

**Preventing Chronic Diseases**

**Challenge Brief**

November 2013

**1. THE PROBLEM**

Almost 80% of Ontarians over the age of 45 have a chronic disease and 70% suffer of those suffer from two or more chronic conditions. The overall economic burden of chronic disease in Ontario is estimated to be 55% of total direct and indirect health costs.[[1]](#endnote-1) People with multiple chronic diseases are usually frequent users of the health care system. Recent analysis shows that 1% of Ontario’s population accounts for 34% of Ontario’s health care expenditures and 5% account for 66%.[[2]](#endnote-2)

**CHRONIC DISEASES**

**Common chronic diseases are cardiovascular disease, cancer, respiratory disease, diabetes, musculoskeletal, neurological, mental health and substance misuse disorders**.

This problem is expected to grow in the future. The Conference Board of Canada shows that the prevalence, direct and indirect costs of the top 10 chronic diseases and conditions all increased from 2000-2010, some dramatically. Diabetes has increased in prevalence by 74%, direct health care cost 135%, and indirect costs 77%. Cardiovascular disease has increased in prevalence 11%, direct health care cost 62% and indirect costs 32%.[[3]](#endnote-3)

In a time when public budgets are increasingly constrained and keeping in mind the long term sustainability of our health care system, we need to discover new approaches to prevent and delay chronic diseases. The MaRS Solutions Lab will bring together stakeholders, innovators, experts, business, foundations and governments to look outside the health care system at how to change behaviors, attitudes and system patterns that lead to chronic diseases.

This challenge brief gives the initial problem definition and describes the design process we propose to develop interventions to change the choice architecture of young people to eat healthy. Healthy eating means at least 5 servings of fruit and vegetables, more whole grains, less salt, less sugar and less saturated and trans fat and fewer calories each day. Our focus will be on the individual, community and system level in three locations: home, school and stores.

**2. WHY A LAB?**

Around the world, societies face increasingly complex social challenges while governments have decreasing resources. At the same time society’s capacity for problem solving is stronger than ever. People are better educated and there are more ways for them to be involved. There is more private capital available and growing corporate interest in social responsibility. Technology connects people easily and enables society to organize complex, collaborative tasks quickly and cheaply. So, we need to solve these complex social challenges together: governments, corporations, non governmental organizations, foundations, academia and the community.

This is certainly true for a challenge like the prevention of chronic disease. This demands actions by many individuals and organizations throughout society. The MaRS Solutions Lab brings together stakeholders to develop new solutions collaboratively. The value of our lab approach for our partners and collaborators can be described as follows:

* **Develop solutions with society**

In the lab we convene stakeholders from different parts of society and develop solutions together. The lab acts as a neutral common ground and creative space. Solutions that come out of the lab are to be implemented and funded by all stakeholders.

* **Understand the problem from a citizen/user perspective**

Many social problems are often defined from an institutional perspective. The lab takes a different view. Using tools from design thinking we try to gain a deep understanding of the problem from a citizen or user perspective by studying people’s experience and analyzing the numbers.

* **Offer opportunities to experiment and learn**

An important value of the lab is experimenting and learning on a small scale to test what works before we make expensive large scale mistakes. But also because such complex problems can only be fully understood when you are trying to solve them.

* **Working towards scale and sustainability**

The lab offers a process to deliberately work towards scale to create system change rather than one-off projects. This means building receptor networks in society to create capacity to implement new solutions. It implies focusing on solutions that can become sustainable without prolonged support from governments or foundations. And it requires developing policies and practices for solutions to scale.

* **Having a long term view**

Solving social challenges and creating system change does not happen quickly. It requires time, stamina and commitment by all partners and collaborators. It may take years and multiple interventions before progress can be claimed, and it often does. While many institutions need to focus on the short term, the lab takes a long term view. We are committed to solving the challenge, however long it takes and whatever solutions are needed.

* **Better social outcomes at lower cost**

Innovation is about discovering better ways of doing things . For social challenges, the result of innovation should be better social outcomes at lower cost. Solutions that are developed in the lab may require investments, but in the long term need to result in cost savings to society.

