Dismantling Weight Bias Towards Overweight Patients in Ontario Healthcare

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Abstract

Weight bias towards overweight patients is a prevalent form of discrimination present in healthcare today. These patients routinely receive unfair treatment, weight-focused diagnoses and shaming from healthcare providers. This causes psychological and physiological stress for the patients, and a hesitant attitude towards accessing healthcare. The weight bias problem exists in almost every aspect of the healthcare system and is present in most countries. This paper focuses on dissecting this issue in Ontario healthcare using the Systemic Design Toolkit. It starts by framing the system followed by listening to the actors involved. Influences and root causes are investigated to understand the system. The paper then moves towards defining the desired future for the issue followed by ideating solution spaces using leverage points. At the end, an innovative strategic solution model is proposed and a transition roadmap is provided to demonstrate the implementation plan. Interviews, surveys and workshops are the primary methods of research used to investigate the issue.

Findings indicate the rampant presence of weight bias amongst family medicine practitioners in Ontario healthcare with sources of the issue rooting back to a societal fear of fatness. The ultimate desire for patients is revealed to be a better, more understanding relationship with their doctors, which can be achieved through diagnoses beyond high weight, treatments beyond weight loss and an approach that looks beyond their body-size. Four solution spaces are proposed and then narrowed down to provide the most meaningful and feasible path forward. The new collaborative solution model is presented with a ten-year roadmap that requires constant efforts and partnerships with different stakeholders in the system.

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Dedication

The project is dedicated to every individual, classified as overweight/obese, who has faced weight discrimination throughout their life while accessing healthcare.

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A Note from the Author

While the words 'fat', 'overweight' and 'obese' are used interchangeably in society, and often in derogatory connotations, in this paper they will convey different meanings.

Fat will be used as a neutral adjective to describe a body size.

Overweight and **obese** will strictly refer to the medical definitions, most commonly used in healthcare, rather than normalized descriptors.

Introduction

Weight bias, or stigma, is the unfair treatment of individuals based upon their weight. Despite being highly pervasive in our society, very few efforts have been made to address it. This is in contrast to other forms of discrimination such as race, class, gender and sexual orientation, which have the support of official laws and policies (Ramos Salas et al, 2017). Research and social policy on weight bias and discrimination lag far behind, to the point where negative attitudes based on weight have been labelled as the last acceptable form of discrimination (Brownnell et al, 2005, p. 1). In healthcare, weight bias exists commonly in the treatment of fat individuals. Fat individuals are labelled as overweight or obese, both identities given to patients using the Body Mass Index (BMI) tool. Moreover, those who are labelled as obese are presumed to be unhealthy with an increased risk of major diseases such as cardiovascular issues, diabetes, strokes and cancer. However, BMI is a flawed measure of health as many recent research studies are starting to indicate, so much so that the CDC (Centre for Disease Control and Prevention) in the U.S. puts up this note on their web page which contains information on obesity:

> *At an individual level, BMI can be used as a screening tool but is not diagnostic of the body fatness or the health of an individual. A trained healthcare provider should perform appropriate health assessments in order to evaluate an individual's health status and risks. If you have questions about your BMI, talk with your healthcare provider. (Centre of Disease Control and Prevention, 2020)*

Nick Trefethen, Professor of Numerical Analysis at the University of Oxford, summarised many of the limitations of BMI in an opinion piece he wrote, stating that "the body-mass index that we count on to assess obesity is a bizarre measure. We live in a three-dimensional world, yet the BMI is defined as weight divided by height squared. It was invented in the 1840s, before calculators, when a formula had to be very simple to be usable" (Carey, 2019). Not only that, the BMI was developed to measure the body of a Caucasian man. It is a health metric resulting

from decades of research mostly conducted on Caucasian people (Firger, 2017). Therefore, it is not an accurate measure of health for people of other ethnicities and races.

Despite this research, the use of BMI and the resulting overweight or obese diagnoses from health practitioners result in the biased care of millions of fat people. Weight bias presents itself in various forms within a healthcare setting. Biased providers, including doctors, specialists, nurses and staff, exude judgemental attitudes (Fruh et al, 2016). Diagnoses for the same diseases differ between thin and fat patients, where the latter are almost always ordered to lose weight as the treatment. The effects of this stigma result in these patients feeling alienated and humiliated. They are prone to being at risk for low self-esteem, depression and lower quality of life (Phelan et al, 2015). Many leave the doctor's office feeling like a failure and blaming themselves for their poor health, even if they pursue healthy choices. This results in high levels of stress hormones that have several long-term physiological health effects, including heart disease, stroke and anxiety (Phelan et al, 2015). Ironically enough, obesity is considered a risk factor for these illnesses.

Perhaps one of the most concerning negative consequences of weight bias for fat patients is their avoidance of accessing healthcare, especially preventative healthcare, due to them being embarrassed by their weight (Phelan et al, 2015). Studies have documented a decrease in the use of healthcare services associated with an increasing body mass index. This includes reduced rates of routine breast and gynecological cancer screening tests among overweight individuals when compared to individuals whose body mass index is classified as normal (Alberga et al, 2019). In fact, the avoidance of preventive healthcare by fat individuals is what possibly contributes to the increased overall health risks linked to obesity, as expressed by the medical community (Brownell, 2005, p. 4).

With so many repercussions at play, including increased mortality risks, the stakes are high. Reducing weight bias in healthcare is crucial to the well-being of millions of patients. The dichotomy of all fat patients leading unhealthy lives and all thin patients leading healthy lives is an antiquated form of thinking that should be eliminated. This requirement for a weight bias reduction strategy led to the research question that this project seeks to answer: How might we reduce weight bias and improve healthcare for overweight patients?

However, following a review of literature and how past interventions differed in the United States and Canada, it was determined that the strategy and tactics cannot be universal. Consideration of the differences in governance process, health insurance model and the sheer scale of the problem cannot be managed in the scope of one study. Therefore, the practical decision of narrowing the scope and focusing on the province of Ontario was made, leading to the primary research question being:

How might we reduce weight bias and improve healthcare for overweight patients in Ontario?

Additionally, the following set of sub-questions were listed to help guide the research:

What can the patients, physicians, healthcare institutions and policy-makers do to make weight bias reduction possible?

What forms of interventions have already been proposed? What are the results of these interventions? Have they been successful?

How biased are the current healthcare providers in Ontario?

What is the current diagnosis process and treatment experience for overweight patients in Ontario?

How are patients currently handling weight bias in their healthcare journey? What strategies do they use?

Purpose

This project aims to propose a solution model and roadmap that can be viewed as a starting point for active efforts in Ontario.

In the current weight bias research landscape, few intervention strategies have been proposed to foster change. Researchers agree that any further research in the field should involve individuals living with obesity in all aspects of the research process, including design, methods and knowledge dissemination (Alberga et al, 2016). This paradigm was closely followed in this research study through the types of primary research conducted, which will be revealed in the next sections.

Another prominent tactic that researchers have proposed is sensitivity training for healthcare providers, including existing professionals and current students (Alberga et al, 2016). An example of this tactic is the Balanced View program based in British Columbia. It is an evidence-informed resource designed to reduce weight bias and stigma among medical professionals, mental health professionals, allied health professionals and public health professionals across the province (Balanced View, 2015). Multi-faceted and collaborative approaches have also been recommended for reducing weight bias. Researchers insist that the government, private sector and others need to work together to fund and provide more rigorous solutions (MacLean et al, 2009).

Nationally, there has been minimum progress made. The 2020 Canadian Obesity guidelines have taken a new direction and have called for a shift in focus to the root causes of obesity rather than weight loss alone. That means doctors working with patients are asked to understand the context that underlies the issue, which could include genetics, trauma and mental health issues. The advice by Obesity Canada and the Canadian Association of Bariatric Physicians and Surgeons also pushes healthcare providers to recognize any bias they may have against overweight patients — such as assuming they lack willpower or are non-compliant (The Canadian Press, 2020).

Currently, in Ontario, there are no active interventions implemented; however, some dialogue exists. In 2019, at the Ontario Public Health Convention, a panel discussion was held to discuss the role of public health in addressing weight bias and how to promote healthy lifestyles without stigmatizing the overweight population. Toronto Public Health was one of the panelists participating in this talk. Their intervention proposition included approaches such as ensuring all public health messaging or images used in resources and communications should focus on health and well-being instead of weight. They should acknowledge the role of individual and social determinants of health. They should be inclusive of all shapes and sizes and not exacerbate negative stereotypes of individuals with obesity (Hambleton & McColl, 2019).

While there are plenty of strategies proposed, with some progress being made; there is no explicit action being taken on a daily basis. The unfortunate emergence of the COVID-19 pandemic further introduced a plethora of issues to the Ontario healthcare system, pushing the goal for tackling weight bias to the backburner. However, complications from weight bias have not paused. Obesity rates continue to rise, along with biased care for fat patients. Clearly, the current protocols of treating fat patients are not working; otherwise, we would have seen positive change through statistics and qualitative patient-centric research.

The pandemic will end, albeit with lasting effects and changes, and we need to be prepared to put healthcare weight bias reduction back on the high priority list. This project will aim to have that game plan ready.

Acknowledgeing Personal Bias & Experience

Before we delve into the project's primary content, I must acknowledge my personal experience with the issue at hand and the possible biases that accompany it. Weight bias in healthcare is a complication I have faced for most of my life and continue to face today. I understand the challenges it brings and the toll it takes on one's health. I have been misdiagnosed, dismissed and have had to resist biased care at almost every single medical appointment I have had.

Additionally, I have taken part in plenty of debates on the issue with people in my circle who do not necessarily understand it because they might not have experienced it themselves or are conditioned to ignore it. In these debates, I have never been able to make a solid case for the debilitating effects of weight bias or its existence as I have no experience in the medical field, only personal stories. This inability was my primary motivation to undertake this project. An academic-level analysis of this prevalent problem and establishing dialogue with others who have faced the issue would be my ammunition against the nay-sayers. However, as I write this paper, at the culmination of my research study, I must admit that it is not the deniers I need to convince, but rather a whole system that I and many others who want to see a change in this sector need to intervene in. This paper will provide an outlook on how it is a systemic issue and propose feasible ways to interrupt the vicious cycle of biased healthcare and the harmful consequences faced by fat patients.

My own experience with weight stigma naturally instills some biases in me. Therefore, I decided to run through a bias management toolkit to discover these biases and create a plan of managing them as I went through the analysis and problem-solving phase of the project. The toolkit I used was recently developed and published by "Sqr One," an Australian innovation consultancy, and "verynice," a US-based design strategy practice.

The 'Understanding and Managing Bias' toolkit lets you explore bias, where it comes from, how you can recognize your own biases, and how you can begin your journey to unlearn (Sqr One & verynice, 2020).

Upon completion of the toolkit, I was able to determine the following biases that I hold in regards to weight stigma in healthcare:

- When someone comments on my weight or my health status, I automatically think they are condescending.
- All healthcare providers hold negative views of fat patients.
- All fat patients follow weight loss methods because their doctors have forced them.

Doing the research for this project had made it clear that these biases are all factually incorrect, and therefore, through the toolkit, I came up with a three-point action plan to keep these biases in check as I proceeded with the study. These points are:

- I will read and insert more secondary research about the healthcare provider's perspective and struggles.
- I will not succumb to personal feelings of resentment. I will acknowledge them when they appear and ensure they do not cloud the project.
- I will not portray healthcare providers as antagonists in the study. They are crucial to solving the problem. Solutions in the world are not achieved by attacking and alienating a primary stakeholder in an issue.

As you read through the next sections, please keep in mind that these action points were thoroughly applied at every step of the project. The unity of actors in the system is crucial to reducing healthcare weight bias in Ontario.

Systemic Design Approach

Systemic design integrates systems thinking and theory with advanced design methods to affect anticipatory change in complex social and socio-technical systems. It embraces pragmatism and multiple perspectives to describe a system and its problems and structures (Jones, 2014). The concept of systems thinking reveals the complexity, interrelationships, and many of the interdependencies that exist in our surroundings (Buchanan, 2019). The issue of weight bias in the Ontario healthcare system has multiple layers. It is not solely about a fat patient and the bias they face from their doctors. It involves other professionals in healthcare, as well. It involves the subsystem of governance, both provincial and federal, and health policy-makers. The education sector plays a significant role, as does the research community. Since the issue is entrenched in social stigma and prejudice, there is high engagement from activists and advocates in the system, especially during these times of social justice movements via online channels.

With a multitude of actors involved, there are many influences and tensions in the system. Proposal of change in one node of the system may bring instability to another. The problem may be committed by one subsystem, but its roots can be found in another. Solving the problem is not a one-off, stand-alone endeavour. It will involve years of collaboration and the analysis of several different perspectives. Therefore, the problem of weight bias can be categorized as a 'wicked problem.' These are ill-defined, complex problems that are difficult to solve through straightforward tactics (Glen et al, 2014). This wicked problem is part of a more extensive socio-technical system of healthcare in Ontario. It is important to note that wicked problems have no ultimate test of a solution, and there are no stopping rules (Jones, 2014). Some symptoms of the problem might get solved, but new symptoms may appear.

With that in mind, the most effective path of conducting a problem-solving research study of such a complex issue is by implementing a systemic design analysis. This ensures a thorough examination of all the different elements of the problem. It helps us understand how occurrences of weight bias between doctors and their patients in the healthcare system are influenced by governance, education, culture, and society and how the solution spaces can account for them all.

