

## Western Public Health Casebooks

2019

### Case 13 : Sustainable mHealth Innovations - Repurposing The Collective Comfort Pilot Project

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#### Recommended Citation

Zasada, J., Johnson, A. & Sibbald, S.L. (2019). Sustainable mHealth Innovations: Repurposing The Collective Comfort Pilot Project. In: Sibbald, S.L. & McKinley, G. [eds] Western Public Health Casebook 2019. London, ON: Public Health Casebook Publishing.

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## CASE 13

# Sustainable mHealth Innovations – Repurposing The Collective Comfort Pilot Project

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### INTRODUCTION

It was a rainy Monday morning in April and Heather Grohl—the Director of the Education Department at the Centre for Addiction and Mental Health (CAMH)—was anxiously tapping her fingers on her desk. In her other hand was a paper with her presentation notes that listed the points that she needed to announce at today’s pivotal Board of Directors meeting.

Heather glanced at her watch as she impatiently awaited the clock to reach 10 a.m. She could feel her heart pounding in her chest and accelerating as each moment passed. Heather knew what was coming and needed a distraction. She pulled out her cell phone and touched The CC icon, which opened an app called *The Collective Comfort* (Exhibit 1). Heather then navigated to *Relaxation Tips*. This forum listed *Box Breathing Technique*, so she decided to close her eyes and give this method a try. After taking a dozen deep breaths while focused on tracing a visual square in her mind, she felt the pressure and uneasiness fade away. She opened her eyes to see the time on the clock was 9:57 a.m. It was now time to head to the meeting.

### BACKGROUND

#### Heather Grohl

Heather Grohl has been the Director of Education at CAMH for the past seven years. Previously, Heather had worked at several other teaching hospitals and, although she enjoyed her work, there was no match to the sense of accomplishment she feels while working at CAMH. Heather revels in the sense of purpose she feels every day as she works to improve the lives of people dealing with mental health and addiction issues.

#### The Centre for Addiction and Mental Health

In addition to being Canada’s largest mental health teaching hospital, CAMH is a well-respected and world-renowned leader in the field of mental health and addictions research (CAMH, n.d.a). There are more than 3,000 CAMH clinicians, physicians, researchers, educators, and support staff who provide care to more than 34,000 patients every year (CAMH, n.d.a). CAMH develops innovative health promotion and prevention strategies while advocating at all levels of government for critical public policy issues (CAMH, n.d.a).

CAMH is dedicated to transforming the lives of individuals who suffer from mental illness and addiction (CAMH, n.d.a). In their 2017–2018 annual report, CAMH first declared themselves as the leaders of a movement of change (CAMH, 2017a). That change is to create a world where every person understands and believes that “mental health is health” by improving access to

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care, building community capacity by creating and sharing knowledge with the community and, finally, inspiring hope through discovery (CAMH, 2017a).

Heather's department was no exception to this innovative effort. Heather works to ensure that the CAMH Education department meets its strategic objective of mental health advocacy through "improved access to mental health services through mobile health solutions" (CAMH, 2017b, p.11). Under Heather's leadership, the Education department's Digital Innovation team has expertly created numerous mobile applications adapted from CAMH's evidence-based mental health publications. This includes The Collective Comfort project—known as The CC project for short—the latest in the line-up from the Digital Innovation team. It is a mobile health (mHealth) pilot project that provides instant social support for people everywhere who have anxiety disorders. The CC project and other CAMH applications share the goal of initiating ground-level change by bridging the gap between high-level academic professionals and increasing accessibility to mental health resources for people who experience mental illness.

### **The Issue at Hand: Mental Health**

The effects of mental illness are far-reaching and contribute to a significant portion of the increasing burden of disease worldwide (Reijneveld, 2005). The World Health Organization (WHO) defines mental health as "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stress of life, can work productively and fruitfully, and is able to make a contribution to her or his community" (WHO, 2014). Mental health is highly intertwined with other forms of health such as physical, social, spiritual, and emotional health and well-being (WHO, 2014). For instance, people who have poor mental health reported having weaker social support networks and other social determinants of health, such as low socioeconomic status and level of education.

