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**FELLOWS'
OP-EDS**

**ÉDITORIAUX
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ACTION  CANADA

**BUILDING LEADERSHIP FOR CANADA'S FUTURE
DÉVELOPPER LE LEADERSHIP POUR L'AVENIR DU CANADA**

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Paying for your poor health choices

JENNIFER ARNOLD

Should the government charge you a higher tax rate if you make poor health choices? Should your daily choices to take the elevator instead of the stairs, sleep one less hour, or have that extra cookie, result in a higher tax rate to offset your higher expected healthcare costs?

The rapid uptake of wearable technology such as Fitbit's wristbands has created a database of individuals' daily lifestyle choices. In the hands of interested parties such as health insurance providers, this data could be used to identify those with higher than average likelihoods of chronic disease or other negative health outcomes.

Wearable devices are accessories that include sensors and software that enable them to track an individual's activity and movement, and share that information with connected devices.

In a 2014 report by PwC it was estimated that approximately 20% of US consumers owned a wearable device, and this number is expected to increase exponentially as options increase, and prices decline. According to the same report, the number of wearable devices shipped to consumers in 2014 was 200% higher than the number shipped the previous year. With this rapid increase in adoption, an enormous repository of health related data has been created. Hidden within this are insights into how the daily choices that we make as individuals impacts our long term health outcomes.

What data do these devices collect exactly? At a minimum, wearable devices track the number of steps the wearer takes each day, with most also recording the length and quality of the wearer's sleep. More sophisticated devices track heart rate or electro dermal activity, where heart rate variability, or the electrical characteristics of your skin, are used to estimate stress levels in the body.

The next horizon of devices will be able to monitor blood glucose levels without breaking the skin by using sensor technology. This is exciting as it will provide a non-invasive way to monitor the immediate impact of food choices on the body by tracking the changes in blood glucose over the course of the day.

For those in the health insurance business, this kind of data could be invaluable. The ability to determine which customers have

the highest likelihood of expensive hospital bills, due to poor lifestyle choices, would allow for customized pricing. Higher premiums for those who have demonstrated poor lifestyle choices, and discounted prices for those who walk, and sleep as eat as the doctor ordered. Clean up your act and live a more healthy life this month, and next month you could see a reduction in your insurance cost.

Car insurance companies in the United States have already started using small in-car devices to monitor driving habits. If you demonstrate that you are a safe driver, you will be rewarded with lower premiums. In addition, corporate wellness programs have started to reward employees' good lifestyle choices with lower healthcare premiums. In 2013 the oil company BP introduced a program that provided employees with Fitbit devices that would be used to track their daily activity. In exchange for the device and data, employees who reached certain activity thresholds qualified for discounted health insurance premiums.

It is only a matter of time before health insurance providers begin to leverage this new information, and offer pricing based on your personalized data. If health insurance companies develop the capabilities to offer discounts, or charge premiums based on individual health data, will it be long before governments that provide health care funding seek to do the same?

While it is generally accepted as reasonable for governments to spend money to encourage people to make healthy choices through advertising campaigns, or to levy high taxes on unhealthy items like cigarettes, is it not also reasonable for the government to tax poor health choices identified through wearable device data? As an Ontario resident, what if your tax rate fluctuated month to month based on the data captured by your wearable device? That might just be the ultimate motivator to leave that last cookie in the jar.

JENNIFER ARNOLD is a management consultant who uses her background in economics and law to help Canadian companies become world leaders in their sectors. She is also a committed volunteer for Camp Ooch, a camp for kids affected by cancer.

Permanent residents should have the vote

JOSHUA BATES

Perhaps no country has had greater success than Canada in welcoming newcomers. This is particularly so in our big cities, which have become some of the most harmoniously diverse places in the world.

But for a country that celebrates diversity — Canada was the first country in the world to make multiculturalism official policy, and we are now the world's second-most-heterogeneous society — we are less committed to the backbone of democratic society: voting rights.

Recognizing permanent residents pay local taxes and use city services, some 50 countries around the world — including Ireland, New Zealand and Belgium — allow resident non-citizens to vote in municipal elections. Despite a growing movement among Canadian cities to enfranchise permanent residents — the decision lies with provincial legislatures, not municipal councils — Canada is not among them.

Granting permanent residents the vote in local elections would deepen our commitment to multiculturalism. Studies show the earlier people begin participating in politics, the more likely they are to become engaged citizens. New Canadians report lower levels of political engagement than those born here, so it should be no surprise municipal councils don't reflect our multicultural reality. A study conducted in Ontario's 23 largest cities found visible minorities held fewer than eight per cent of the council seats, despite making up more than 32 per cent of the population. Greater political participation among our diverse communities would benefit all Canadians by encouraging the integration of newcomers.

While some argue voting rights should be reserved for citizens, the decision of the Ontario Court of Appeal to uphold a federal law that says Canadians who have lived abroad for more than five years cannot vote in federal elections affirms the connection between residence and voting.

According to Ontario Chief Justice George Strathy, "Permitting all non-resident citizens to vote would allow them to participate in making laws that affect Canadian residents on a daily basis, but have little to no practical consequence for their own daily lives."

If this is true, is it fair to deny Canada's 1.5 million permanent residents the right to help

shape laws that have a direct, practical consequence on their daily lives?

Permanent residents revive urban spaces, start businesses, serve in our military and yes, some do become citizens. However, the Canadian model of immigration leading to citizenship is at risk. The percentage of immigrants who become citizens has dropped dramatically from 79 per cent to 26 per cent among people who arrived between 2000 and 2008, reflecting policy and program changes that have made citizenship "harder to get and easier to lose." This is leading to a growing population that does not have the right to vote.

We live in an age of greater migration and increasingly free trade, and yet, in Canada, municipal voting rights have remained fixated on the idea of national citizenship.

Our best and brightest are not choosing so much between Canada and China, but between Toronto and Tokyo or Vancouver and Vienna. In many ways, mass migration has replaced national citizenship with urban citizenship.

By reflecting the identity and experience of the city's residents, urban citizenship is fundamental to a newcomer's attachment to their new society. Extending civic voting rights to non-citizen residents signals a desire to welcome newcomers. For many, this sense of belonging will foster a renewed commitment to Canada, fostering innovation.

Today's concept of citizenship has its roots in an attachment to the city state in ancient Greece. With global migration remaking the very idea of citizenship along urban identities, it is time to validate today's reality of urban citizenship by granting voting rights to urban citizens.

A century ago, Manitoba became the first province in the British Commonwealth to grant women the right to vote. Sixty-eight years ago, race was removed as grounds for exclusion from the federal franchise. As an urban nation, founded on democratic principles — redefined by multiculturalism — what could be more Canadian than an urban ballot box reflecting our multicultural reality?

