

Mental Health
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la santé mentale
du Canada

Advancing the Evolution

Insights Into the State of e-Mental Health Services in Canada

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Executive Summary

Despite the widespread prevalence of mental health problems and illnesses, it is estimated that fewer than one-third of Canadians affected by them will seek treatment.¹ With high rates of mental health problems and low access levels for traditional mental health services (delivered one-on-one, in-person at a clinic settings), there is an urgent need for innovative approaches to service provision. This, combined with exponential growth in communication technologies and the development of effective digital interventions to address mental health, has made improving the design and application of e-health technologies a mental health priority of national concern. In fact, Canada's first mental health strategy, *Changing Directions, Changing Lives*, recommends that technology be used in myriad ways, to “foster collaboration, increase access to services, and engage people in managing their mental health problems and illnesses.”

Despite the clear potential of digital technology to connect people and health services in new ways, there is plenty of evidence to suggest that this potential is not being fully realized in Canada. This environmental scan identifies current e-mental health programs and initiatives *operating as part of mental health service delivery through a hospital or community-based service provider, and/or as a component of a government's mental health strategy*. It also summarizes themes that emerged through 21 in-depth key informant interviews. The analysis follows the RE-AIM Framework (Reach, Effectiveness, Adoption, Implementation and Maintenance Framework) which seeks to bridge the gap between research and practice by specifying key steps involved in the successful application of programs and policies in real-world settings. This framework provides

critical questions to help program planners, evaluators, and policy makers maximize their chances for successful translation of evidence-based interventions.

As a result of this scan, challenges in the implementation of e-mental health in Canada are identified, along with opportunities to build on existing strengths and areas for growth in the planning of e-mental health services and programs in Canada to ensure their adoption, successful implementation, and evaluation. Notably, it is important to:

- Strengthen e-mental health research and development.
- Engage in knowledge translation across the country and across the globe.
- Ensure people with lived experience and their caregivers are engaged as partners and co-designers throughout the design, development and implementation of e-mental health innovations.
- Pursue the integration of e-mental health as part of broader - and necessary - mental health service transformations.
- Adopt an implementation science approach to enhance the likelihood of translating successful research outcomes to community practice settings.

It is imperative that research and practice communities work together to translate evidence-based programs and policies into widespread practice. A helter skelter approach is likely to be unsuccessful. The application of the RE-AIM Framework however, can facilitate successful knowledge translation efforts and make a positive difference in delivering high quality mental health care in Canada.

¹ Canadian Medical Association and Canadian Psychiatric Association (2016). A Joint Statement on Access to Mental Health Care. Ottawa, ON: Retrieved from Canadian Medical Association website: <https://www.cma.ca/Assets/assets-library/document/en/advocacy/policy-research/cma-policy-access-to-mental-health-care-pd16-04-e.pdf>

Contents

Executive Summary	i	Scan of Current Initiatives	18
Framing the Use of e-Health for Mental Health Care	1	Opportunities for e-Mental Health in Canada	19
The Evolution of e-Mental Health.....	1	Opportunity 1: Research and Development Structures.....	19
The Drivers for e-Mental Health Transformation.....	2	Opportunity 2: Global Networking.....	19
e-Mental Health Care.....	2	Opportunity 3: Voices of Lived-Experience in Co-Design.....	20
Goals of the Scan.....	2	Opportunity 4: Transformative Models.....	20
Methodology	3	Opportunity 5: Implementation Science.....	21
Search of Current Practices in Canada.....	3	Conclusion.....	21
Key Informant Interviews.....	3	Appendix 1: Definitions	22
RE-AIM Framework.....	3	Appendix 2: List of Interviewees	23
Relevance and Impact of e-Mental Health	5	Appendix 3: Key Informant Interview Guide	25
Reach.....	5	Appendix 4: Scan of Current e-Mental Health Programs	26
Effectiveness.....	8		
Adoption.....	10		
Implementation.....	14		
Maintenance.....	16		

Framing the Use of e-Health for Mental Health Care

Digital technologies have the potential to transform mental health care by connecting clients, services and health data in new ways. Digital, online and mobile applications can offer clients greater access to information and services and enhance clinical management and early intervention through access to real-time client data. However, substantial gaps exist in the evidence base underlying the use and effectiveness of these technologies. Greater patient and clinician involvement is needed to evaluate digital technologies and ensure they target unmet needs, maintain public trust and improve clinical outcomes. At the same time, compensation models that only reward clinicians for traditional face-to-face treatments in clinic settings could be improved with more comprehensive and flexible models that encourage clinicians to incorporate e-mental health interventions in their practices.

The Evolution of e-Mental Health

Advances in technology and particularly mobile digital information and communication technology continue at an exponential rate, making it possible to communicate, obtain information and access goods and services in new ways. In 2016, 32 million adults in Canada (89 per cent) were routinely accessing the Internet and spending upwards of 877 minutes per week online using their mobile devices.² Internet use in Canada jumped 40 per cent from 2014 to 2015, and has continued to grow rapidly since, so that the average Canadian household is now downloading 93 gigabytes of data a month³. Significant sections of society are increasingly familiar and comfortable with using technology for a wide range of transactions.

e-Health and m-health (increasingly referred to collectively as, “connected health,” see Appendix 1 for definitions) describe the delivery of health care by electronic means via the Internet using a variety of devices, including mobile phones, remote monitoring devices and other wireless devices. These digital technologies can greatly improve access to mental health care and adherence to treatment by enabling flexible delivery of services tailored to individual patient needs. Recent developments in sensor technology, online psychological therapy and remote video consultation, mobile applications (apps) and gaming all present real opportunities to engage

and empower clients and create novel approaches to both assessing and intervening in mental health problems.

e-Mental health is not just about the technology. It represents a cultural change in mental health care, in that it is empowering clients to exercise greater choice and control. For example, clients can now choose to access online psychological interventions, potentially accessible 24 hours a day, seven days a week—at their convenience—rather than waiting for an in-person appointment. The availability and uptake of these services is increasing rapidly.

Mental health professionals have historically relied on face-to-face consultations in clinical settings (in fact, many compensation systems for clinicians are built on this model), but this model does not give clinicians a window into the day-to-day lives of their clients. Mobile apps that allow clients to record their mood, behaviour and activities in real-time can provide such a window. And, thanks to sensors that are standard parts of smartphones and other mobile devices, it is possible to continuously and passively collect objective data about a person’s behaviour and activities. For example, subtle changes in sleep and activity patterns constitute important early warning signs of relapse in depression and bipolar disorder. Detecting these signals through technology is a potentially effective way to prompt early intervention. Providers would gain tremendous insight and clients would benefit from this, as well as from greater engagement in their care, shared decision-making with their providers, earlier detection of problems, and more timely adjustment of treatment.

² Statista. Number of Internet users in Canada from 2000 to 2016 (in millions) [Web log post]. Retrieved May 4th, 2017, from <https://www.statista.com/statistics/243808/number-of-internet-users-in-canada/>

³ Tencer, D. (2016, October 10). Internet Usage In Canada Soared 40 Per Cent In A Year. Here’s Why. The Huffington Post Canada, retrieved from: http://www.huffingtonpost.ca/2016/10/26/internet-usage-canada_n_12662202.html

The Drivers for e-Mental Health Transformation

The demand for mental health care exceeds available Canadian mental health services and resources, and this gap is likely to increase. A study published in the *Canadian Journal of Psychiatry* in 2016 noted that despite a 17 per cent increase in the number of practicing psychiatrists between 2003 and 2013, and increases in the number of patients seen, demand for services continues to outpace supply⁴. Lack of integrated programs for clients and families of all ages has created “silos” of care, in which family doctors and mental health professionals are isolated from each other. According to a 2012 Statistics Canada study, while 91 per cent of Canadians were prescribed the medication they sought, only 65 per cent received the therapy they felt they needed⁵. Access to evidence-based psychotherapy, which experts say should be considered a first-line medical treatment⁶, is limited and wait lists—at least in some areas—remain long. Provincial health insurance plans do not cover therapy delivered in private practice by a psychologist, social worker or psychotherapist. This has created a two-tier system in which families that do not have coverage through work—those more likely to be low-income—either pay out of pocket or go without. Non-profit groups working to fill these gaps in the health care system do not have the capacity to meet the demand. Cost pressures require that more be done with less and providers therefore must find innovative ways to deliver services. Connected health innovations—i.e. e-mental health interventions—have the potential to offer flexible, more patient-centred services to meet the burgeoning needs.