Mental illness is a highly prevalent public health issue, with one in five Canadians experiencing a mental illness during their lifetime (CAMH, n.d.b). By the age of 40, half of Canadians have had or still have a mental illness, with 70% of mental health problems beginning in adolescence or childhood (CAMH, n.d.b). People suffering from a mental illness have a 10 to 20 year decreased life expectancy compared with the general population (CAMH, n.d.b). Furthermore, mental illness is a leading cause of disability in Canada, with more than 4,000 Canadians dying by suicide each year (CAMH, n.d.b). Mental illness does not discriminate on the basis of age, gender, religion, sexual orientation, or race—it affects individuals from all walks of life.

### **Social Support: Key Determinant of Mental Health**

The WHO (2017) recognized social support as a key social determinant of mental health. The Canadian Mental Health Association (n.d.) defines social support as "the physical and emotional comfort given to us by our family, friends, coworkers, and others. It's knowing that we are part of a community of people who love and care for us, and value and think well of us". Additionally, the effects of stressors have been found to be buffered by strong social support networks because these support networks reduce perceived stigmas and increase a sense of belonging (WHO, 2017). Increasing social support networks is a key social determinant of mental health that should be targeted in mental health interventions with the goal of improving an individual's mental well-being.

### **The Collective Comfort: An mHealth Pilot Project**

The Collective Comfort platform (Exhibit 1) enables users such as Heather to connect via a group thread on the mobile phone application. The application includes *Comfort Chat* categories consisting of forums such as 'Relaxation Tips' that people can select. Comfort chats allow people who mutually share an issue to come together and offer support to one another. The

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shared commonality among members creates a free, online social support system. The goal is to create a safe, stigma-free, mobile social support network for people who may otherwise not have, or feel comfortable seeking, other forms of mental health assistance such as a psychiatrist. The forum also provides a certain level of anonymity for users who are not yet comfortable revealing their identity. Heather's vision for The CC project was to help create a world in which nobody who has a mental illness feels like they are alone.

The Board of Directors meeting would determine the fate of The CC pilot project. Heather and her team had tirelessly spent the past 18 months dedicated to this pilot and, after 18 months the grant had expired and left The CC project at a new stage of uncertainty. However, Heather refused to lay the pilot project to rest. Fortunately, she had attended a Public Health Digital Innovation think tank session earlier that month and learned of a major gap in the system that The CC app could address. Several organizations such as the Alzheimer Society of Toronto, Homeless Hub, and Veterans Affairs Canada, indicated that there were currently no mobile, digitally accessible platforms for their support groups. This sparked Heather's idea to determine whether The Collective Comfort application may be transferrable to other populations in need, beyond people who have anxiety disorders.

### HEATHER'S PRESENTATION

Heather was presenting The Collective Comfort app's journey to the Board of Directors, including its successful outcome evaluation and its supporting engagement metrics, to prove the wider benefits of this mHealth application. She made it clear that The CC project's successes did not have to end after the pilot funding expired because it had great potential to fill other gaps in the health system. Specifically, The CC app could fulfill the needs of organizations external to CAMH, which were seeking an innovative way to expand their support programs.

#### 1. **Alzheimer Society of Toronto**

"The role of the Alzheimer Society of Toronto is to offer support, information, and education to people with dementia, their families, and their caregivers, to increase public awareness of dementia, to promote research, and to advocate for services that respect the dignity of the individual" (Alzheimer Society of Toronto, n.d.).

#### 2. **Homeless Hub**

The Homeless Hub is "a web-based research library and information centre representing an innovative step forward in the use of technology to enhance knowledge mobilization and networking" that is devoted to homelessness in Canada (Homeless Hub, n.d.).

#### 3. **Veterans Affairs Canada—Mental Health Advisory Group**

Veterans Affairs Canada is the department within the Government of Canada responsible for providing services, including mental health services, to any former member of the Canadian Armed Forces (Government of Canada, n.d.).

Heather explained to the Board of Directors that these three organizations have the potential to benefit from the groundwork that The CC project had already completed. The application could be repurposed to meet the new needs of these external organizations. Heather argued that the CC application is highly transferrable because it was originally designed to be a mobile social support network, meaning that one could strip the surface level of the app and rework the template to meet a new program's specific needs and goals.

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### **THE CHALLENGE OF SUSTAINABLE INNOVATION**

The field of innovation is fast-paced and constantly changing. Heather is facing a challenge common with technological innovations, which is ensuring that the mobile application remains sustainable from both a financial and technological standpoint.