**3. WHERE TO INTERVENE?**

Factors driving chronic diseases can be grouped into modifiable factors such as diet, exercise, tobacco and alcohol use, non-modifiable factors such as age and genetics, and societal conditions such as income, employment and air quality. In 2007, 60% of all Ontario deaths can be linked back to the modifiable risk factors of smoking, unhealthy alcohol consumption, poor diet, physical inactivity and high stress. Nearly all Ontarians reported at least one of these five unhealthy behaviours. Only 1.4% had none.[[4]](#endnote-4)

The recent report “Taking Action to Prevent Chronic Disease: Recommendations for a Healthier Ontario” describes the interconnectivity of common risk factors, risk conditions and chronic diseases as shown below.[[5]](#endnote-5)

 

When compared to other OECD countries, Canada does relatively well with respect to tobacco and alcohol use, and relatively poorly with respect to prevalence of obesity. For prevalence of obesity among adults, Canada ranks 35th out of 40 countries at 24.2% in 2009. This is a significant increase since 1990 when 14% of Canadians were obese (2000: 17%). Prevalence of overweight Canadian children 5-17 years old was 26.1% for girls and 28.9% for boys in 2011, much higher than the OECD average. This ranks Canada 33rd out of 40 countries.[[6]](#endnote-6)

The prevalence of overweight children and youth 6-17 years old in Canada has doubled in the last twenty-five years and prevalence of obesity has moved from being rare to almost 10%.[[7]](#endnote-7) For all Canadians, almost two-thirds were considered overweight or obese in 2008, and 24% were considered obese.[[8]](#endnote-8)

And how does Ontario compare to the rest of Canada? The 2012 Health Monitor shows that Ontarians have more unhealthy behaviors than British Columbians. Adult obesity is 19% in Ontario compared to 13% in Bristish Columbia.[[9]](#endnote-9) Clearly, there is a need for intervention so that more Canadians develop healthy behaviors.



In 2009, obesity cost Ontario about $4.5 billion, $1.6 billion in direct heath care costs and $2.9 billion in indirect costs.[[10]](#endnote-10) The economic cost of unhealthy behaviors, both direct health care costs and indirect costs, total more than $16 billion/annually. Interesting, unhealthy eating creates more direct health care costs, estimated at $2.9 billion annually, than smoking because more than half the population is affected.[[11]](#endnote-11)

*Annual Economic Cost to Ontario of Risk Factors (Public Health Ontario/Cancer Care Ontario, Taking Action)*

|  |  |  |  |
| --- | --- | --- | --- |
| Risk Factor | Direct Health Care Costs | Indirect costs | Total Annual Costs |
| Smoking | $2.2B | $5.3B | $7.5B |
| Alcohol | $1.7B | $3.6B | $5.3B |
| Physical Inactivity | $0.9B | $2B | $2.9B |
| Unhealthy eating | $2.9B | Unknown |  |

**Area of Intervention: obesity and unhealthy eating**

Based on our early research review of possible points of intervention and potential impact to prevent chronic disease, we suggest focusing on obesity and unhealthy eating as the key area of intervention. The prevalence of obesity has been growing at a rapid rate and Canada is performing poorly compared to other countries. Within Canada, British Columbia has shown that significant improvements can be made to obesity rates. Unhealthy eating is a strong driver of obesity and the top risk factor for chronic disease based on direct health care costs. The key question in this challenge then becomes how to change behaviors, attitudes and system patterns that lead to obesity and unhealthy eating.

**3. TAKING ACTION ON OBESITY & UNHEALTHY EATING**

Taking action on chronic disease prevention is an important public health issue. The Government of Ontario’s Action Plan for Health Care says “Helping people stay healthy must be our primary goal and it requires partnership. As a government, we’re increasingly putting our efforts into promoting healthy habits and behaviours, supporting lifestyle changes and better management of chronic conditions. But to succeed, we need everyone to play an active role in their health care by participating in healthy living and wellness, while also taking advantage of recommended screening and vaccination programs.” [[12]](#endnote-12) According to a May 2011 Ipsos Reid poll, 9 out of 10 Ontarians think it is imperative to invest in health promotion and introduce policy changes to promote healthy living. [[13]](#endnote-13)