This project uses the Systemic Design Toolkit developed by Namahn and shiftN in collaboration with Peter Jones (Systemic Design Association) and Alex Ryan (MaRS Discovery District) (Systemic Design Toolkit, 2020) as the framework for primary research, analysis and problem-solving. It is a seven-step process that involves firstly framing the system; listening to and understanding the system; defining the desired future; and ultimately intervening in the system through leverage points, an intervention model and a transition plan. Some steps of the toolkit employ foresight tools to stay aligned with the essence of problem-solving through design by taking into account future implications and scenarios. This is a necessary action to take in these unpredictable times.

The rest of the paper will follow the Systemic Design toolkit structure, going through each step in detail. The research methodology, findings and insights are all embedded in these steps.

Systemic Design Approach

1. Framing the System

2. Listening to the System

3. Understanding the System

4. Defining the Desired Future

5. Exploring the Possibility Space

6. Designing the Intervention Model

7. Fostering Transition

Figure 1: Systemic Design Approach Flowchart

Discovering the Landscape

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Step 1: Framing the System

The first step in the toolkit seeks to frame the system. It involves setting the boundaries of the system in space and time, identifying the hypothetical parts and relationships (Systemic Design Toolkit, 2020).

For this project, this step will consist of a high-level review of the healthcare weight bias landscape and the actors involved, using the Rich Context Tool and a knowledge versus power-based Actors Map. This will frame the direction of this study and introduce the system that the project will be working with.

Rich Context Tool

The Rich Context tool is a technique that helps understand the "big picture" by mapping the current practices, trends and innovative initiatives in the system. It is used to generate a shared understanding of the current situation (Systemic Design Toolkit, 2020).

Rich Context Tool

Emerging Niche Initiatives

Fat Activists on Social Media

Fat-positive Doctors

Anti-diet Dieticians

Weight Bias Training Programs

Fat-positive Fitness Providers

HAES Community

Current System

Institutional Structures

Economic Structures

BMI = Measure of Health

Patient-Doctor Power Dynamics

Weighing Fat Patients at Visits

Refusing Tests/Referrals for Fat People

Patient:
Diet Programs
Mental Health Services

Government:
Health Promotion
General Funding
Obesity Funding

Long-term Trends

Rise of Anti-diet Culture

Intuitive Eating

Fat Activism

Health at Every Size

Rising Obesity

COVID-19 Changes

Popularity of Naturopath

Holistic Health Approaches

Increased Weight Bias Research

Obesity is a Burden

Body Positivity = Promoting Obesity

Fat People are Unhealthy

Obesity Caused by Lack of Willpower

Weight = Health

Use of BMI

Non-existent Bias training

Referrals to Diets and Weightloss Programs

Culture

Practices

Figure 2: Rich Context Tool in Use

Long-term Trends

Around the general landscape of weight bias, some long-term trends are emerging. These could have a potential influence on the issue and a positive impact on fixing the issue. The trends include:

Rise of Anti-diet Culture

While the dieting industry in the United States is estimated to be worth 72 billion dollars (Market Data LLC, 2019), diet-culture resistance is a growing trend. The anti-diet movement spearheaded by intuitive eating practices is a way of thinking about eating that takes you back to babyhood when you ate what you wanted for as long as you wanted and when full, turned away (LaMotte, 2020). It discourages restricting food groups and food items, which is a standard in dieting plans. The notion is that if you allow yourself to eat everything whenever you crave it, you will be able to prevent yourself from overeating and falling into unhealthy eating habits. Dieting is standard advice given by doctors to their fat patients. Some doctors will give the usual "eat less, move more" lecture ("Obesity Not Defined," 2020), and others will refer patients to specific dieting programs or clinics, whether the patients want to or not. However, the data show that 95% of people who go on diets fail at them, and if they have lost weight, two-thirds of them gain even more weight back (LaMotte, 2020). With the rise of this trend, patients are more exposed to intuitive eating habits and benefits. Therefore, it can have a positive effect on biased dieting advice from doctors, as more and more patients refuse to follow them.

Health at Every Size Ideologies

Anti-diet culture is one of the underpinnings of the Health at Every Size movement. It is a movement working to promote size acceptance, end weight discrimination, and lessen the cultural obsession with weight loss and thinness. The HAES movement promotes balanced eating, life-enhancing physical activity, and respect for the diversity of body shapes and sizes (Association of Size Diversity and Health, 2020). This approach proposes that any intervention strategy for obesity should be one that promotes the development of a healthy lifestyle (Penney & Kirk, 2015). While many critics might accuse this way of thinking as 'glorifying' obesity, which they only see as unhealthy, the HAES culture is slowly trending upwards and giving fat patients more empowerment to stand up for their health and body in biased settings.

Fat-positive Activism

The rise of anti-diet and HAES movements has propelled the rise of fat-positive activism. Fat-positive or fat acceptance movements have been around since the 1960s. It has been around through different waves and forms for about 50 years, but currently, fat acceptance is a social justice movement aiming to make body culture more inclusive and diverse in all its forms (Severson, 2019). With the rise of social media and influencer roles, the movement has skyrocketed in popularity. Fat acceptance supports the equal rights of fat bodies in all aspects of life, including healthcare. Hence, it has the ability to have immense effects on the stigmatized treatment of larger bodies by healthcare providers.

Rising Rates of Obesity

The rise of positive movements has not yet made its effect on the daily systemic structures in which fat people face prejudice because of their weight. Weight bias is more ubiquitous than ever, especially in healthcare, with providers and researchers believing they are taking the right approach. However, rates of obesity continue to rise. If diets work, weight loss programs work, and 'tough-love' care works, why is obesity continuing to increase? The rate of obesity has tripled over the past three decades in Canada, and now about one-in-four Canadians are obese, according to Statistics Canada ("Obesity not defined," 2020). Furthermore, is obesity really the issue since it is a construct of BMI? Or, could we attribute the issue to the poor health of fat people caused by biased healthcare, socio-economic factors and societal stigma that prevents them from living and sustaining healthy lives? That is a conundrum that warrants a different research question, but it nevertheless influences this landscape.

Pandemic as a Catalyst for Healthcare Innovation

Lastly, the COVID-19 pandemic has completely revamped healthcare. It has revealed the gaps and shortcomings in the province's healthcare system. In the past few months, the world has seen the pace of healthcare innovation accelerate rapidly, with the typical timeline of years becoming weeks or days. Under normal circumstances, healthcare innovation is costly and time-consuming. However, COVID-19 has pushed healthcare innovation to develop at unprecedented speed, with individuals focusing on solving real-world problems and collaborating with cross-functional teams (Palanica & Fossat, 2020). This is a fundamental shift that can positively affect the issue of weight bias. If this healthcare prioritization rate continues, the implementation of weight bias interventions will be much smoother.

Current System

In the current system of weight bias, the tool revealed the following structures and practices:

Economic Structures

The economic structures can be divided into two categories – patient expenses and government expenses. Due to weight bias, the patient may face additional costs in accessing dieting programs that doctors recommend. They may also face the cost of mental health resources that they require to treat harmful emotional effects from biased care. On the government side, rising rates of obesity are increasing expenditure. It is estimated that the economic costs of obesity in Canada range from $4.6 billion to $7.1 billion annually (Public Health Agency of Canada, 2011).

Culture

The cultural notions that exist in the current system include a plethora of biased beliefs that antagonize fat people. It is a common assumption that fat people are lazy and have no control over their appetite. They lack willpower, lead very unhealthy lives and are at high risk of mortality because of their own failures. Doctors' explicit impressions of patients with obesity tend to be that they are non-compliant and sloppy (Alberga et al, 2016).

Institutional Structures

The structures in play that encourage weight bias in healthcare settings include the power dynamics between doctors and their patients. Doctors often exert control over their fat patients in the form of tests or referral refusal. This can be caused by an implicit bias rooted in another institutional structure that BMI is an accurate representation of health. This belief is strengthened in medical education. Studies show that explicit weight bias in medical students increases significantly during medical school (Phelan et al, 2015).

Practices

Common practices in the system currently are based on the belief that weight determines the health status of a patient. Referrals to diet and weight loss programs are expected and encouraged for all fat patients. Medical schools lack weight bias training, and there are currently no educational interventions actively at play (Poustchi et al, 2013).

Emerging Initiatives

While the current system appears to be discouraging regarding weight bias reduction actions, there are emerging initiatives on the horizon carried out by stakeholder groups such as influencers, HAES fitness providers and dieticians, and fat-positive doctors. There is no system-wide collaborative push, but individuals are working hard in the space to bring change.

Actors Map

Through the Rich Context tool, some stakeholder groups have surfaced. The weight bias system not only consists of fat patients and doctors, but it also involves many other influencing actors. The system includes:

- Fat Patients
- Physicians
- Nurses and Staff
- Specialists
- Ancillary Providers: Physiotherapists, Dieticians, Mental Health Providers etc.
- Medical Schools & Communities
- Healthcare Manufacturers
- Ontario Health

- Public Health Ontario
- Ontario Government
- Activists
- Corporate Lobbyists (Diet & Food)
- Internet Influencers
- Internet Trolls
- Obesity Researchers
- Weight Bias Researchers

The following map organizes these stakeholders according to their level of knowledge and power to give a clearer picture of how influential they might be.

Actors Map

Figure 3: Knowledge Vs. Power Actors Map
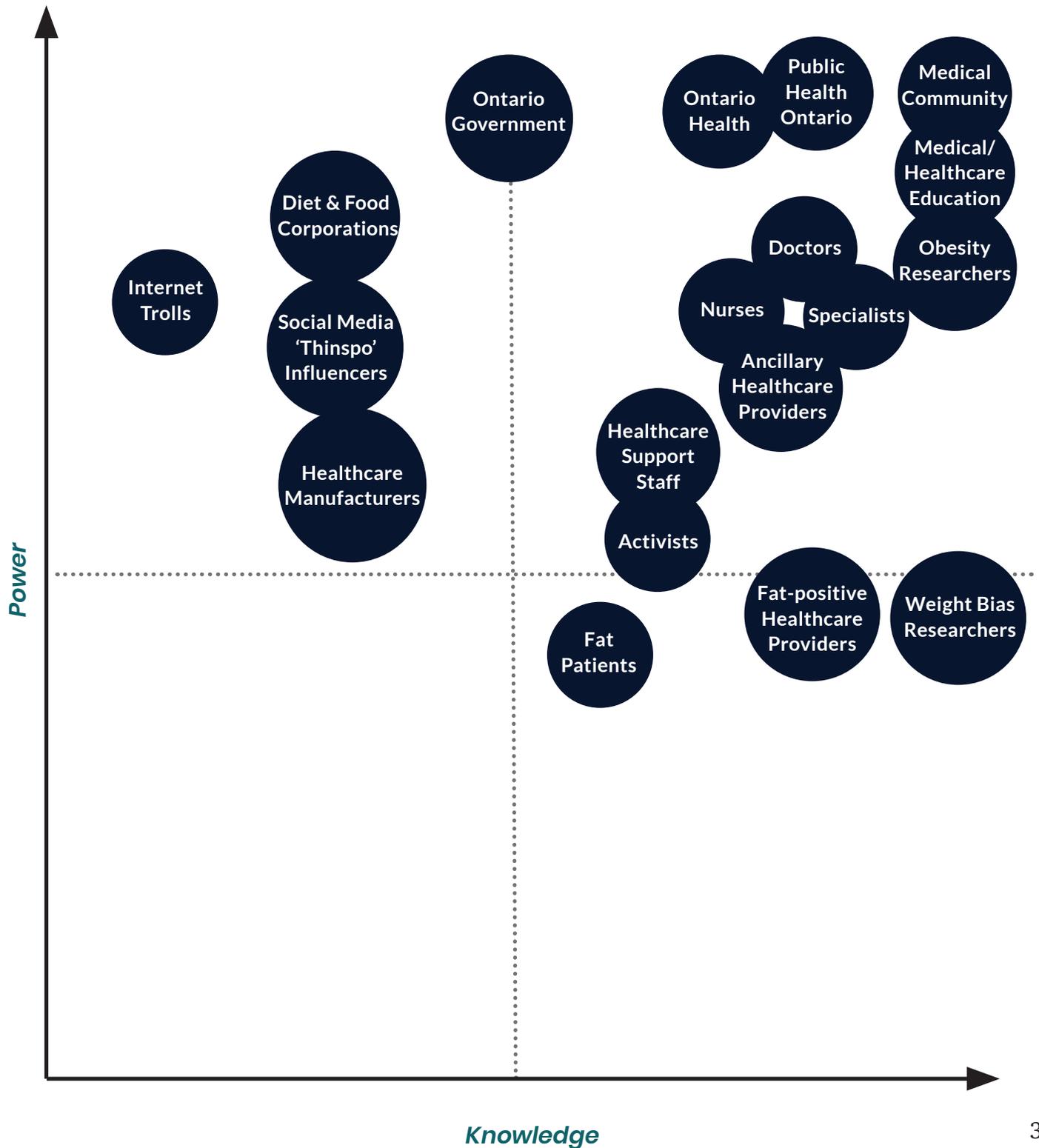
The map shows a clear picture of the power dynamics between the providers and the patients. The providers include not only healthcare professionals but also medical education and healthcare governance. This demonstrates that the weight bias is not just instilled in the professional subsystem but also in the education and government systems.