4 Kurdyak, P., Zaheer, J., Cheng, J., Rudoler, D., & Mulsant, B. (2017). Changes in Characteristics and Practice Patterns of Ontario Psychiatrists. *The Canadian Journal of Psychiatry*, 62(1), 40-47.

5 Sunderland, A.; Findlay, L.C. Perceived need for mental health care in Canada: Results from the 2012 Canadian community health survey—Mental health. *Health Rep*. 2013, 24, 3-9.

6 Hunsley, J., Elliot, K., Therrien, Z. (2013). The Efficacy and Effectiveness of Psychological Treatments. Ottawa, ON: Canadian Psychological Association. Retrieved from: http://www.cpa.ca/docs/File/Practice/TheEfficacyAndEffectivenessOfPsychologicalTreatments_web.pdf

e-Mental Health Care

By their very nature, information and communication technologies (ICT) have the potential to address issues such as social isolation and the relative inaccessibility of mental health services. With the rapid increase in popularity of social media platforms, people are increasingly able to access information and support from peers and professionals in new and informal ways. This presents a particularly powerful opportunity to address mental health problems in younger people. While this group is disproportionately affected by mental health problems, it is also the biggest user of ICT; a potential avenue for widening access for young people who find it difficult to access traditional services.

It is critical, however, to recognize the shortcomings of connected health innovations in the context of mental health care delivery. The “digital divide”—the gulf between those who have ready access to a computer and the Internet and those who do not—means that some groups of clients are likely to face barriers to accessing mental health care delivered using ICT. The needs of these groups, which include older adults, people who are homeless, and people in geographic locations with limited or no access to reliable bandwidth, are important logistical and ethical challenges that must be considered in service planning.

Goals of the Scan

Despite the clear potential of digital technology to connect people and health services in new ways, there is plenty of evidence to suggest that this potential is not being fully realized in Canada. In general, uptake is limited and outcomes are largely anecdotal and have yet to be widely published. To learn more about the challenges behind this lag in Canada, we conducted a rapid environmental scan exploring how e-mental health is integrated within health systems and/or health policy nationwide. We set three primary goals for our scan: (1) to identify current and proposed initiatives addressing e-mental health in Canada; (2) to identify challenges in the implementation of e-mental health in Canada; and (3) to identify resources and opportunities in e-mental health in Canada.

Methodology

Search of Current Practices in Canada

We began with an initial Internet search of government and other publicly available websites, starting with websites of Canadian health centres that are part of the Canadian Association of Pediatric Health Centres (CAPHC), Canadian Association of Community Health Centres (CACHC), First Nations and Inuit Health Branch (FNIHB) and other agencies (e.g., Canadian Mental Health Association (CMHA), Centre for Addiction and Mental Health (CAMH)). We also approached patient and non-profit organizations (e.g., eMentalHealth.ca, Clients Canada, Canadian Family Advisory Network). Our aim for the online scan was to identify e-mental health programs and initiatives, which we broadly defined *as any an e-mental health program operating as part of mental health service delivery through a hospital or community-based service provider, and/or as a component of a government's mental health strategy*. We did not include initiatives related generally to e-health (e.g., electronic medical records). We used data extraction tools to identify key features of these initiatives for summary purposes, with a focus on identifying gaps in knowledge and practice which should be filled to inform the strategic planning.

Key Informant Interviews

Next, for a more in-depth view of existing practices and policies, we contacted 40 key stakeholders—including jurisdictional representatives from all provinces and territories—and invited them all to participate in a 60-minute telephone interview. Twenty-one agreed to be interviewed. Interviewees were identified by: (1) targeted Google searches for relevant government, health, and technology organizations; (2) rapid review of Canadian researchers working in relevant areas; and (3) recommendations from members of our team. We planned the interview based on a list of standardized questions designed to reveal current levels of e-mental health awareness and to gain information about existing programs and policies. Key informants received the guide via e-mail two days prior to their scheduled interview, to allow time to review the questions in advance.

After an experienced transcriptionist transcribed the digitally recorded interviews, we conducted rapid deductive thematic analyses of the transcripts using the RE-AIM Framework.⁷

RE-AIM Framework

The RE-AIM Framework (Reach, Effectiveness, Adoption, Implementation and Maintenance Framework) bridges the gap between research and practice by specifying the key steps involved in successfully applying programs and policies in real-world settings. It provides critical questions to help program planners, evaluators, and policy makers maximize their chances for successful translation of evidence-based interventions.

The RE-AIM Framework has also been used to understand the relative strengths and weaknesses of different approaches to health care services—such as in-person counselling, telephone counselling, and Internet resources⁸. The overall goal of the RE-AIM Framework is to focus attention and critical thinking on essential program elements that can improve the sustainable adoption and implementation of effective, evidence-based programs and policies. To maximize overall impact, a program must perform well across all five RE-AIM elements. Our goal was to explore what the RE-AIM elements currently look like in relationship to e-mental health in Canada.

7 Glasgow, R.E., Vogt, T.M., Boles, S.M. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *Am J Public Health*. 1999;89:1322-7.

8 Gaglio B., Shoup, J., Glasgow, R.E. The RE-AIM Framework: A Systematic Review of Use Over Time. *American Journal of Public Health*: June 2013, Vol. 103, No. 6, pp. e38-e46.

Reach

What is the proportion and representation of Canadians participating in e-mental health services and programs?

Effectiveness

What is the (positive and negative) impact of e-mental health on client outcomes, satisfaction and usability of health services?

Adoption

To what extent do mental health care organizations adopt e-mental health?

How is e-mental health care facilitated and which efforts are made by organizations who adopt these services?

Implementation

To what extent are e-mental health services implemented as intended in routine practice?

What are implementation barriers and facilitators from different stakeholder perspectives?

Maintenance

To what extent do e-health services become a sustained part of routine practice, and what are facilitating and hindering factors in their maintenance?

Relevance and Impact of e-Mental Health

Reach



Informant interviews revealed that Canada continues to experience a “treatment gap”—essentially, a discrepancy between people’s mental health needs and appropriate, accessible care. Informants identified barriers to access and varying levels of demand for these services as obstacles to meeting the mental health needs of the Canadian population. Key informants we interviewed displayed a strong sense of optimism about the potential for e-mental health care to enhance accessibility and increase cost-efficiency of services, promote consumer empowerment, and overcome geographic obstacles to service utilization. The consensus was that demand at an individual client level is high and increasing, particularly among younger populations. This demonstrates the need for an integrated approach to improving the reach of services that takes into account pre-existing services and infrastructure within local communities. Five key “Reach” themes emerged from discussions:

1. Technology changes the where and how of service delivery.

While informants expressed confidence in the benefits for clients (reduced travelling, better professional treatment, health benefits through faster professional evaluation where time counts, better selection of further treatment, better access to specialists, and more effective use of specialist expertise), not everyone agreed as to “who benefits the most” from e-mental health services. Even so, reducing geographic barriers to care was the most commonly cited benefit of using e-mental health services.

However, most examples of e-mental health services provided by key informants suggested they were not brought online for that specific purpose but offered as an additional option to accommodate existing clients:

“We’re a fairly large province with a small population. Being able to reach people in the rural and remote areas is an issue as is having after-hours capacity, with more flexibility for clients especially for younger people.”