A child obesity strategy has been identified as a government priority. The Healthy Kids Panel recently provided advice in its report “No Time to Wait: the Healthy Kids Strategy”to achieve Ontario’s goal of a 20 percent reduction in childhood obesity by 2018. Recommendations were aimed at starting all kids on the path to health, changing the food environment and creating healthy communities.[[14]](#endnote-14)

Public Health Ontario and Cancer Care Ontario recently collaborated on recommendations for population-level interventions to prevent chronic disease by acting on risk factors of smoking, alcohol, inactivity and poor diets”.[[15]](#endnote-15) Health Quality Ontario has also suggested ideas to improve unhealthy behavior and prevent chronic disease in its 2012 Quality Monitor report.

The Public Health Agency of Canada (PHAC) has recently launched a new call for proposals to promote healthy living and chronic disease prevention through an integrated approach that focuses on common risk factors. PHAC requires matched funding in terms of financial contributions from non-governmental or private sector partners in a ratio of 1:1 for most projects and 1:3 for tobacco focused projects. PHAC contributions will range from $200K-$5M over 2-5 years and require a performance based agreement to measure outcomes.[[16]](#endnote-16)

Appendix 1 summarizes what has been done and what works in OECD countries and Canada to address obesity and unhealthy eating. Some approaches to obesity and changes to the food environment that could prompt people to eat healthier are also outlined.

While many players are active trying to reduce obesity and unhealthy eating, most agree that some new approaches are needed. We suggest introducing approaches and methods from fields like behavioral economics and design thinking to arrive at new ideas for intervening on obesity and unhealthy eating. Two elements are central when developing interventions: the notion of a choice architecture and the use of a user/citizen-centered perspective.

**The notion of choice architecture**

Influencing behavior means more than just messaging and marketing. Most of us know we need to eat healthy and stay active. So, why don’t we do it? A choice architecture is about “nudging” people to make the better choice, to make it easier without reducing choice. This concept was popularized by Cass Sunstein and Richard Thaler in their book ‘’Nudge: Improving Decisions About Health, Wealth and Happiness”. They applied strategies from behavorial economics to promote better social outcomes thus widening the scope of interventions that governments and others can employ. They showed that behavorial change was sometimes more effective than legislation, advertising campaigns or subsidies, and often much cheaper. [[17]](#endnote-17) Several governments around the world have now adopted this approach, most notably the US and the UK.

Changing this choice architecture can be done in different ways. For instance, Sunstein and Thaler showed how the layout of a school cafeteria changed what students chose to eat. Similarly, making people sign their tax form right at the start reduced tax fraud because people felt more inclined to fill their forms honestly. So, changing the choice architecture can happen through changes in infrastructures, procedures, forms and influencing people’s socio-economic and cultural considerations.

Searching for smart interventions to change people’s choice architecture starts with understanding thoroughly the citizens involved. Why do people make the choices they make? We need to apply a citizen-centered perspective when developing interventions for change. Therefore, researching and involving users is an important part of this process.

For obesity and healthy eating, three levels of choice architectures can be distinguished. The causes of obesity (and related chronic disease) are multiple and interdependent occurring at the system, the community and the individual level. On each level there are choice architectures. At the system level, people’s choices are impacted by factors like urban planning, food access and affordability, transportation policies, the modern nature of work, agricultural policies, and what the food industry decides to produce, sell, and market. At the community level, people’s choices are influenced by social norms and actions taken by family, friends and the larger community. At the individual level, they are impacted by knowledge, tastes and preferences, food affordability and accessibility, and industry advertising practices.

Changing individual behavior is difficult without addressing the food environment at different locations like home, restaurants, supermarkets, schools, workplaces and recreational facilities.[[18]](#endnote-18) The increasing availability of high energy dense food, frequent use of restaurants, fast-food outlets and large portion sizes have been associated with weight gain. Healthy eating means Ontarians would eat at least 5 servings of fruit and vegetables, more whole grains, less salt, less sugar and less saturated and trans fat and fewer calories each day. Changing the choice architecture at all three levels and in different locations is the complex challenge we are facing.

