

Familiar Faces: Evaluating Outcomes of a Community Mental Health Program
for Frequent Emergency Department Users

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Abstract

This dissertation is composed of three studies that evaluated outcomes of a novel community-based mental health care program providing services to frequent emergency department users presenting with mental illness or addiction in Ottawa, Ontario, Canada. The publicly-funded program, known as Familiar Faces, provided a stepped-care intervention to clients, including system navigation and intensive case management. The program was designed to support client health and social needs while alleviating resource burden on hospital emergency departments.

Study 1 used a pre-test/post-test design to prospectively assess program outcomes. Quantitative data were obtained from self-report measures of 63 program clients regarding their experiences of psychosocial functioning, mental illness symptoms, and addiction symptoms, at baseline program intake and follow-up at least six months later. Results indicated improved client outcomes over time related to overall functioning and severity of anxious and depressive symptoms.

Study 2 used a qualitative design and pragmatic thematic analysis to retrospectively assess program outcomes. Data were obtained from interviews with 15 program clients and focus groups with six program case managers regarding their perceptions of program outcomes, mechanisms of change, and barriers to change. Results indicated perceptions of improved client outcomes related to quality of life and severity of mental illness symptoms. Perceived mechanisms of change included the importance of fostering positive working relationships between program clients and case managers, as well as the program's focus on supporting clients to develop practical skills.

Study 3 used a pre-test/post-test, nonequivalent groups design to retrospectively assess program outcomes. Quantitative data were obtained from longitudinal population-level public health care records for 278 program clients and three matched comparison groups regarding their frequency of emergency department visits, hospital admissions, days in hospital, general practice outpatient visits, and psychiatric outpatient visits, in the one year before and two years after program intake. Results indicated that both program clients and comparison participants improved on outcomes over time, including reduced frequency of emergency department visits and hospital admissions. No interaction effects were found on outcomes between groups over time, other than for psychiatric outpatient visits, with program clients experiencing greater increases in psychiatric outpatient visit frequency over time than comparison participants.

These dissertation studies employed varied research designs, different methods, multiple data sources, and diverse participant pools, enabling a comprehensive and rigorous evaluation of program outcomes. The dissertation findings contribute empirical evidence and practical insights to inform mental health care program and policy development for frequent emergency department users with mental illness or addiction and the health care systems that support them.

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Preface

The three studies comprising this dissertation were conducted as part of a broader program of research, referred to as both “Familiar faces: Evaluating the implementation and effectiveness of a diversion support program for people who are heavy users of emergency rooms and hospitals” and “Formative and outcome evaluation of the Familiar Faces program at the Canadian Mental Health Association - Ottawa Branch.” This broader research evaluated the implementation and outcomes of the Familiar Faces program for frequent emergency department users with mental illness or addiction in Ottawa, Ontario, Canada.

For Study 1, Tim Aubry was principal investigator and supervised the dissertation research. John Sylvestre was co-investigator of the study. Donna Pettey was an internal research representative from the Canadian Mental Health Association Ottawa Branch. Jonathan Samosh, as a graduate student researcher, was responsible for conducting the literature review, formulating research questions, coordinating data collection, collecting the majority of study data, analyzing study data, and writing the manuscript. Study methods were approved by the University of Ottawa Office of Research Ethics (H10-15-09).

For Study 2, Tim Aubry was principal investigator and supervised the dissertation research. John Sylvestre was co-investigator of the study. Donna Pettey was an internal research representative from the Canadian Mental Health Association Ottawa Branch. Ayda Agha reviewed qualitative analysis. Jonathan Samosh, as a graduate student researcher, was responsible for conducting the literature review, formulating research questions, coordinating data collection, conducting all study interviews and focus groups, analyzing study data, and

writing the manuscript. Study methods were approved by the University of Ottawa Office of Research Ethics (H10-15-09).

For Study 3, Tim Aubry was supervisor of the dissertation research. Donna Pettey was an internal research representative from the Canadian Mental Health Association Ottawa Branch. Ayda Agha supported statistical analysis. Jonathan Samosh, as a graduate student researcher and principal investigator, was responsible for conducting the literature review, formulating research questions, coordinating data collection, analyzing study data, and writing the manuscript. Study methods were approved by the University of Ottawa Office of Research Ethics (H-05-21-6935) and Ontario Institute for Clinical Evaluative Sciences (P0970 278 000).

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General Introduction

Frequent emergency department users presenting with mental illness or addiction often struggle to find the support they need (Kanzaria et al., 2019). Indeed, emergency departments have seen a growing number of patients presenting recurrently who require support beyond traditional medical care, including from housing and social services (Davis et al., 2024; Kanzaria et al., 2019). Although the definition of frequent emergency department use varies (Doupe et al., 2012), research using a definition of four or more visits per year identified that this group of 4.5% to 8% of emergency department users accounted for 21% to 28% of all emergency department visits (LaCalle & Rabin, 2010). It is now well-known that this small proportion of emergency department users accounts for a disproportionately large amount of emergency department visits (Beck et al., 2017). Notably, the most consistent characteristic of these frequent emergency department users is the presence of psychiatric diagnosis (Giannouchos et al., 2020; Soril et al., 2016). This health care context places significant strain on hospital emergency departments while failing to address patient health and social needs, with increasing calls for the provision of more personalized care approaches across multiple support systems – not just medical – to address these issues (Meng et al., 2017).

Studies describing frequent emergency department users with mental illness or addiction indicate that this population differs notably from other frequent emergency department users, in that the former have higher rates of emergency department use, homelessness, unemployment, comorbid and chronic physical, mental, and substance-related diagnoses, and are more likely to be a visible minority and have access only to public health insurance (Brennan et al., 2014; Buhumaid et al., 2015; Chang et al., 2014; Doupe et al., 2012; Leporatti et al., 2016; Meng et al.,

2017; Zhang & Das, 2024). Descriptions of frequent emergency department users with mental illness or addiction also indicate that, on average, this group is middle-aged, single, and has a lower-than-average level of education; they often present with symptoms related to suicidality or intoxication and commonly have psychiatric diagnoses related to anxiety, mood, schizophrenia spectrum, or substance use disorders; and prevalence of the frequent emergency department use is similar between females and males (Buhumaid et al., 2015; Chang et al., 2014; Zhang & Das, 2024).

In the province of Ontario, Canada, the frequency of emergency department visits for mental illness or addiction increased almost 50% from 2009 to 2017, while outpatient visits increased by less than 10% over the same period (Mental Health and Addictions Program Framework Research Team, 2021). These trends are consistent with patients reporting lack of access to services and inadequate outpatient care being their main reasons for frequent emergency department use (Fleury et al., 2024), as well as research indicating systemwide difficulties referring and coordinating care between the emergency department and other services (Barker et al., 2020; Fleury et al., 2025; Walker et al., 2021). Frequent emergency department users also report that their emergency department visits are necessary and unavoidable because they need immediate aid or lack other service options (Birmingham et al., 2017; Wise-Harris et al., 2017). This perception holds despite frequent emergency department users also reporting stigma from hospital staff and being discharged with insufficient follow-up care (Wise-Harris et al., 2017). Alternative care models extending beyond the emergency department may therefore be more appropriate for meeting the needs of this population.

As a result, various approaches have been implemented in an attempt to better support frequent emergency department users, including system navigation and case management (Althaus et al., 2011; Mullen et al., 2023). System navigation refers to individuals receiving support to reduce barriers and connect with needed health and social services in a client-centered manner. It has been found to be an effective intervention (Mullen et al., 2023). Case management refers to a more comprehensive and often interdisciplinary approach to supporting health and social needs in a client-centered manner. It too has been found to be an effective intervention (Dieterich et al., 2017; Ponka et al., 2020; Soril et al., 2015). However, recent research has described substantial challenges to reducing emergency department use and hospital readmissions, as well as increasing quality of life, after providing such supports to frequent emergency department users with mental illness or addiction.

Stergiopoulos et al. (2017) conducted a randomized controlled trial of a case management service for frequent emergency department users with mental illness or addiction in Toronto, Ontario, Canada. Their findings indicated that both intervention and treatment as usual participant groups experienced reductions in emergency department visits and days in hospital over one year, with no statistically significant differences found between the two groups. Finkelstein et al. (2020) conducted a randomized controlled trial of an intensive clinical and social care program, including system navigation, for individuals with frequent hospital admissions and various other criteria, which could include mental illness or addiction, in Camden, New Jersey, United States of America. They found no statistically significant differences between intervention and treatment as usual participant groups in hospital admissions over six months. Cohen et al. (2022) conducted a randomized controlled trial of a case

management intervention designed to reduce frequent emergency department use in York, North Yorkshire, England. They found no statistically significant differences between the intervention and treatment as usual participant groups in overall primary care use over two years.