Once the app has been created and is circulating, the application developers should:

- ensure the application is updated by the organization itself, the vendor who created the application, or a third party contracted for various ongoing and future software issues
- involve the same parties for general maintenance of the application, depending on the scope of information that may need to be kept updated
- address changes in industry standards that must be continually checked and met: software framework, compatibility (e.g., Apple made a new software compatibility rule that all apps must be compatible with iPads as well as iPhones and Androids)
- explore the future scalability of the application because as the user population becomes larger, greater resources will be required to maintain and expand the application
- secure ongoing funding support to maintain the above, whether from grants, from the organization itself, or from users paying for the application. The application will require a source of income to ensure it is kept up and running

### **NEXT STEPS**

Heather's boss, the President of CAMH Education, has approved her plan to pitch to an external organization, but has determined that, because of time and labour shortages, the pitch should focus on one of the three organizations. Heather must decide which organization to select and how best to develop the pitch. Her tight timeline of three days adds even more stress to this difficult decision. She needs to understand the needs and goals of each organization. Thankfully, she has teams that will help her by conducting external research on each organization to develop user personas, problem scenarios, user stories, and a prototype that is based on The Collective Comfort's template design. The teams are also expected to propose one new, innovative app feature that they believe will be useful for their specific organization. Once done, Heather and the President of CAMH Education will decide the final winning pitch based on which pitch best balances both creativity and feasibility.

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### EXHIBIT 1

#### *The Collective Comfort Application on an Apple iPhone Interface*

The home page of a mobile device, where the inconspicuous, teal icon that accesses The Collective Comfort application can be found.



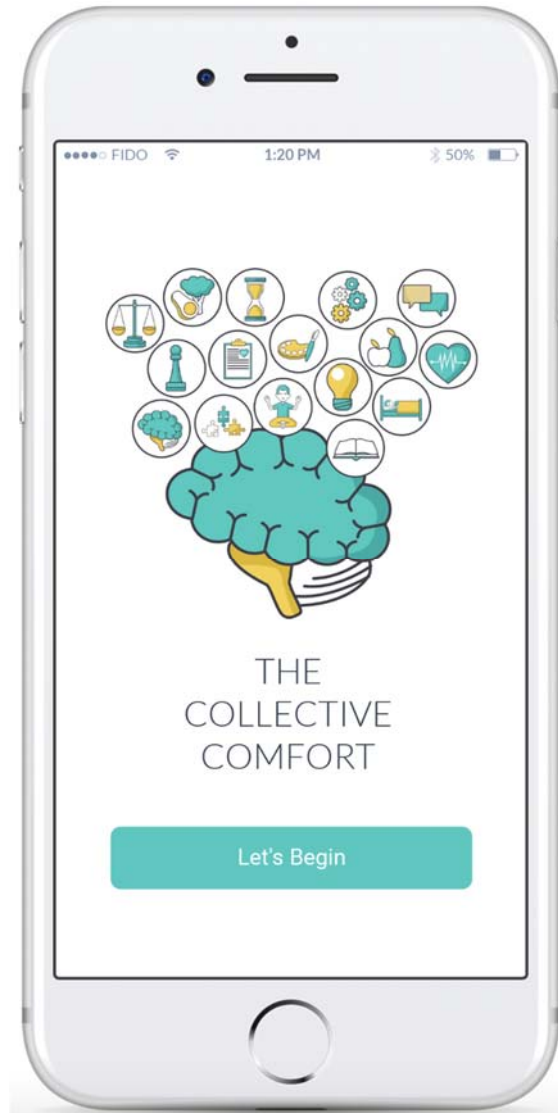
Source: Created by Author.

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### EXHIBIT 1 (cont'd)

The home page of the actual application (The Collective Comfort) opens once the icon is tapped.