**Economic effects**

Changing behaviors to prevent obesity and promote healthy eating does not only have impact on the health system. There are economic impacts too, which need to be taken into account. In addition to impacts on non-health costs like labour productivity, there are industry cluster benefits like increased sales and jobs. The Ontario agri-food sector contributes more than $34 billion to the provincial economy and employs more than 700,000 people. Ontario’s food processors purchase about 65 per cent of production of the province’s farms.[[19]](#endnote-19) The Toronto Food Policy Council, a subcommittee of the City’s Board of Health, estimates that if every Ontario household spent $10/week on local food, the local economy would have an additional $2.4 billion and 10,000 new jobs at the end of a year. [[20]](#endnote-20) So, in April 2013, the Ontario government re-introduced legislation to help make more local food available in markets, schools, cafeterias, grocery stores and restaurants throughout the province. We plan to integrate the economic perspective in our research and development of interventions.

**4. THE PROCESS FOR DEVELOPING SOLUTIONS**

Before describing the process we propose to follow for this challenge in the coming months, here is some background on the MaRS Solutions Lab and its approach to clarify and give a better context.

**The MaRS Solutions Lab**

The MaRS Solutions Lab helps to tackle complex social challenges that require system change. We provide support and space for multiple stakeholders to collaborate, experiment and learn. We introduce new approaches, perspectives and players. Applying new approaches like design thinking, social innovation and behavorial economics. Providing new perspectives on the basis of a thorough understanding of the citizen, looking outside in. Bringing new players into the game can generate fresh ideas. The MaRS Solutions Lab creates a bridge between government and society. We develop solutions, create support systems and build capacity for change to improve the lives of people and strengthen the resilience of communities. Our working model has four stages:

 Stage 1: Hypothesis

In this first stage the problem is defined, scoped and framed from a system perspective. On the basis of preliminary research, interviews and some stakeholder workshops, we formulate our hypothesis and an approach for how to tackle the challenge. The end result of this stage is a challenge brief, which in this case is the document you are reading now. It provides a guide for the team, our partner(s) and key stakeholders.

 Stage 2: Conceptualization

The second stage is about analyzing the problem and developing potential interventions or solutions. This starts with extensive user research in order to get a better understanding of the citizens involved in this challenge. Through interviews, observations and ethnographic studies, we want to understand the choices and considerations that are being made or how policies and procedures really work. Then we do a systems mapping exercise, which provides us with even better insights where to intervene. This is done through data research, expert interviews and different types of review. Taken together this gives a design brief with thorough analysis of the problem. It is input for the ideation workshops to develop interventions (or solutions). They are developed into prototypes, which are first tested in a lab environment. The end product of this stage is one or more intervention plans to test these prototypes in a real life situation. We make sure that we involve users, stakeholders, experts and innovators in ideation workshops. They form a first community of change, which can later grow a movement of early adopters who promote change. The analysis and ideas can also be used to start to create support for future policy change.

 Stage 3: Intervention

Change and tangible results are only being realized by taking action. In the third stage, we intervene by prototyping ideas that have been developed in stage two. These prototypes are projects that we undertake ourselves in partnership with others, or where we help others to undertake them. The role of the lab is above all to monitor the progress, reflect and learn. And make sure everyone involved learns from it. We help grow this learning community, reaching out to early adopters in the field. We help to gather evidence on what works, as well as input for future policies that can help scale and sustain these prototypes. And if needed, we help to redesign the prototypes. The end products are evaluated prototypes with evidence of what works supported by a vibrant community of change agents.

 Stage 4: Synthesis

In the final and fourth stage, we synthesize all activities into a strategy for system change. This consists of three types of strategies. First, we develop strategies to scale prototypes that work and can be implemented in many ways. Second, we translate the evidence into strategies for policy change that support and help sustain the innovations, and we work with government to achieve that policy change. This will also enable scaling to create system change. Third, we grow the learning community by reaching out to the early majority. This means helping to create materials, toolkits, learning programs and other supports to scale and sustain the prototypes. Taken together we have a synthesis for system change. The end product is a strategy document, and hopefully scaled innovations, new policies and a large community of people that are engaged in making the change happen.