- Informant 17

2. The paradox of demand.

Detection and identification of mental health problems and clients' pathways to care (at the community level) are heavily influenced by culture. Many informants noted that low uptake among potential new clients or high dropout levels among existing clients suggest we are still often missing the mark when it comes to what clients need and want for e-mental health services. At the same time, they observed that new demands were emerging in response to new services, and that people would respond more positively to e-mental health treatment if they were already accessing traditional services or if the technologies were an adjunct to their care plan. This revealed a "paradox of demand," where instead of reaching previously unreached clients, e-mental health may only be penetrating the health system as a means of additional services for clients already accessing care. Demand may be high, but defining what specific applications of technology are beneficial and desired, and how to get them to underserved populations, is unclear. One informant described the results of an in-house needs assessment:

"...we said, to what extent do you agree with the idea of using technology to receive reminders about your appointment? Well almost everybody, or the majority of participants, said that was fine... But then when we went down the list... to what extent do you agree with the idea of using technology to communicate with the treatment team? It wasn't that high. So... yes, demand, but demand for what?"

- Informant 9

Informants discussed how the "reach" of different solutions varies tremendously, from relatively low-tech solutions (e.g. text message reminders about medication or appointment follow-ups) to human resource-heavy interventions (e.g. online chat group, telepsychiatry).

Informal and internal data gathering from existing client populations was the predominant way that administrators gathered information about which services to deliver—suggesting we still need a clearer picture of service demands for those not currently being helped.

3. Preferred models of care.

Problems with improving the reach of e-mental health services at a system level were generally perceived to be more pragmatic; a perception that that not many desired services are available. A resounding theme across informants was that, while nationally and internationally developed models are useful, the choice of any particular model should be driven by local need, allowing flexibility for local providers to innovate and meet the needs of their local population. Simply moving the location of care (e.g., moving face-to-face therapy to videoconference) or the communication channel (e.g., moving from phone support to chat support) or flexibility (e.g., timing of access) is not always enough.

"Some of these e-health solutions provide incredible opportunities for people to be served where they are, in their homes, evenings, weekends, at times that fit their needs."

- Informant 13

"...from a Canadian perspective, we don't have enough synthesized knowledge about what's available for our Canadian context. So, there are a lot of platforms that exist that have been developed internationally, and there has been good quality evidence around their effectiveness, but... there has to be some kind of adaptation or contextualizing process... for our Canadian context."

- Informant 9

An often-cited example of how client preferences are changing with technological evolution was the case of young people. Informants saw technology as a central part of young people's lives but also noted a fundamental shift in how they want to use the technology to communicate. The importance of choice (email, or chat, or phone) and options for peer/ social support relate not only to a changing technological infrastructure but also to changes in the therapeutic process. Informants felt this has implications for how clients want to engage with health care providers and what kinds of therapeutic conversations they will have with them. One example was the Kids Help Phone, which recently integrated a chat option into its traditional phone-based support platform. The popularity of this new medium is demonstrated by the fact, that once the queue is open for chat, it is almost immediately full of youth waiting to engage with a counsellor. Preferences for services then, are not only related to the content of support but potentially to the medium through which they are delivered.

4. Potential clinical applications.

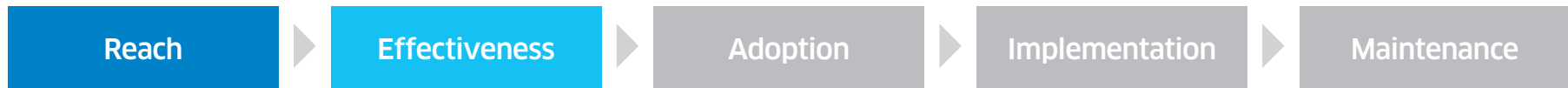
Technology solutions widely studied for mental health provision most often include Internet-based self-help programs—such as Internet-based cognitive behavioural therapy interventions (iCBTs) for treating mild to moderate mental health problems (e.g., depression and anxiety), or mobile apps for self-management and treatment that require little or no interaction with health professionals. Our informants expressed uncertainty, however, regarding the suitability of emerging e-mental health interventions for reaching individuals with more severe mental illnesses or complex

conditions (co-occurring mental health and substance misuse). For instance, some informants raised concerns about the usability and acceptability of web-based or mobile applications for people with serious mental illnesses (e.g., schizophrenia, schizoaffective disorder, bipolar disorder), given the cognitive limitations and social challenges that often go along with these conditions. One informant noted that the structure and nature of the mental health system is primarily shaped by a risk-management imperative that may solidify the preference of clinicians for face-to-face service provision over technology-based interaction. In general, our informants described current e-mental health services as focused on providing mental health literacy for sub-clinical populations, ongoing care for mild-to moderate clinical cases, and short-term service for clients/families on the waitlist for traditional clinical services. One informant described the challenge of appropriate application like this:

“...individuals and families who are not in crisis are struggling, and needing support... if they're being triaged at the health authorities, they're being identified as being a low priority, and not needing urgent or emergent services... we recognize that there's already long waitlists for services, and that there's a significant portion of the population who could avail of self-help, self-management, kind of low intensive options by e-health, either on their own or with some monitoring or interaction from clinicians electronically that would really kind of support a large portion of our population...”

- Informant 13

Effectiveness



More and more, health service providers are seeking new ways to improve quality by increasing cost-effectiveness and encouraging innovation in technologies and practices. Informants discussed four specific success factors that, if taken together, would build a case for the legitimacy of any technology-related change to mental health services.

1. Redefining and communicating performance indicators.

Informants noted that definitions of “effective” and “successful” are varied, with differing effects on decision-making processes. Informants suggested that quality of care cannot be improved without monitoring how such care is delivered, from its organization to processes and, ultimately, patient outcomes. From an organization’s perspective, success indicators for e-mental health must be established for characteristics of the treatment setting’s operational needs, including program fidelity, staffing, infrastructure and cost (i.e., are quality services available?). Process measures would examine interactions between clients and the services (i.e., are they completing the intervention, are they satisfied?). Outcome measures—to monitor and report results in terms of patient functioning, morbidity, mortality, quality of life—were universally acknowledged as the key aim.

“It depends on what the target is of the approach, so I wouldn’t say that there’s any way of saying a single indicator... I think one all-encompassing indicator, which can get overlooked, is do people actually use these things?”

– Informant 6

“The only indicator that matters is health outcomes...”

– Informant 4

Most informants also cited a lag in the development and implementation of performance measures for e-mental health services. Parameters for decision-making are poorly defined (e.g., definitions of treatment “engagement,” “psychotherapy,” “recovery,” or intervention “fidelity” are often not well-described). Existing data sources often lack sufficient information to establish accurate numerators and denominators for quality indicators (diagnostic criteria).

2. Effective vs. popular.

Not surprisingly, informants displayed a wide range of opinions as to the evidence base for e-mental health care. Most of this discrepancy revolved around the difference between the clinical effectiveness of programs (studied formally by researchers) and the feasibility of programs (operational, economic, technical, market, resources, and cultural or financial elements). Clinician scientists and researchers frequently cited the substantial research base for things like Internet-based cognitive behavior therapy and telepsychiatry. Health administrators, meanwhile, were more likely to show skepticism around the evidence base and whether these interventions would work “in real life.”

“There’s a dearth of evidence supporting electronic health and digital health approaches, especially in mental illness. If you look at systematic reviews for example, of the thousands and thousands of apps out there, only a handful have been developed or even informed by any kind of research evidence, let alone studied through trials. The momentum has far, far outstripped the evidence, so that’s a problem...”

- Informant 6

“I do think we’re moving too slowly in helping to gather that evidence, and then disseminate the evidence...”

- Informant 2

3. Accessibility of evaluation data.

Informants described the challenge of accurately assessing effectiveness, due to a limited availability of data sources that can easily inform routine care. Data on appropriate pharmacotherapy and psychotherapy are only available when pulled from multiple sources (e.g., billing claims, outpatient and pharmacy records). Most performance measures are based on medical chart review or electronic claims data. Manual chart review is slow, labour intensive, expensive, constrained to small samples, and prone to variation depending on the interviewer. Administrative claims data—while appealing because the sample size is larger and data pulls can be done electronically—are less meaningful given the wide variability in mental health conditions and the lack of complete data on the types of visits or treatments (e.g., specific treatment modalities). Informants pointed to limited knowledge about specific e-mental health service performance measures, which has resulted in a growing burden and confusion over data capture and

reporting processes as providers try to implement quality-measurement program requirements. Informants noted the burden of this data reporting, capture and analysis on clinicians as follows:

“...because there has not been enough evaluation of e-health solutions. When I talk to people and they say, oh yeah, we’ve evaluated our service, and I go, oh, that’s amazing, I’d love to see the evaluation, and they won’t share it. If it’s not a public evaluation, then it doesn’t help with general knowledge...”