As senior policy advisor to the Mayor of Halifax, **JOSHUA BATES** is committed to creating a more inclusive, accessible and active community. He has worked in the Nova Scotia government's finance and health portfolios and, as a UNESCO intern, helped shape strategy against racism and discrimination.

Making money by solving world's most pressing problems

AISHA BUKHARI

Traditionally, the government is tasked with solving social problems and doing public good. Private businesses, large corporations and start-ups, innovate and generate wealth. However, there are large-scale social problems, such as poverty and global warming, that the governments have been unable to solve in a timely manner. Tackling these problems with urgency and sustainably, requires a blended mindset that reflects aspects of both the government and private business models. This has given rise to a new class of organization, termed as a social enterprise (SE). A SE solves social injustices and generates revenue while doing so. The profits are reinvested within the organization to scale the impact and be sustainable.

Social entrepreneurship is deemed as a worthy cause. If it is possible to make money by doing good, then why aren't more people doing it? Examples of successful SEs started by Canadians include the Aspire FG and Kitigan. Despite individual successes, social entrepreneurship is not widespread, yet. SEs face special challenges because they are a for-profit organization, with low margins. They lie somewhere in between the traditional non-profit charities, and high-growth start-ups. Specific challenges include:

- Lack of governmental intervention to facilitate SE growth
- Access to finance and
- Lack of skills required to take up social entrepreneurship as a career path

Both public and private sector has a role to play in not only removing barriers but also actively promoting SEs.

The government must recognize that social enterprises are not only a tool for creating social change but also for economic development. Encouraging SE growth requires creative solutions to promote public and private partnerships. Opening up data and information and making it publicly available can facilitate this. The government is also in a position to provide platforms to establish our desired social outcomes (at all levels municipal, provincial, national and international). There is also a need to adopt a long-term (5-10 year) perspective as opposed to a short-term perspective. The government can also adopt policies (such as procurement etc), which

determine how the government budgets are spent. In Canada and globally, the shift to outcome and impact focused spending has already begun. The government can also provide financial incentives to SEs such as tax credits that are available for non-profits. To make this a reality, change needs to happen across all departments of the government.

A key to growing social enterprises is to make financing more accessible. Due to lower margins, SEs are not lucrative to traditional angel investors and venture capitalists. In parallel, because they are a for-profit organization they often lose funding opportunities through foundations and government grants. Creating platforms to connect social enterprises to like-minded investors can solve this problem. A great example of a platform that has launched in Ontario is SVX. However, there is still a need for platforms to connect ventures and investors across a wider geography as well as cater to ventures at different stages, in particular including those that require early stage seed funding. Foundations can also step up by complementing their philanthropic efforts with investments in social enterprises using their endowment funds. Pooling is also an innovative funding model that has been implemented by BlueOrchards a Switzerland based social investor organization that assembles portfolios from many micro-lenders. Canadian examples include the Social Enterprise Demonstration Fund in Ontario, Social Enterprise Fund in Alberta and Social Impact Bonds. However, there is a gap, as many of the SE initiatives support only organizations that provide local benefits. There is of course a need for SEs that deal specifically with Canadian social challenges; however, there is also a need for Canadians to step up and lead in the world.

Capacity building for social entrepreneurship through education and skill development from a young age is a proactive way to encourage youth to take this up as a career path. An example of a private organization leading the way in this is Future Design School based out of Ontario. Another way to build capacity is to provide opportunities to "learn by doing". Examples of initiatives promoting this include student competitions such as the Hult Prize, which offers mentorship and grants winning

teams \$1 million in seed funding. Internships that provide opportunities to travel to international locations and get contextual knowledge to understand the root-causes of social problems are also needed.

Social Entrepreneurship is a new wave that offers many opportunities for Canadians. If we step up, we can create local employment opportunities, as well as be a leader in solving world's most pressing problems.

AISHA BUKHARI is an electrical engineer and social entrepreneur. She co-founded Atollo, an early-childhood-education social enterprise that is a finalist for the 2015 Hult Prize. A business development specialist with Toronto Hydro, she led the utility aspect of a consortium-based Community Energy Storage project.

Moving Beyond the Good Samaritan

SARAH DOYLE

Entrepreneurial approaches hold huge promise to help charities and non-profits do their jobs better. Building businesses that provide a stable source of revenue, and investing for both financial and social return, can mobilize new sources of capital for public good. To unleash this potential, however, outdated rules must be changed.

As federal and provincial governments finalize priorities for the next fiscal year, this should be front and centre.

Canada has inherited a binary understanding of the non-profit and for-profit sectors. The non-profit sector is seen as the domain of the Good Samaritan, while innovation and entrepreneurship are believed to belong in the for-profit sector.

The non-profit sector is Canada's front line in coping with big challenges, such as rising inequality, chronic disease, and climate change. It accounts for over eight percent of Canada's GDP, employs over two million people, and is responsible for services that our communities rely on. But the sector has been hamstrung by archaic rules that circumscribe what it does and how it does it.

According to these rules, charities can engage in the important work of giving to those in need – through soup kitchens, for example – but cannot address the causes of that need. They can hold fundraisers but cannot be truly entrepreneurial. They are the projects of well-intentioned people, but not of innovative leaders looking for the most effective models for improving the chances of the marginalized in this country.

Oxfam – a leading international aid and development organization – reports that the Canada Revenue Agency issued a warning in 2013 that it could not maintain charitable status if its objective is to “prevent” poverty. It could “relieve” poverty, but could not act in a way that would benefit people who were not already poor. Perverse as this is, it was not an isolated or capricious judgment. Its roots extend into 19th century English common law.

Charities are restricted to relatively minor business activities, while the Canada Revenue Agency has effectively indicated that non-profits must aim for a zero balance at the end of each fiscal year. These restrictions fail to recognize the value of social enterprise in

the non-profit sector, to support core funding, growth and long-term planning. Funding from donors and governments has fluctuated since the 2008 financial crisis. Often, this money comes with conditions that prevent it from being used to meet core funding needs – staff, space and other essentials. Earned revenue accounts for about half of total revenue for the core non-profit sector, and is likely the only source of non-profit income with the potential for growth.

Charities are also investors. Charitable foundations in Canada hold about \$61 billion in endowed assets, the lion's share of which is currently in traditional markets. A growing cadre of foundation leaders are beginning to seek greater alignment between their investments and charitable purposes, viewing their investment strategies as complementary to their granting strategies. Investing 10 percent of these assets in social-purpose projects or businesses – known as “impact investing” – as some foundation leaders have recommended, would unlock over \$6 billion annually in additional capital for public benefit.

Part of the problem stems from the lack of a federal regulator responsible for setting intelligent strategy for the non-profit sector. Policy for the sector is largely set by the Canada Revenue Agency, whose primary mandate is to administer tax laws.