Unfortunately, the application of interventions to support frequent emergency department users with mental illness or addiction has been inconsistent and research on their outcomes is still at an early stage (e.g., Barker et al., 2020; Finkelstein et al., 2020; Soril et al., 2015), leading to an ongoing lack of evidence-based procedures to effectively move forward (Stergiopoulos et al., 2017). One of the reasons for the inconsistency in outcome studies likely reflects the broad variability in the services being provided and in the health care contexts being studied (Althaus et al., 2011; Stergiopoulos et al., 2017), as well as limited knowledge of the mechanisms of change that might promote positive intervention effects (Manuel et al., 2023). However, what does appear consistently across research in this field is that frequent emergency department users with mental illness or addiction are not receiving the support they need (Weber, 2012).

The Familiar Faces Program

In Canada, the relationship between mental illness, addiction, and health care service use became a focal point of the Ontario Ministry of Health and Long-Term Care's (2011) comprehensive mental health care strategy. Repeated and unscheduled emergency department visits within 30 days for mental illness or addiction were subsequently included as performance indicators of the Ontario mental health care system (Mental Health and Addictions Leadership Advisory Council, 2016). Local Health Integration Networks that publicly fund and organize health care in separate regions of Ontario took up this focus as a result. The Champlain Local Health Integration Network, serving the Ottawa, Ontario area, thus developed goals to reduce

frequent emergency department use for mental illness or addiction (Champlain Local Health Integration Network, n.d.). This included public funding to create a mental health care program to support frequent emergency department users with mental illness or addiction in the Ottawa area, while reducing resource burden on local hospitals (as detailed in a related Memorandum of Understanding; Canadian Mental Health Association Ottawa Branch & The Ottawa Hospital, 2015).

This program, known as Familiar Faces, was implemented out of the hospital and in the local community by the Canadian Mental Health Association Ottawa Branch – an independent, community-based, non-profit organization, which typically provided services to individuals in the Ottawa area with severe and persistent mental illness or addiction, as well as chronic homelessness or vulnerable housing (Canadian Mental Health Association Ottawa Branch, 2025). The Familiar Faces program began accepting referrals in 2014 and aimed to assist clients to reduce their emergency department use by providing them with more relevant and comprehensive community-based services, including related to mental illness, addiction, employment, and housing. The program received referrals directly and automatically from three hospitals via an electronic health records system that identified all individuals attending the emergency department two or more times within 30 days for mental illness or addiction presentations; one additional hospital sent only handwritten referrals by fax. The program was staffed by social workers providing a novel stepped-care approach to intervention, based on a modified strengths model of case management (Rapp & Goscha, 2012).

Upon receipt of a referral, program staff would “cold call” the referred individual, who would typically be unaware of their referral prior to this first phone contact. Mailed letters and

visits in the community formed additional outreach efforts used by the program to follow up further with referrals. The intervention itself involved three months of system navigation support (i.e., outreach, assessment, and assistance organizing referrals to relevant health and social services) and, if relevant, a subsequent nine months of community-based intensive case management support (i.e., continued system navigation support plus a focus on leveraging client strengths to achieve specific goals that could improve quality of life and reduce emergency department use, such as obtaining a family physician, applying for housing, or developing safety plans), for an intended maximum of one year receiving program services. When clients ended their time with the program, either due to goal achievement, reaching the time limit for service provision, or the client wishing to withdraw, they could either terminate services or connect with other services, if available. These other services could be internal to the Canadian Mental Health Association Ottawa Branch (e.g., long-term case management support, concurrent disorder group treatment), or external to the organization (e.g., counseling services, addiction support programs).

A review of Familiar Faces program data from January 1, 2018 to December 31, 2018 indicated that the program received 1,325 referrals over the year, with 250 of these becoming system navigation clients and 83 system navigation clients becoming intensive case management clients. Over this year, 287 clients were enrolled in the system navigation service and 139 in the intensive case management service, reflecting a total of 362 unique individuals enrolled across both services. System navigation clients received an average of three hours of support over an average of eight client contacts during an average of two months in the service, including phone calls averaging 15 minutes each and in-person contacts averaging 65 minutes each. Intensive

case management clients received an average of 17 hours of support over an average of 29 client contacts during an average of 14 months in the service, including phone calls averaging 15 minutes each and in-person contacts averaging 78 minutes each.

Past research evaluated the implementation of this Familiar Faces program. A study of the implementation of the system navigation service found that the automated referral system was more effective than handwritten referrals in the demanding emergency department context, the service was assisted by the Canadian Mental Health Association Ottawa Branch building connections with other local organizations to provide clients with more relevant supports and continuity of care, and the service was challenged by a lack of integration across health and social care systems more broadly in the Ottawa area (Cherner et al., 2022). Evaluation of the implementation of the intensive case management service found that the flexible, client-centered, and community-based nature of the service helped clients pursue their personal goals, that again the service was assisted by the Canadian Mental Health Association Ottawa Branch building connections with other local organizations to provide clients with more relevant supports and continuity of care, and the service was challenged by tension between maintaining its short-term duration to assist a greater number of clients while also looking for more resources to enable longer duration of support for clients with substantial ongoing needs (Samosh et al., 2019). While this past research found Familiar Faces program implementation to be efficient and sustainable overall, it did not assess client outcomes to evaluate the program's effectiveness in achieving its goals to support frequent emergency department users with mental illness or addiction and reduce resource burden on hospitals in the Ottawa area.

Dissertation Purpose and Structure

This dissertation evaluated outcomes of the Familiar Faces program across three studies for the purpose of contributing knowledge to more effectively assist frequent emergency department users with mental illness or addiction and the health care systems that support them. To do so, the dissertation studies aimed to produce findings with implications for current empirical understanding and future research, program, and policy development in this field. The studies employed varied research designs, different methods, multiple data sources, and diverse participant pools, to enable a comprehensive and rigorous evaluation of program outcomes related to mental illness and addiction symptom severity, quality of life, and health care service use.

Study 1 used a pre-test/post-test design, without comparison group, to prospectively assess program outcomes. Quantitative outcome data were obtained from client self-report measures of psychosocial functioning, mental illness symptoms, and addiction symptoms. Study 2 used a qualitative design and pragmatic thematic analysis to retrospectively assess program outcomes. Outcome data were obtained from interviews with program clients and focus groups with program case managers regarding their perceptions of program outcomes, mechanisms of change, and barriers to change. Study 3 used a pre-test/post-test, nonequivalent groups design to retrospectively assess program outcomes. Quantitative outcome data were obtained from longitudinal population-level provincial public health care records with matched comparison groups regarding frequency of emergency department visits, hospital admissions, days in hospital, general practice outpatient visits, and psychiatric outpatient visits.

The dissertation author's involvement in this research included reflexivity practice drawing from Walsh's (2003) framework. For example, personal reflexivity included examination of the author's beliefs regarding contemporary mental health care practice and policy, interpersonal reflexivity included consideration of the needs of various stakeholders involved in the dissertation studies (e.g., program clients, program management, university researchers), methodological reflexivity included understanding the strengths and weaknesses of different study designs to structure a dissertation with complementary methods in the pursuit of accurate and useful research findings, and contextual reflexivity included recognition of the potential influence of social stigma on perceptions of frequent emergency department users with mental illness or addiction. The dissertation studies proceeded accordingly.

Self-Reported Mental Health and Addiction Outcomes of a Novel Community-Based Case
Management Program for Frequent Emergency Department Users

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Disclosure Statement

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Abstract

Objective: Frequent emergency department users presenting with mental illness or addiction often struggle to find the services they need. This study investigated an alternative intervention model aiming to support this population out of hospital.

Methods: A pre-test/post-test design assessed client outcomes after participation in a novel community-based stepped-care program delivering individualized intensive case management services.

Results: Results indicated improvement in overall functioning and severity of anxious and depressive symptoms.

Conclusions: Study findings may indicate effectiveness of the program's novel stepped-care model for delivering individualized intensive case management support to frequent emergency department users with mental illness or addiction out of hospital and in the community.

Introduction

Frequent emergency department users presenting with mental illness or addiction often struggle to find the services they need. Due to the complex health and social needs of these individuals, hospital emergency rooms similarly struggle to provide them with relevant support while managing wait times and limited resources (Kanzaria et al., 2019). Awareness of this health services issue and its negative effect on the Canadian health care system continues to grow, as do calls for more innovative and personalized approaches to effectively address the diverse needs of frequent emergency department users while reducing resource burden on hospitals (Meng et al., 2017).

The Canadian Mental Health Association's Ottawa Branch operates the community-based Familiar Faces program with funding provided by the Ontario government. Ottawa-area hospitals send automated referrals directly to the Familiar Faces program for all individuals who attend an emergency department two or more times within 30 days for mental illness or addiction concerns. Once contacted and enrolled into the Familiar Faces program, clients receive system navigation support for up to three months, including outreach, assessment, and support connecting to relevant health and social services. Intensive case management can be provided for a subsequent nine months for those clients requiring additional assistance, including the pursuit of targeted personal goals to improve quality of life and reduce visits to the hospital. In this way, the Familiar Faces program reflects a novel community-based stepped-care model for delivering intensive individualized supports to frequent emergency department users with mental illness or addiction.