- Informant 2

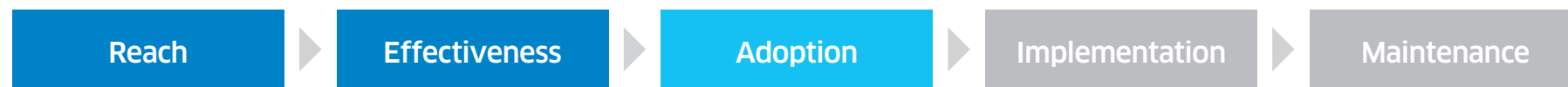
“...having a good framework to go with your indicators to make sure you get the proper range is important, and having a process by which you can co-create your indicators with your appropriate audience is also really important...”

- Informant 7

4. Lack of data integration.

A related concern for program evaluation of e-mental health services was the lack of comprehensive and linkable electronic records to facilitate capture of the required health information. Informants noted that, as a substantial amount of mental health services are delivered outside the health care sector (e.g., through criminal justice, social services, non-profit community services), the details and outcomes of these services are not integrated into the electronic medical record in the health care system. This makes it exceptionally difficult for researchers and decision-makers to amalgamate and analyze appropriately complete electronic information to improve planning for mental health services.

Adoption



Technology adoption and diffusion affects a variety of stakeholders and is influenced by the nature and complexity of the intervention, the characteristics of the health system and local context, and the perceptions of adopters. Health technology adoption as described by informants is a cumulative process that often starts slowly (e.g. one or two clinicians in an office) and often increases exponentially as the range of adopters expands. During this process, each stakeholder in the health system makes a decision to accept or reject the technology, and every one of these decisions represents a potential turning point where adoption can be facilitated or hindered. It is clear that clinical outcomes and cost savings are important in encouraging large-scale investment in the required resources. Most informants viewed evidence that these interventions can work under experimental conditions as insufficient proof that an intervention should be scaled up and implemented—from economic, social, and ethical perspectives. When discussing the role of technology in services, some participants pointed to prior negative experiences with technology, such as a lack of streamlining, duplication of efforts and assumptions that what worked in another country would work here in Canada. Seven key themes emerged in relation to Canada’s current state of e-mental health adoption:

1. Managing risk in a risk-averse context.

While informants recognized the benefits of technology in tracking clients’ progress and level of risk more closely, they expressed concerns that the technologies may create unrealistic expectations about clinicians’ degree of responsiveness, possibly increasing workload and responsibility to unmanageable levels. These concerns included a perceived lack of guidelines around when and how clinicians should respond to potentially risky information—particularly outside of work hours. Some participants told us that they negotiated guidelines with their clients to establish clear expectations of when and how the clinician would respond to queries and concerns. While the provision of e-mental health services in many places

suggests that individuals or groups have been able to navigate these issues, those initiating new e-mental health services often don’t have models or resources to guide them. Many informants expressed the need for clear and detailed organizational policies and procedures to govern and drive the use of technology in practice. Others expressed concern that excessive policy-making might stifle staff innovation, promote prescriptive work practices and hinder uptake. These dichotomous perspectives speak to assumptions around risk—both in terms of what is seen as risky and the level of personal versus organizational responsibility needed to innovate.

2. People with lived experience and the power of co-design.

One of the areas of strongest consensus among our informants was the importance of involving clients in the design and development of services. Clients' lived experiences should be central in shaping the "content" of the intervention or service, as well as its implementation and the benchmarks that will be used to evaluate its success. Reduction of "silo" development and the inclusion of multi-sectoral partners was viewed by informants as desirable but underutilized to date.

"We need a range of people at the table when talking about creating a tool—an IT person, an e-health representative of a hospital or health care system, clinical leaders, researchers, patient or caregiver representatives."

- Informant 9

"I think that we have to have partnerships not only within and between agencies and organizations, but also with the technology companies who are building these incredible engines."

- Informant 2

3. Upskilling for providers.

Informants highlighted the dual challenge of low technology skill levels in both the client and provider populations—a persistent and oft-discussed issue. While acknowledging that significant investments have been made in infrastructure, there was considerable concern from informants that the human resources investment needed to make e-mental health services work was severely underfunded and underappreciated. Informants did not emphasize formal training and education (e.g. as part of medical school coursework) but more informal and "on the job" apprenticeship training opportunities that could tailor the support to each provider's current level of technical skills.

"I do think that simulations around using these kinds of interventions from a clinical perspective are very valuable—so teaching people how to be digitally professional, and then giving them feedback on how to do that. So we often give people technical training on how to use an app or an information system, but do we really show them how to integrate it into their clinical practice? And do we work with them until they say, hey, I feel comfortable doing this, right... how can I optimize the use of this technology to provide the best patient care that I possibly can? And that requires a shift in thinking... an organizational learning that needs to happen... our health systems need to learn to be digitally literate."

- Informant 7

4. e-Mental health devices are assistive devices.

Informants frequently cited the lack of formal recognition of e-mental health tools as assistive devices as a barrier to their widespread adoption. Even though e-mental health tools are used to support cognitive functioning (e.g. memory, attention, planning, timing)—just as glasses support vision and walkers support mobility—e-mental health assistive devices are not yet commonly or officially recognized as true assistive devices. As a result, informants experienced significant challenges in integrating these tools into mental health services and obtaining appropriate funding for them.

“Most of the medical treatment is supported by the government, and then some hospitals or organizations cannot afford either the technology or cannot reimburse the doctors using it. I’m thinking about for example, tele-health to do psychotherapy at a distance... Once you get to non-medical treatments, for example, psychotherapy and support, then it’s not well provided in the governmental institutions...”

- Informant 8

5. Absence of implementation models and strategic planning.

A strong consensus emerged from informant interviews that, while many providers are interested in e-mental health tools and motivated to adopt them, they lack precise and specific “how to” information. Comments echoed a general “where do you start?” sentiment that underlined the lack of current models or human resources needed to navigate a new initiative. Several informants relayed stories of the “lone adopter” who took responsibility for innovating and, over time and through personal effort, was able to bring other local clinicians on board. They saw this as a professionally and personally challenging undertaking. They felt that local “watch and learn” experiences are not adequate and that national strategic leadership is required to provide models of assessment, costing, staffing and training, so health authorities and even larger organizations have clear and useful guidance in the realms of policy and practical application.

“I think there has to be a strategy at every level, and when I say every level, I don’t mean government and hospitals, and private psychiatrists and psychologists. I think it needs to be at every level including schools, workplaces...”

- Informant 19

6. Privacy: an obstacle or a deflector for change?

Another adoption-related theme identified by informants pertained to changing notions around privacy. Importantly, many informants questioned whether at this point privacy was a real or perceived concern, given the advances in technology security. While they viewed securing the personal health information of clients as critically important, most informants felt these issues were technically solvable, even though feelings and perceptions around them create major barriers to innovation and uptake.

“...[privacy influences implementation] more than it should, because we’re all worried about privacy, and it makes sense, but we have to realize that if there’s sufficient care, there’s no reason to worry more about confidentiality and security of information than in standard practice.”

- Informant 8

“I think mainly the privacy and liability issue is more an excuse for not really moving... I think it’s an excuse, because the technical problems are solved.”

- Informant 5

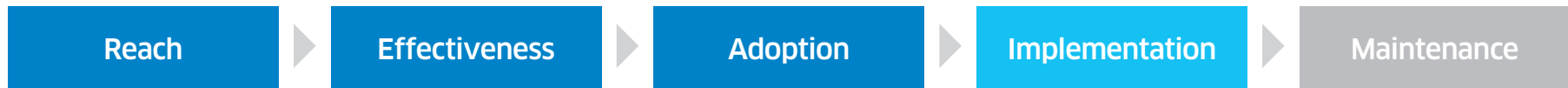
7. Billing.