Charities and non-profits benefit from tax breaks, which makes it critical to ensure that they are acting in the public interest. This is not, however, an argument for tying their hands. A legal framework focused on enabling charities and non-profits to maximize their impact in communities, rather than on preventing wrongdoing at the cost of effectiveness and efficiency, would look very different.

As part of a G8 taskforce study of impact investment, a group of Canadian experts released a report – *Mobilizing Private Capital for Public Good: Priorities for Canada* – calling for a number of policy changes that would unlock the potential of the non-profit sector. The 2015 federal budget adopted one of the report's recommendations – to allow charities to invest in limited partnerships, thereby removing a major barrier to foundation impact investments.

This is an important change, but creating a more effective non-profit sector will require

a comprehensive review of the laws that govern it. Considering the magnitude of the challenges charities and non-profits are set up to tackle, modernizing the rules that govern them should be a priority.

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Weekend Crush: Candies or Jewels?

SIMON GAMACHE

How much time did you spend last week virtually crushing jelly beans? Binging on a TV series everybody watched five years ago? Or rather enviously stalking a *friend's* fabulous travel pictures? Do not answer. It's embarrassing. We all do it. It would have been so much more edifying to explore a museum's galleries, attend a concert, or take in a live dance performance. Right? But that's a lot of work. And imagine you're among the 19% of Canadians living outside the country's urban centres. Then just forget it.

The common denominator among the first set of oh-so-shameful activities is that it takes place online, in the comfort of your home, at your own pace. The more laudable second list involves getting out of the house, fearing cultural faux-pas and, if you're lucky, having the experience of a lifetime. Is there a way to merge entertainment, accessibility, enlightenment, and convenience? Definitely yes, but it requires a vision, will power and money.

The digitization and wide dissemination of the world's greatest cultural assets is not new. In the late nineties, the Louvre made part of its collection accessible online. The Berlin Philharmonic live broadcasts concerts on its Digital Concert Hall platform since 2008. You might even have gone to your local cinema on a Saturday morning to catch a showing of a Metropolitan Opera production. Call it artistic democratization or the cultural equivalent of fast-food, but having that content at your fingertip is nothing less than extraordinary.

Canada boasts superb visual and performing arts organizations. They are the pride of their hometowns. Think of Ballet BC, the soon to be opened National Music Centre in Calgary, the Canadian Museum for Human Rights in Winnipeg, the Canadian Opera Company, the Orchestre symphonique de Montréal, The Rooms in St. John's. Those are only some of the big ones. There are hundreds of smaller, exciting, cutting-edge, exciting and thriving institutions revolving in their orbit.

But it's a short-haul flight between each of those cultural jewel's cities. They are only accessible to their local community. Which is obviously crucial: it would be suicidal for any artistic organization not to be rooted in its community. As for any business, a gallery, spoken world festival, or chamber orchestra

not responding to a demand should probably just call it quits. Local economics will shut it down anyway.

But what if you call the huge land that is Canada *the* community? Now that's a challenge. Not so much if you consider technological innovations of the past two decades.

Consider the National Film Board. If you haven't browsed their website recently, do. Hundreds of free documentaries of high artistic integrity and cultural relevance available for free. Look up a topic of your liking, take a chance, watch a movie, feel strongly about it, and share it on social media. It's not on YouTube, rather on the NFB's own platform, assuring copyright protection and the artist's attribution. Without knowing it you learned something new about your country and supported a filmmaker living 3000km away.

There is certainly a way to bring Canadian art to all people. Financial support – public, corporate, or philanthropic – is obviously necessary to establish such initiatives. But first there has to be a vision. Someone somewhere has to believe that art should be democratic, not elitist. That art is a reflection of what we were and have become. That life without art is pointless. Philanthropists get it, some big corporation are starting to, but we have not heard it from politicians recently.

Nothing will ever replace witnessing from front row a dancer's muscles bend or staring at a painter's brush stroke 10 centimetres off your nose. But our country is big. Few Canadians will savour the full range of its artistic offering and cultural diversity in their lifetimes. We have to find ways to disseminate those treasures.

Could the CBC – much in the news following the Liberals' promise to reverse the cuts made under the Conservatives – partner with local innovative independent producers and corporate funders to broadcast performing arts across the country on multi-platform?

Could our best galleries adopt 3D-visualization technologies so that arts lovers in small communities can experience the magnitude of Bill Reid or the intensity of Paul-Émile Borduas?

Artists through artistic institutions help us make sense of the eternal question: what is the essence of the Canadian character? If you care for my opinion: that's not a beer or a doughnut.

So – candy crush or culture fix?

An accomplished administrator, musician and advocate for the arts, **SIMON GAMACHE** is responsible for music programming at The Banff Centre. He is regularly invited to participate in artistic selection committees at the provincial and national levels, and previously oversaw production for classical music label Analekta.

Our Most Important Stakeholders

AYESHA HARJI

Last week, the Truth and Reconciliation Commission's final report was released. It outlined 94 recommendations for changing the course of the relationship between the government and Canada's first people and beginning the process of reconciliation. Following a number of missed opportunities for real change – the recommendations of the 1996 Report of the Royal Commission on Aboriginal Peoples and the 2008 apology former students of Indian Residential Schools, for example – let's not let another one pass us by.

For too long, we have ignored the needs of one group of Canadians – our Aboriginal peoples. Our history shows the devastating effects of Canadian policy-making on these people. Policies have lacked an understanding of Aboriginal traditions, way of life, and culture. If Canada really wants to reconcile with Aboriginal communities, we need to make sure that Canadian and Aboriginal leaders sit side by side at the public policy table going forward.

There is little need to rehash the numerous challenges that face Canadian Aboriginal communities. Underemployment, integration and discrimination problems have been long-standing, and yet remain unresolved at all levels of government. And these problems aren't going away. Statistics show that the Canadian Aboriginal population is growing at a faster rate than the non-Aboriginal population. By 2036, Aboriginal Canadians will make up 6.1 percent of the population, up from 4.6 percent in 2011. This represents an annual growth rate of between 1.1 and 2.3 per cent, higher than the 0.9 percent Canadian growth as a whole. If this trend continues, we won't be able to ignore the needs of an expanding segment of Canadians. Every Canadian deserves to live in a country where they are recognized as equals, and where their lives and well-being matter to the same degree as every other person.

Canada has a proud history of tolerance and inclusivity, so we need to start the process of reconciliation by re-examining how we bring Aboriginal Canadians more fully into Canadian fabric and society. It's time that we show a willingness to learn and understand, and a desire to build a positive relationship.

Supreme Court Chief Justice Beverly McLachlin once said: "The only way forward

is acknowledgement and acceptance of the distinct values, traditions and religions of the descendants of the original inhabitants of the land we call Canada." We can't start the process of true reconciliation until we look at what stereotypes we hold about Aboriginal people, and what barriers exist in our interactions.