It also appears that some stakeholders, such as the corporate lobbyists and internet trolls, who lack knowledge on the topic, have higher power than the patients. This further exhibits the unfair distribution of power in the system. Fat patients, who are most affected by the system, are afforded among the last levels of power in it.

Overall, the completion of Step 1 discloses the large number of external stakeholders involved in the weight bias issue between a healthcare provider and a fat patient. **Therefore, the system should be framed around these two main actors, with a more in-depth look at how the other subsystems affect them and their relationship.**

Getting to Know the Actors

Step 2: Listening to the System

The second step in the toolkit provides us with the opportunity to listen to people's experiences and discover how the interactions lead to the system's behaviour (Systemic Design Toolkit, 2020). This step will describe two of the three primary research methods in this project (the third one will be presented in Step 4 of the toolkit). These methods were conducted with the two main actors of the system – fat patients and healthcare professionals. Once the research was completed, and data were analyzed, the findings were used to fulfill two Empathy Maps, one for each actor.

Primary Research: Interviews

Method

Interviews were chosen as the primary instrument to investigate deeper into the system's main actor – fat patients. They are the main stakeholder this project aims to serve; so it was essential to give them the opportunity to speak about their experiences. Interviews allow more freedom to learn from people and give them the reins to shape the direction of the process (Sanders & Stapper, 2012, p. 68). This was an important characteristic required for this project; therefore a semi-structured interview format was followed with guiding questions from the researcher. This structure allowed the participants to relay as much information about their experience as they wanted, but with specific questions that helped them stay on topic.

Interview questions were divided into three main sections. The first section contained demographic questions inquiring the age range and gender of the interviewees. This section also determined whether the participant had been classified as overweight by their healthcare provider. The second section consisted of questions regarding the participant's experience with weight bias and how they felt or coped during these encounters. The last section questioned about weight bias management and consequences. It inquired about the interviewee's willingness to access healthcare and any strategies they use when doing so. Ultimately, the main goal of the interviews was to get a better understanding of the occurrence of weight bias in Ontario healthcare and how it has affected fat patients.

Experience

Recruitment for the interviews was carried out on social media platforms, specifically through Instagram and Facebook posts and stories. The criteria for participants were that they had to self-identify as fat or be medically classified as overweight. They also had to have accessed healthcare in Ontario. The first level of recruitment came in the form of opportunistic sampling. Followers with personal connections to the researcher volunteered to participate. The second level of recruitment, where most participants were gathered, was done through snowball sampling. Followers of the researcher's social media accounts shared the recruitment materials on their own accounts. (Sanders & Stapper, 2012, p.153-154). Recruitment was carried out over three weeks, simultaneously with the interviews taking place. At the end of the research period, a total of 13 interviews were conducted. Interviews generally lasted an average of 30 to 35 minutes. All participants answered all the questions and even shared extra information on their own accord. They were passionate about describing their experiences, and every participant wanted a change in the system.

Findings

Out of the 13 participants interviewed, 12 were female, and one was gender-fluid. Participant ages ranged from 26 to 58, with more than half of them being in their 30s. All but one are currently classified as overweight by their healthcare provider. The average number of years these patients have been classified as overweight is 22 years.

Some of the critical findings discovered after analyzing the responses about weight bias experiences are:

• Ten out of the 13 participants had faced most of their weight bias from their current or previous family doctors.
• Participants primarily faced weight bias during preventive care and physicals.
• Participants have had their injuries dismissed, with their doctors resorting to weight as the cause.
• For eight out of the 13 participants, the principal diagnosis for their ailment was weight, and the main treatment was weight loss. However, each of the eight had a different issue they went in with.
• Participants were denied referrals to further tests and specialists.
• Participants have been coerced into following dieting advice and plans.
• Ten out of the 13 participants could not maintain weight loss prescribed by the doctor and gained more weight plus developed mental health complications and eating disorders.
• The participants' biggest frustration was that even if they followed healthy lifestyles such as eating nutritious food or exercising daily, their doctors did not believe them.
• There was an extensive list of physical barriers shared: small gowns, small chairs, small blood pressure cuffs, judgemental messaging, public weighing scales and unstable beds.

Some of the key findings discovered after analyzing the responses about weight bias effects and management are:

- Eight out of the 13 total participants said they are now reluctant to access healthcare, especially preventive care.
- Less than half said they still access preventive care but prepare intensively before going. They mentally get themselves ready to stand up for themselves, do their own research and read up on Health at Every Size affirmations. Much effort is made.
- Some other tactics they commonly use are being persistent about getting diagnoses beyond weight, refusing to get weighed or discussing weight, and actively looking for fat-positive providers.

Interviews also brought up some unique, absorbing insights from some of the participants. One participant mentioned that they have not faced as much weight bias at appointments during the ongoing pandemic simply because they were over the phone. Another participant mentioned that it is not just medical professionals who show judgement but also office staff at clinics such as receptionists and administrators. Some pointed out that they do not understand why doctors think fat people are not aware of their weight. These people live in their bodies every day and understand their weight and their abilities. Chances are they have also tried numerous weight loss plans in their lifetime.

Another insight shared was that when fat patients have positive healthcare experiences, it feels like a rare moment of celebration and triumph, which is problematic, considering it is an essential service. One participant also mentioned that what frustrated them the most is the lack of dignity they experience when they are continually being told to lose weight as if they are a little child being told to obey rules. In conclusion, the interviews painted a grim picture of the realities of weight bias in healthcare currently in this province.

Primary Research: Surveys

Method

The second primary research method used was a survey to measure the level of weight bias healthcare providers in Ontario held. The survey was designed using three pre-existing scales: Beliefs About Obese People, Attitude Towards Obese People and Fatphobia Scale. These scales are part of the bias toolkit created by the Rudd Centre for Food Policy and Obesity (The Rudd Centre For Food Policy & Obesity, n.d.).

Beliefs About Obese People (BAOP) is an 8 - statement scale that measures belief about the underlying reasons for obesity. Items are scored on a 6-point Likert scale (strongly disagree to strongly agree). Higher scores indicate the belief that genetic and environmental causes drive obesity, and lower scores indicate that obesity is caused by a lack of personal control (Poustchi et al, 2013).

Attitudes Towards Obese People (ATOP) is a 20 - statement scale that measures perceptions regarding obese people. Items are also scored on a 6-point Likert scale (strongly disagree to strongly agree). Higher scores indicate more positive attitudes, and lower scores indicate more negative attitudes (Poustchi et al, 2013).

Fat Phobia Scale (FPS) is a 14 - item scale that requires participants to indicate which adjective better describes obese people on a 5-point scale, e.g. active to inactive. Higher scores indicate high levels of fatphobia, thus more negative stereotypes (Poustchi et al, 2013).

The survey had three sections with each of these scales. ATOP and FPS scales were reduced to 10 items only to ensure the survey was not too long. Survey data was analyzed using the instructions provided by each scale.

Experience

Survey recruitment was carried out through opportunistic and snowball sampling via Instagram, Facebook, as well as LinkedIn. The participant criteria were that they had to be a healthcare professional or student in Ontario. This included general physicians, specialists, nurses, technicians, physiotherapists, dieticians, mental health professionals and paramedics. Acquiring survey participants was a bit more frustrating because the response was not as big. Recruitment was carried out over a full month. In the end, ten participants completed the survey.

Limitations

With such a low number of participants, saturation was not reached, and the survey data was not correctly representative. For future improvements, creating a shorter survey and allowing for a more extended recruitment period could help get more responses. Direct recruitment could also provide more fruitful results.

Findings

In total, 60% of the respondents had positive attitudes towards obese people (ATOP), and 60% believe that obesity is under the obese individual's personal control (BAOP). All the respondents scored above-average on the Fatphobia Scale, indicating the presence of fatphobia. Despite the low numbers and lack of representative data, some compelling anecdotal findings were discovered:

- Respondents who had more negative attitudes towards obese people believed obesity was in personal control of the individual. However, at the same time, half of the people who had positive attitudes also held the same belief about personal control.
- More positive attitudes accompanied Fatphobia scores that were on the lower side.
- The lowest fatphobia scores were the ones who believed that obesity is more controlled by genetics and the environment. However, only 20% felt this way.

In conclusion, while the survey was not a successful research method in representing primary data in this province, it was still representative of the data found in the secondary sources on this topic.

Upon completing data analysis from the two research methods, i**t was determined that one of the primary actors, healthcare providers, should be narrowed down to family doctors.** This resulted from the finding that most participants experienced the highest amount of weight bias from family doctors. A 2019 study, "Examining Weight Bias among Practicing Canadian Family Physicians," concluded that negative attitudes towards patients with obesity exist among family physicians in Canada. Many of them reported feelings of frustration with patients with obesity and agreeing that people with obesity increase demand on the public healthcare system (Alberga at al, 2019). So while the survey in this study did not yield representative data, there is sufficient information available on the existence of biases among family doctors. In addition to having access to existing literature, focusing on just family doctors will make synthesizing more manageable since different healthcare providers have different influences, barriers, and characteristics.

Empathy Map

Now that the primary actors have been finalized to be fat patients and family doctors, it is crucial to understand them better on a personal level. The Empathy Map tool was employed for this task.

The Empathy Map, developed by visual thinking company Xplane, yields a clearer understanding of a stakeholder's environment, behaviour, concerns, and aspirations. This tool uses simple directive questions like what does the person see, think, hear, do and say, plus pains and gains of the individual to develop the stakeholder's persona (Osterwalder et al, 2010, p.131).

Empathy Map: Fat Patients

Think/Feel:

- Resentful towards doctors
- Worried about health not receiving proper care
- Anger & frustration from biased treatment
- Hesitant about accessing healthcare
- Feeling dismissed by healthcare providers
- Thinking they are a failure for poor health
- Relieved when they receive non-biased care
- Feeling empowered by HAES community
- Healthy living motivation

Hear:

- Unsolicited weight loss advice
- "Lose weight, all will be fine"
- "You are at high risk for xyz"
- "You don't need this test/referral"
- "Eat better & exercise more"
- Unsolicited diet advice or referrals
- Negative stereotypes about fat people
- Positive advice from fat-positive doctors
- Health at Every Size content
- Talks about weight bias
- Positive & empowering messaging from activists

Fat Patients in Ontario

See:

- How health providers treat them vs thin patients
- Weight loss prescriptions
- Their weight, BMI and test results
- Obesity as risk factor in all health issues
- Fatphobic content & thin representation
- Uncomfortable and small healthcare spaces & equipment
- Thin people getting different diagnoses for same problem
- Weight loss content on the internet
- Research on weight bias
- BMI history & its roots
- HAES activists

Say/Do:

- Complying with weight loss advice
- Going on different diets & attending clinics
- Trying out different workout plans
- Consistently defending health habits
- Mentally preparing for medical appointments
- Standing up for themselves in healthcare settings
- Being adamant and getting referrals
- Researching about health issues & obesity
- Refusing to get weighed or talk about weight with doctor
- Looking for fat-positive practitioners

Pains:

- Biased healthcare
- Misdiagnoses due to biased care
- More health issues from biased care
- Constant weight loss talk from healthcare providers
- Good health habits not believed by doctors
- Not being trusted on past weight loss attempts
- Not receiving referrals or treatments due to weight
- Uncomfortable healthcare spaces & small equipment

Gains:

- Receiving unbiased healthcare
- Receiving diagnoses other than weight
- Non-judgmental attitude from healthcare providers
- Health not being defined by their weight
- Inclusive healthcare spaces
- Proper access to tests and specialists
- Being believed about their good health habits

Figure 4: Empathy Map for Fat Patients

Empathy Map: Family Doctors

Think/Feel:

- Weight is a huge factor in poor health
- Unsettled when patients go against their words as they have studied hard to be experts in the field
- Referrals are not needed since weight is the problem
- Weight loss will solve a lot of health issues for fat patients
- Worried about patients, wants what is best for them
- Occupied with clinic efficiency & business
- Responsible for patient's declining health
- Worried about healthcare cuts

Hear:

- Patient's description of their issues
- Patient habits
- Test results from labs
- Obesity being a risk factor
- Patients asking for tests/ referrals
- New research in the medical field
- Fatphobia in society
- Ontario Health cuts and mandates
- Unsolicited advice on their profession
- Office talk with staff
- Patients disagreeing
- Fat-positive activism

Family Doctors

See:

- Patients of all ages, all sizes, new and registered, all genders, all health levels
- Patient's weight & BMI score
- Various test results
- Patients in distress
- Clinic staff & other doctors
- New weight loss techniques
- New research in the field
- Public health guidelines
- ON healthcare cuts
- Fat positive movements

Say/Do:

- Asks patient questions
- Follows BMI as a measure of health
- Physically checks patients
- Discussions with patients
- Tells fat patients to lose weight
- Refers to tests, specials & prescribes medication
- Formulates diagnoses and lectures fat patients on weight
- Forms alliances with different clinics including weight management clinics
- Work with nurses & staff
- Protests healthcare cuts

Pains:

- Problems with their clinics
- Healthcare funding cuts
- Too many patients, not enough doctors
- Student debt (new doctors)
- COVID-19 pandemic
- Friction with patients, their diagnoses being question
- Not enough time with patients
- Deteriorating health of patients

Gains:

- Correct diagnoses
- Improving health of patients
- More doctors in the field to share the load
- Financial gain
- More accolades
- Healthy patients

Figure 5: Empathy Map for Family Doctors

Insights from Step 2

The culmination of the interview and survey analysis, followed by the empathy mapping of the two main stakeholders, resulted in the following insights:

1. Healthcare cuts, overwhelming patient numbers and resulting visit time limits amplify the discriminatory treatment of fat patients by family doctors. Healthcare cuts back in 2014 led to some clinics posting signs indicating patient visits can only last 15 minutes — thus, patients were asked to keep their questions and concerns down to one or two issues (Seth, 2016). According to many of the interview participants from this study, this is a practice that is still exercised today in most clinics.