Billing for e-mental health services can be challenging due in large part to variability in requirements across private and public insurers. These billing issues were perceived at the provider and patient level. The type of practitioner billings allowed (non-physician mental health providers, paraprofessional coaches, peer-led, etc.) was noted as restrictive given the range of providers now offering services. Another significant challenge was lack of understanding around how to bill for actual time of service in e-mental health services. As these tools can be used for such a range of clinical processes (diagnostic, patient education, treatment, appointment/activity reminders, and risk factor reduction, etc.) there is significant range in how providers should be/could be reimbursed for these different supports. The lack of a clear, value-base framework for compensating healthcare professionals in many parts of the country is seen as a barrier to providers fully adopting new technologies and processes. On the patient side, informants acknowledged that with limited private insurance coverage and a fragmented public funding approach the cost of many available services are/ will continue to be borne by clients. Clients are required to have purchased the technological tools (smartphone, computer, webcam, etc.) and often to offset direct costs (purchase an app, data plans, etc.) needed to receive the service.

“So some of the barriers that we have...particularly with in-home video; physicians don’t get reimbursed, so specialists do not get reimbursed. So while they believe in the value of seeing clients in their homes, they don’t get reimbursed.”

- Informant 14

Implementation



Given the many barriers our key informants identified, it is not surprising that their experiences with e-Mental health implementation suggested high failure rates, coupled with incomplete adoption of the technology in many cases. However, informants did describe a diverse range of approaches to address barriers and ensure that e-mental health services were delivered as expected and designed. They identified two factors in particular, that facilitate implementation: 1) organizational and staff fidelity to the various elements of the relevant protocols; and 2) stable funding that addresses both setup and ongoing costs.

1. Training not only on technology but clinical workflow.

Informants reported that implementation is most successful when training focuses not only on the hard technology skills (e.g. navigating screens, knowing which button to press, knowing how to set up the camera), but also on managing the required changes to clinical processes and translating clinical skills in virtual contexts.

“Just because you have a good therapist, doesn’t mean you have a good e-therapist... there is an education component and a training component, and an apprenticeship component. So there are hurdles to scaling up, and one of the biggest hurdles is getting therapists who are going to be comfortable communicating online...”

- Informant 10

2. Updating costing models.

Informants recognized that mental health care systems are confronted with questions about how to deliver quality, affordable, timely care in a variety of settings. While they noted that increasing operating efficiency is a desirable goal, they felt it should be considered in context. Informants described different costing model scenarios and the risk of evaluating the costs of implementation solely on the basis of comparison to face-to-face or existing services. Instead, they discussed the need to think about cost in terms of offsetting costs through prevention or early intervention, leading to fewer referrals and lower demand for acute or specialized services, pharmacological supports, etc. Informants felt strongly that what is currently lacking in program evaluations that look at e-health interventions is incorporating changes quickly and iteratively once initial implementation has occurred. Early startup costs for infrastructure and training may be high, but once the tools are established and the processes refined, the cost-efficiencies become more readily apparent. Overall, informants felt that costs for many e-mental health services are reasonable but require more nuanced ways of capturing this data than head-to-head costing models provide. The cost to clients is another important consideration—particularly when the costs of taking time off work, travelling to appointments, child care, parking, etc., become barriers to receiving necessary care. e-Mental health interventions relieve clients of such financial burdens so they can receive affordable care at a time of day that is convenient to them.

“I also think there are huge cost implications for inaction on mental health problems. The number one reason people are off work this week, from a disability perspective and a workplace disability perspective, is mental health problems... So a small upfront cost is going to pay for itself.”

– Informant 10

“So there are typically some start-up costs, but what we’re hoping for down the road, once we demonstrate that these things work, is that they’re integrated into existing models of care... The more projects we do, the better we get, but that engagement work is really important.”

– Informant 14

Maintenance



Sustainable health care, as a concept, refers to the balance between the economic, environmental and social constraints and demands within health care settings. Sustainable development of e-mental health care requires health care providers and policymakers to maintain this balance, while modernizing and improving health care systems and modes of delivery. Informants noted that a sustainable health care system that recognizes and addresses the broader and societal impact of mental illness is crucial to the long-term sustainability of high-quality health care provision, with or without the provision of e-health solutions. Informants pointed out that priorities should be set based on an assessment of the disease burden and its contribution to health inequalities. Priorities should then be addressed using those cost-effective, high-value, sustainable treatments for which good evidence is available, while those with low or uncertain value should be decommissioned. Of primary concern among informants was the lack of economic support for ensuring high-quality services are available over the long term.

“You build something and then three years later you have to refresh or change, upgrade, and there’s always a need to continue to support those things. And I don’t see where the funding is for that. It’s not, funding really hasn’t been laid out to support those things unless it’s coming out of foundations and private donors.”

- Informant 11

“I think the primary issue is funding... There’s a call for new ideas and new services, but how do you sustain those services? Where is the government funding support to help facilitate uptake and integration of these types of services within the usual care system?”

- Informant 18

Partnerships

Finally, in our informants' view, maintaining effective e-mental health initiatives in Canadian health care systems requires investment by industry in both research and development and capital infrastructure. Informants highlight significant challenges in moving from concept to development within the research stage, and note that there is a lack of partnership between industry and the clinical community to ensure that e-mental health solutions are properly vetted and evaluated.

“In the e-mental health space, one of the big problems that we have is that there aren't enough industry partners who are interested.”

- Informant 7

“I don't think that there are actually very good funding mechanisms to support that sort of work. For example, with e-health innovations, partnership programs that are funded through the Canadian Institutes of Health Research, that was really focused on Canadian-made health care technology. What if there is something that's been developed outside of Canada that has a lot of potential for Canada? Where do we go for that sort of support?”

- Informant 9

Scan of Current Initiatives

Although it was beyond the scope of this scan to conduct an exhaustive evaluation of national initiatives, it is useful to draw attention to illustrative examples. There is variation in program size, where individual physicians offer some programs and federal and provincial governments offer others. A key distinction made for the purposes of this scan was to focus on e-mental health programs operating as part of mental health service delivery through a hospital or community-based service provider, and/or as a component of a government's mental health strategy. There is a vast array of online self-management resources (websites, online reports, online screeners, online decision aids, online magazines, apps, etc.) relating to and supporting the education of individuals and families dealing with mental health challenges but they were not included in the scan. There are also several commercial e-mental health platforms and services that were not included as they were beyond the scope of this scan.

Appendix 4 lists a range of current e-mental health initiatives and offers a “snap shot” in time—not an exhaustive list of the kinds of programs and services available. We did not include programs that are no longer available, pilot projects that have been completed, or initiatives we were unable to confirm are available either now or in the near future. This scan does not evaluate the degree to which these initiatives are evidence-based and is not meant to endorse these services but rather to illustrate some examples of the kinds of programs and services people in Canada may have available.

In addition to the services and programs listed in the table, there are numerous recent funding announcements and research grants that have been allocated, suggesting significant work in the field is advancing. For example, in 2014, the eHealth Innovations Partnership program (eHIPP) launched by the Canadian Institutes for Health Research allocated over four million dollars to a range of program targeting early identification of and interventions for youth and adolescents with mental health conditions (See following link for list of projects and funding amounts: http://webapps.cihr-irsc.gc.ca/cfdd/db_search?p_language=E&p_competition=201506EH1). The Canada Research Chairs Program is also investing in e-mental health, particularly through a Canada Research Chair in Clinical Cyberpsychology (see website for more information: <http://www.chairs-chaires.gc.ca/chairholders-titulaires/profile-eng.aspx?profileID=805>).

Opportunities for e-Mental Health in Canada

The RE-AIM Framework provides a useful way of thinking about Canada's strengths and areas for growth in planning of e-mental health services and programs to ensure adoption, successful implementation, and evaluation. Using the RE-AIM Framework can lead to the development of policies and standards that can increase the execution and reporting of RE-AIM indicators.

Our key informant interviews and the scan of current and emerging initiatives revealed the following strategic opportunities for e-mental health in Canada:

Opportunity 1: Research and Development Structures

Sustained cooperative action is required to improve the mental health of populations everywhere.