Aboriginal Canadians need a forum to voice their opinions and concerns at all levels of decision-making. In the North end of Winnipeg, members of the Aboriginal community meet weekly at an event called "Meet Me at the Bell Tower" to discuss topics such as stopping violence against women and advocating for Indigenous rights. These meetings are open to all community members, and show a grass-roots effort to make sure that Aboriginal perspectives are heard.

The federal government should create similar spaces to provide Aboriginal communities with the opportunity to review and consult on all proposed pieces of legislation, and to have their voices heard. Currently, any proposal that gets introduced must include a full examination of this legislation's impacts of Canada's provinces and territories, as well as an environmental assessment. Why not include aboriginal communities as an additional stakeholder and create a Prime Minister's Advisory Council on Aboriginal Issues? We could easily make sure that legislation reflects their considerations and concerns.

Canada could also increase Employment Equity quotas for aboriginal public servants to make sure that they have a hand in crafting policies and programs that meet their needs, and offer mandatory training to all public servants on Aboriginal issues. Training can never replace a personal understanding, but having more Aboriginal public servants will make sure that important issues are addressed when developing policy.

Beyond our traditional public service, we must set aside Senate and Supreme Court positions for Aboriginal membership, and dedicate seats in national and provincial legislatures. These types of positions will allow the original Canadians to determine the future of this great country, and shape it in a way that ensures their ongoing participation and inclusion.

The TRC report offers Canada a once-in-a-lifetime chance to meaningfully address

the issues facing Aboriginal Canadians. The theme of co-operation over conflict was clear in the final report, and there is no better catalyst than the TRC to reinvigorate Canada's relationship with its aboriginal peoples. If anything, these measures will help kick start the process of reconciliation and move us past our painful history together.

AYESHA HARJI is a senior policy analyst with Public Safety Canada, where she manages multilateral engagement with the United Nations and the Organization of American States. She also co-leads the department's Young Professionals' Network, and is a board member with the Ottawa Gala, raising funds for at-risk youth.

Le Canada inventeur ou innovateur ?

YOUMANI JEROME LANKOANDE

Depuis 10 ans, le gouvernement du Canada et de nombreuses organisations mandatent des recherches sur la compétitivité du Canada en termes de productivité et d'innovation. Dix ans pendant lequel le Canada a vu diminuer sa compétitivité en matière d'innovation. La situation est préoccupante. Le Canada ne fait plus parti du top 10 des pays les plus innovants. Il est passé de la 8^e place en 2011 à la 15^e place en 2015 dans le Global Innovation Index. Pourquoi d'autres pays font-ils mieux que nous en matière d'innovation ? Que faut-il faire pour amener le Canada à la tête du peloton des pays innovants ?

Chaque jour de nouveaux produits et services innovants sortent pourtant des incubateurs et des centres de R&D à travers le Canada. Les innovations qui parviennent à connaître un succès commercial sont malheureusement peu nombreuses en raison des difficultés de commercialisation auxquelles entreprises canadiennes font face.

Le Canada accuse un retard par rapport aux États-Unis et certains pays de l'OCDE dans la commercialisation des innovations. Le Canada est pourtant parmi les pays les plus performants sur plusieurs indicateurs de l'innovation. Le Canada est le 5^e pays au monde avec les plus grandes compagnies de hautes technologies, selon le classement Bloomberg Innovation Index 2015.

L'innovation est la commercialisation ou l'adoption d'une invention radicale, dit l'entrepreneur Peter Balbus. Un nouveau produit ou service qui n'a pas été adopté par les consommateurs n'est pas une innovation, mais une invention ! La phase de commercialisation des inventions est la phase la plus critique pour les entreprises. Bien plus que cela, une compagnie qui n'arrive pas à vendre n'aura pas assez de revenus pour investir dans la recherche et développement de nouveaux produits. C'est dire donc que jusque-là les Canadiens ont été de bons inventeurs mais pas des innovateurs. Mais de l'invention à l'innovation il ne reste qu'un seul pas à franchir. D'où l'espoir ! Pour amener le Canada dans le dernier carré des pays innovants il faut aller à la conquête de nouveaux marchés.

Le programme canadien pour la commercialisation des innovations mis en place en 2010 constitue un tremplin pour les entreprises, mais ne suffit pas pour réussir la phase

de commercialisation. Mais où écouler nos innovations quand notre marché local notre partenaire historique, les États-Unis, consomme de moins en moins nos produits ?

La commercialisation internationale est la seule option viable. Mais le constat est que les PME canadiennes hésitent encore à dépasser le marché américain pour scruter d'autres horizons faute de moyens ou d'accompagnement. Pour certaines destinations, les entreprises canadiennes les considèrent encore à risque comparées aux États-Unis et aux autres pays de l'OCDE.

La commercialisation des innovations comporte des difficultés liées au fait qu'elles obligent les entreprises à s'adapter à ces nouveaux marchés à risque. Il est là tout le défi. Mais compte tenu des difficultés économiques des pays développés, il est important que le Canada se dote d'une nouvelle stratégie pour accompagner ses entreprises vers les marchés émergents et les pays en développement.

Le Canada peut être par exemple un partenaire de choix pour l'Afrique dans de nombreux secteurs comme l'agriculture, l'éducation et les nouvelles technologies.

Dans les pays africains, la présence canadienne se fait rare alors que les entreprises chinoises, américaines, françaises et anglaises y renforcent leur présence de jour en jour. Au cours des cinq dernières années Facebook et General Motors se sont installés respectivement en Afrique du Sud et au Nigéria. En 2013, Microsoft s'est allié au chinois Huawei pour s'attaquer au marché africain des smartphones en proposant Huawei 4Africa Windows Phone.

Un axe important de la stratégie canadienne devrait donc inclure, pour les grandes entreprises, le soutien à la formation et à l'implantation de filiales canadiennes en Afrique. Pour les PME, cette stratégie pourrait soutenir la co-entreprise avec des compagnies locales.

Le Canada crée mais le Canada ne vend pas. Pour passer de l'inventeur à l'innovateur le Canada doit adopter une nouvelle stratégie de soutien à la commercialisation de ses produits sur de nouveaux marchés. Trouver de nouveaux marchés est le chemin qui mènera le Canada vers le carré des pays innovants. Ne dit-on pas que le chemin de l'innovation passe par l'innovation du chemin ?

YOUMANI JÉRÔME LANKOANDÉ est président d'Innovation Québec, une entreprise de Montréal, et président de la Jeune chambre de commerce et d'industrie de St-Laurent-Mont-Royal. Auteur de nombreuses publications sur l'innovation et l'économie internationale, il siège aussi au conseil d'administration de nombreuses organisations canadiennes.