2. The most significant friction in the relation between the patient and the family doctor comes at the moment of diagnosis. During this point in the service, patients get schooled on their weight and how weight loss will solve their issues. This friction can be conscious, unconscious, or miscommunication, depending on whether the doctor holds more implicit or explicit biases.

3. The moment of diagnosis is a moment of triumph for the doctor. They believe they are treating and helping their fat patients, but this moment is actually a moment of failure and high stress for the fat patient. According to some patient participants from the interviews, they are often unable to explain their frustrations to the doctor. Moreover, if they do, some doctors do not understand it or dismiss it.

Digging into Relationships

Step 3: Understanding the System

Step 3 of the Systemic Design Toolkit involves seeing how the variables and interactions in the system influence the dynamics and emergent behaviour. This step starts with identifying the leverage points that can be worked with (Systemic Design Toolkit, 2020).

In this project, the data and insights gathered from Steps 1 and 2 will be analyzed in this step using methods such as systems map, causal loops and causal layered analysis to understand the influences and barriers in the system.

Systems Map

Systems Map is a technique for visualizing the system, its structure and the interrelations between its elements (Systemic Design Toolkit, 2020). For the healthcare weight bias system map, influences were chosen to be plotted for further investigation into the power dynamics that emerged in the Step 1 Actors Map. The map focused on the various sub actors, how they affected each other and the two main stakeholders – fat patients and family doctors.

The map on the following page demonstrates the influences some of the more powerful stakeholders have on the other actors in the system. These influences can be helpful or deterring. They were determined using interview data and various secondary sources.

Influences

Diet companies pay millions to influencers to promote their product and promote the need to be thin (Lyles, 2020).

Food and diet corporations contribute to obesity research and guidelines. An example is the new Canada Obesity guide and its competing interests (Wharton et al, 2020).

Diet companies promote their products heavily on all channels to fat individuals, often succeeding (LaRosa, 2019).

'Thinspo' Influencers

Diet Companies

Food Corporations

Obesity Research & Guidelines

Weight Bias Research

Influencers promoting thinness and weight loss influence fat patients to try harmful diets and feel bad about themselves.

Activists

Activists are often fat-positive healthcare providers themselves or influence these healthcare providers to be fat-positive (Scriver, 2020).

The increasing weight bias research studies have been changing the approach of some doctors making them more fat-positive (Scriver, 2020).

Diet companies that have been well-established are often referred by family doctors to their fat patients.

Activists empower fat patients to stand up for themselves.

Internet Trolls

Fat-positive Healthcare Providers

Nurses

Medical research shapes what is taught about obesity in medical schools and other health related programs ("So Why Change," n.d.).

Internet trolls directly or indirectly put down fat people by expressing harsh opinions about their health.

Fat Patients

Doctors' weight bias often carries over to the nurses working with them.

Specialists

Family Doctors

Doctors' weight bias also carries over to the admin and support staff working for them.

Healthcare Support Staff

Doctors biased notes on their patient's history or referral influences bias in ancillary providers.

Ancillary Health Providers

Ontario Health coordinates healthcare in the province and provides tools and information to family medicine practitioners ("Our Story," n.d.).

Public Health Ontario sets obesity guildelines and treatment policies that shape how doctors treat fat patients ("Obesity," n.d.).

Ontario government determines funding for family clinics. Cuts put pressure on doctors and affect their care quality (Alam, 2018).

Obesity research and guidelines shape the official guidelines that Public Health Ontario puts out.

Medical schools and other health related programs often instill explicit weight bias into its students resulting in biased healthcare providers (Phelan et al, 2015).

Ontario Health

Public Health Ontario

Ontario Government

Medical schools, other healthcare education & medical community

Family doctors' weight bias is influenced by their medical education which has shown to increase explicit weight bias in their students (Phelan et al, 2015).

When observing the Influence map, an obvious one is that of medical education on family doctors and other healthcare providers, which is the source of most of their knowledge and practices. Another undeniable influence is that of Ontario Health and Public Health Ontario on family doctors. Ontario Health is an agency recently created by the Government of Ontario with a mandate to connect and coordinate the province's healthcare system. They ensure that health professionals have the tools and information required to deliver the best possible care within their communities (Our Story, n.d.). This new system was introduced in early 2019 by the current provincial government (Jeffords & Jones, 2019). Ontario Public Health, on the other hand, creates health promotion policies and provides education and professional development to Ontario's health providers ("Ontario Public Health," 2020). The big takeaway from these influences is that change initiatives in these two subsystems, education and governance, will be mandatory to solve the issue of weight bias in family medicine today.

A second revelation from the map is the overwhelming societal forces on fat patients. While activists and social media advocates build their confidence and empower them to receive proper healthcare, the same amount of influence is expelled from the opposite side, consisting of 'thinspiration' influencers or internet trolls. These conflicting messages often confuse fat patients and further corrode the relationship between them and their biased doctors.

Another striking influence in the system is that of food or dieting corporations on obesity research and guidelines, which shape the protocols encouraged by Public Health Ontario, and thus influence health providers, particularly family doctors. This is problematic because the same protocols that guide our healthcare providers on treating fat patients have contributions from corporations that benefit from the insecurities of fat patients. In a recent Zoom panel hosted by FoodShare Toronto on the topic "Dismantling Fat Shaming and Weight Stigma, one of the panelists, Anshuman Iddamsetty, who is a Toronto-based writer and producer working on fat liberation (Iddamsetty, 2020), pointed out that the new Canadian obesity guideline includes numerous contributors with competing interests. The most

questionable one being an individual who sells Optifast Meal Replacements through a weight-management centre (Foodshare Toronto, 2020). This means someone who makes a profit off of people with obesity has contributed to the national obesity care guidelines. How is that fair? This is an accurate example of how corporate influence shapes the healthcare fat patients receive.

Causal Loops

The influence map provides a robust comprehension of the dynamics in the healthcare weight bias system. Now, the goal is to pinpoint some persistent occurences that must be interrupted to bring change in the system. This is best achieved by determining causal loops in the system. Causal loop diagrams begin as qualitative descriptions outlining how one thing causes another in either a positive or negative direction. Typically, feedback loops are identified between the different elements. They can be reinforcing, or positive feedback loops, where A produces more B, which in turn produces more A or they can be balancing or negative feedback loops, where a positive change in one leads to a push back in the opposite direction (Peters, 2014).

For this project, existing system archetypes are used to discover the healthcare weight bias system's feedback loops. System archetypes are feedback loops that capture common anticipated problems that can occur in diverse systems. They are powerful tools for easy diagnosis and identification of problem patterns (Kim, 1992). The two archetypes identified in this system are the Fixes That Fail archetype and Limits to Success archetype.

Fixes That Fail Archetype
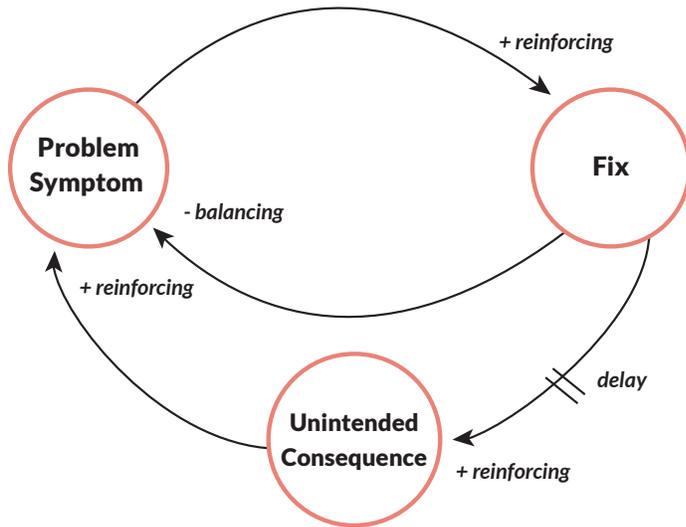
Figure 7: Fixes That Fail Archetype

In a "Fixes That Fail" archetype, a problem symptom demands resolution. A solution is quickly implemented that alleviates the problem, but it also produces unintended consequences that exacerbate the problem. Over time, the problem symptom returns or is made worse by the same solution that was used to fix it (Kim, 1992).

A central issue in the system, which encapsulates the experiences of the participants interviewed, can be represented by this archetype. Fat patients go to the doctor with health issues. The doctors implement a fix, which is to lose weight. While the fix might temporarily mitigate some of the issues, over time, it results in the unintended consequence of mental health issues, eating disorders and physiological stress, making the initial health issue worse. In summation, weight loss is a fix that often fails.
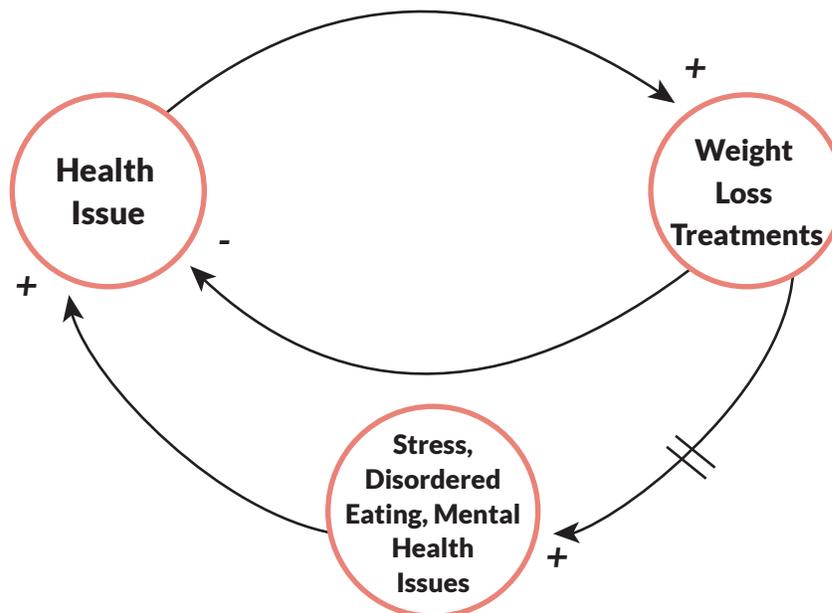
Figure 8: Fixes That Fail Archetype in Use

Limits to Success Archetype
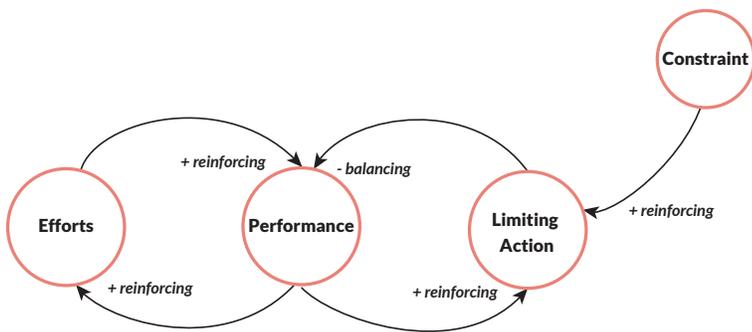
Figure 9: Limits to Success Archetype

In a "Limits to Success archetype, continued efforts initially lead to improved performance, but over time the system encounters a limit which causes performance to decline, even if efforts are sustained (Kim, 1992).

One of the most frustrating consequences of biased healthcare that fat patients deal with can be represented by the Limits to Success archetype. Fat individuals engage in healthy living by practising good nutrition and physical activity habits and researching Health at Every Size concepts. This motivates them to stay healthy and get preventive healthcare. However, when accessing preventive care, they face bias and judgement, causing various physical and mental health issues, thus dampening their efforts to lead healthy lives. Stigmatizing healthcare limits their success of good health. This stigma is driven by constraints such as biased medical education and lack of health policies against weight bias.