With this challenge brief, formulating our hypothesis, we can now go towards stage 2, which is to conceptualize new solutions on the basis of a good understanding of the user and the system.

**The process of this challenge, going into stage 2**

In brainstorming discussions conducted by MaRS Solutions Lab (MSL) in May with Ministry of Health and Long Term Care staff on the prevention of chronic disease, the following wicked questions were debated.

1. Why do people not adopt healthier living?
2. Whose responsibility is it that people are healthy?
3. What transformative insights and technological advances from non-health industries can be applied so people adopt healthier living?
4. How do we mobilize actions by individuals, communities, businesses, non-profit organizations, and health care providers to adopt healthier living?
5. How do we measure success?

Suggested areas for exploration were: healthier food environment, engaging communities to promote healthier living, focus on children and youth. Our preliminary research supports food as the area of intervention looking at choice architecture at the individual, community and system levels through user experience and multistakeholder engagement. It also confirms that many countries have focused on children and youth since behaviors are often established during childhood and adolescence. Schools provide a practical platform for intervention however complementary interventions in the home and community environment are essential for sustainable behavior change and system change.

The MSL proposes that we organize the next phase of our work on analyzing the challenge and conceptualizing solutions based on the following challenge question, goals, principles, strategies for intervention and design process.

**Challenge: How can we make healthy eating the easy choice for children and youth contributing to a 20% reduction in unhealthy eating and 20% improvement in healthy weights by 2020?**

This challenge question reframes the problem of preventing chronic disease as an issue outside of health care, represents a complex problem without a solution, is broad enough to allow for creativity, authentic social innovation and system change yet specific enough to bring focus.

**Design Goals**

* Develop a better understanding of the choice architecture for young people and their parents at an individual, community and system level
* Collaborate with innovators, stakeholders and experts to design behavioral interventions at the individual, community and system levels to make healthy eating the easy choice for children and youth based on user level understanding and designed collaboratively with users and service providers
* Support the development of behavioral interventions that can be scaled to create system change
* Provide opportunities for youth to capitalize on their talent, build skills and networks that will foster personal development, entrepreneurial spirit and employability
* Provide opportunities for public service leaders to learn and gain skills to develop public services from a user-centred perspective and how to apply design thinking to challenges

**Design Principles**

The following design principles will guide the process:

* Start with the citizen (in this case, students and their parents)
* Create solutions with users and stakeholders , not just for them
* Always look for the smallest possible intervention with the largest possible impact
* No action without reflection, no reflection without action
* Collaborate with users, innovators, stakeholders, and experts to diagnose problems, to galvanize change and to deliver concrete improvements
* **Create a safe environment for ideation and collaboration: government and the food industry are part of the solution**

**Strategies to intervene, possible collaborators and early opportunities**

MSL plans to look for interventions to this challenge by learning about the choice architecture from an individual, community and system perspective in three settings: the school, home environment and surrounding stores. Our goal is to identify 4- 6 high impact behavioral interventions which positively impact eating behaviors covering the choice architecture across the 3 settings.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **School** | **Home** | **Stores** |
| **Individual**Eg. What will I choose for a snack, an apple or bag of chips? |  |  |  |
| **Community**Eg.What are the social norms about snacks? |  |  |  |
| **System**Eg. What snacks are available for purchase at what prices? |  |  |  |

To approach our learning from a user perspective, we will interview and do ethnographic studies of young people and their parents, and interviews/surveys with schools and surrounding stores. We will start here in Toronto where we have explored collaborative opportunities with the Toronto District School Board, (TDSB) Toronto Public Health, and start-up companies interested in healthy eating. The TDSB encompasses 600 schools that serve 259,000 students making it the largest school board in Canada and the fourth largest in North America. We will select 4-5 schools with different socioeconomic profiles and school cultures so we can learn more about how young people are influenced and engaged by their families and communities. Success will only be achieved if we shift mainstream social norms and reach all young people, their families and communities.