Count Our Children In, Canada

TAYLOR LOVE

As part of the 2015 Economic Action Plan the Federal Government is rolling out a new strategy called Count Me In, Canada, aimed at increasing the financial literacy of Canadians. Personal finance has become increasingly complex and it isn't easy to navigate the options, but so what?

The challenge isn't educating Canadians the internet is full of easy to read tutorials on personal finance, but making them care. With the exception of 2009-2010 Canada is experiencing the lowest recorded interest rates since 1935. The average debt to income ratio in Canada crept up to 163.3% in the first quarter of 2015 with total income only increasing by 1%.

The scariest part about an average think normal distribution, is that a large portion of Canadians fall on either end of the curve. Those retired with little-to-no debt influence the number as heavily as those first time home buyers. Very few investors would support a company with that kind of performance. The facts are scary, but how do we get Canadians to care? The answer is in educating our children.

Proportionately, the highest leveraged borrowers are younger Canadians, probably buying their first home. I am 27 and fit in that category, and like most other Canadians I wasn't taught anything about personal finance in public school. This coming year I will attend my 10 year high school reunion and as I start to think about my future children's education I still wonder—why isn't financial literacy imbedded into all provincial education systems?

The vision for Count Me In, Canada is to empower Canadians to “manage money and debt wisely, plan and save for the future, and prevent and protect against fraud and financial abuse”. The problem is understood, the educational tools exist, but the government missed the most important target audience – Canada's youth. Pieces of financial literacy are taught in some provinces, but there is no uniform curriculum. Teachers need clear benchmarks so that they can properly prepare their teaching plans to meet curriculum requirements. It's time to get kids excited about financial literacy and prepare them for the financial challenges that lay ahead.

Some theorists discredit the teaching of financial literacy in the education system, suggesting that “personal finance manage-

ment is complex, requiring considerable time and effort to understand...what is needed in today's markets cannot be bridged by financial literacy training alone.” Or that “financial literacy messages are a small trickle compared to the vast flood of advertising from banks, investment firms, insurance companies and many others” says Lauren Willis, a Professor of Law at Loyola Law School and the author of *Against Financial Literacy Education*.

Financial literacy is a life long education; saving for education, buying your first home, saving for your children's education, planning for retirement, and retiring. The earlier Canadians become financially literate the better equipped they will be to make fewer mistakes along the way. This is not suggesting that Canada's education system should be influenced by corporations or that students should be subject to financial advertising or product promotions. It is simply suggesting that a high school graduate should understand the functioning of a mortgage, the importance of compound interest, future value of money, how a credit card works and how taxes are calculated.

The Organization for Economic Co-operation and Development released their 2012 report on financial literacy and those countries rated best use a cross-curricular approach integrating financial literacy into existing courses, have a higher than average percentage of teachers that attend professional development in financial education, and have a national education strategy for increasing financial literacy.

To this day I still consider myself to be above average at quick multiplication, and the reason for this isn't complex. My grade three teacher had a point system offering students stars for the number of right multiplication answers. Students could then spend their stars on different prizes. It helped me learn the multiplication table, the importance of hard work, but most importantly the importance of saving. I still remember the satisfaction of spending all my hard earned stars at the end of the school year on a special prize. This exercise didn't require a complete transformation of the education system, but rather a simple cross-curricular approach focused on the concept of saving.

Entrepreneur **TAYLOR LOVE** is director of business development for Northern Vision Development in Whitehorse, Yukon. He also owns a landscaping company, and a consulting company that assists First Nations development corporations. To start a new career in energy infrastructure and policy he is pursuing an MBA

Chances are your loved one won't die where they wish. When asked, two-thirds of Canadians say they want to die at home. According to Dr. Robert Fowler of Toronto's Sunnybrook Hospital, who recently published an international study, 52.1% of Canadian cancer patients die in hospital. In Canada, it is more common for cancer patients die in hospital than in any of the six other countries studied. To honour the wishes of patients we must find new ways to make end of life a core part of care.

There are three clear steps to make end of life more about the patient:

First, we must accept that physical decline is inevitable. Before modern medicine, people typically got sick and died quickly. Now we are living longer and sicker, often with multiple chronic diseases that mix in unpredictable ways. We have become very good at keeping people breathing. Sadly, the momentum of our medical progress focuses more on fixing the problems and less on treating the patient.

The rush to treat is natural. Health care is filled with passionate people who want to relieve suffering. Our challenge is to recognize that many treatments relieve some symptoms only to introduce suffering elsewhere. Recent studies on early stage breast cancer illustrate that more aggressive treatment isn't always better. Evidence is also mounting that palliative chemotherapy worsens quality of life.

Second, we must redefine success. Instead of acknowledging a cancer patient's hollow cheeks as a natural part of the advancing disease, they are often viewed as failure. Success for a nephrologist might be maintaining stable "serum phosphorus" levels for a patient with Stage 5 Chronic Kidney Disease. But what does success mean for the patient? We will never know if we don't ask.

Conversations about dying are some of the hardest in health care. They are hard for both doctors and patients. Doctors may be uncomfortable with the idea that their treatment may not work, or they may be afraid to dash the hope of a desperate patient. Conversely, patients may not want to offend their doctor by raising their fears about death. Patients may not feel it's their place to speak up.

Still, we are making progress. Now, more than ever, people are talking about quality of life and what success looks like for them

at the end of life. For some, success may be maintaining the ability to have conversations with their family. For others success may be living to see their son graduate from high school. Success may be no prolonged suffering, or more 'good' days than 'bad'.

Acceptance is required to move forward. Acceptance that we can't fix all problems. Acceptance that we are dying. Acceptance that what I want at the end of my life may be different than what you want.

The third requirement to transform end-of-life care is empowerment. Patients must be empowered as partners in their care. To do so we must address the structural barriers. Doctors hold the balance of power in these relationships; we see them on their schedule and in their space. We may even be wearing a gown devilishly designed to tie up at the back. Sharing your hopes and fears in these moments of vulnerability is challenging, but these conversations are what changes health care from transaction to interaction. We must empower patients to make them happen.

Health professionals must also be empowered. They need to be free to act on the goals of their patients. There are shining examples of physicians and nurses arranging tributes for patients and tracking down estranged relatives. In Wigan, UK, a horse was once brought to the hospital for a last visit with its loving owner. This is not strictly health care. It is real, human care.

Medicine has come far, but it has innovated almost exclusively around our physical needs. As we approach death, we need health care that addresses all of our physical, psychosocial, and spiritual needs. We are only beginning to recognize that innovation in the way we care for patients may be as important as the medicines that keep us alive. Failing to sustain what gives people meaning in life, regardless of our success in keeping them alive, has grave human consequences.