Figure 10: Limits to Success Archetype in Use
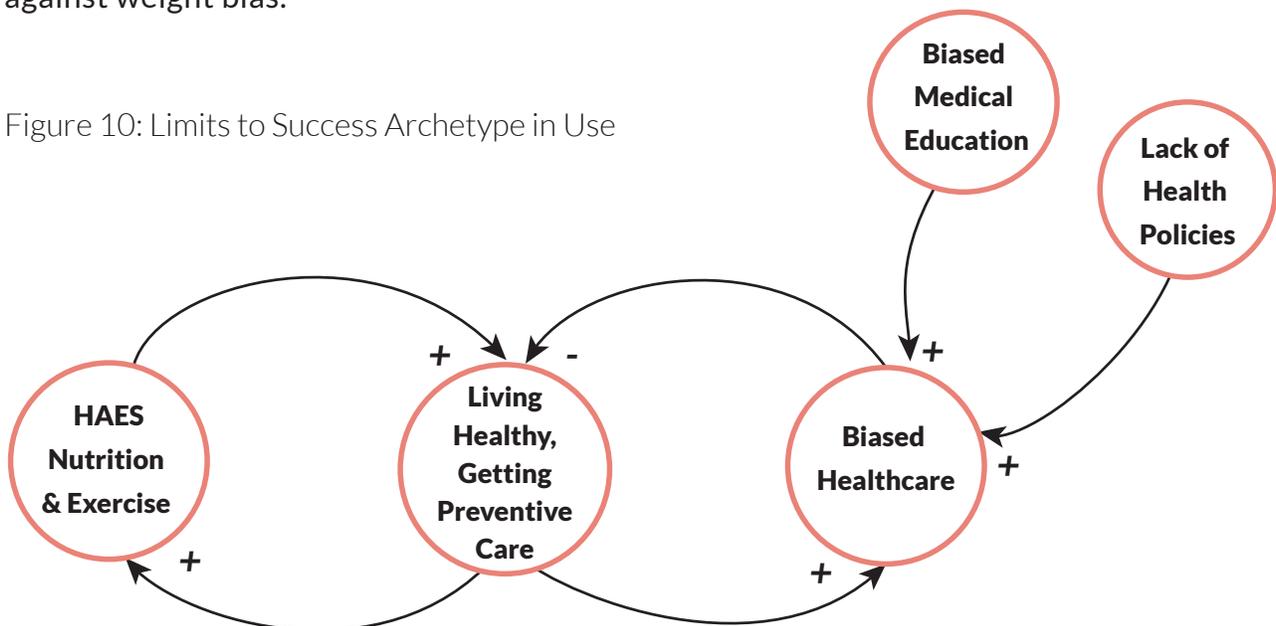
Causal Layered Analysis

Now that influences and persistent problems in the healthcare weight bias system are more apparent, the next move is to learn more about the deeper roots of the issues. This deeper dive into the problem can be conducted using the Causal Layered Analysis (CLA) tool. CLA is a foresight tool that seeks to unpack the deeper future. It has four dimensions (Inayatullah, 2008).

Litany: The day-to-day occurrence, the most commonly accepted headlines of the way things should be (Inayatullah, 2008).

System: Deeper systemic causes of the issue that can be social, economic, technical, cultural or political (Inayatullah, 2008).

Worldview: This is the big picture, the paradigm that defines the problem and informs how we understand it (Inayatullah, 2008).

Myth/Metaphor: This is the deepest level of causes that are driving the issue. These causes are firmly rooted and believed, and often unconscious (Inayatullah, 2008).
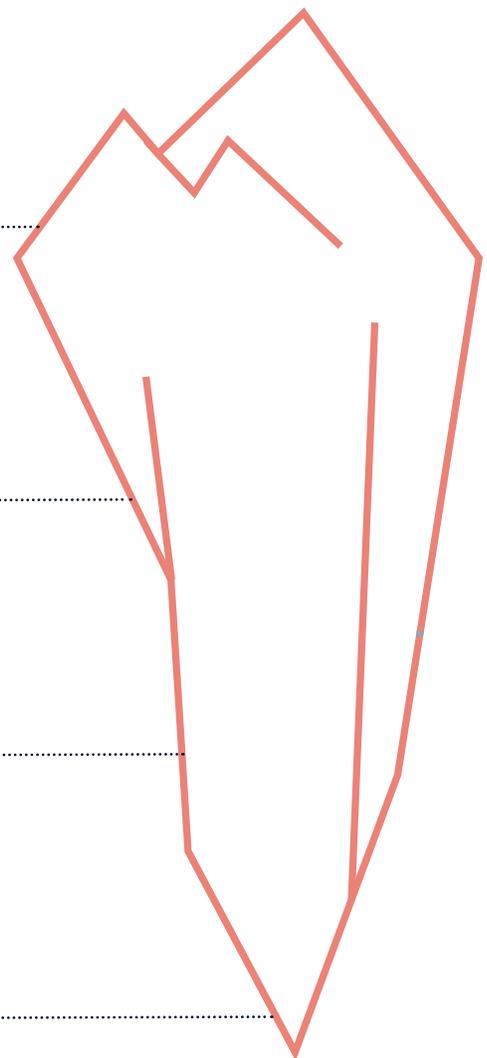
Figure 11: Causal Layered Analysis Tool

A Causal Layered Analysis of weight bias in healthcare revealed the following causes and contributors to the issue:

Table 1: Causal Layered Analysis for the Issue of Weight Bias in Healthcare	
Litany The statements in this level were derived from the primary data obtained from interviews of fat patients in Step 2 of this project. These statements reflect what fat patients in the system regularly hear from their healthcare providers.	• Your illness is caused by obesity. • Lose weight and come back to see me. I guarantee you the symptoms will disappear. • You do not need to get this test/see a specialist because the problem is just weight-related. • You can try this dieting program/ obesity management clinic. I highly recommend it. • You need to eat better and exercise more. Lose the potato chips and walk more. • Your reports seem inaccurate. Your levels should be higher (disbelief of good health indicators).
Systemic These surface-level causes encourage biased healthcare. Further secondary investigation into the litany derived from primary data revealed these causes.	• Medical research regularly links obesity to numerous diseases that result in early death. Obesity is a significant risk factor and contributor to increased morbidity and mortality, most notably from cardiovascular disease (CVD) and diabetes and cancer and chronic diseases, including osteoarthritis, liver and kidney disease, sleep apnea, and depression (Pi-Sunyer, 2009).

Table 1: Causal Layered Analysis for the Issue of Weight Bias in Healthcare (continued)	
## Systemic (continued) These surface-level causes encourage biased healthcare. Further secondary investigation into the litany derived from primary data revealed these causes.	• The most basic, most accessible and most common method of determining obesity is the body mass index (BMI). Doctors easily calculate BMI from the heights and weights they gather at each check-up; BMI tables and online calculators also make it easy for individuals to determine their own BMIs ("Measuring Obesity," n.d.). It is regarded as a trusted source. • Weight bias prevention in medical school is very uncommon. Few medical schools provide curriculum content on obesity treatment, let alone instructions on reducing weight bias (Phelan et al, 2015). • Obesity research is often based on meta-analysis. Meta-analysis is a quantitative, formal, epidemiological study design used to systematically assess previous research studies to derive conclusions about that body of research (Haidich, 2010). The other form of obesity research is to employ clinical trials that prioritize weight loss as a primary outcome and rarely consider patients' experience, quality of life, or adverse events (Sturgiss & Campbell-Scherer, 2017).

Table 1: Causal Layered Analysis for the Issue of Weight Bias in Healthcare (continued)	
Worldview These ingrained societal beliefs enforce the systemic causes that encourage weight bias. Diving into literature and stories surrounding the systemic causes revealed these worldviews. Primary data from the interviews also reflected some of these sentiments. Observation into social media comments on the literature pieces also disclosed these perceptions in people.	• All fat people lead unhealthy lifestyles, and being fat is one of the worst things. Making anything fat inclusive encourages poor health habits (Cernik, 2018). • Healthy habits and being thin makes you morally superior. Being fat is a sign of failure because you eat poorly and stay on the couch (Your Fat Friend, 2020). • Fat people are an economic burden (Tremmel et al, 2017). • Doctors know our bodies best. They have gone through rigorous education, so they are always right.
Myth/Metaphor: Unconscious beliefs that drive the worldviews listed above. These beliefs were extrapulated from both interview data and secondary research findings (which revealed worldviews) and rewritten to summarize overall feelings.	• Fat is evil. • Obesity kills. • Doctors are angels in white coats (A metaphor often used to describe doctors).

After completing the CLA, it became evident that the presence of weight bias in healthcare comes down to three implicit beliefs held by society:

1. Fatness is a symbol of greed and gluttony.
2. Death is scary, and obesity quickens it.
3. Doctors are put in a superior position rather than being seen as partners in taking care of our health.

Insights from Step 3

The culmination of Step 3 tools brought forward the following new insights:

1. There is not enough qualitative research surrounding obesity, even though the root causes of obesity are linked to emotional, societal and environmental reasons.

2. Obesity is often embedded in a one size fits all notion. Fatness looks different for everybody. Different fat people have different health effects if any. However, the treatment is the same for all of them.

3. There is a vast disconnect between the governance and medical community subsystems and the advocacy subsystem. The systems map showed no direct line of influence. We all know the scientific effects of obesity and weight bias. On the other hand, we have witnessed the social uprising of fat-positive movements and influencers on the internet. However, there is no collaboration between the two to advance the lives of fat people and reduce barriers like weight bias.

Thinking of the Future

Step 4: Defining the Desired Future

Now that we have framed the system, listened to the primary actors through interviews and Empathy Mapping, and tried to understand the system's connections and deep roots, the next move is to help the stakeholders articulate the common desired future in Step 4.

For this project, this step involved conducting a foresight workshop with the participants who identified as fat patients, to determine their desired future of dismantling weight bias in healthcare.

Primary Research: Three Horizons Workshop

Method

The workshop utilized the foresight tool Three Horizons Framework. Three Horizons is a futures technique that connects the present with desired futures and helps identify the transition stage that emerges from conflict between the embedded present and these imagined futures (Curry & Hodgeson, 2008). Horizon 1 depicts today's challenges. Horizon 3 depicts the future one wants. Between them, Horizon 2 demonstrates the transition from today's challenges to the desired future. The secondary spaces under the horizons are also used to generate points such as pockets of the future present today, aspects of today we want to keep in the future, and transition procedures that are already happening. When using the tool the starting point would be Horizon 1, listing the challenges, followed by jumping forward to Horizon 3 to share the desired future. Once those are completed, participants would work through Horizon 2 to discover the transition points needed to reach the goals in Horizon 3. At the end, the secondary spaces would be tackled.

These are based on a specific time period ranging from short-term, like two to five years, to long-term, such as twenty years or more. It varies depending on the industry (Curry & Hodgeson, 2008). The following diagram displays the framework with the definitions.
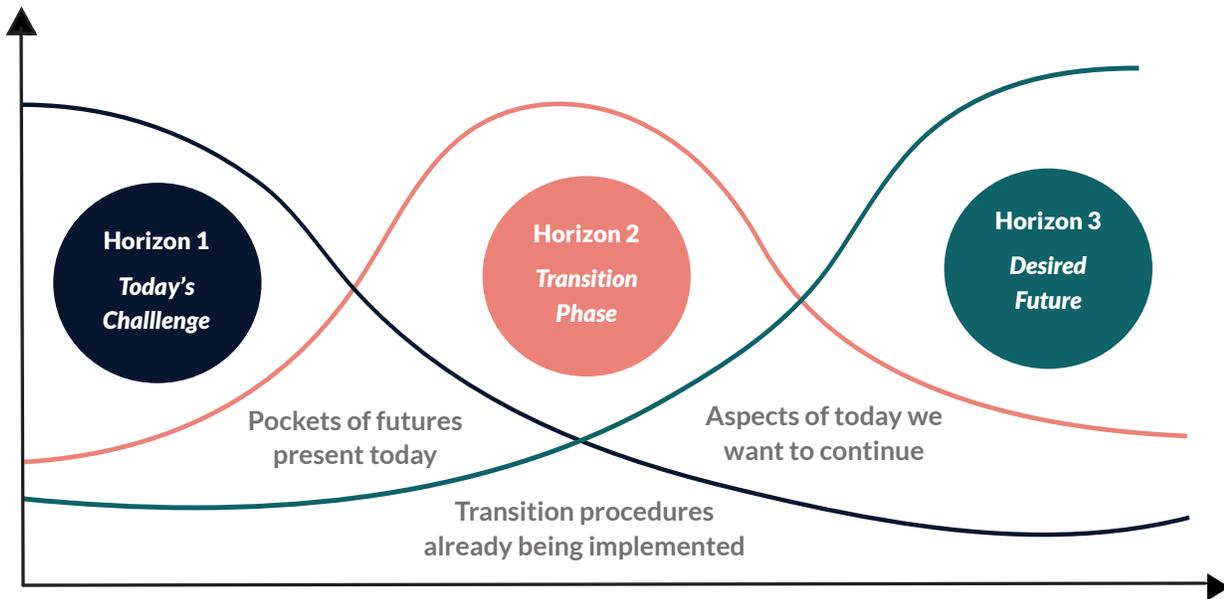
Figure 12: Three Horizons Framework

This tool was built for collaborative use. It is relatively comprehensible and straightforward to use for workshops with non-practitioners (Curry & Hodgeson, 2008). This is critical when approaching issues like weight bias in healthcare because it allows the actor group most affected by it, the fat patients, to ideate the future they want.

Experience

Workshop participants were recruited at the same time as the interview participants. Five of the 13 participants from the interviews also opted to participate in the workshop. The criteria were the exact same as interviews. They had to self-identify as fat or be medically classified as overweight and had to have accessed healthcare services in Ontario. On the day of the workshop, one of the participants cancelled, so the workshop was ultimately conducted with four participants.

The session started with an introduction of the framework and how to use it, followed by questions from the facilitator to guide the participants in filling out the Three Horizons framework. The framework was shared through the screen so participants could witness the facilitator writing down the points being made. Participants actively engaged with not only the framework questions but also in discussions with each other. The workshop lasted for an hour and a half.

Findings

As the participants navigated through each of the Horizon spaces and accompanying questions, the following findings emerged:

Horizon 1

What are the challenges fat patients face today when accessing healthcare?