The current study aimed to assess the mental health, alcohol use, drug use, and psychosocial outcomes of Familiar Faces program clients for the purpose of improving the program and collecting empirical evidence for policymakers and practitioners looking to similarly support frequent emergency department users with mental illness or addiction.

Methods

Participants

A sample of 63 Familiar Faces program clients who had received at least six months of program services and were still enrolled in the program participated in the current study. An additional six declined to participate, seven agreed to participate and then did not, and six were interested but could not participate prior to the study deadline.

Materials

Participants completed the following validated self-report measures in interview format with the researchers: the Alcohol Use Disorders Identification Test (AUDIT; a 10-item self-report screener for harmful alcohol use; Babor et al., 2001; see Appendix A), the Drug Abuse Screening Test (DAST-10; a 10-item self-report screener for problematic drug use; Cocco & Carey, 1998; see Appendix B), and the Global Appraisal of Individual Needs – Short Screener, as modified by the Centre for Addiction and Mental Health (GAIN-SS; a 27-item self-report screener with subscales for internalizing disorders [e.g., anxiety, depression], externalizing disorders [e.g., inattentiveness, hyperactivity], alcohol and drug use, crime and violence, overall functioning [i.e., a combination of the aforementioned subscales], and a supplemental subscale [i.e., for concerns related to eating, trauma, psychosis, videogame or internet use, and gambling]; Dennis et al., 2013; see Appendix C).

Procedure

The Health Sciences Research Ethics Board at the University of Ottawa (H10-15-09) approved the study methods. Informed consent procedures were followed accordingly. Participants were each compensated with a \$20 gift card. Baseline data collected by program staff when clients completed intake into the Familiar Faces program were obtained by the researchers from the Canadian Mental Health Association's client database. Follow-up self-report data were collected directly by the researchers at least six months later with participants either at the Canadian Mental Health Association offices, at a mutually agreeable community location that provided for adequate privacy, or by phone, based on participant preference. All follow-up data were collected in 2018 and 2019. Average client duration in the program at time of follow-up was 11 months ($SD = 5$ months).

Design and Analysis

A pre-test/post-test design without comparison group was used to compare the mental health, alcohol use, drug use, and psychosocial outcomes of program clients at baseline and follow-up using two-tailed paired-samples t -tests ($\alpha = .05$). Data were analyzed with IBM SPSS Statistics (Version 29) software. Single items of missing data were prorated as an average of the rest of the scale data present. Full scales of missing data were computed with scale-level multiple imputation. For comparison, analysis was also repeated without imputing missing data.

Results

Table 1 presents demographic characteristics of Familiar Faces program clients who participated in the current study. A review of all program clients participating in the program over a one year period ($N = 191$) indicated their primary diagnostic categories were substance

related disorders (29%), mood disorders (28%), psychotic disorders (20%), anxiety disorders (12%), and personality disorders (10%); further, 60% were identified as having a concurrent disorder and 35% presented with either a suicide attempt or threat to another's life.

Table 1

Demographic Characteristics of Program Clients

Demographic Characteristic	<i>n</i>	%
Gender		
Female	27	43%
Male	35	56%
Other	1	2%
Age		
18-24 years	9	14%
25-34 years	17	27%
35-44 years	13	21%
45-54 years	10	16%
55-64 years	14	22%
Residence type		
Own apartment/home	22	35%
Share place with friends/peers	8	13%
Supportive/transitional housing	7	11%
With parent(s)/family home	4	6%
Rooming/boarding house	1	2%
Treatment facility	1	2%
With other family members/relatives	2	3%
Group home	1	2%
Shelter	16	25%
Homeless (without a fixed address)	1	2%
Referring hospital		
The Ottawa Hospital General Campus	31	49%
The Ottawa Hospital Civic Campus	20	32%
Hopital Montfort	6	10%
Queensway Carleton Hospital	6	10%

Note. *N* = 63 program clients. These data reflect self-reported characteristics recorded at time of research follow-up.

Analyses found statistically significant symptom improvement between baseline and follow-up on the GAIN-SS internalizing disorders subscale and overall functioning scale, as

shown in Table 2. No significant differences were found between baseline and follow-up on the GAIN-SS externalizing disorders, alcohol and drug use, crime and violence, and supplemental subscales. There were also no significant differences found between baseline and follow-up on the AUDIT alcohol use screener and DAST-10 drug use screener. However, all null findings indicated reduction in symptom severity from baseline to follow-up despite failing to reach the level of statistical significance in this regard.

The same results of statistical significance and non-significance were found when analysis was repeated without using multiple imputation to address missing data. In this regard, significant symptom improvement was reported from baseline ($M = 3.2$, $SD = 2.1$) to follow-up ($M = 2.1$, $SD = 1.5$) on the GAIN-SS internalizing disorders subscale, $t(48) = 3.43$, $p = .001$, $d = .49$, 95% CI (.19, .79). Significant improvement was also reported from baseline ($M = 5.9$, $SD = 4.5$) to follow-up ($M = 4.2$, $SD = 3.5$) on the GAIN-SS overall functioning scale, $t(46) = 2.53$, $p = .02$, $d = .37$, 95% CI (.07, .66).

Table 2

Self-report measure	Baseline			Follow-up			<i>t</i>	<i>df</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range			
AUDIT alcohol use	9.8	11.4	0-40	8.1	10.8	0-38	1.35	314	.18
DAST-10 drug use	2.7	3.4	0-10	2.3	2.3	0-9	1.06	122	.29
GAIN-SS internalizing disorders	3.3	1.9	0-5	2.0	1.5	0-5	4.17	499	<.001
GAIN-SS externalizing disorders	1.1	1.2	0-4	0.8	1.0	0-3	1.53	3931	.13
GAIN-SS alcohol and drug use	1.4	1.8	0-5	1.3	1.5	0-5	0.62	7042	.54
GAIN-SS crime and violence	0.2	0.6	0-3	0.1	0.3	0-1	2.09	501	.04
GAIN-SS overall functioning	6.0	4.0	0-17	4.1	3.4	0-14	3.28	7179	.001
GAIN-SS supplemental	1.4	1.5	0-5	1.1	1.5	0-5	1.53	494	.13

Note. *N* = 63 program clients. Degrees of freedom are reported as the pooled results from multiple imputation.

Discussion and Conclusions

The current study of the Canadian Mental Health Association's Familiar Faces program aimed to assess the mental health, alcohol use, drug use, and psychosocial outcomes of program clients. Clients reported statistically significant improvement in their overall functioning from baseline to follow-up in the program, largely related to their reporting of reduction in severity of anxious and depressive symptoms. Statistically significant change was not found for other outcomes under investigation. Clients would likely benefit in this regard from longer-term and more targeted support for symptoms related to alcohol use, drug use, and externalizing disorders. Further, clients likely require support extending beyond health care to address broader concerns related to social determinants of health, such as housing and homelessness, all of which reach beyond the capacity of the Familiar Faces program to address on its own.

Ultimately, frequent emergency department users with mental illness or addiction reported improved overall functioning and reduced symptoms of internalizing disorders while participating in the Canadian Mental Health Association's Familiar Faces program. This may indicate effectiveness of the program's novel stepped-care model for delivering individualized intensive case management support to clients out of hospital and in the community. This result is consistent with past calls for personalized care approaches to address the diverse needs of this population beyond the limited services provided by emergency departments (Kanzaria et al., 2019; Meng et al., 2017).

This study had limitations. Small sample size and some missing data may have affected statistical power such that all self-report measures showed improvement from baseline to follow-up, but only two of these reached a level of statistical significance. As a quasi-experimental

study without comparison group, results were also susceptible to validity threats such as attrition, history, maturation, and regression to the mean. Further, the study collected only self-report data to measure program outcomes. Future studies should continue to investigate innovative approaches to address the challenge of supporting frequent emergency department users effectively while reducing resource burden on health care systems.

References

- Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G. (2001). *The Alcohol Use Disorders Identification Test: Guidelines for use in primary care (2nd ed.)*. World Health Organization.
- Cocco, K. M., & Carey, K. B. (1998). Psychometric properties of the Drug Abuse Screening Test in psychiatric outpatients. *Psychological Assessment, 10*(4), 408-414.
<https://doi.org/10.1037/1040-3590.10.4.408>
- Dennis, M. L., Feeney, T., & Titus, J. C. (2013). *Global Appraisal of Individual Needs – Short Screener (GAIN-SS): Administration and scoring manual, version 3*. Chestnut Health Systems.
- Kanzaria, H. K., Niedzwiecki, M., Cawley, C. L., Chapman, C., Sabbagh, S. H., Riggs, E., Chen, A. H., Martinez, M. X., & Raven, M. C. (2019). Frequent emergency department users: Focusing solely on medical utilization misses the whole person. *Health Affairs, 38*(11), 1866-1875. <https://doi.org/10.1377/hlthaff.2019.00082>
- Meng, X., Muggli, T., Baetz, M., & D'Arcy, C. (2017). Disordered lives: Life circumstances and clinical characteristics of very frequent users of emergency departments for primary mental health complaints. *Psychiatry Research, 252*, 9-15.
<https://doi.org/10.1016/j.psychres.2017.02.044>

Community Mental Health Services for Frequent Emergency Department Users: A Qualitative
Study of Outcomes Perceived by Program Clients and Case Managers

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Abstract

Objective: This study aimed to investigate the perceived outcomes and mechanisms of change of a community mental health service combining system navigation and intensive case management supports for frequent emergency department users presenting with mental illness or addiction.