TAYLOR MARTIN is a professional engineer committed to creating equitable access to healthcare services. He has worked in the public and private healthcare sectors and holds a master's in health administration. He is a world-class ultimate frisbee player and an avid amateur violinist.

Four years ago, Peter Fenker begged his wife to shoot him or strangle him with a rope.

Peter suffered from amyotrophic lateral sclerosis, known as ALS, or Lou Gehrig's disease – a progressive condition with no cure. ALS weakens muscles until paralysis sets in, often paralyzing the muscles that control breathing.

Peter endured years of the crippling disease, but his suffering became acute in his final months. He suffered an excruciating, slow march to death. He gasped and choked for air, as though drowning. Doctors sedated him to the point of semi-consciousness, but Peter continued to struggle to the end, while Grace Fenker, his wife of 42 years, and their daughters watched in their own agony.

“It was a horror to watch Peter labour to die,” Ms. Fenker said. “It’s a painful eternity when you are helplessly watching your beloved husband suffer. I’ll never forget the pleading look in his eyes as he asked me to help him and there was nothing I could do.”

Peter wanted to have the option of a physician-assisted death, but doctors in Canada were criminally barred from helping critically ill patients who wanted to die in a dignified way.

The British Columbia Civil Liberties Association stepped in to challenge this callous injustice. After a four-year legal struggle, on February 6, 2015, the group won an historic lawsuit on behalf of Peter and all Canadians who need a choice at the end of life.

On that day, the Supreme Court of Canada unanimously declared that Canadians suffering unbearably with a serious, incurable medical condition have the right to seek a compassionate death with the assistance of a doctor.

The Supreme Court of Canada recognized that a growing number of jurisdictions around the world permit death with dignity – Switzerland, the Netherlands, Belgium, Luxembourg, and Colombia. In the United States – Oregon, Washington, Montana, Vermont and California authorize aid in dying, with legislation pending in other states.

The Supreme Court gave Parliament and the provincial legislatures 12 months to enact legislative guidelines relating to the medical practice, should they choose to do so – they have until February 6, 2016.

Religious and other groups that oppose sui-

cide or assisted dying under any circumstances are currently lobbying the government for further delays, and for restrictive laws that impose so many barriers that physician-assisted dying will be practically unavailable to many seriously and incurably ill Canadians. If that happens, people like Peter will continue to die horrifying deaths against their will.

Stephen Harper's government delayed responding to the court's decision, and then eventually created a three-member external consultation panel to consider legislative options. Two of three panelists – Harvey Max Chochinov and Catherine Frazee – were expert witnesses for the federal government in the court case. Both oppose physician-assisted dying in principle. The panel is seeking online feedback from Canadians, but the survey questions are shockingly biased and misleading.

In the face of the Harper government's efforts to undermine the Supreme Court's decision, the majority of provinces and territories joined together to form an independent expert advisory group to consider their own options.

Sick and dying Canadians are pleading with the new Federal government to take a different direction. Parliament should immediately disband the biased federal consultation panel. The new government could show responsible leadership by seeking to cooperate with the provincial-territorial expert advisory group. Whereas the federal panel is not expected to report for months, this group is working quickly to ensure that its final recommendations are completed by the end of November. Members of the broadly constituted group include provincial and territorial health and justice ministers and patient, health care, ethics and legal experts from across Canada.

There is no way to know whether this panel will ultimately uphold the rights of critically ill patients, but its even-handed approach and broad expertise make it worthy of serious consideration.

As lawmakers and stakeholders around the country consider this issue, they should look to the decades of data collected in countries that permit death with dignity. But they needn't start at square one: B.C. Supreme Court Justice Lynn Smith exhaustively canvassed this research in her trial court decision;

the Supreme Court of Canada affirmed her findings. The Québec National Assembly's Select Committee on Dying with Dignity issued the Québec Select Committee Report in 2012 and the province is expected to implement death with dignity legislation by the end of the year.

Critics of physician-assisted dying argue that dying people will be forced to end their lives. This is not true – and it never was. The research shows that life-ending assistance is not widely requested or used and the laws have been responsibly carried out. For example, in Oregon the law has been safely administered for over 20 years – last year, only 105 patients ended their lives with a doctor's assistance.

Ms. Fenker's inability to help her husband die painlessly and with compassion is a circumstance no family member should have to face.

“Peter never wanted his life to end that way. I'll always feel bitter that his wish for a dignified death was never granted to him. He was good and kind man – he didn't deserve to have his life end this way.”

Peter deserved better – so do we all.

Lawyer **GRACE PASTINE** is the litigation director for the B.C. Civil Liberties Association, where she directs the organization's nationwide legal program. A frequent speaker on civil liberties topics, she has taught law as an adjunct professor at the University of British Columbia and the University of Victoria.

Quand le mieux est l'ennemi du bien!

JONATHAN PLAMONDON

Saint-George-de-Clarenceville, un village de mille personnes à 45 minutes de Montréal compte maintenant une borne de recharge pour les voitures électriques grâce à un programme gouvernemental. Malgré la fierté de voir cette nouvelle technologie s'implanter au Québec, il est difficile de ne pas voir un paradoxe lorsqu'un village sans accès à Internet dont le centre communautaire n'a même pas accès à l'eau potable se dote d'une borne pour voiture électrique. Clairement, l'implantation aveugle d'une **récente** technologie, ici, dessert la mission derrière une telle initiative, c'est-à-dire pour susciter l'innovation.

Saint-George-de-Clarenceville n'est pas ce que l'on peut appeler un lieu de la nouvelle économie **où** chacun roule en Tesla. Loin des grands axes routiers, plus du quart de sa population n'a aucun diplôme ou qualification et moins de la moitié de celle-ci fait partie de la population active. Alors est-ce que cette borne de recharge **électrique** transformera les habitudes des villageois et favorisera l'innovation? Vont-ils s'acheter des voitures électriques?

Poser la question révèle le caractère superficiel de ce type d'initiative, surtout lorsqu'on tient compte du niveau d'infrastructure en place dans ce village. De telles politiques doivent s'articuler de concert avec les politiques sociales qui visent le maintien et l'amélioration des conditions de vie des Canadiens.

Rappelons l'objectif du programme gouvernemental qui installe ces fameuses bornes de recharges : Innover dans nos méthodes de développement grâce à l'électrification des transports. Cependant, plusieurs chercheurs soulignent que si un certain niveau socioéconomique n'est pas atteint, il est utopique de penser innovation. La créativité et l'audace nécessaires à l'innovation et l'entrepreneuriat sont fortement sensibles aux variations sociales et économiques.