- A lack of empathy from their doctors.
- A myriad of assumptions about their health habits and past weight loss attempts.
- Constant recommendation of losing weight no matter what the illness is.
- Fear of misdiagnoses.
- A battle to get referred for tests or to specialists.
- Mistrust from doctors on health habits and activities.
- Medical appointments being 'hijacked' by weight loss.
- Anxiety and hesitancy to get check-ups.
- A lot of exhausting efforts to research and prepare before appointments.
- Formal diagnoses on eating disorders.
- Physical barriers, particularly gowns, chairs and blood pressure cuffs.
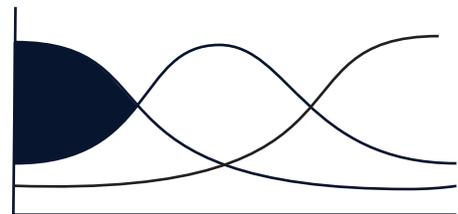
Horizon 3

What is the desired future? What kind of changes do we want to see to make healthcare better for fat patients?
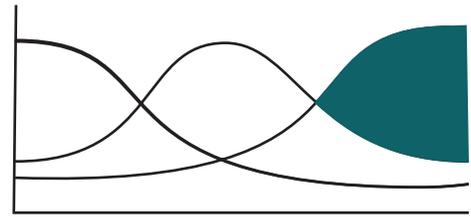
- Removal of BMI as a health assessment.
- Doctors who understand the harm of diet culture and fatphobia.
- Doctors who listen to fat people and show more empathy.
- Switching from an outcome-oriented healthcare model (weight loss) to a behaviour-oriented one (healthy choices).
- Change in language around obesity. Neutralizing use of the word 'fat.'
- Changed curriculum in medical school and extra required certification for existing doctors.
- Eating disorder diagnoses based on behaviours, not physical appearance.
- More qualitative research before obesity is listed as a risk factor in a disease. An example of this is the hasty decision to list obesity as a risk factor for COVID-19 with very little research on other factors such as race, socio-economic status, quality of care or other health conditions an individual might have (Byrne, 2020).

Horizon 2

What do we need to start doing to get to that desired future? What steps need to be taken, and who needs to take them?
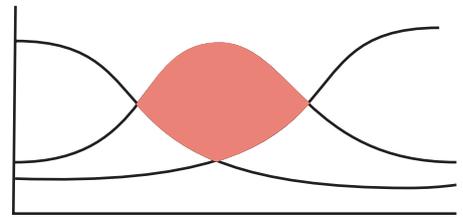
- Bias training programs should focus on increasing empathy for fat patients in doctors.
- Health at Every Size training should be offered in medical schools or through continuing education.
- Change in curriculum in medical schools should be made to mandate a certain number of hours in weight bias training.
- Advocacy on a grassroots level and from healthcare providers is required.
- Recognizing fat healthcare workers, their contribution and experiences in the system.
- Academic research from all fields (social, economic, science) on weight bias.
- More education around eating disorders on all bodies is crucial.
- Removing morality from the discussion of health.
- Drafting health policy proposals to fight weight bias.

Secondary Spaces

What changes from our desired future are present today? Is change starting to happen?
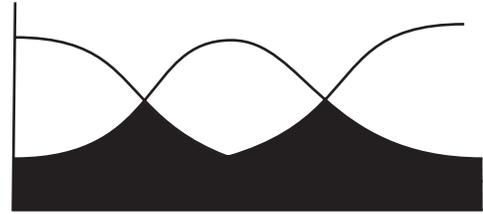
- Empathetic fat-positive doctors already exist in some capacity.
- More and more advocacy is happening around condemning weight bias in healthcare.
- More fat inclusive languages are slowly being used in all settings.

Are there any aspects of the present day that we want to continue into our desired future?

- Academic research into weight bias has been rising in the last 15 years. Continuation of this research is required to fight the issue.
- Continuation of advocacy is essential to tackling the issue as there is a lot of pushback from society.

Who is already working to help us get to our desired future

- The HAES community educates people on the importance of health, healthy living and behavior for all body sizes and weight.
- Canadian Eating Disorder Association makes people aware of the 'atypical' forms of eating disorder which include all the symptoms but in those who don't match the physical description of the condition ("Other Specified," 2019).
- Social media influencers use their platform to fight the issue and encourage fat positivity.
- Fat-positive fitness professionals who offer fitness coaching and classes for all bodies, making it easier for fat individuals to stay active.
- BalancedView BC provides online weight bias training program for the province's health professionals (Balanced View, 2015).

Three Horizons Framework for Family Doctor

To complement the fat patient-centric framework, the Three Horizons exercise was also completed from a family doctor's perspective. Since this was done indiviually by the researcher rather than in a workshop setting with doctor participants, some of the points are presumptive. Secondary research such as a detailed blog post written by an Ontario family doctor and news articles were used to produce the findings. These sources contained information on the challenges family doctors face and how it negatively affects their practice. This helped in filling out the first horizon about today's challenges. The desired future and transition points were then hypothesized based on these challenges. The main purpose of this exercise was to build more empathy for the family doctors and interpret their struggles and desires better.

Horizon 1

What are the challenges family doctors in Ontario face today?
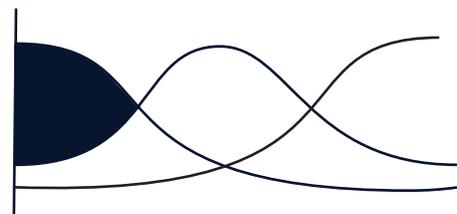
- Overwhelming workload. Too many patients and not enough family doctors, particularly outside of urban centres (Alam, 2018).
- Ongoing funding cuts by the Ontario government (Alam, 2018).
- Fewer medical school students are opting for family medicine, particularly clinic-based practice (Ray, 2017).
- Less integrated patient data system, especially in small towns (Alam, 2018).
- Family clinics are not backed up by a large institution, unlike hospitals (Kupfer, 2020).
- COVID-19 pandemic changes, particularly around personal protective equipment (PPE) shortage and adapting to virtual care (Kupfer, 2020).

Horizon 3

What is the desired future? What kind of changes will improve family medicine?
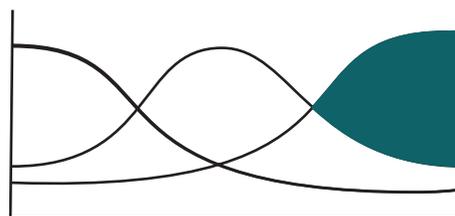
- More new doctors in family practice.
- More medical school graduates specializing in family practice.
- More time to give to patients.
- Increased government funding focused on family medicine.
- A detailed, sophisticated data management system.
- More PPE during the pandemic and support from the government for post-pandemic changes.

Horizon 2

What do we need to start doing to get to that desired future? What steps need to be taken, and who needs to take them?
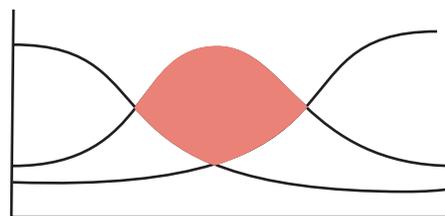
- Medical school incentives to pursue family medicine.
- More funding and grants to start up a family practice.
- Research and funding to explore healthcare data management innovations.
- Start designing post-pandemic plans to anticipate changes and necessary resources.

Secondary Spaces

What changes from our desired future are present today? Is change starting to happen?
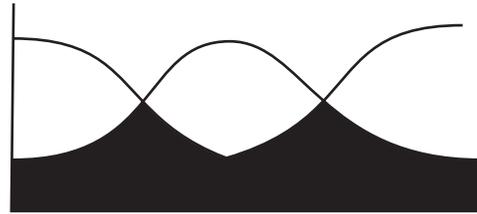
- Pandemic response and plans are being carried out by individual practitioners (Kupfer, 2020).

Are there any aspects of the present day that we want to continue into our desired future?

- Virtual care could continue on some level, depending on the patient issue, as it saves time and makes the clinic more efficient.

Who is already working to help us get to our desired future?

- Family clinics are banding together and forming support groups to help each other out.

Insights from Step 4

Completion of the Three Horizon frameworks, from the perspective of both primary actors, resulted in the following insights:

1. The current challenges for fat patients are mostly embedded in assumptions made by healthcare providers and the mistrust between them and their fat patients.

2. The desired future for fat patients is built on trust and understanding. Weight bias destroys that between a patient and their doctor. First and foremost, these patients want a better relationship with their doctors, followed by policy and protocol changes.

3. The education sector and the government need to step into a more active role regarding this issue. The future can only be achieved with all nodes in the system working together.

4. Current initiatives are only happening through individuals. Currently, there is no collective, collaborative change-making on the horizon.

5. The desired future for family doctors is efficiency and more time for their patients. They want to run their practice and help their patients without the worries of funding cuts, a low number of family doctors and a slow data management system.

Ideating Solutions

Step 5: Exploring the
Possibility Space

Before diving into Step 5, it is critical to recap the last four steps and the insights they generated –

Step 1 analyzed the weight bias landscape by identifying structures, practices, trends and stakeholders. This framed the project to focus on the two primary actors, fat patients and healthcare providers, and investigate how the other stakeholders affect them.

Step 2 investigated the primary actors through primary research and created Empathy Maps to better comprehend their perspectives and experiences with the issue of weight bias. Healthcare providers were further specified to be family doctors since primary research revealed that they are the biggest perpetrators of weight bias. This step generated insights about how external factors often augment doctors' biased attitudes and that the most prominent tension between the doctor and the fat patient comes at the moment of diagnosis when the appointment is overpowered by talk of weight and weight loss.

Step 3 explored the main actors' relationships with the secondary and examined the deeper causes of the issue. At the end of this step, it was evident that research around obesity was not perfect, focusing on quantitative figures rather than qualitative attributes. It was also exposed that there is a massive disconnect between the weight bias issue's advocacy aspect and the scientific side of it.

Step 4 probed into the future state of the issue and what kind of changes are desired by the two primary actors. This step constructed the notion that the ultimate desired future is to have a more positive relationship between fat patients and their doctors. While changes will need to be made in education and regulation, the betterment of the human relationship and partnership between the two primary actors is most coveted.

Now, in **Step 5**, with the help of the findings and insights discovered in the previous steps, possible ideas are formulated to address this project's research question.

Intervention Strategy Model

The exploration of possibility spaces is initiated by using the Intervention Strategy Model from the Systemic Design Toolkit. This tool is based on the intervention levels determined by Donella Meadows. They refer to critical areas in a system that one can intervene in (Meadows, 1999). By exploring different possible interventions, one can make sure the future combination of interventions will cover the big picture (Systemic Design Toolkit, 2020). These intervention areas include the following: constants, parameters, buffering capacities, physical and digital structures, delays, balancing and reinforcing feedback loops, information flows, rules, self-organization, goals and paradigms.

Please refer to **Appendix A** to see the utilization of the tool and some of the specific ideas that were brainstormed.

Possible Solution Spaces

The conglomeration of the insights from previous steps has ultimately led to the creation of four possible solution spaces.

Solution Space 1

Ontario Public Health policies in how overweight patients are treated in family medicine.

The research has revealed that fat patient's experience with their family doctors is brimming with weight bias. From physical barriers to staff attitudes and doctor diagnoses, every aspect is stressful, frustrating and unfair for fat patients. However, there are currently no interventions present from a policy perspective to tackle the issue. By implementing formal guidelines on weight bias consequences and policies on tackling weight bias at the doctor's office, fat patients can achieve fair treatment. This has the potential to decrease obesity mortality rates and advance the livelihoods of fat patients. The types of policies that can be introduced include simple notions such as:

1. Weight cannot be the principal diagnosis for a fat patient's issue since weight is not the sole cause of any illness. While obesity is considered a risk factor for many illnesses, not all people with obesity have the illnesses ("Health Risks Related," n.d.).

2. Non-invasive tests and referrals to specialists should be given without hesitation. The rule is simple. If the doctor is not referring the patient to tests or specialists because they think it is just a weight issue, then it is not a valid reason. This was a major complaint from the study participants.

3. Adopt a behaviour-oriented treatment model rather than an outcome-focused. This remarkable idea was shared by one of the study participants. They described this model as doctors focusing more on their patients' lifelong healthy behaviours versus pushing weight loss goals on them.

An underlying aim of policy development is to address health inequities and lessen the health gap (Bergeron, 2018) and biased treatment of a large portion of the population, resulting in many dire consequences, is undoubtedly a case of inequities in healthcare.

Solution Space 2

Adding in weight bias curriculum in family medicine education across Ontario.

There are currently six medical schools in Ontario ("Medical Schools," 2020). After reviewing the publicly available foundational curriculum of all six schools, there was no evidence found of weight bias training or even courses on treating patients with obesity. With the obesity rates in Ontario being over 26% (Statistics Canada, 2019), it is alarming that medical students coming out of schools in the province do not get any empathy training on treating fat patients.

The solution space prioritizes adding weight bias curriculum in family medicine programs in Ontario medical schools. It can be passed onto other specializations later on. While the inclusion of this training should be mandatory, it can be part of electives to start with. This ensures that future graduates are more informed on the issue. For current professionals and those who fulfill medical education in other provinces or overseas, the proposal is to create weight bias certification courses through Continuing Studies at certain schools.

Solution Space 3

Increase qualitative research around obesity as a condition and risk factor.