The next 10 years will see more change in the mental health ecosystem that will affect how we provide care. Technological advances such as real-time availability of health information, remote sensing of health status over time, and a fundamental shift in how individuals interact with the health care system and providers (e.g., email, texting, online social networks) have the potential to improve individuals' care experiences. Yet strategic research questions must be answered for technology's promise to materialize. For example, what are the critical targets for improving the care delivery system and improving mental health outcomes in diverse populations (e.g., sex, gender, age, race, ethnicity)? How can research contribute to creating and using new tools to meet those targets? In what new ways can health care data be leveraged to address pressing patient, provider, and system-level needs? Which research methods are best suited for assessing public health impact? How do we balance public safety with the need to more rapidly roll out services?

While many aspects of health and illness are universal, they are embedded, and must be understood, in local socio-cultural, economic and political contexts. Such understandings can only be gained through high-quality, locally relevant research. Therefore it is important to ensure a robust research system. Increasing the resources and, ultimately, the funding available for research is an obvious means of strengthening capacity. However, careful attention must also be paid to the coordinated and efficient use of existing resources.

Opportunity 2: Global Networking

Effective knowledge translation is viewed as essential for closing the gap between what we know and what we do. In the field of e-mental health, knowledge translation is intensifying international collaboration between knowledge users and knowledge producers. Working with international partners we promote mutual learning through the process of planning, producing, dissemination and applying knowledge. It takes tremendous effort to convene experts, people with lived experience, caregivers, students, technologists, health strategists, donors, and medical professionals to share lessons learned, implementation challenges, ideas for integration and scale-up, and more. However, these global networks should focus not only on highlighting exemplars or disseminating research results, but also on sharing specific knowledge about how successful e-mental health services were negotiated with member economies—governments, academic institutions, industry practitioners and professional groups.

Opportunity 3: Voices of Lived-Experience in Co-Design

When research is intended to influence policy and practice, it is essential that the users of the research results are engaged as partners in the research process. But beyond the decision makers and clinicians who will use the results to design and deliver new programs, the people with lived experience of mental health problems and illnesses must also be seen and acknowledged as essential and invaluable partners across the design, development and implementation cycles of service development. People with lived experience and their caregivers and families have deep understanding of mental health issues and illnesses that will ensure that diversity is recognized, health literacy is enhanced, and services are enriched to support a range of users with differing quality-of-life experiences. This will improve the commitment of users to the research and services, ensure that the developed services are relevant to the goals of the users, and will make it more likely that the research results are understood and used in an appropriate manner. A particularly important responsibility of organizations that make up Canada's mental health network is to ensure that research outcomes are turned into tools for advocacy, for use by consumer and care organizations and by other civil society organizations, as well as into policy briefs for policy makers and implementers.

Opportunity 4: Transformative Models

Research can expedite implementation of evidence-based care in community settings by optimizing the organization and delivery of current treatments. In the new mental health care landscape, there should be opportunities to improve outcomes with new financing and care delivery models, with services provided outside the traditional health care systems (e.g., in schools, community settings, workplaces, and online), and with

integration of care. Individual providers need the science and the support to capitalize on these opportunities. In other words, they need solid evidence to show them how to organize and deliver care to ensure the best outcomes, and they require financial models that allow for new programs and services to be developed and maintained over the long-term. Most major transformations in mental health services have been accompanied by financial models that support or facilitate change. As noted in our scan, lack of transparent billing systems and designated budget to pay for training and trialing new technologies is currently prohibitive.

Service transformation from e-mental health can come from the reconfiguration of services. The traditional shortcomings of mental health care could be circumvented by developing and testing novel components of care across multiple settings where mental health services are needed, and by using advanced tools to better reach the population and deliver immediate, appropriate, and progressively improving care. Some resources may need to be reallocated to fund the improvement of existing services and the development of new ones.

“First, government and political decision makers need to acknowledge that right now our system is not providing the kind of health care to the degree it should be, so there is very limited expertise, very limited quality... we need to change the way we organize our system and spend our resources in a way that really provides health care to the majority of clients. And that means you need to provide at structural framework and also the funding model for that.”

- Informant 5

Opportunity 5: Implementation Science

Most interventions are developed in academic settings where the translation of successful research outcomes into community practice settings continues to be a major challenge. Enhancing the practical relevance of effectiveness research—taking into account how patient, provider and organizational factors impact the outcomes of interventions in practice settings—should be a priority. We can accelerate the uptake of research results, including research on the bundling of previously validated interventions to optimize their impact in community practice settings. This approach promises to move community practice beyond the single-pill or single-treatment approach. Once such outcomes are optimized in pragmatic trials, they are ready for yet broader implementation in a variety of service settings and health care system models. Through an implementation science approach, we can conduct efficient, pragmatic trials that employ new tools to rapidly identify, engage, assess, and follow participants in the context of routine care while ensuring fidelity to treatment protocols.

Conclusion

An increasing number of Canadians and their families are struggling with mental health-related problems; addressing these concerns is a national priority. The creation and expansion of e-mental health services have been suggested as one mechanism to help overcome barriers to care and meet the needs of this population. Much can be learned from both unsuccessful e-mental health implementation experiences, as well as the successful partnerships and initiatives currently underway in Canada. The intent of this report was to review the current landscape of e-mental health care across the five domains of the RE-AIM Framework and inform how we evolve these services moving forward. We recommend continued emphasis on sharing evaluation results of established and developing e-mental health services to assess key implementation strategies. We call for the broad dissemination of findings to fill current evidence gaps. We also encourage policymakers in government and in private and non-governmental entities to work together to develop evidence-informed partnership models, and then evaluate them to effectively expand e-mental health services for all Canadians.

Appendix 1: Definitions

e-Health:

The transfer of health resources and health care by electronic means. It encompasses three main areas:

- The delivery of health information, for health professionals and health consumers, through the Internet and telecommunications technologies;
- The use of information technology and e-commerce to improve public health services—for example, through the education and training of health workers;
- The use of e-commerce and e-business practices in health systems management.

m-Health:

Medical and public health practice supported by mobile devices, such as mobile phones, patient-monitoring devices, personal digital assistants and other wireless devices. m-Health uses and capitalizes on a mobile phone's core utility of voice and short messaging service (SMS), as well as more complex functionalities and applications. These include general packet radio service (GPRS), third- and fourth-generation mobile telecommunications (3G and 4G systems), global positioning system (GPS) and Bluetooth technology.

e-Mental health:

For the purpose of this document we are defining e-mental health as “mental health services and information delivered or enhanced through the Internet and related technologies.”⁹

Telehealth:

The use of telecommunications and information technologies to exchange information, as well as to provide clinical care, education, public health, and administrative services at a distance.

Telemental health:

A subset of telehealth that uses video-conferencing technology to provide mental health services from a distance. It includes telepsychology, telepsychiatry, telemental health nursing and telebehavioural health.

9 Christensen, H., Griffiths, K.M., Evans, K. (2002). E-Mental Health in Australia: Implications of the Internet and Related Technologies for Policy. ISC Discussion Paper No 3.