Par conséquent, implanter des outils d'innovations qui ne font pas partie d'une stratégie plus globale de développement économique et social ne fera que creuser les inégalités qui sont déjà croissantes ces deux dernières décennies. Notre société peut compter sur des îlots créatifs et fortement compétitifs situés en grands centres urbains où s'épanouissent des talents issus de formations universitaires dans une économie du savoir. Par contre,

notre territoire contient de large secteur où une l'économie s'essouffle puisqu'elle n'est pas appuyée sur le savoir et les technologies. En ne misant que sur des politiques d'innovations, qui ne visent que le premier segment de la population, nous venons nourrir les inégalités, car nous accentuons le fossé entre deux réalités économiques au pays.

D'ailleurs, Richard Florida, spécialiste international en matière d'économie créative et respecter dans le monde de l'innovation technologique, dénonce publiquement cette économie qui refuse d'être au profit de tous malgré sa croissance.

Il faut donc résister à la tentation de concentrer l'action de l'État en innovation et en politiques industrielles qui favorisent uniquement les meilleurs. Nous oublions trop souvent que des politiques sociales comme un programme universel de garderie peuvent influencer grandement notre capacité à innover. En effet, un tel programme au Québec a permis un accroissement spectaculaire des femmes sur le marché du travail, diversifiant ainsi la composition des organisations. Une diversité qui a suscité **réellement de l'innovation, car elle est nécessaire** la créativité et, en plus, améliore les conditions socioéconomiques d'une bonne portion de la population.

Alors, il est évident que notre fameuse borne de recharge pour voiture **électrique**, n'incitera pas les villageois à se doter d'une voiture électrique parce que, dans leur réalité, ce n'est pas une option envisageable. Cette borne servira uniquement au très urbain propriétaire d'une voiture électrique qui se sera là par hasard. C'est donc beaucoup d'énergie et de ressources qui ne profiteront qu'à certains. Est-ce le sens que nous voulons donner à l'action de l'État dans notre société? Pouvons-nous faire mieux? C'est lorsqu'on combinera politiques d'innovations et politiques sociales que la compétitivité du marché sera à l'avantage de tous et qu'elle créera un cercle vertueux de croissance. À ce moment, peut être qu'un citoyen de Saint-George-de-Clarenceville ira recharger sa voiture électrique à la borne du village.

Conseiller en relations industrielles agréé, **JONATHAN PLAMONDON** a travaillé dans le secteur privé avant de devenir agent de relations industrielles au Conseil canadien des relations industrielles. En 2014, il a organisé une mission de reconnaissance en Belgique pour Mission Leadership Québec. Il a également été président de Force Jeunesse.

Give our streetcars and buses their own lanes

SHOSHANNA SAXE

When it comes to public transit we can't seem to agree what to build, where to build or how to pay for it. In Toronto, the last 35 years have seen a myriad of public transit proposals and very little follow through. The city needs major public transit infrastructure investment. Mega projects have been promised but heavy rail routes like SmartTrack and the Downtown Relief Line are expensive and will take a decade to open. Toronto needs these big projects but it also needs less infrastructure intensive rapid transit that can be built quickly. Toronto should copy innovations from other cities and better use the transit infrastructure we already have. It would be innovative expanded transit, the easier way.

Many of our streetcars should be given their own right of way, as should the highest usage bus routes. Streetcars and buses that run in traffic are victims of congestion rather than solutions to it. Giving them dedicated space to operate makes them the fastest, most reliable way to get around. Light dedicated surface rail is being built all over North America, perhaps most surprisingly in LA, the capital of the car, which has built four such lines in 25 years with more coming. Dedicated rapid bus lanes originated in Brazil in the 1970s and have spread worldwide. Thirty-two and a half million passengers now use them each day, around the world.

Well-designed rapid transit routes have three key features, dedicated lanes, priority at traffic lights and a system to pay the fare at the stop rather than on the vehicle, speeding things up. They require little new infrastructure when run on existing streets. The dedicated lanes could be constructed quickly and are up to 12 times cheaper than subways, according to a 2008 Metrolinx report.

Downtown streetcars are packed; more people would use them if the capacity was higher and if the service reliable. The awkward dance between streetcars and cars on downtown streets slows everyone down. The best way to get the greatest benefit in speed for the most people is to give the streetcars their own lanes. This could be done by painting lines on the road but would probably work best with a physical divider, like a concrete curb.

Some people will claim that a dedicated streetcar lane on King, Queen and/or Dundas in

central Toronto would be a congestion disaster. Yes, it would mean the loss of a driving lane but with reliable fast streetcar service many would make the switch to public transit. The remaining drivers would find freer flowing roads since more people would be on the streetcars. Furthermore, reliable rapid transit east and west of downtown would spur development in many of Toronto's up and coming neighbourhoods; today the limitations of the east west streetcars cast a shadow to either side of downtown.

Toronto has six exceptionally high use bus routes that already have enough riders to support dedicated lanes. They are the buses on Eglinton, Don Mills, Dufferin, Finch, Jane and Lawrence. The Eglinton bus will be replaced by Crosstown, but the other five desperately need better service. Being outside of the downtown, these buses run on wide roads, which can more easily accommodate special bus lanes.

Part of Finch is scheduled to get better service when the Finch West LRT finally opens in the 2020s but east of Keele, where 44,000 people ride the bus everyday, a dedicated bus lane should be implemented. Similarly, dedicated rapid bus routes should be pursued on Don Mills, Dufferin, Jane and Lawrence. Some may call for a subway on these roads rather than a rapid bus route in the name of fairness. But dedicated bus service could happen now; subway is decades away at best, would cost billions and would be hard to justify given the ridership numbers.

We have spent so long debating costly, lofty transit improvements while ignoring the opportunities at street level. In transit as in so many of the challenges faced by our cities, sometimes the innovation we need is not expensive, high-tech and complicated. We should not be afraid of making changes that are relatively cheap, simple and effective..

SHOSHANNA SAXE is a professional engineer and a PhD candidate at the University of Cambridge where she is a UK Commonwealth Scholar. She researches, and blogs about, the role of transport infrastructure in development, travel choice and greenhouse gas emissions.

Where is everybody going? Is Canada suffering another brain drain?

CHRISTOPHER SKAPPAK

Step onto any university in Canada and you'll find empty laboratories and broken dreams. This is the new normal for scientists at universities across Canada. Governments have cut funding for new jobs and are not filling positions left open after others retire. Canada's best and brightest minds are taking their amazing talents and training to other countries in record numbers because they can't find a job in Canada. The typical job for PhDs and Post-Doctoral Fellows was to work as a professor or researcher at a university. Today these kinds of positions don't exist as governments claw back the funding to research and universities. This has led a shocking loss of brain power, and the squandering of millions of dollars invested in the education and training of the 4000 students who earn PhDs at publicly-funded universities across Canada.

Research in Canada is vastly underfunded in both the private and public sectors.