This possibility space puts forward the notion of slowing down and including more qualitative research into obesity being a risk factor. More research into social conditions, secondary illnesses, medical history and economic conditions should be conducted before listing obesity as a risk factor to new diseases and further stigmatizing fat patients.

Solution Space 4

Removing weight management/dieting competing interests from any report or research on obesity.

Weight management competing interests in research reports and health guidelines for obesity redact these materials' academic validity. They contribute to sustained, biased healthcare. Removing these competing interests and avoiding contributions from such individuals or corporations will result in more dependable and viable research/ guidelines or, at least, maintain their scientific dignity.

The four solution spaces delve into four different sectors of the system – governance, education, research and corporate involvement. If progress could be made in all these subsystems, overwhelming results could be achieved for the issue as a whole. However, if we travel back to the original research question, it aims to find answers to reducing weight bias in Ontario's healthcare. Therefore, while solution spaces 3 and 4 champion significant proposals, they are much broader and not specific to Ontario. Solution spaces 1 and 2 on the other hand include strategies that can definitely be put into action with stakeholders and resources in the province. Hence, this project will move forward with Solutions 1 and 2.

To further converge on a solution model, a quick future state scenario analysis was conducted through a 2 x 2 matrix to see what kind of scenarios are produced when one, both or neither of the solutions are implemented.

The matrix consisted of an X axis that ranged from no weight bias training existing in family medical education to weight bias training implemented in family medical education. The Y axis ranged from no existence of healthcare policies in regards to weight bias in family medicine to healthcare policies of such sorts being implemented. Forecasting possible future states using these ranges resulted in the following scenarios:

Scenario 1: Implemented weight bias policies but no weight bias curriculum.
In this scenario, Public Health Ontario puts out policies that set fair and appropriate care standards for fat patients by family doctors. Doctors in family practices across Ontario have to follow basic standards such as diagnosing beyond weight, referring to necessary tests and specialists despite of weight and following a behaviour oriented treatment model. However in this scenario, medical education continues using current curriculum with no additional training on weight bias.

Scenario 2: Implemented weight bias policies and implemented weight bias curriculum.
This scenario represents the desired future for this issue. Not only does Public Health Ontario put out the policies described in Scenario 1, medical schools also introduce weight bias training in their curriculum for current students, and through continuing education for existing professionals.

Scenario 3: No weight bias policies or weight bias training in curriculum.
This scenario represents the current state of things with neither initiatives being implemented in family medicine practices and education.

Scenario 4: Implemented weight bias curriculum but no weight bias healthcare policies

This scenario is the opposite of Scenario 1. Medical schools in Ontario revamp their curriculum to include weight bias training, and offer courses through continuing studies but there is no policy-level intervention to complement this initiative in professional settings.

The 2 x 2 matrix belows demonstrates the implications of these scenarios:

Implemented Weight Bias Healthcare Policies

Scenario 1: In a scenario where weight bias health policies are implemented but there is no weight bias curriculum in medical schools, there will be a divide between doctors who follow the policies and those who don't. Without weight bias education, doctors will push back against the policies as it challenges their biases.	**Scenario 2:** A scenario, where both weight bias health policies and curriculum are implemented, will see fair and unbiased treatment of fat people resulting in better physical and mental health. Fat people will be comfortable to reach out for preventive care. It could lead to less financial expenditure on obesity.
No Weight Bias Medical Curriculum	*Implemented Weight Bias Medical Curriculum*
Scenario 3: In this scenario of no implementation of a weight bias curriculum or policies, nothing changes. It is just a continuation of weight bias in healthcare with all the current issues attached to it.	**Scenario 4**: In a scenario where no weight bias policies are implemented, but there is a presence of a weight bias curriculum, chances of new graduates slipping into biased practices are high. Curriculum will need to be strong & mandatory for current students. However, existing doctors may not change their biased approach.

No Weight Bias Healthcare Policies

Figure 13: 2 x 2 Scenario Implications

Looking at the four scenarios, one can deduce that to effectively reduce weight bias in family medicine, both solution spaces – creating new policies and adding a weight bias curriculum – will need to be considered. In the next steps, an intervention model and an implementation roadmap will be proposed to reach the goal of reducing weight bias in Ontario healthcare.

Presenting the Solution

Step 6: Designing the Intervention Model

The model for change, also known as the intervention model, describes the DNA of change within a system; it contains the principles/activities that will enable change in the system (Systemic Design Toolkit, 2020). This step will combine the policy and curriculum solution spaces from the last step to create an intervention model that will seek to create change through governance and education. During Step 3 of this project, a key insight, which will be crucial for this new model, was discovered. This insight demonstrated a considerable disconnect between the scientific research side of weight bias and obesity, and the social activism side. Both subsystems have the same goal. They both want to see better health and respect, proper treatment and unbiased diagnoses of fat people in healthcare, so that fat people can sustain their health and improve their livelihoods. Merging these two groups will form the backbone of this new strategy.

The key theme in this intervention model is collaboration. Firstly, there is collaboration of two different solution spaces, policy and curriculum. Secondly, there is the collaboration of different sub-systems – governance, education and social activism – which is mandatory to make this initiative possible. Therefore, the best way to present this model is to draft it on the Collaboration Model Canvas from the Systemic Design Toolkit.

The Collaboration Model is similar to a Business Model Canvas (BMC). The BMC allows businesses to design, describe, invent and pivot their business model by determining core structures such as key activities, resources, partners, financials, values, etc (Osterwalder et al, 2010). The Collaboration Model uses similar segments to build an intervention model, but with a focus on collaborators working on the solution, their capacities, values and resources (Collaboration Model, n.d.). The next page introduces the model and what each of its segments mean.

Collaboration Model
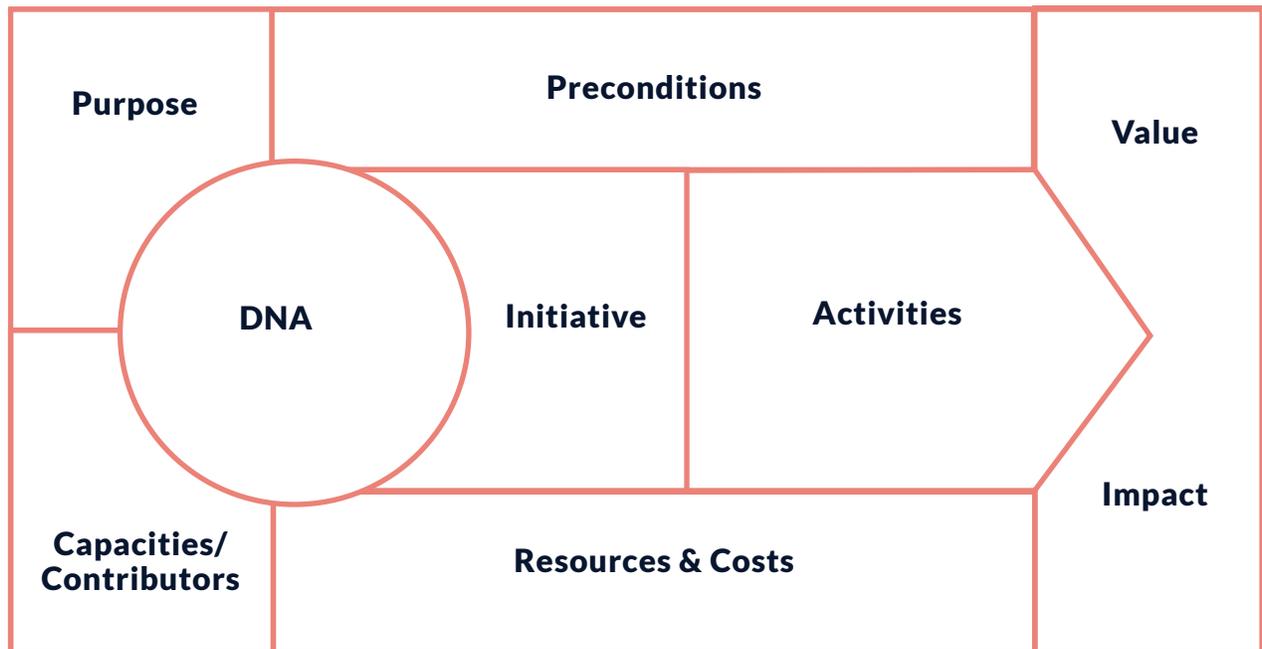
Figure 14: Collaboration Model

DNA - What key characterisitics will inspire the collaboration?

Purpose - What is the main purpose of the collaboration?

Capacities - Who will contribute? With what capacities?

Initiative - What is the purpose of the joint initiative? What changes do you want to achieve? For who? What are the short-term and long-term goals?

Activities - What are the key activities?

Value/Impact - What is the value created in the short-term and long-term? What is the value for the collaborating organizations and community? How will this be measured?

Preconditions - Are there any regulations, processes or attitudes that should change to make the initiative possible or more impactful?

Resources and Costs - What resources and finances are required? Where will they come from?

Collaboration Model:

Reducing Weight Bias in Ontario Healthcare

DNA

The key characteristics of this strategy are embedded in system-wide collaboration with the partnership of scientific researchers and social activists. The strategy promotes policy and curriculum changes to reach compassion and respect between family doctors and fat patients.
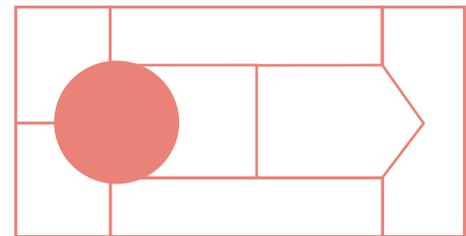
Purpose

This collaborative strategy aims to bring holistic change so that not only does it make a difference now, but that change also sustains. Introducing policy changes will tackle weight bias in the existing family medicine system, but intervening in the medical education system will improve the issue for the future. Social activism will get the engine running, but science will need to fuel that engine to bring validity to the claims.
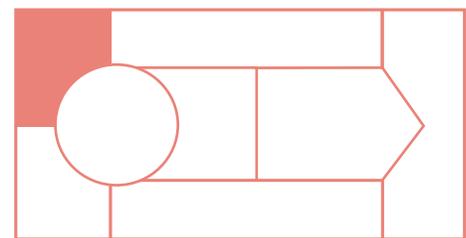
Contributors and their Capacities:

This strategy's main contributors are weight bias researchers, obesity researchers, fat activists and influencers, health policy-makers, the Ontario government, and medical school faculties.
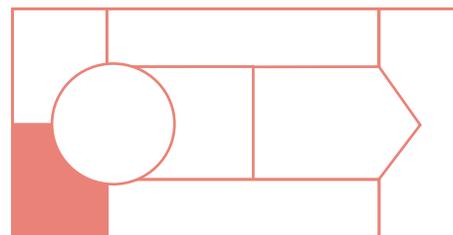
Weight bias researchers will need to continue providing studies on weight stigma. Obesity researchers will need to measure the different outcomes of reducing weight bias in healthcare, for example, whether proper care reduces the rate of mortality for fat patients. Fat liberation activists will be the driving force of the movement, bringing awareness and attention of decision-makers to the issue. Health policy-makers will need to investigate the problem and work through the policy development process to implement new policies. The Ontario government will need to support the policy-makers and ensure sufficient funding is available for family practices to allay other issues in the system. Lastly, medical school faculties will need to work within their institutions to convince the authorities on making curriculum changes.

Initiatives:

The initiative encompasses three main goals, reducing weight bias in family clinics, increasing respect and empathy between the family doctors and fat patients, and working towards a behaviour-focused care model rather than outcomes. These will advance and improve healthcare for all fat patients. The short-term goals are to gain momentum and support for policy and curriculum changes and see an increase in the number of fat-positive clinics and family doctors. The long-term goal is to see the policy changes enacted and weight bias curriculum added, and a province-wide decrease of weight bias in family medicine.
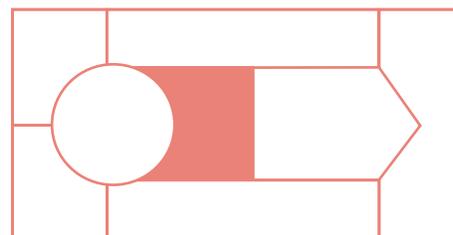
Activities

The key activities are divided into two streams – education and policy. Both streams begin with organizing fat activists, obesity and weight bias researchers and family doctors who already support the cause. The next step is to collaborate with influential stakeholders in each stream to draft and present proposals that build a case for the problem. From there on, continuous efforts are required from activists, researchers and partners to build a curriculum and place the issue on the table of Public Health Ontario's policy-makers. A more detailed glance at the activities and future steps will be provided in Step 7's roadmap.
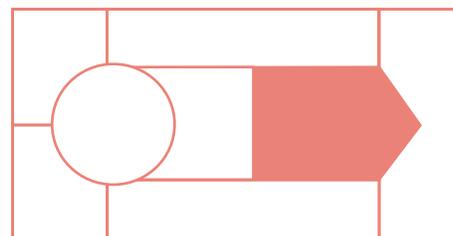
Value Created/ Measuring Impact