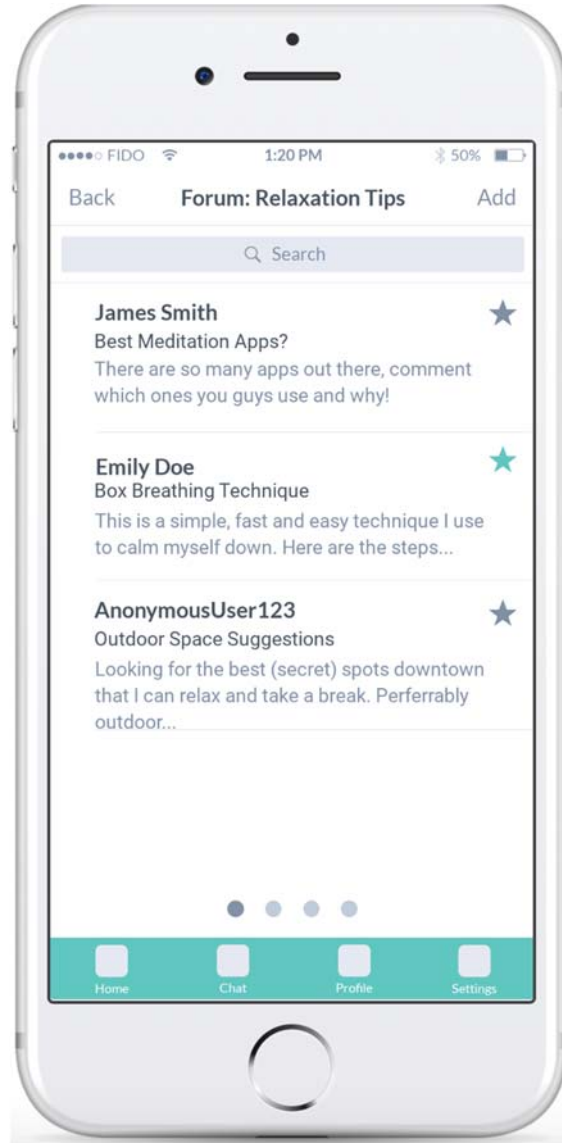


Source: Created by Author.

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### EXHIBIT 1 (cont'd)

After signing in, a user is able to access any of the forums. For example, Heather selects the *Relaxation Tips* forum in which she can view other forum posts from users and “favourite” the ones she likes (represented by the teal star).



Source: Created by Author.



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## INSTRUCTOR GUIDANCE

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#### BACKGROUND

The *Collective Comfort* project (CC project) is a mobile health (mHealth) pilot project created by the Digital Innovation team in the Education Department at the Centre for Addiction and Mental Health (CAMH). The CC project provides safe, online social support networks—a crucial social determinant of health—that are accessible everywhere to people who have anxiety disorders.

Unfortunately, funding has come to an end for this pilot project. CAMH's Director of Education, Heather Grohl, and her team are tasked with repurposing the CC project mobile application for three organizations—the Alzheimer Society of Toronto, Homeless Hub, and Veterans Affairs Canada. These organizations are seeking a digital innovation that would allow their social support groups to be accessed through mobile phones. However, Heather's boss, the President of CAMH Education, has only approved pitching to one organization. Therefore, her team must divide into three smaller teams to develop a proposal appropriate for each organization. The pitch will consist of a user persona, problem scenarios, user stories, and a prototype that is based on the CC project's template design. Each pitch will be specifically tailored to the respective organization's unique needs. The teams are also expected to develop one new innovative feature for the mHealth application that they believe would be useful for their specific organization. For example, an application for the Homeless Hub could incorporate a feature that displays homeless shelters in the area. Each of the teams will then present their prospective pitches to Heather and the President of CAMH Education, who will together decide the winning proposal based on which one best balances both creativity and feasibility.

#### OBJECTIVES

1. Understand and critically discuss the strengths and challenges of an mHealth innovation.
2. Identify the unique needs of a specific population using research and experience to:
  - design a population-based mHealth social support application that meets the unique needs of its users (population) while working under a time constraint with incomplete and imperfect information
  - present the audience-appropriate, public health informatics context both orally and in writing

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### **DISCUSSION QUESTIONS**

1. Why and how is social support a crucial social determinant of mental health? What is the role of mobile technology applications in providing social support?
2. What are the major strengths and major challenges of using mHealth technology to address mental health issues in the field of public health?
3. What processes and resources would be required to find the information necessary to best create these personas, problem scenarios, user stories, and prototypes for each organization?
4. How could the financial and technological sustainability of an mHealth intervention be maintained?

### **KEYWORDS**

Health technology; innovation; mental health; mHealth application; public health informatics; social support