Methods: The study setting was a community mental health agency receiving automated referrals directly from hospitals in a midsize Canadian city for all individuals attending an emergency department two or more times within 30 days for mental illness or addiction. Qualitative interviews with 15 program clients were conducted. Focus groups with six program case managers were also conducted. Data were analyzed using pragmatic qualitative thematic analysis.

Results: Participants generally reported perceiving that the program contributed to reduced emergency department use, reduced mental illness symptom severity, and improved quality of life. Perceived outcomes were more mixed for outcomes related to addiction. Reported mechanisms of change emphasized the importance of positive working relationships between program clients and case managers, as well as focused efforts to develop practical skills.

Conclusions: Community mental health services including intensive case management for frequent emergency department users presenting with mental illness or addiction were perceived to effectively address client needs while reducing emergency department resource burden. Similar programs should emphasize the development of consistent and warm working relationships between program clients and case managers, as well as practical skills development to support client health and well-being.

Introduction

Hospital emergency departments often struggle to provide support for the complex health and social needs of frequent emergency department users (Hansagi et al., 2001; Soril et al., 2016). This challenge is further amplified for those frequent emergency department users presenting with mental illness or addiction (Kanzaria et al., 2019; Minassian et al., 2013; Ondler et al., 2014). Although the definition of frequent emergency department use varies (Doupe et al., 2012), research using a definition of four or more visits per year identified that this group of 4.5% to 8% of all users accounted for 21% to 28% of all emergency department visits (LaCalle & Rabin, 2010). It is now well-known that this small proportion of emergency department users accounts for a disproportionate amount of emergency department visits (Beck et al., 2017; Hunt et al., 2006).

Although the provision of effective supports for this population remains inconsistent (Barker et al., 2020), what is clear is that these emergency department users would benefit from help that they are not receiving (Weber, 2012). Two broad categories of health services being implemented and researched to address the needs of frequent emergency department users are system navigation and case management (Althaus et al., 2011; Mullen et al., 2023). System navigation refers to individuals receiving support to reduce barriers and connect with needed health and social services in a client-centered manner. It has been found to be an effective intervention (Mullen et al., 2023). Case management refers to a more comprehensive and often interdisciplinary approach to supporting individuals' health and social needs in a client-centered manner. It too has been found to be an effective intervention (Dieterich et al., 2017; Ponka et al., 2020; Soril et al., 2015).

At the same time, some research has also described substantial challenges reducing emergency department use and hospital readmissions, as well as increasing quality of life, after providing system navigation or case management support to frequent emergency department users (e.g., Finkelstein et al., 2020; Spillane et al., 1997; Stergiopoulos et al., 2017). One of the reasons for inconsistency in such outcome studies likely reflects the broad variability in the services being provided and in the health care contexts being studied (e.g., Althaus et al., 2011), as well as limited knowledge of the mechanisms of change that promote positive effects (Manuel et al., 2023).

There are still no best practices regarding interventions for frequent emergency department users because the system navigation and case management interventions that have been evaluated to address this challenge are often quite different from one another. Addressing the needs of frequent emergency department users with mental illness or addiction, as well as addressing the resource needs of overwhelmed emergency departments, continue to be substantial health policy concerns requiring further innovation and study. To better understand next steps in this regard requires further investigation into not only the implementation and outcomes of such interventions but also an enumeration of the specific mechanisms of change that actively respond to frequent emergency department users' needs and reduce their frequency of hospital visits.

The Familiar Faces program (funded by the Ontario government and implemented by the Canadian Mental Health Association's Ottawa Branch) receives automated referrals directly from hospitals in the Ottawa, Ontario, Canada area for all individuals attending an emergency department two or more times within 30 days for mental illness or addiction. This community-

based program is staffed by social workers and is composed of two connected services. First, social workers provide a system navigation service for up to three months, including outreach, assessment, and assistance organizing referrals and connections to relevant health and social services. Second, an intensive, community-based, modified strengths model of case management (Rapp & Goscha, 2012) is offered by social workers for up to an additional nine months to those program clients requiring further support. The case management service offers continued system navigation support and adds a focus on leveraging client strengths to achieve specific goals that improve quality of life and reduce emergency department use (e.g., obtaining a family physician, applying for housing, developing safety plans).

This novel program design reflects innovation in the field of health care services for frequent emergency department users. Evaluations of the implementation of this service indicated that such a program can be developed and implemented efficiently and sustainably (Cherner et al., 2022; Samosh et al., 2019). However, outcome studies investigating the effectiveness of this service delivery model and its related mechanisms of change have not yet been published.

The current study of program clients and case managers used a qualitative design to evaluate Familiar Faces program outcomes for those who received both system navigation and intensive case management supports. The study was grounded in a pragmatic realist orientation to describe actual client experiences, program functions, and how these forces likely affected program outcomes (Miles et al., 2014). Accordingly, the study was intended to answer the following research questions as perceived by program clients and case managers:

- 1) Why did program clients visit emergency departments prior to program enrollment?

- 2) What services were provided by the program?
- 3) What were the outcomes of program participation?
- 4) What mechanisms of change and barriers to change affected program outcomes?

Methods

Participants

A sample of 15 program clients who each received at least six months of Familiar Faces services participated in this study. Six months was the minimum for study participation to ensure that participants had received at least the full three months of system navigation support, followed by a further three months of intensive case management support, meaning that they had significant experience of the program and had reached at least the halfway mark of the maximum 12-month program duration. Nonprobability purposeful sampling was pursued with the assistance of case managers for the “selection of information-rich cases for the most effective use of limited resources,” identifying clients who were available and willing to participate, able to effectively communicate their experiences, and representing a diversity of client demographic characteristics, namely, gender, age, primary diagnostic category, and referring hospital (Palinkas et al., 2015, p. 534). Further, a sample of six of the seven Familiar Faces case managers participated in study focus groups.

Materials

Semistructured protocols were used for interviews and focus groups. The interview protocol included questions asking participants why they used the emergency department before receiving Familiar Faces services, what services they received from the Familiar Faces case management program, what outcomes they perceived resulting from these services, and what

they perceived to be the mechanisms of any changes they observed of themselves related to receiving services (see Appendix D). The focus group protocol for case managers asked similar questions but from the perspectives of the case managers providing the service (see Appendix E). The protocols permitted the researcher to deviate from these items as necessary to promote participant comfort when discussing difficult personal experiences and to permit the researcher to probe for follow-up information based on each participant's unique responses.

Procedure

The University of Ottawa Research Ethics Board (File H10-15-09) approved the study methods. Informed consent procedures were followed. Program client participants were each compensated with a \$20 gift card. Interviews were audio recorded and transcribed verbatim. All case managers providing Familiar Faces case management services were invited to participate in one of two focus groups; six of seven were available to participate. All interviews and focus groups took place in 2020 and considered the program prior to the COVID-19 pandemic.

Design and Analysis

Interview and focus group transcripts were analyzed with the assistance of QSR International NVivo and Microsoft Excel software. Qualitative thematic analysis was used to code the transcripts and identify themes relevant to each research question (Miles et al., 2014). This involved summarizing each interview and focus group, creating a start list of codes deductively based on the study research questions, conducting first-cycle coding of each transcript using the start list of codes and updating the codes as needed, developing a cross-case matrix of the data (to compare client and case manager codes, with columns for participants and rows for codes), and conducting second-cycle coding to consolidate and make sense of the

broader themes within the data relative to the study research questions. Analysis was conducted by the first author and validated via peer audit by the second author throughout this process. Each component of this analysis and any related decisions were recorded in an audit trail, with particular attention paid to the potential presence of data outliers.

Results

Participant Characteristics

Fifteen program clients who each received at least six months of Familiar Faces support (both system navigation and case management) participated in this study. Interview duration ranged from 11 min to 53 min ($M = 25$ min). Fifteen clients proved sufficient for reaching data saturation (Fusch & Ness, 2015), as no new themes emerged after 11 interviews. Further, at least one client from six of the seven case managers' respective caseloads had been interviewed by that point, including at least one client from each hospital emergency department referring to the Familiar Faces program, suggesting diverse sampling of client experiences in the current study. Table 3 presents demographic characteristics of client participants.