Based on discussions with our collaborators, we have identified some new interventions that are emerging and provide opportunities for learning. “Fresh Ed” aims to create a youth social movement and campaign to make fresh, healthy food “cool”. “Teaching kitchens in schools” aims to provide students with experiential learning about nutrition and the food supply chain while providing career and entrepreneurial skills by supplying meals to their own cafeterias. “Healthy corner stores” aims to provide fresh, healthy food and beverages at affordable prices to people in convenient locations. See Appendix 2 for further information.

We are providing these emerging interventions as examples only. Our design process will yield new ideas based on our analysis and ideation workshops with students and parents, innovators, experts and leaders from schools, food industry, and the community.

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**5. DESIGN PROPOSAL**

The proposal consist of four streams

1. A field study and literature review to explore the choice architecture of young people and their parents
2. Ideation to develop behavioral interventions for system change
3. Build a network of early adopters to act on behavioral interventions
4. Identify quick wins and develop implementation/funding plan for prototypes

**Stream A: A field study and literature review to explore the choice architecture of young people and their parents**

Results: A design brief consisting of i) the key observations from user ethnographic studies and focus groups ii) system map showing influences on the choice architecture of the young person and parent in the home, school, and surrounding stores, and iii) ideas to influence the choice architecture.

In an ethnographic study of young people and their parents, we will learn what they eat, whether they think the food is heathy or not, and what considerations they make in choosing what they eat. The goal is to understand the choice architecture and the impact of individual preferences, the home and school environment, and surrounding stores. In addition, we will complete a literature review of behavioral economics to identify ideas that could positively impact the choice architecture for young people and their parents.

The following activities are planned focusing on the user (A1), community (A2), system (A3-5):

Action A1.1 Ethnographic study of 5 parents at each of 5 schools, total 25 parents

Action A1.2 Focus groups of young people at each of 5 schools, estimated total of 50-60 students

Action A1.3 Ethnographic study of 5 young people selected from focus groups

Action A1.4 Analysis and summary of ethnographic studies and focus groups to understand behavioral influences at home, school, and stores

Action A2.1 Interviews and survey of school principal, staff and volunteers

Action A2.2 Interviews of store owners/managers

Action A3 Interview experts and innovators to understand behavioral influences, the food system, stakeholders interests, leading and emerging practices and opportunities

Action A4 Map influences of young people and their parents at home, school, and surrounding stores

Action A5 Literature review on behavioral economics to identify ideas for positive intervention

Action A6 Write design brief and develop infographic about the choice architecture for young people at home, school and stores

**Stream B: Ideation to develop behavioral interventions for system change**

Results: Clear interventions to change the choice architecture for young people and their parents as well as ways to measure impact

The following activities are planned with users, behavioral experts, innovators, leaders from schools and stores and data/evaluation experts:

Action B1 Ideation workshop with 15-20 young people and parents

Action B2 Ideation workshop with 15-20 food industry and community leaders

Action B3 Ideation workshop with 15-20 behavioral experts and innovators

Action B4 Meeting with data and evaluation experts

Action B5 Ideation workshop with 80-100 users, experts, innovators, leaders from schools, food industry, and community

ActionB6 Write blogs and produce videos highlighting key messages from ideation workshops

Action B7 Write brief on behavioral intervention ideas/actions to change choice architecture and measure impact

**Stream C**  **Build a network of early adopters to act on new ideas**

Results: A “network” for learning, connecting and aligning capabilities/capacity of users, innovators, stakeholders and experts on new interventions to make healthy eating the easy choice for young people

The following actions are planned:

Action C1.1: Create “network” with participants of users workshop, create a blog with highlights of user focus groups and ethnographic study

Action C1.2 Add participants of food industry and community leaders workshop to “network”, create a blog with highlights of workshop

Action C1.3 Add participants of behavioral expert/innovators workshop to "network”, create and post fact sheet with ideas for behavioral interventions from workshop

Action C1.4 Share design brief with “network” and "system" workshop participants

Action C1.5 Create blog and share behavioral intervention ideas with “network” for feedback

Action C1.6 Create blog and planned prototypes with “network”

Action C2 Create public engagement/education event concurrent with "system” workshop