Appendix 2: List of Interviewees

NAME	PROVINCE	BACKGROUND
Ella Amir	Quebec	Executive Director, Ami Quebec
Dr. Alexa Bagnell	Nova Scotia	Chief of Psychiatry, IWK Health Centre Associate Professor, Department of Psychiatry, Dalhousie University
Beth Brannon	Ontario	Administrative Director, Ontario Shores Centre for Mental Health Sciences
Dr. Stephane Bouchard	Quebec	Professor, Université du Québec en Outaouais Canada Research Chair in Clinical Cyberpsychology
Connie Coniglio	British Columbia	Provincial Executive Director, Adult Mental health & Substance Use, BC Mental Health and Substance Use Services
Sandra Kiume Dawson	British Columbia	Founder, Unsuicide (Online suicide help wiki)
Dr. Cheryl Forchuk	Ontario	Professor, Arthur Labatt School of Nursing, University of Western Ontario Group Leader of Mental Health/Health Outcomes, Lawson Health Research Institute
Dr. David Gratzer	Ontario	Psychiatrist and Physician in Charge of Mental Health inpatient services, The Scarborough Hospital
Dr. Heather Hadjistavropoulos	Saskatchewan	Professor, University of Regina Founder and Director, Online Therapy Unit for Service Education and Research
Jessica House	Ontario	Manager of Clinical Services, Crossroads Children's Centre
Dr. Sean Kidd	Ontario	Clinical Psychologist and Clinician Scientist, Centre for Addiction and Mental Health (CAMH) Associate Professor, Department of Psychiatry, University of Toronto
Dr. Michael Krausz	British Columbia	Professor, Department of Psychiatry, University of British Columbia Scientist, Centre for Health Evaluation and Outcome Sciences (CHÉOS) Chair, Informatics and Telecommunications in Psychiatry Section, World Psychiatric Association
Dr. Stan Kutcher	Nova Scotia	Sun Life Financial Endowed Chair in Adolescent Mental Health Research, Dalhousie University Professor, Department of Psychiatry, Dalhousie University

NAME	PROVINCE	BACKGROUND
Dr. Shalini Lal	Quebec	Assistant Professor, School of Rehabilitation, Faculty of Medicine, University of Montreal Principal Scientist, University of Montreal's Hospital Research Centre (CRCHUM) Associate Researcher, Douglas Mental Health University Institute
Niki Legge	Newfoundland	Social Worker and Program Manager of E-Mental Health Services, Government of Newfoundland and Labrador
Dr. Patricia Lingley-Pottie	Nova Scotia	Co-founder, President & CEO, Strongest Families Institute Assistant Professor, Department of Psychiatry, Dalhousie University Research Scientist, IWK Health Centre
Dr. Kwame McKenzie	Ontario	Director of Health Equity, CAMH Professor, Department of Psychiatry, University of Toronto CEO, Wellesley Institute
Laurie Poole	Ontario	Vice President, Telemedicine Solutions, Ontario Telemedicine Network (OTN)
Alisa Simon	Ontario	Vice President, Counselling Services & Programs, Kid's Help Phone
Dr. David Wiljer	Ontario	Executive Director, Education, Technology & Innovation, University Health Network Associate Professor, Institute for Health Policy Management and Evaluation, University of Toronto
Kathy Willerth	Saskatchewan	Director, Mental health and Addictions, Ministry of Health, Government of Saskatchewan

Appendix 3: Key Informant Interview Guide

Part 1: Background

- How long have you been working in your organization?
- What are your major responsibilities in your current position?
- Can you describe your work and experience as it relates to e-health?

Part 2: Reach (eligible people participating)

- Are you familiar with e-health technologies to identify, treat or care for people with mental health issues? (Please describe)
- Who do you see as the target audience for these technologies (geographic location or for a particular mental illness, certain age-group)?
- What kind of demand is there from your client population for these kinds of tools?
- In what areas do you think e-health technologies would have the largest benefit to health systems? Health care professionals?

Part 3: Effectiveness

- What is your current view of the credibility and quality of technologies for mental health?
- Could you provide any examples of current e-health technologies for mental health you believe to be effective?
- What indicators should be monitored to determine if these e-health technologies are effective?
- From an organizational perspective, what would make the case for e-health to be a good return on investment?

Part 4: Adoption

- What education/training would your staff/organizational members need in order to facilitate e-health uptake?
- What obstacles exist in adapting to new e-health strategies within health care systems/organizations? What could be done to overcome these?
- In what ways is adoption of e-health for mental health occurring among your stakeholders?

- What changes in governmental policies would be useful to support e-health in your organization?
- To what extent is your organization willing to experiment with or trial e-health innovations?

Part 5: Implementation

- How do issues like privacy and professional liability influence implementation of e-health tools?
- What technical challenges do providers experience in providing services via e-health? What about clients?
- How does the organizational culture of mental health care affect the implementation of e-health services and tools?
- What costs are associated with the implementation and upscaling of e-health interventions?
- How do e-health services and tools impact on the time required to support persons with mental health conditions?
- What are the characteristics of non-adopters (provider and patient?)

Part 6: Maintenance

- How are most e-health innovations funded? (Short term versus long term)?
- What resources (facilities, materials, technology, staffing) have the largest impact on the uptake of e-health services and tools?
- What policies or regulatory actions are needed to make e-health services a routine element of mental health care?
- How does your organization transfer learning/learn (trial and error, consultation, partnerships)?
- What has been learned by your organization in the last 2-5 years that can contribute to the further development and funding of e-health for mental health care?
- What new structures and partnerships have emerged to enable sustained use of e-health for mental health care?

Appendix 4: Scan of Current e-Mental Health Programs

National

Program/Service	Walk Along
Location	National
Description	Provides information and links to existing mental health care resources for friends, family, and health care professionals, and allows for different levels of assessment and monitoring.
Populations Served	Youth and young adults
Mental Health Issue Targeted	General
Payment Model	Free to user
Setting	Internet
Online Information	http://acdresearch.med.ubc.ca/projects/e-mental-health/walkalong-ca/
Organization	University of British Columbia
Publically Available Formal Evaluation	No
Program/Service	Strongest Families
Location	National
Description	Through a combination of evidence-based curriculum (handbooks or online) and phone coaching, families learn skills to overcome mental health problems. A sophisticated software platform known as IRIS integrates staff management with the educational client interface, customizing care to meet the families' needs.
Populations Served	Parents of children and youth 3-17 / youth 14-17 (bilingual)
Mental Health Issue Targeted	Attention deficit hyperactivity disorder Oppositional defiance disorder Anxiety disorder Nighttime bedwetting
Payment Model	Free to user / Government funded
Setting	Phone and Internet Mobile friendly
Online Information	http://strongestfamilies.com/ http://irisplatform.com
Organization	Strongest Families Institute (not-for-profit)

Publically Available Formal Evaluation Yes, for example – McGrath, P. J., Lingley-Pottie, P., Thurston, C., MacLean, C., Cunningham, C., Waschbusch, D.A., Watters, C., Stewart, S., Bagnell, A., Santor, D. & Chaplin, W. (2011). Telephone-based mental health interventions for child disruptive behavior or anxiety disorders: randomized trials and overall analysis. *JAACAP Journal of the American Academy of Child & Adolescent Psychiatry*, 50 (11).

Lingley-Pottie, P., McGrath, P.J. (2016) Imagine a mental health service that builds stronger families. *Paediatrics & Child Health*. 2016 Jun-Jul; 21(5):247-8. PMID: 27441017.

Sourander A, McGrath PJ, Ristkari T, Cunningham C, Huttunen J, Lingley-Pottie P, Hinkka-Yli-Salomäki S, Kinnunen M, Vuorio J, Sinokki A, Fossum S, Unruh A. Internet-Assisted Parent Training Intervention for Disruptive Behavior in 4-Year-Old Children – A Randomized Clinical Trial. *JAMA Psychiatry*. 2016; 73(4):378-387. doi:10.1001/jamapsychiatry.2015.3411.

Program/Service Kids Help Phone / Jeunesse, J'écoute

Location National

Description Toll-free, 24-hour, bilingual and anonymous phone, chat counselling, web counselling, information and referral service.

Populations Served Age 5-20

Mental Health Issue Targeted General

Payment Model Free to user

Setting Phone, app, website

Online Information <http://org.kidshelpphone.ca/about-us/>

Organization Kids Help Phone (not-for-profit)

Publically Available Formal Evaluation Yes – http://org.kidshelpphone.ca/main-data/uploads/2014/11/KHP_English_Proof_Positive_FINAL.pdf

Program/Service iCopeU (mindyourmind)

Location National

Description An online program offered to universities and colleges in Canada. The program provides fingertip access to reliable information, stress management and safety planning tools to students who are feeling overwhelmed.