Table 3

Demographic Characteristics of Interviewed Program Clients

Demographic Characteristic	<i>n</i>	%
Gender		
Female	10	67%
Male	5	33%
Age		
18-24 years	1	7%
25-34 years	5	33%
35-44 years	2	13%
45-54 years	2	13%
55-64 years	4	27%
65-74 years	1	7%
Indigenous status	3	20%
Primary diagnostic category		
Adjustment disorder	1	7%
Anxiety disorder	5	33%
Mental disorder due to general medical condition	1	7%
Mood disorder	6	40%
Schizophrenia or other psychotic disorder	1	7%
Substance-related disorder	1	7%
Other illnesses		
Concurrent disorder	7	47%
Dual diagnosis	1	7%
Other chronic illness or physical disability	5	33%
Housing		
Non-profit	1	7%
Own or rent	4	27%
Special care	1	7%
Subsidized private	7	47%
Supportive	2	13%
Primary income source		
Employment	2	13%
None	1	7%
Social assistance	7	47%
Unknown	5	33%
Highest level of education		
College/university	4	27%
Secondary school	4	27%
Some college/university	4	27%
Some elementary school	1	7%
Some secondary school	2	13%

Note. *N* = 15 participants. Characteristics were recorded at time of client entry into program.

A sample of six of the seven program case managers participated in one of two focus groups. Focus groups were 59 min to 1 hr 37 min in duration ($M = 1$ hr 18 min). Case manager participant demographics included four (67%) female and two (33%) male case managers who had been working in this role with the Familiar Faces program from one to five years.

Emergency Department Use

Table 4 summarizes qualitative analysis findings. Both program clients and case managers reported a broad range of contextual risk factors and immediately precipitating factors that led to program clients attending emergency departments prior to their referral to the Familiar Faces program. These factors were addiction symptoms, employment issues, financial issues, housing issues, mental illness symptoms, relationship issues, suicidal/self-harm ideation/behaviour, and system navigation issues. Only case managers indicated that some clients also attended emergency departments due to physical illness symptoms.

Table 4

Summary of Qualitative Themes Perceived by Participants

Research Question	Themes
1) Reasons for emergency department use	Addiction symptoms Employment issues Financial issues Housing issues Mental illness symptoms Physical illness symptoms Relationship issues Suicidal/self-harm ideation/behaviour System navigation issues
2) Program services	Activities of daily living support Counseling support Education support Employment support Financial support

Table 4 continued

Research Question	Themes
	Housing support Symptom management System navigation
3) Program outcomes	No change Addiction symptoms Emergency department use Future outlook Mental illness symptoms Suicidal/self-harm ideation/behaviour Positive change Addiction symptoms Access to services Coping skills Emergency department use Education Employment Finances Future outlook Giving back Housing Mental illness symptoms Quality of life Relationships Self-advocacy Self-awareness Self-confidence Suicidal/self-harm ideation/behaviour
4) Mechanisms of change	Mechanisms of change Access to services Intensity of support Practical skills development Therapeutic relationship Barriers to change Client characteristics Intensity of support None Program duration Program client-case manager fit Systemic issues

Program Services

Program clients and case managers reported receiving and providing services, respectively, from the Familiar Faces program to address needs across various life domains. These included services to support activities of daily living, housing, symptom management, and system navigation. Some clients also detailed receiving the following additional services: counseling support, education support, employment support, and financial support.

Perceived Program Outcomes

Neither clients nor case managers reported negative effects on clients due to participation in the Familiar Faces program, even with the interviewer explicitly probing for the potential experience of negative outcomes. However, a small number of clients reported no effects of their program participation on their addiction symptoms. Case managers also noted a lack of perceived effect in this area, with one stating that “I wish I had more success with the ability to tackle substance use. I think it’s a lagging area of study. I think there’s not a whole lot of impact that we’ve had.”

Some clients also described continuing to have a negative outlook for their futures. For example, one client replied in the negative to an interview question about potential changes to future outlook by stating, “No, not right now. Not right now, yeah. Sorry to be negative, but it’s just sad.” A few clients also noted experiencing ongoing mental illness symptoms that affected their functioning, including “mental health-wise I’m still having a tough time in my life.” Two clients indicated continued use of the emergency department despite receiving program services, with statements such as “I’m still going to the hospital a lot.” Two clients also reported experiencing ongoing suicidal/self-harm ideation/behaviour.

However, study participants perceived a much broader array of positive outcomes related to being a client in the Familiar Faces program. Some clients and case managers reported perceiving the program effecting positive change for the following outcomes: addiction symptoms, access to services, coping skills, emergency department use, education, finances, future outlook, giving back, housing, mental illness symptoms, quality of life, relationships, self-advocacy, self-awareness, and self-confidence. Some clients also reported positive effects related to the additional two outcome domains of employment and suicidal/self-harm ideation/behaviour.

The most emphasized perceptions of positive program effect related to improved future outlook, self-confidence, and improved quality of life for clients. Said one client: “I think I’m feeling more optimistic about my life. I’m feeling hopeful, which I never had. I hadn’t felt hopeful for years to be honest.” Another stated: “Well, I think it’s given me some more confidence in myself, that I am a strong person because I’ve gone through all the things I’ve gone through and survived.” And finally: “I don’t believe I’m all the way through my recovery journey, but definitely I’m in a way better place than I ever could have been by myself.”

Also of note were perceptions from some clients and case managers of positive program effects related to addiction symptoms, with one client stating: “I’m much more confident that I’m not going to relapse into oblivion.” Other participants also described positive effects in terms of feeling inspired to give back and pay forward similar program experiences and outcomes to others in their communities: “I’m dedicating my life for betterment and empowerment ... In my small way, how I can empower others to feel the way I feel. And I feel pretty good.”

Mechanisms of Change

Program clients and case managers reported perceiving four main mechanisms of change being responsible for positive program outcomes: the therapeutic relationship between clients and case managers, practical skills development, access to a broad array of support services, and high intensity of program support. Further, while most participants emphasized that there were no barriers to change present in the program, a small number identified client characteristics, insufficient intensity of program support, short program duration, poor fit between clients and case managers, and various systemic issues as barriers to change.

The therapeutic relationship between client and case manager was identified as the most fundamental mechanism of change leading to positive program outcomes. One case manager explained:

Going into the community and meeting the client there is literally you meeting them where they're at. And that is so important in your relationship with them, that you're not expecting them to come to your office, you're not expecting them to do XYZ so that your relationship can keep going. You're doing what you can to meet the client where they're at and kind of start there and work from there ... I think that really benefits them because then they know that you're really there for them and you're not there for yourself or your numbers or whatever.

Clients also described the impact of the therapeutic relationship on the changes they experienced while participating in the Familiar Faces program, including:

I think the human connection of Familiar Faces is really the aspect that I would sell to somebody ... What this program can offer is a consistent outreach on a one-on-one basis

that is truly helpful, and its unique perspective that, you know, it's not something that you should be anxious about when you call in and talk to the worker. They're personable, they're very warm, and kind.

Clients and case managers also identified the following further mechanisms of change: practical skills development, access to services, and intensity of support. One client said: "It is a level of support that is difficult to find and you get access to things quickly because you've been flagged."

Barriers to Change

Although emphasized less than the aforementioned mechanisms of change, some study participants also identified various barriers to change, which they perceived as interfering with the pursuit of positive program outcomes. In particular, they identified the limited program duration as being a barrier to change, with one case manager stating that "after nine months working with us, we are sometimes just engaging ... and after nine months we are about to close [the client's file], but [client] is finally ready to work with us." Systemic issues, such as long waitlists for other community services, housing shortages, and stigma, were also identified as barriers to change, including a case manager noting "there's that systemic barrier that there aren't a lot of services for [clients], especially if you don't have the finances, right?"

Another perceived barrier was the fit between clients and case managers, with one client stating: "Every worker's personality is different, so you may be able to have a better fit with someone." Intensity of support was also identified as a barrier. Said a client: "I would have liked to have been more engaged with support. Yeah, more frequently." Finally, client characteristics, such as readiness for change, were also raised as a barrier to change, with one case manager

describing how “sometimes ... [clients] want the support, but the readiness to take actions or to change may be so very low, so we have to work with that. Sometimes it can take months before we can start.” However, the majority of clients reported perceiving no barriers to positive change in the program.

Discussion and Conclusions

The current qualitative study provided data about the outcomes and associated mechanisms of change of a community-based system navigation and intensive case management service for frequent emergency department users with mental illness or addiction, as perceived by 15 program clients and six of their case managers. The findings indicated that community mental health services incorporating both system navigation and intensive case management were perceived by both program clients and case managers as being responsive to the needs of frequent emergency department users with mental illness or addiction, while reducing resource burden on emergency departments.

Study participants generally perceived positive effects of the Familiar Faces program, notably related to reduced emergency department use, enhanced quality of life, improved future outlook, increased self-confidence, and reduced symptoms of mental illness. Some prior research studying interventions that provided either system navigation or case management supports has found ongoing difficulty reducing emergency department use and enhancing quality of life (e.g., Finkelstein et al., 2020; Spillane et al., 1997; Stergiopoulos et al., 2017). However, the current study results are encouraging and point to the potential benefits of providing a combined system navigation and intensive case management stepped-care intervention model. At the same time, some clients and case managers noted the program not having an effect on addiction symptoms.

This is a common challenge for many treatment models, as addiction likely requires specific targeting, higher intensity, and longer duration of intervention (Cherner et al., 2017; David et al., 2022; Lappan et al., 2020; Zamboni et al., 2021).