The strategy produces incredible value for fat patients by creating judgement-free health experiences and better physical and mental health due to respectful healthcare. It also creates value for the healthcare community whose worry is the 'obesity epidemic' and its effects. Evidence abounds that health can be improved through physical activity, maintaining proper nutrition, and reducing stress, even in the absence of weight loss (Mann et al, 2015). Therefore, if family doctors in the province adopt the behaviour-centric model of treating their fat patients, the negative results from obesity can be mitigated. In fact, a non-biased healthcare approach towards fat people will eliminate their hesitancy to access preventive care. More preventive care could further reduce fat people's health problems, thus lengthening their lives and possibly reducing the morbidity levels attached to obesity. There are a few possible ways to measure the impact of this strategy long-term. Obesity rates, depression rates in fat people and eating disorder rates would be good indicators of change. Expansion of the strategy federally and globally would prove its ability to reduce weight bias.
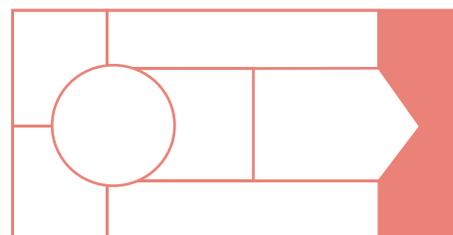
Preconditions

Certain attitudes will need to change to implement this model. Incredible perseverance and continued efforts are required consistently throughout the process. Once the ball is rolling, contributors will need to move from the awareness stage to the action phase without stopping awareness. An open-minded and positive attitude is necessary because ideas and efforts might get shut down, considering how accepting weight bias is in this society. Ultimately, negative attitudes about fat people and being fat will need to be kept in check, as they creep up very quickly.
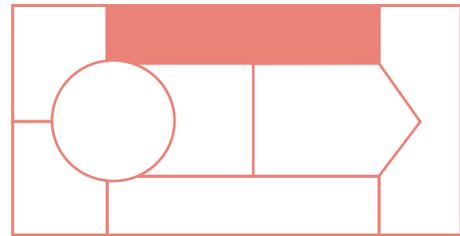
Resources and Costs

The strategy will require a lot of time and energy from activists and researchers. It needs the support of organizations with financial capability already working towards similar issues. Free, earned and shared media is critical to gain momentum as well as GoFundMe campaigns and other grants. At the later stages, the government will need to allocate funding to implement the health policies, and universities will need to budget expenditure on running weight bias training courses.
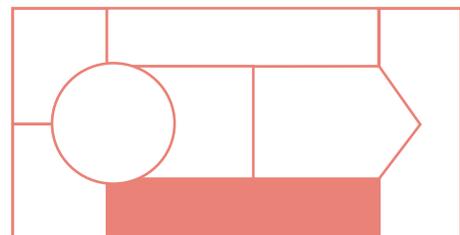
This comprehensive education and governance strategy driven by the partnership of activism and research sets up a strong foundation toward decreasing weight bias in Ontario family clinics. In the next step, a roadmap will be introduced to demonstrate the implementation procedure.

Planning the Next Steps

Step 7: Fostering Transition

Step 7 of the Systemic Design toolkit involves creating a transition plan to implement the new intervention strategy. This step utilizes the Roadmap for Transition tool, which plans the implementation of the interventions so that change occurs by design. It is used to map the transition towards the desired goal by planning and growing the intervention model in time and space (Systemic Design Toolkit, 2020).

Roadmap for Transition by Design

The proposed solution hinges on three critical phases – activism, partnerships and decision-making efforts. These phases are ongoing once they start. Once they accomplish the first objective of reducing weight bias in family medicine in Ontario, they can continue working for another healthcare aspect or a different location. Activism must not stop once partnerships are established, and partnerships must not get ignored once decision-makers take the lead. Both activism and partnerships are maintained while resolutions are being formed. All three need to be working in tandem.

The circular timeline below shows that all phases are ongoing until goals are met. Its circularity conveys that this plan goes beyond the first ten years, as it tackles other healthcare sectors after finding success in family medicine. The healthcare landscape is huge and weight bias is prevalent in every part of it. Therefore, the efforts do not stop.
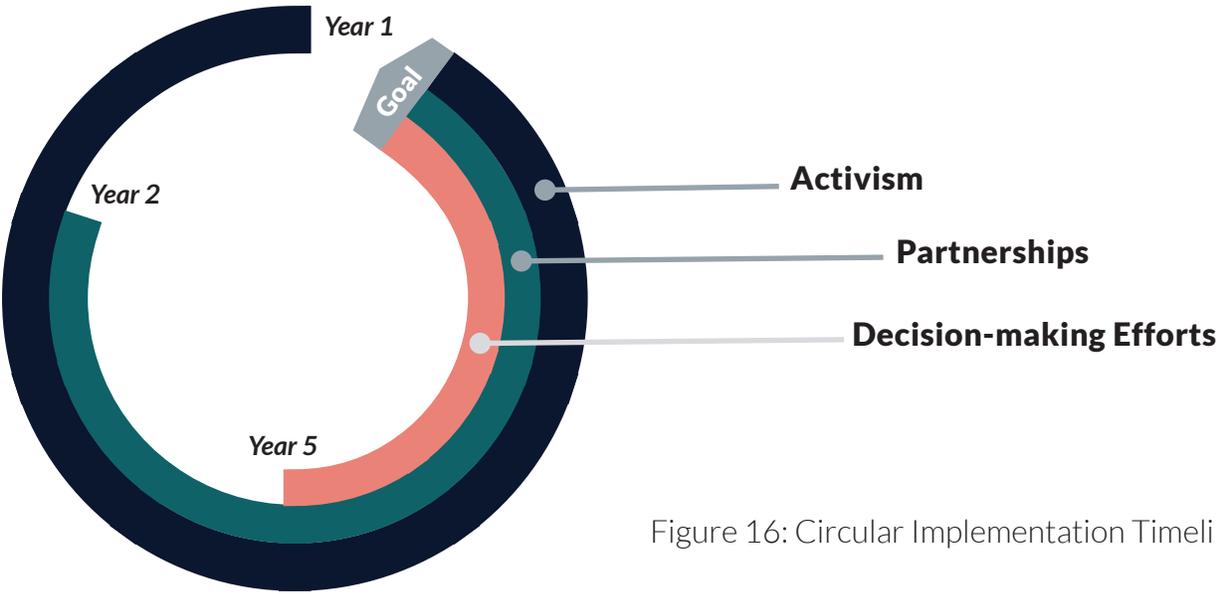

Figure 16: Circular Implementation Timeline

Strategic Roadmap

The following roadmap gives an overview of the transition steps. It is based on the Roadmap for Transition tool. While it would be preferred to achieve the goal in the shortest amount of time possible, realistically, it would require about five to ten years to mobilize and carry out the plan. Keeping this in mind, this roadmap is based on a ten-year timeline.

Table 2: Implementation Roadmap

	Engine	Actors	Tools	Activities
Year 1 and ongoing	Activism	Weight bias activists Social media influencers Weight bias researchers Fat patients who want to participate	Online fundraisers Research studies Free, earned and shared media Time and energy Social media platforms	Organize stakeholders Form online fundraisers Generate social media momentum Reach out to media outlets Gather research studies and draft proposals for partnerships
Aim to start in Year 2	Partnerships	Obesity researchers Fat-positive doctors Medical School faculty/ representatives Organizations already working on the cause	Proposals Networking Obesity research demonstrating current failures in managing it and the need for a different approach Financial resource of existing organizations working on the cause	Organize weight bias and obesity researchers to research collaboratively Organize family doctors who support non-biased care Get in touch with key individuals in Ontario medical schools (professors, deans, any faculty with an influencing role) Reach out to organizations already working on eliminating weight bias Form partnerships
Aim to start in Year 5	Decision-making Efforts	Univesity Executive Boards Medical School Executives Public Health Ontario Government of Ontario/ Ontario Health	Proposals and presentations University resources and funds Public Health Ontario and Ontario Government funds Possible non-competing corporations Larger research funds and grants	Start efforts to contact Public Health Ontario leadership and policy-maker teams through networks from medical school faculty and organizations working towards reducing weight bias Collaborate, as an external consultant, with medical schools on adding weight bias training as an elective, in continuing studies and eventually as a mandatory course in foundational curriculum Present the problem to policy-makers, support the process as peripheral stakeholders (Bergeron, 2018), and support the policy adoption phase Conduct larger research studies to further understand the problem and measure impact of changes

Conclusion

A Summary

This paper sifted through a description of the issue, findings from primary research, a synthesis of the problem using systemic design methods, and a high-level strategic proposal and plan that lays out the essential steps required to tackle the issue of weight bias in Ontario healthcare. A review of the landscape revealed that there are more actors than just patients and doctors that directly or indirectly contribute to the issue. The prominent research finding that family medicine is the most pervasive environment for weight bias against fat patients narrowed the synthesis to concentrate on this sector of healthcare in the province. Mapping the system revealed the disconnect between the scientific perspective of weight bias and obesity, and the social advocacy side. Defining the future led to the comprehension that it is not just about functional systemic changes, but primarily about emotions and the fabric of a doctor-patient relationship. Ultimately, these discoveries led to four different solution spaces consisting of policy-making, curriculum, research and corporate involvement. The decision to focus on policies and education was made to concretely respond to the research question – How might we reduce weight bias to improve healthcare for overweight patients in Ontario? The solution model and the roadmap was based on a three-prong model of activism, partnerships and decision-making.

Moving Forward

Despite all of those steps, this paper is just a drop in the bucket of the healthcare weight bias issue. Unfortunately, that bucket barely has anything in it. The issue of weight bias affects millions of individuals globally, however it only accounts for a small number of research studies. Therefore, moving forward, a lot more research is required from all disciplines. Scientific research on the effects of weight bias on physical and mental health, investigative research on the viability of the BMI, economic research on the burdens of weight bias and much more. From these research studies, proposals need to be made to try and solve the issue in various sectors of health, in different places.

Although, that is just the beginning. The issue faces a fair share of dismissal and critique from society and any improvement means continuous, constant and lasting efforts are mandatory. It is a long battle. Unfortunately, with the arrival of the COVID-19 pandemic and its worsening effects, touching on any other issue in the healthcare space has been delayed. Currently, the focus is on controlling and ending the pandemic, but through that, a number of discrepancies in the healthcare system are surfacing. This pushes the issue of weight bias further back on the priority list. However, vaccines distribution is underway, and there is light at the end of the pandemic-filled tunnel. The time will eventually arrive to address the 'weight bias epidemic,' and preparations must be underway. The movement has begun. It is now time to propel it forward.

Next Steps

A Note From The Author

I want to thank you all for taking the time to read through this paper. As mentioned earlier, this issue is very close to me and I plan to continue the work. However, as the paper indicates, I cannot manage it alone. If you are a fellow researcher, a healthcare professional, a social media activist/ influencer, an academic or someone who cares about the problem and wants to do something about it, please reach out to me. I would love to collaborate and take this forward. Email me at ireenahaque@outlook.com and we can get started!

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Appendix A:Intervention Strategy Model

Constant, Parameters & Numbers What are the decisions about limits that should be changed or reviewed?	Make the amount of time spent with overweight patients more efficient since it is already too short. Relocate weight loss talk towards conversations around healthy habits. Additionally, increase Ontario government funding limits for family medicine
Buffering Capacity Which capacity should be increased/decreased to make the system more stable?	Increase: Time spent with patients, hiring of fat-positive doctors and staff, training on weight bias in schools, qualitative research for obesity. Decrease: Healthcare cuts, the number of times fat people are weighed at the clinic, referrals to diets.
Physical Structures How can we improve the current physical structures or what are the missing ones?	Introduce bigger clinic gowns, bigger beds, chairs without arm rests, bigger blood pressure cuffs, and put up more charts and posters in the clinic that do not show negative attitudes towards fat people.
Digital Structures How can we improve the current digital structures or what are the missing ones?	A better patient data management system for doctors as it will improve their practice functions.
Delays Which are the critical delays in the system that we want to reduce time span between actions and expected results?	Reduce the time it takes to correctly diagnose fat patients. This can be done by referring to tests and specialists earlier. Take out the weight loss step of treatment and focus on other options.
Balancing Measures How can we integrate dissuasive, discouraging measures into the system?	Weight bias training and policies to discouraged biased treatments. Policies can come in form of guidelines from Public Health. Training can happen in any medical school located in Ontario.

Appendix A: Intervention Strategy Model (continued)

Reinforcing Measures How can we integrate persuading, encouraging measures into the system?	Encourage obesity doctors to adopt weight bias measures and HAES approach as it can have a positive effect on obesity rates.
Information Flows What are the lacking/missing flows of information?	Disconnect between scientific obesity research and social obesity reasearch. Disconnect between scientists, medical community & governent, and social activism.
Rules/ Regulations What rules and regulations should be changed?	Rules that prohibit judgemental behaviour from staff towards fat patients in clinics. If referrals or tests are denied, it should be noted. Ask if patients are looking for weight loss options before making any recommendations.
Self-organisation What are good ways to let the actors self-organize?	Form advocacy groups within the healthcare provider stakeholder system. Collaboration of fat-positive doctors and social advocates. Action plans for reducing weight bias listing tools, resources and timelines.
Goals What are the objectives of the system that need to be changed?	Objective should not be to reduce obesity, it should be to increase healthy habits and improve health for people with obesity. Objective should not be to lose weight. It should be to adopt healthy behaviours.
Paradigms What change in mindset is needed? What worldview needs to be overturned?	Doctors are patient's partners not bosses. They are experts in their field but patients know their body best. HAES does not glorify obesity. Obesity is not an epidemic it is a health consequence resulting from various factors.