Populations Served Post-secondary students

Mental Health Issue Targeted General

Payment Model Free to user / Institutional licensing

Setting Web-portal

Online Information <https://icopeu.com/>

Organization Mind Your Mind (not-for-profit)

Publically Available Formal Evaluation No

Program/Service	The Breathing Room Program
Location	National
Description	An eight-module, online self-management program which helps youth ages 13-24 manage stress, depression and anxiety, developed by the Canadian Institute for Natural and Integrative Medicine (CINIM).
Populations Served	Ages 13-24
Mental Health Issue Targeted	Stress, anxiety, depression
Payment Model	Free to user / Institutional licensing
Setting	Internet
Online Information	http://breathingroom.me/
Organization	Canadian Institute of Natural and Integrative Medicine a http://cinim.org/ (not-for-profit) Adopted by the Government of Newfoundland and Labrador
Publicly Available Formal Evaluation	Yes - https://cdn.crawford.works/breathingroom.me/wp-content/uploads/2016/05/22183155/BreathingRoom-Qualitative-Findings.pdf

Newfoundland & Labrador

Program/Service	Bridge the gAPP
Location	NL
Description	Mobile app with access to content on a variety of mental health and addictions topics which provide advice, inspiration, assurance, or direction for finding additional supports.
Populations Served	Youth version (ages 13-18) Adult version (18+)
Mental Health Issue Targeted	General
Payment Model	Free to user
Setting	Mobile phone and Internet
Online Information	http://www.bridgethegapp.ca/
Organization	Government of Newfoundland
Publicly Available Formal Evaluation	No

Quebec

Program/Service	Tel-jeunes
Location	Quebec
Description	Tel-jeunes is a free, bilingual counseling service via telephone or Internet.
Populations Served	Youth 5-20
Mental Health Issue Targeted	Anxiety, bullying, suicide crisis
Payment Model	Free to user
Setting	Phone or Internet
Online Information	http://en.teljeunes.com/who-we-are
Organization	Foundation Tel-jeunes
Publically Available Formal Evaluation	No

Ontario

Program/Service	TeleLink
Location	Ontario
Description	Using live-video broadcasting, TeleLink connects children and youth, their case managers and families to psychiatrists and other mental health professionals for clinical assessments, capacity building and education.
Populations Served	Youth (age range not specified)
Mental Health Issue Targeted	Attention deficit hyperactivity and disruptive behaviour disorders, mood and anxiety disorders, psychotic/thought disorders
Payment Model	Free to user / Government funded
Setting	Video broadcasting
Online Information	http://www.sickkids.ca/psychiatry/tele-link/index.html
Organization	Hospital for Sick Children (Sick-Kids)
Publically Available Formal Evaluation	Yes – http://www.sickkids.ca/tele-link/research/telelink-research.html

Program/Service	Big White Wall
Location	Ontario
Description	A digital support and recovery service for people who are stressed, anxious, low or not coping. Guided by trained professionals, who are online 24/7.
Populations Served	Ages 16+
Mental Health Issue Targeted	General
Payment Model	Free to user / Government funded
Setting	Internet
Online Information	www.bigwhitewall.com http://www.ontarioshores.ca/cms/One.aspx?portalId=169&pageId=29550
Organization	Piloted in Ontario through partnership with Ontario Telemedicine Network, Ontario Shores Centre for Mental Health Sciences, Lakeridge Health and Women’s College Hospital
Publicly Available Formal Evaluation	Yes – https://www.bigwhitewall.com/home/science-behind-bww.aspx#.WRB8YjUrJQI Ontario pilot currently being evaluated by Women’s College Hospital Institute for Health System Solutions and Virtual Care (WIHV)

Program/Service	Mozzaz
Location	Ontario
Description	The Mozzaz mHealth solution allows patients to actively participate in their care and stay connected to their care teams in between appointments through their mobile devices. Patients can enter scheduled self-assessment forms and access reminders for medications directly into the app. The platform can be fully integrated with a patient’s electronic medical record and it can connect to wearables and other devices.
Populations Served	Transitional-aged youth; adults
Mental Health Issue Targeted	General
Payment Model	Free to user / Government funded / Public-private partnership
Setting	Mobile app
Online Information	http://www.mozzaz.com/solution/ http://www.ontarioshores.ca/cms/One.aspx?portalId=169&pageId=31751
Organization	The Mozzaz solution is being piloted at Ontario Shores Centre for Mental Health Sciences with patients from their Transitional Aged Youth Service, Neuropsychiatry Service, Eating Disorders Unit and Geriatric and Neuropsychiatry.
Publicly Available Formal Evaluation	An evaluation is being carried out by the University of Ottawa and the University of Toronto.

Program/Service	NexJ
Location	Ontario
Description	Delivers mental health coaching and cognitive behavioral therapy (CBT).
Populations Served	Youth (age not specified)
Mental Health Issue Targeted	Diagnosed depression and anxiety
Payment Model	Free to user / Research funded
Setting	Mobile phone / Internet-platform
Online Information	http://www.nexjhealth.com/2016/09/07/transforming-youth-mental-health-services/
Organization	Federal Economic Development Agency for Southern Ontario (FedDev Ontario), York University and the Centre for Addiction and Mental Health (CAMH)
Publically Available Formal Evaluation	Current trial

Program/Service	The Scarborough Hospital iCBT program
Location	Ontario
Description	The clients are emailed readings, watch videos on a designated website, complete homework. Trained psychotherapists then email or phone the clients with feedback.
Populations Served	Adult 18+
Mental Health Issue Targeted	Depression and anxiety
Payment Model	Free to user / Government funded
Setting	Internet and phone
Online Information	http://www.tsh.to/areas-of-care/mental-health/adult-outpatient-program/
Organization	The Scarborough Hospital
Publically Available Formal Evaluation	Yes - http://tshfoundation.ca/wp-content/uploads/2014/07/FacesFall_2015.pdf

Saskatchewan

Program/Service	Online Therapy USER
Location	Saskatchewan
Description	Free online cognitive behavioural therapy with the support of a therapist or a guide.
Populations Served	Adults 18+
Mental Health Issue Targeted	Depression, anxiety (including panic disorder and social anxiety) and PTSD. Treatment for chronic pain is also provided.
Payment Model	Free to user / Government funded
Setting	Internet and phone
Online Information	https://www.onlinetherapyuser.ca/
Organization	University of Regina
Publically Available Formal Evaluation	Yes - 20 peer-reviewed published articles available at: https://www.onlinetherapyuser.ca/study-results

British Columbia

Program/Service	YouthInBC
Location	BC
Description	Youth in BC (YIBC) is an online crisis chat service, where you can chat 1-on-1 with a trained volunteer from the Vancouver Crisis Centre. Youth can also seek support via email.
Populations Served	Youth (age range not specified)
Mental Health Issue Targeted	Crisis and suicide prevention
Payment Model	Free to user / Government Funded
Setting	Internet and phone
Online Information	http://youthinbc.com/
Organization	The Crisis Intervention and Suicide Prevention Centre of BC (not-for-profit)
Publically Available Formal Evaluation	No

Program/Service	Kelty's Key Online Therapy Service
Location	BC
Description	Online therapy program that combines online learning modules with therapist-assisted cognitive behavioural therapy (CBT).
Populations Served	Age range not specified
Mental Health Issue Targeted	Depression, anxiety, panic, grief, chronic pain, addictions, insomnia and family support
Payment Model	Free to user / Government Funded
Setting	Internet
Online Information	https://www.keltyskey.com/
Organization	Vancouver Coastal Health
Publically Available Formal Evaluation	No

Program/Service	Bounce Back
Location	BC
Description	Bounce Back is a free skill-building program for adults experiencing low mood or stress with or without anxiety. Bounce Back offers three forms of help: <ul style="list-style-type: none"> • Bounce Back Today Video: Provides practical tips on managing mood, improving sleep, building confidence, increasing activity, problem solving and healthy living. The video is available online or in DVD format. • Bounce Back Coaching: A customized series of workbooks with 4 to 6 coaching sessions delivered by video conference or telephone. • Bounce Back Online: A self-guided online program with access to video modules, e-books and worksheets.
Populations Served	Aged 15+
Mental Health Issue Targeted	Mild to moderate depression or anxiety
Payment Model	Free to user / Government funded
Setting	Video, phone, Internet
Online Information	https://www.cmha.bc.ca/programs-services/bounce-back/
Organization	Canadian Mental Health Association (CMHA) BC [Bounce Back is also currently available in regions of Ontario and Manitoba]
Publically Available Formal Evaluation	Yes - http://www.cmha.bc.ca/wp-content/uploads/2016/05/BB-annual-report-2015-16.pdf



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