Mechanisms of change identified in the current study were consistent with psychotherapy and community mental health services research (e.g., Kahan et al., 2016). Most notably, the current study identified consistent perceptions that the critical mechanism of change in the Familiar Faces program was the relationship between program clients and case managers. The therapeutic relationship was characterized as being relationally warm, compassionate, authentic, trusting, nonjudgmental, patient, and consistent. This conforms to long-standing research findings regarding the importance of therapeutic alliance and other interpersonal relationships in the lives of mental health service users (Crits-Christoph & Connolly Gibbons, 2021; Kidd et al., 2017; Kondrat & Teater, 2012; Napierala et al., 2022; Roebuck et al., 2022). Further, practical skills development (e.g., stress management, coping strategies, problem-solving) is a common mechanism of change identified in outcome studies (Crits-Christoph & Connolly Gibbons, 2021; Mueser et al., 2002). Prompt access to a broad array of health and social services is also known to contribute to positive outcomes for clients (Kumar & Klein, 2013; Mullen et al., 2023). Finally, having flexibility to vary support intensity based on individual client need is an important standard of case management practice (e.g., Gilmer et al., 2013; Monroe-DeVita et al., 2011).

Barriers to change identified in the current study were less salient to most participants, indicating the program was perceived to be functioning effectively overall. Indeed, the main participant response to interview questions about barriers was the perception that there were no

barriers at all. However, for those barriers that were identified, the time-limited duration of the program (i.e., maximum three months system navigation, followed by maximum nine months case management) was notable. Case managers were particularly concerned that a subset of clients could take months to outreach and engage into the program, following which they could benefit from program services, but then they lost this opportunity due to time constraints. This is consistent with the findings of prior implementation studies of the Familiar Faces program (Cherner et al., 2022; Samosh et al., 2019), as well as other community interventions for frequent emergency department users (Poremski et al., 2016). These results speak to the challenging policy considerations involved when balancing limited resources with high levels of need and varied readiness for change at the population level. Program developers determining service time limits may wish to consider that outreaching and engaging clients into program activities can take variable amounts of time.

Program clients and case managers also highlighted difficulties experienced in various life domains beyond health care that contributed to crises, ultimately culminating in emergency department visits prior to enrollment in the Familiar Faces program. This included challenges related to employment, finances, housing, relationships, and system navigation. They also identified services provided by case managers to support clients related to activities of daily living, education, employment, finances, housing, and system navigation – not just to manage symptoms of mental illness or addiction. This emphasizes the need to understand frequent emergency department use behaviours and service needs with a comprehensive model that extends beyond just health care and symptom management alone (Meng et al., 2017; Weir et al., 2022). To understand and support the whole person in frequent emergency department use

contexts likely requires broader conceptualization, including a focus on social determinants of health and implementation of policies to share and integrate data widely across health and social care systems (Kanzaria et al., 2019).

The current study had limitations. Eligible program client participants were identified by their case managers, which may have biased selection. Further, although 15 clients were determined to be sufficient for reaching data saturation and the researchers deliberately assessed for outlier data throughout the interview and analysis process, it is possible that interviewing more clients would have revealed novel or disconfirming data. In addition, clients who may have negatively experienced their time in the program could have terminated their participation in it early and therefore were not present to contribute to this research. Also, the study examined outcomes perceived retrospectively. Finally, this study was conducted in the hospital context of an electronic system that identified frequent emergency department users with mental illness or addiction in the Ottawa, Ontario, Canada area and referred them automatically to the community-based Familiar Faces program. Both emergency department and Familiar Faces services were publicly funded. Generalizability of the results may therefore be limited to similar health care contexts. Future research should continue to study not only the outcomes of services targeting frequent emergency department users but also their associated mechanisms of change and barriers to change.

References

- Althaus, F., Paroz, S., Hugli, O., Ghali, W. A., Daepfen, J., Peytremann-Bridevaux, I., & Bodenmann, P. (2011). Effectiveness of interventions targeting frequent users of emergency departments: A systematic review. *Annals of Emergency Medicine*, 58(1), 41-52. <https://doi.org/10.1016/j.annemergmed.2011.03.007>
- Barker, L. C., Sunderji, N., Kurdyak, P., Stergiopoulos, V., Gonzalez, A., Kopp, A., & Vigod, S. N. (2020). Urgent outpatient care following mental health ED visits: A population-based study. *Psychiatric Services*, 71(6), 616-619. <https://doi.org/10.1176/appi.ps.201900466>
- Beck, A., Sanchez-Walker, E., Evans, L. J., Harris, V., Pegler, R., & Cross, S. (2017). Frequent users of mental health liaison services within emergency departments. *Psychiatry Research*, 258, 194-199. <https://doi.org/10.1016/j.psychres.2017.08.006>
- Cherner, R., Aubry, T., Sylvestre, J., Boyd, R., & Pettey, D. (2017). Housing First for adults with problematic substance use. *Journal of Dual Diagnosis*, 13(3), 219-229. <https://doi.org/10.1080/15504263.2017.1319586>
- Cherner, R., Polillo, A., Samosh, J., Sylvestre, J., Rae, J., Pettey, D., & Aubry, T. (2022). Bridging the gap between hospital and community mental health services for frequent emergency department visitors. *Canadian Journal of Community Mental Health*, 41(1), 1-17. <https://doi.org/10.7870/cjcmh-2022-001>
- Crits-Christoph, P., & Connolly Gibbons, M. B. (2021). Psychotherapy process–outcome research: Advances in understanding causal connections. In M. Barkham, W. Lutz, & L. G. Castonguay (Eds.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (50th anniv. ed., pp. 263-295). Wiley.

- David, A. R., Sian, C. R., Gebel, C. M., Linas, B. P., Samet, J. H., Sprague Martinez, L. S., Muroff, J., Bernstein, J. A., & Assoumou, S. A. (2022). Barriers to accessing treatment for substance use after inpatient managed withdrawal (detox): A qualitative study. *Journal of Substance Abuse Treatment, 142*, 108870. <https://doi.org/10.1016/j.jsat.2022.108870>
- Dieterich, M., Irving, C. B., Bergman, H., Khokhar, M. A., Park, B., & Marshall, M. (2017). Intensive case management for severe mental illness. *Cochrane Database of Systematic Reviews, 1*(1), CD007906. <https://doi.org/10.1002/14651858.CD007906.pub3>
- Doupe, M. B., Palatnick, W., Day, S., Chateau, D., Soodeen, R., Burchill, C., & Derksen, S. (2012). Frequent users of emergency departments: Developing standard definitions and defining prominent risk factors. *Annals of Emergency Medicine, 60*(1), 24-32. <https://doi.org/10.1016/j.annemergmed.2011.11.036>
- Finkelstein, A., Zhou, A., Taubman, S., & Doyle, J. (2020). Health care hotspotting – A randomized, controlled trial. *The New England Journal of Medicine, 382*(2), 152-162. <https://doi.org/10.1056/NEJMsa1906848>
- Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report, 20*(9), 1408-1416. <https://doi.org/10.46743/2160-3715/2015.2281>
- Gilmer, T. P., Stefancic, A., Sklar, M., & Tsemberis, S. (2013). Development and validation of a Housing First fidelity survey. *Psychiatric Services, 64*(9), 911-914. <https://doi.org/10.1176/appi.ps.201200500>

Hansagi, H., Olsson, M., Sjoberg, S., Tomson, Y., & Goransson, S. (2001). Frequent use of the hospital emergency department is indicative of high use of other health care services.

Annals of Emergency Medicine, 37(6), 561-567.

<https://doi.org/10.1067/mem.2001.111762>

Hunt, K. A., Weber, E. J., Showstack, J. A., Colby, D. C., & Callahan, M. L. (2006).

Characteristics of frequent users of emergency departments. *Annals of Emergency*

Medicine, 48(1), 1-8. <https://doi.org/10.1016/j.annemergmed.2005.12.030>

Kahan, D., Poremski, D., Wise-Harris, D., Pauly, D., Leszcz, M., Wasylenki, D., &

Stergiopoulos, V. (2016). Perceived case management needs and service preferences of frequent emergency department users: Lessons learned in a large urban centre. *PLoS*

ONE, 11(12), e0168782. <https://doi.org/10.1371/journal.pone.0168782>

Kanzaria, H. K., Niedzwiecki, M., Cawley, C. L., Chapman, C., Sabbagh, S. H., Riggs, E., Chen,

A. H., Martinez, M. X., & Raven, M. C. (2019). Frequent emergency department users:

Focusing solely on medical utilization misses the whole person. *Health Affairs*, 38(11),

1866-1875. <https://doi.org/10.1377/hlthaff.2019.00082>

Kidd, S. A., Davidson, L., & McKenzie, K. (2017). Common factors in community mental health

intervention: A scoping review. *Community Mental Health Journal*, 53(6), 627-637.

<https://doi.org/10.1007/s10597-017-0117-8>

Kondrat, D. C., & Teater, B. (2012). The looking-glass self: Looking at relationship as the

mechanism of change in case management of persons with severe mental illness.