**Stream D Plan prototypes for system change**

Results: Identify quick wins and develop implementation/funding plan for prototypes

The following activities are planned:

Action D1 Identify promising behavioral interventions from field study of students, parents and literature review of behavioral economics

Action D2 Prototype planning workshop of 15-20 leaders with high impact capability

Action D3 Write implementation/funding plan for selected prototypes of behavioral interventions and impact measurement/feedback

**Team**

The project team will consist of following people:

Project lead/senior researcher: Susan Paetkau, Manager of MaRS Solutions Lab

Susan Paetkau is seconded from the Ministry of Health to lead this project and act as senior advisor to the team. She will guide the design of activities and function as point of contact to key stakeholders. She will also perform the duties of the senior researcher managing the day to day work on the project, conducting part of the research, and guiding preparation of all sessions, briefs and/or presentations.

Associate/Researcher: tbd

The Associate/Researcher will conduct the research, help with the interviews (or even conduct some as well), prepares all of the sessions, briefs and presentations.

Coordinator: tbd

The coordinator will support the process, organize meetings (including registration, venues and catering) and is responsible for project administration.

Adviser: tbd

The advisor will advise the team when necessary given experience with relevant methods and social innovation and facilitate the brainstorm sessions.

**Appendix 1 WHAT HAS BEEN DONE AND WHAT WORKS**

In 2010, the OECD produced a report showing that governments are increasing their efforts to promote healthy eating and active living in response to the growing obesity problem. Most have adopted initiatives focused on children, nutrition guidelines and health promotion messaging. Fewer have used regulation of fiscal levers because of the challenges with enforcement and opposition of key industries. It notes the potential contribution and engagement of the private sector including employers, the food and beverage industry, the pharmaceutical industry, the sports industry and encourages greater collaboration particularly on food product reformulation, limitation of marketing activities, transparency and information about food contents. Cooperation between governments and the food industry is flagged as the single most important link in the generation of a multi-stakeholder approach towards obesity prevention.[[21]](#endnote-21)

OECD has also looked at which intervention works best and at what cost. The most cost-effective interventions are health education and promotion, food labeling, fiscal measures and counseling in primary care which are favourable compared to the cost-effectiveness of treatments used only as chronic disease emerge. Other interventions such workplace and school based programs are cost-effective over longer periods of time. Individual interventions have a relatively limited impact, therefore comprehensive strategies involving multiple interventions to address a range of determinants are required to reach a “critical mass” generating fundamental changes in social norms. An obesity prevention strategy should combine population and individual (high-risk) approaches involving multi-stakeholders. Key drivers of success are high participation by service providers and clients, long-term sustainability of impact, ability to generate social multiplier effects and combination of multiple interventions with impact. [[22]](#endnote-22)

Canada 2020 recently held a forum on the public health crisis in Canada. The background paper

by Aqsa Malik focuses on obesity and provides a review of interventions put in place in OECD countries to provide some guidance about what works. Programs with documented evidence of success were categorized by those targeting young people or adults. [[23]](#endnote-23) Some of the key messages and insights from the forum are:

* “Promote healthy living without demonizing different body types: focus on changing sedentary lifestyles and eating food of poor nutritional quality
* We cannot educate ourselves out of a crisis: information about healthy eating and active lifestyles is not enough, Canadians need better access to nutritious lunches at school cafeterias, grocery stores that stock fresh produce at affordable prices, safer parks and recreation facilities and other health promoting infrastructure
* Promoting health outcomes is not just the responsibility of individuals but also the collective ‘us”: programs and initiatives that deliver results have two things in common – uniquely tailored to a given community and they are supported by multiple stakeholders.”[[24]](#endnote-24).