In 2005 Statistics Canada reported that 925 or 65% of PhD graduates in Ontario started their graduate degrees with the intention of obtaining an academic position. Less than 18.6% of PhD holders in Canada currently work in an academic position of some kind (contract, tenure, or tenure tract) according to a 2015 conference board of Canada. Research and development for industry in Canada may be falsely thought as another potential job source, but reality has demonstrated that industry in Canada cannot absorb 4000 PhDs graduating each year. So newly minted researchers are fleeing Canada for the United States and Europe. Again Canada is again experiencing another brain drain.

Larger job markets and greater appreciation for academic research draw new graduates from Canada in droves. A 2012 Statistics Canada report found that over 20% of new PhDs left Canada in 2005. Canada has dealt with a similar issue before during the tenure of Prime Minister Jean Chrétien; his government addressed this exodus by expanding the budgets of the federal research granting agencies and creating programs like 2000 Canada Research Chairs. These had a profound effect in luring Canadian researchers that had gone abroad back to academic research in Canada, with 32% of these positions filled by Canadian expatriates that returned home. Unfortunately there are no such efforts now.

Instead research funding in Canada has shifted from a model based around scientific discovery to one focused on specific government defined priorities and applications. These restrictions have made it harder for young scientists to secure stable research funding at academic centres. In attempt to bolster the industrial side of research and development the federal government has enacted policies to support industry through funding academic collaborations with universities and funding industry projects with researchers at the National Research Council of Canada. Although very well intentioned neither of these initiatives has translated into more jobs for the large number of highly educated young minds.

Canada is left with a conundrum. How can we support and retain the young brilliant minds whose education we have subsidized. Universities and colleges can only support so many researchers and scientists. What Canada needs is a fundamental shift in the industry landscape. This can be achieved not by foreign investment, but from grassroots entrepreneurship. Imagine if those 800 departing Canadian trained PhDs all stayed in Canada and started their own businesses. Canada could create entirely new sectors of its economy and have them be led by our best and brightest. Our country could not only keep our highest educated, but recruit the best minds from around the world.

Now this all sounds amazing, but is it even possible? We need only look south of the border to know that it is, and to identify the factors needed to make it happen.

First, by incorporating the American ethos of entrepreneurialism into our schools across all grades, we can create generations of Canadians that have the drive to take their ideas and turn it into a job, a career, and a company for themselves.

Second, the federal government can use its industry-designated research funding to create initiatives like Small Business Administration (SBA) funding programs in the U.S. such as Small Business Innovation Research (SBIR) and the Small Business Technology Transfer (STTR) grants.

Finally with the desire to create a company and government funding support for research

the only piece missing is access to capital to form the initial startup. Ideally this would come from the venture capitalists, individuals who have a vested interest in seeing a new company succeed, products being made, and jobs being created. With these three components we can create an innovation-based economy in Canada.

Creating an environment where brilliant minds can flourish and the next generation can chase their dreams will surely help bring back some of the minds we have lost, and prevent the others from leaving.

CHRISTOPHER SKAPPAK, MD, PhD, is a resident in emergency medicine at McMaster University. Passionate about governance and policy, he was the youngest member ever appointed to the board of the Health Quality Council of Alberta, where he helped develop healthcare policy reforms.

Exercising our right to better treatment for chronic disease

JANE THORNTON

Are Canadians getting the best treatment possible from our medical system? For millions of us who suffer from chronic disease or illness the answer is no.

We are justly proud of our universal healthcare, but critics assert the more accurate term may be *disease* care, and for good reason.

An aging population and skyrocketing rates of mainly preventable chronic diseases have stretched our capacities beyond anything they were designed to handle. We have become a nation of sedentary people. The rise in childhood obesity is just one manifestation of this disturbing trend: over the last 25 years, the rate has tripled. Our system's focus on treatment rather than prevention puts our doctors on the defensive line of a team with an ineffective offensive strategy. What would it take to turn this around?

What if part of the solution were to treat chronic disease with a dose of exercise? Canada ranks as one of the most inactive nations on the planet. Seven out of every 8 Canadians are not sufficiently active, yet the World Health Organization ranks physical inactivity as one of its top four risk factors for mortality.

The good news and likely medicine's best-kept secret: even minor increases in physical activity can boost therapy or even replace medication for over 30 different chronic diseases. This is true for anxiety and depression, as well as arthritis, diabetes, and several types of cancer. Engaging in physical activity is also the best thing seniors can do to prevent falls, reduce social isolation and live independently longer.

So why don't we focus on it within our current healthcare system?

As the recent Senate committee report on obesity in Canada calls for, improved training for physicians on exercise counseling is needed. Exercise "prescription" is not yet taught at most Canadian medical schools. Most healthcare practitioners are also unaware that it is fitness, not "fatness", which has a bigger effect on quality of life and life expectancy. We fail to counsel our patients on the benefit of movement, due to lack of time, lack of training, or the belief that our advice will fall on deaf ears. We may also forget to consider the burden of *treatment* – the not-so-insignificant side effects and costs of medications to both patient and taxpayer.

The year 2016 marks an important anniversary: 50 years of universal health care. Most of us agree that Medicare is showing its age. Yet among all the concerns being raised about its sustainability due to rising costs of chronic disease, we're at risk of missing the point. At the core of chronic disease management is the understanding that it is largely preventable, or at least, modifiable through lifestyle change.

In fact, "only through the practice of preventive medicine," cautioned Tommy Douglas, "will we keep the costs from becoming so excessive that the public will decide that Medicare is not in the best interests of the people of the country."

As a physician-in-training, I love my job. The call to heal is one of life's highest privileges. Yet, it can be difficult for doctors and other health professionals to pay more than lip service to prevention. We stick to the familiar – more tests, medications, referrals. It's the quick fix, but is it the best way?

It's not easy. I get it; but since we are all patients at one point or another in this lifetime, I also understand the power of choice to incorporate a lifestyle change on our terms.

Exercise can't fix everything. But it can go a long way to improve the health of Canadians and our healthcare system. This will require nationwide change and creative strategies to open up the conversation between practitioner and patient. It doesn't need to be complex or branded. Ask your doctor how physical activity could work for you. We need the patient voice desperately.

It is not too late for Canadians with chronic disease, and it's not too late for our healthcare system either. The march of medical progress in the last hundred years has been truly amazing, and the advances in understanding and practice of each generation has given new life and hope to the next. As poet Maya Angelou said, "Do the best you can until you know better. Then when you know better, do better." It's time we heed this advice.

This is Canada's challenge. Our country, our people, and our governments, can collaborate to improve one of our best assets and lead the world in preventative care and innovation.

Resident physician **JANE THORNTON**, who holds a PhD in sport medicine, aims to be at the forefront of rethinking healthcare delivery in Canada. A former Olympic rower, she is involved in leadership positions in preventative medicine, advocacy and sporting organizations such as the 2015 Pan American/ParaPanAmerican Games.