Families in Society, 93(4), 271-278. <https://doi.org/10.1606/1044-3894.4237>

- Kumar, G. S., & Klein, R. (2013). Effectiveness of case management strategies in reducing emergency department visits in frequent user patient populations: A systematic review. *The Journal of Emergency Medicine*, 44(3), 717-729.
<https://doi.org/10.1016/j.jemermed.2012.08.035>
- LaCalle, E., & Rabin, E. (2010). Frequent users of emergency departments: The myths, the data, and the policy implications. *Annals of Emergency Medicine*, 56(1), 42-48.
<https://doi.org/10.1016/j.annemergmed.2010.01.032>
- Lappan, S. N., Brown, A. W., & Hendricks, P. S. (2020). Dropout rates of in-person psychosocial substance use disorder treatments: A systematic review and meta-analysis. *Addiction*, 115(2), 201-217. <https://doi.org/10.1111/add.14793>
- Manuel, J. I., Nizza, M., Herman, D. B., Conover, S., Esquivel, L., Yuan, Y., & Susser, E. (2023). Supporting vulnerable people during challenging transitions: A systematic review of critical time intervention. *Administration and Policy in Mental Health and Mental Health Services Research*, 50(1), 100-113. <https://doi.org/10.1007/s10488-022-01224-z>
- Meng, X., Muggli, T., Baetz, M., & D'Arcy, C. (2017). Disordered lives: Life circumstances and clinical characteristics of very frequent users of emergency departments for primary mental health complaints. *Psychiatry Research*, 252, 9-15.
<https://doi.org/10.1016/j.psychres.2017.02.044>
- Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook*. Sage Publications.

- Minassian, A., Vilke, G. M., & Wilson, M. P. (2013). Frequent emergency department visits are more prevalent in psychiatric, alcohol abuse, and dual diagnosis conditions than in chronic viral illnesses such as hepatitis and human immunodeficiency virus. *The Journal of Emergency Medicine*, 45(4), 520-525. <https://doi.org/10.1016/j.jemermed.2013.05.007>
- Monroe-DeVita, M., Teague, G. B., & Moser, L. L. (2011). The TMACT: A new tool for measuring fidelity to assertive community treatment. *Journal of the American Psychiatric Nurses Association*, 17(1), 17-29. <https://doi.org/10.1177/1078390310394658>
- Mueser, K. T., Corrigan, P. W., Hilton, D. W., Tanzman, B., Schaub, A., Gingerich, S., Essock, S. M., Tarrier, N., Morey, B., Vogel-Scibilia, S., & Herz, M. I. (2002). Illness management and recovery: A review of the research. *Psychiatric Services*, 53(10), 1272-1284. <https://doi.org/10.1176/appi.ps.53.10.1272>
- Mullen, J. N., Levitt, A., & Markoulakis, R. (2023). Supporting individuals with mental health and/or addictions issues through patient navigation: A scoping review. *Community Mental Health Journal*, 59(1), 35-56. <https://doi.org/10.1007/s10597-022-00982-2>
- Napierala, H., Kruger, K., Kuschick, D., Heintze, C., Herrmann, W. J., & Holzinger, F. (2022). Social prescribing: Systematic review of the effectiveness of psychosocial community referral interventions in primary care. *International Journal of Integrated Care*, 22(3), 11. <https://doi.org/10.5334/ijic.6472>
- Ondler, C., Hegde, G. G., & Carlson, J. N. (2014). Resource utilization and health care charges associated with the most frequent ED users. *American Journal of Emergency Medicine*, 32(10), 1215-1219. <https://doi.org/10.1016/j.ajem.2014.07.013>

- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533-544. <https://doi.org/10.1007/s10488-013-0528-y>
- Ponka, D., Agbata, E., Kendall, C., Stergiopoulos, V., Mendonca, O., Magwood, O., Saad, A., Larson, B., Sun, A. H., Arya, N., Hannigan, T., Thavorn, K., Andermann, A., Tugwell, P., & Pottie, K. (2020). The effectiveness of case management interventions for the homeless, vulnerably housed and persons with lived experience: A systematic review. *PLoS One*, 15(4), e0230896. <https://doi.org/10.1371/journal.pone.0230896>
- Poremski, D., Harris, D. W., Kahan, D., Pauly, D., Leszcz, M., O'Campo, P., Wasylenki, D., & Stergiopoulos, V. (2016). Improving continuity of care for frequent users of emergency departments: Service user and provider perspectives. *General Hospital Psychiatry*, 40, 55-59. <https://doi.org/10.1016/j.genhosppsych.2016.01.004>
- Rapp, C. A., & Goscha, R. J. (2012). *The strengths model: A recovery-oriented approach to mental health services* (3rd ed.). Oxford University Press.
- Roebuck, M., Aubry, T., & Manoni-Millar, S. (2022). A qualitative study of the working alliance in the strengths model of case management with people with severe mental illness. *Community Mental Health Journal*, 58(5), 944-954. <https://doi.org/10.1007/s10597-021-00903-9>

- Samosh, J., Polillo, A., Sylvestre, J., & Aubry, T. (2019). *Implementation evaluation of the Familiar Faces Transitional Case Management service at the Canadian Mental Health Association—Ottawa Branch*. Centre for Research on Educational and Community Services, University of Ottawa.
- Soril, L. J. J., Leggett, L. E., Lorenzetti, D. L., Noseworthy, T. W., & Clement, F. M. (2015). Reducing frequent visits to the emergency department: A systematic review of interventions. *PLoS ONE*, 10(4), e0123660. <https://doi.org/10.1371/journal.pone.0123660>
- Soril, L. J. J., Leggett, L. E., Lorenzetti, D. L., Noseworthy, T. W., & Clement, F. M. (2016). Characteristics of frequent users of the emergency department in the general adult population: A systematic review of international healthcare systems. *Health Policy*, 120(5), 452-461. <https://doi.org/10.1016/j.healthpol.2016.02.006>
- Spillane, L. L., Lumb, E. W., Cobaugh, D. J., Wilcox, S. R., Clark, J. S., & Schneider, S. M. (1997). Frequent users of the emergency department: Can we intervene? *Academic Emergency Medicine*, 4(6), 574-580. <https://doi.org/10.1111/j.1553-2712.1997.tb03581.x>
- Stergiopoulos, V., Gozdzik A., Cohen, A., Guimond, T., Hwang, S. W., Kurdyak, P., Leszcz, M., & Wasylenki, D. (2017). The effect of brief case management on emergency department use of frequent users in mental health: Findings of a randomized controlled trial. *PLoS ONE*, 12(8), e0182157. <https://doi.org/10.1371/journal.pone.0182157>
- Weber, E. J. (2012). Defining frequent use: The numbers no longer count. *Annals of Emergency Medicine*, 60(1), 33-34. <https://doi.org/10.1016/j.annemergmed.2012.02.019>

Weir, B., Struthers, R., Reid, L., Wild, C., & Robinson, L. (2022). Psychological recovery in a step 4 service: A qualitative study exploring the views of service users and clinicians.

Journal of Mental Health, 31(2), 220-226.

<https://doi.org/10.1080/09638237.2021.1922640>

Zamboni, L., Centoni, F., Fusina, F., Mantovani, E., Rubino, F., Lugoboni, F., & Federico, A.

(2021). The effectiveness of cognitive behavioral therapy techniques for the treatment of substance use disorders: A narrative review of evidence. *The Journal of Nervous and*

Mental Disease, 209(11), 835-845. <https://doi.org/10.1097/NMD.0000000000001381>

An Investigation of Health Care Service Use Outcomes of a Community Mental Health Program
for Frequent Emergency Department Users

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Disclosure Statement

This study included data that were obtained from Ontario Institute for Clinical Evaluative Sciences (ICES) Data and Analytic Services (DAS). This study contracted ICES DAS and used de-identified data from the ICES Data Repository, which is managed by ICES with support from its funders and partners: Canada's Strategy for Patient-Oriented Research (SPOR), the Ontario SPOR Support Unit, the Canadian Institutes of Health Research, and the Government of Ontario. The opinions, results and conclusions reported are those of the authors. No endorsement by ICES or any of its funders or partners is intended or should be inferred. Further, parts of this material are based on data and information compiled and provided by the Canadian Institute for Health Information (CIHI) and the Ontario Ministry of Health. The analyses, conclusions, opinions, and statements expressed herein are solely those of the authors and do not reflect those of the funding or data sources; no endorsement is intended or should be inferred. This study was not yet published separately in peer-reviewed academic journal format as of the date of this dissertation.

Abstract

Objective: To investigate health care service use outcomes of a novel stepped-care community mental health program, including system navigation and intensive case management, for frequent emergency department users presenting with mental illness or addiction. Also, to contribute to program and policy development related to supporting frequent emergency department users.

Methods: A quasi-experimental, pre-test/post-test, nonequivalent groups design evaluated the interaction effects of group (stepped-care intervention and three treatment as usual comparisons) and time (baseline and two follow-up years) on health care service use (emergency department visits, hospital admissions, days in hospital, general practice outpatient visits, and psychiatric outpatient visits). Retrospective longitudinal participant data were obtained from population-level public health care records and analyzed using generalized estimating equations methods.