From a review of various reports and early discussions with stakeholders, the following approaches to obesity could prompt people to eat healthier:

* Community development/action (often focused on kids) such as the EPODE program in France, “Let’s Move” campaign in the US, and the ActNow! Initiative in British Columbia, Canada.
* Enhanced school curriculum, training workshops and shared resources/programs for teachers, students, families, health providers, community agencies
* Social marketing campaign
* Counseling/coaching by doctors, dieticians, allied health providers, personal trainers
* Quality-assured online supports and mobile apps
* Connecting schools and workplaces to community resources: public health units, community agencies, sport/fitness groups, pharmacies, dieticians, food retailers
* Self-management programs
* Setting school/community baselines and targets for healthy eating and weights

In Canada, the most successful government interventions to influence the food environment to date are Canada’s Food Guide, labels on packaged food and voluntary reduction of trans-fat prompted by planned regulation, Quebec’s advertising ban to children under 13 and Ontario and BC’s healthy eating initiatives in schools. In recent years, food companies have reformulated products, introduced new products and improved nutritional information however the range of products include both healthy and unhealthy products.[[25]](#endnote-25)

From review of the various reports and early discussions with stakeholders, the following changes to the food environment could prompt people to eat healthier:

* Access to healthy food in priority neighbourhoods, corner stores and on transit routes
* Marketing healthy food through in-store displays, reward/loyalty and food skills programs
* Product reformulation to reduce fat, sodium, sugar, and calories
* Certification of healthy food with easy to understand branding e.g. Health Check from Heart & Stroke Foundation
* Restaurant posting of nutritional information of menu items, support to create healthier choices and smaller serving sizes
* Regulate advertising of unhealthy foods in media and reduce point of sale promotions (especially to children and youth)
* New procurement and distribution models to support healthy and local food to schools, hospitals, cafeterias, corner stores, workplaces
* Aggregate and use data on food access, purchase and consumption in communities to guide healthier eating initiatives and set targets

These are just some initial ideas. As described, we aim to take action on fighting obesity and unhealthy eating by changing choice infrastructures. Our goal is to introduce new approaches and perspectives that lead to new strategies and actions that are more effective and less costly.

**Appendix 2 EARLY OPPORTUNITIES FOR LEARNING**

Based on discussions with our collaborators, we have identified some new interventions that are emerging and provide opportunities for learning .We are providing these emerging interventions as examples only. Our design process will yield new ideas based on our analysis of the choice architecture of students at home, school and stores and collaboration through ideation workshops with students and parents, innovators, experts and leaders from schools, food industry, and the community.

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**“Fresh Ed” impacts individual behavior and social norms at school and home**

MaRS is working with a start-up company “Fresh Ed” led by three young entrepreneurs from "King of the Dot Entertainment, Think Don’t Shoot, and 1812 Entertainment Media Group. " Their goal is to “empower youth to change the conversation about food” through better understanding the barriers between young people and healthy fresh food choices”. The idea is to build a social movement and campaign to make healthy fresh food cool and develop behavioral interventions such as hip hop and other entertainment, student ambassadors and a rewards program.

**“Teaching Kitchens in Schools” impacts individual behavior, social norms and how the system functions in the school**

The TDSB is making a conscious effort to promote healthy eating in schools with the implementation of various programs including the MyFoodMyWay (MFMW) initiative. Using a grassroots approach, MFMW aspires to drive cultural/behavioral change in the way food is perceived (breaking down the barriers between kitchen and dining room and, further, breaking down barriers across the entire farm to fork value chain) by aligning with jobs/careers in a growing industry. Initiatives within the program include the expansion of the teaching kitchen format and related curriculum to more schools based on the Thistletown Collegiate prototype (http://www.cbc.ca/thenational/teachers/keithhoare.html), new recipe creation, urban farms, internship for experiential food categories, and other pending programs. Although each school has a cafeteria, only about 60% are active and 25% are considered teaching kitchens – the latter both having the potential to expand and drive local procurement. Given the number of students in GTA the potential lunch budget is estimated as $100 million. These teaching kitchens could also expand to cater to local elementary schools and senior homes / community centres with no local procurement strategy

**“Healthy corner stores” impacts individual behavior, social norms and how the system functions in neighbourhood stores**

Toronto Public Health has mapped the retail food stores and restaurants and explored the concept of healthy corner stores. There are some neighbourhoods in Toronto that do not have access to healthy food. Initial research has been completed to better understand how healthy corner stores could be created and discussed with potential partners. Their goal is to test this concept at targeted locations in the coming year.

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