Results: Both intervention and comparison groups experienced reduced emergency department visits and hospital admissions over time. No interaction effects were found between intervention and comparison groups over time for frequency of emergency department visits, hospital admissions, days in hospital, and general practice outpatient visits. However, results indicated significant differences between the groups regarding frequency of psychiatric outpatient visits over time, with the intervention group experiencing greater increases in visit frequency.

Conclusions: The current study replicated past research findings demonstrating that a targeted intervention did not reduce emergency department visits and hospital admissions among frequent emergency department users beyond what others experienced with treatment as usual. However, this study also identified benefits of the stepped-care intervention, notably for increasing access to psychiatric outpatient services.

Introduction

The most consistent characteristic of frequent emergency department users across various international health care systems is the presence of psychiatric diagnosis (Giannouchos et al., 2020; Soril et al., 2016). Indeed, emergency departments are increasingly faced with frequent visitors presenting with mental illness or addiction, with this patient population often requiring not only medical but also nonmedical interventions (e.g., housing and social services) to support their varied needs (Davis et al., 2024; Kanzaria et al., 2019). In the province of Ontario, Canada, the frequency of emergency department visits for mental illness or addiction increased almost 50% from 2009 to 2017, while outpatient visits increased by less than 10% over the same period (Mental Health and Addictions Program Framework Research Team, 2021). These trends are consistent with patients reporting lack of access to services and inadequate outpatient care being their main reasons for frequent emergency department use (Fleury et al., 2024), as well as research indicating systemwide difficulties referring and coordinating care between the emergency department and other services (Barker et al., 2020; Fleury et al., 2025; Walker et al., 2021).

This health care context places significant strain on hospital emergency departments while failing to address patient health and social needs, with increasing calls for the provision of more personalized care approaches across multiple systems – not only medical – to address these issues (Meng et al., 2017). Various approaches to bridging medical and nonmedical interventions, such as system navigation and case management, have been implemented in an attempt to assist these patients (Althaus et al., 2011; Mullen et al., 2023). Unfortunately, the application of such interventions to support frequent emergency department users has been

inconsistent and research on their outcomes is at an early stage (e.g., Barker et al., 2020; Finkelstein et al., 2020; Soril et al., 2015), leading to an ongoing lack of evidence-based procedures to effectively move forward (Stergiopoulos et al., 2017).

The Familiar Faces program in Ottawa, Ontario, Canada was designed to reduce frequent emergency department use among patients presenting two or more times within 30 days for mental illness or addiction, by using automated identification and referral of these individuals to a community-based stepped-care service providing system navigation support for up to three months, followed by intensive case management support for a further nine months, if necessary. This novel program, delivered by the Canadian Mental Health Association's Ottawa Branch and publicly funded by the Ontario government, began accepting referrals in October 2014. The program has been described in past research indicating that its implementation was efficient and sustainable (Cherner et al., 2022; Samosh et al., 2019), that receiving program support was associated with reduction in anxiety and depression symptoms and improvement in overall functioning (Samosh, Pettey, et al., 2024), and that related quality of life improvements were fostered mainly by the program's development of positive working relationships between staff and clients, its focus on teaching clients practical skills, and its access to a broad network of medical and nonmedical services for clients in the local community (Samosh, Agha, et al., 2024). While these results are encouraging with regard to clients' self-reported health, wellbeing, and perceptions of program services, what remains unclear is if Familiar Faces program services are also associated with changes in objective outcome measures of client health care service use.

The current study aimed to investigate the health care service use outcomes (i.e., frequency of emergency department visits, hospital admissions, days in hospital, general practice

outpatient visits, and psychiatric outpatient visits) of Familiar Faces program clients who were referred to the program due to frequent emergency department use for mental illness or addiction presentations. This was investigated to inform program and policy development in this growing area of public health and mental health care, as well as to provide feedback to the Familiar Faces program itself.

Methods

Participants

All Familiar Faces program clients were considered for study inclusion if they received both system navigation and intensive case management supports and their intake into the program occurred between October 2014 and December 2017. This allowed for a sufficient window of time for follow-up data to be collected after program intake and before the COVID-19 pandemic. Comparison group participants were individuals who were not enrolled in the Familiar Faces program during the same time period but were otherwise matched categorically with program clients by: sex (i.e., female, male), age (i.e., 16 to 29, 30 to 49, 50 or more), and emergency department discharge diagnosis (i.e., addiction disorders, anxiety disorders, deliberate self-harm, mood disorders, psychotic disorders), as recorded at the time of the second emergency department visit within 30 days that would have triggered referral into the program; experiencing, in the same calendar year, two or more emergency department visits within 30 days for mental illness or addiction presentations (i.e., 2014, 2015, 2016, 2017); and the total number of emergency department visits (beyond the two that would have triggered referral into the program; i.e., zero to one, two or more), hospital admissions (i.e., zero, one or more), and outpatient visits (i.e., zero to three, four or more), for mental illness or addiction presentations, in

the two years prior to the second emergency department visit within 30 days that would have triggered referral into the program.

Participant inclusion criteria also required having a valid entry in the provincial health care record databases provided by the Ontario Institute for Clinical Evaluative Sciences for this study, eligibility for public health insurance in Ontario, residency in Ontario, and falling within the age range of 16 to 105 years old. Once confirmed, participant data were structured by group as deriving from either the Familiar Faces program (i.e., intervention group participants) or one of three comparison groups that did not receive the intervention: Ontario participants (i.e., province-wide comparison participants), Hamilton participants (i.e., comparison participants from a different but similar midsize city in the province), and Ottawa participants (i.e., comparison participants from the same midsize city as the intervention participants).

A priori power analysis conducted with G*Power 3.1.9.3 (Faul et al., 2007) estimated the sample size required to achieve 90% power for detecting a medium effect at $\alpha = .01$ (i.e., in accordance with Bonferroni correction of $\alpha = .05$ divided by five outcome variable analyses) was 50 participants. Thus, the obtained sample sizes reported below were sufficient for this study.

Procedure

The University of Ottawa Research Ethics Board (H-05-21-6935) and Ontario Institute for Clinical Evaluative Sciences (P0970 278 000) approved this study. The Institute for Clinical Evaluative Sciences is an independent, non-profit research institute funded by an annual grant from the Ontario Ministry of Health. As a prescribed entity under Ontario's provincial privacy legislation, this institute is authorized to collect and use health care data for health systems analysis, evaluation, and decision support. Secure access to data for researchers is governed by

policies and procedures approved by the Information and Privacy Commissioner of Ontario (Data and Analytic Services, 2023).

As a result, informed consent of participants was not required nor obtained, as data were provided to the researchers in accordance with relevant data handling and privacy laws, policies, and procedures. The researchers were engaged with the Canadian Mental Health Association's Ottawa Branch and the Institute for Clinical Evaluative Sciences in a comprehensive process of project consultation, contract development, and privacy review, following which the researchers were provided with de-identified data that could only be accessed and analyzed on a secure Institute for Clinical Evaluative Sciences online server. Final study results could only be downloaded from this server following another privacy review of the findings to ensure participants were not identifiable.

Design and Analysis

This study used a quasi-experimental pre-test/post-test design with one intervention group (i.e., stepped-care) and three comparison groups (i.e., treatment as usual), involving retrospective longitudinal data derived from government population-level public health care records. Outcome variable data were structured by time across three time points as baseline data (i.e., the yearlong period prior to intake into the intervention), first-year follow-up data (i.e., the first yearlong period after intake into the intervention), and second-year follow-up data (i.e., the second yearlong period after intake into the intervention). The five outcome variables assessed across each of these year-long study periods were the total number of mental illness or addiction-related emergency department visits, hospital admissions, days in hospital, general practice outpatient visits (i.e., visits at a general practice physician office, patient home, virtual

appointment, long-term care facility, or complex care facility; not nurse practitioner visits, nor community health centre visits), and psychiatric outpatient visits (i.e., psychiatry visits that were not for inpatient care).

Analysis was conducted with Stata 17 software (StataCorp, 2021). Outcome variables were modeled with negative binomial distributions, as data were characterized by non-normality, positive skewness, positive kurtosis, and overdispersion (as seen in the descriptive statistics reported below). Baseline characteristics were therefore compared between groups using Pearson chi-square tests ($\alpha = .05$) for categorical variables and negative binomial regressions with two-tailed Wald z -tests ($\alpha = .05$) for continuous variables. Primary study analyses then used generalized estimating equations methods with two-tailed Wald z -tests and Wald chi-square tests ($\alpha = .01$, as described above) to assess main and interaction effects of data across group (i.e., the Familiar Faces stepped-care intervention and three treatment as usual comparison groups) and time (i.e., one baseline year and two follow-up years). Finally, additional two-tailed Wald z -tests ($\alpha = .017$, in accordance with Bonferroni correction of $\alpha = .05$ divided by three time point comparisons) were used to conduct *post hoc* pairwise comparison analyses to interpret any significant interaction effects found in the primary analysis.

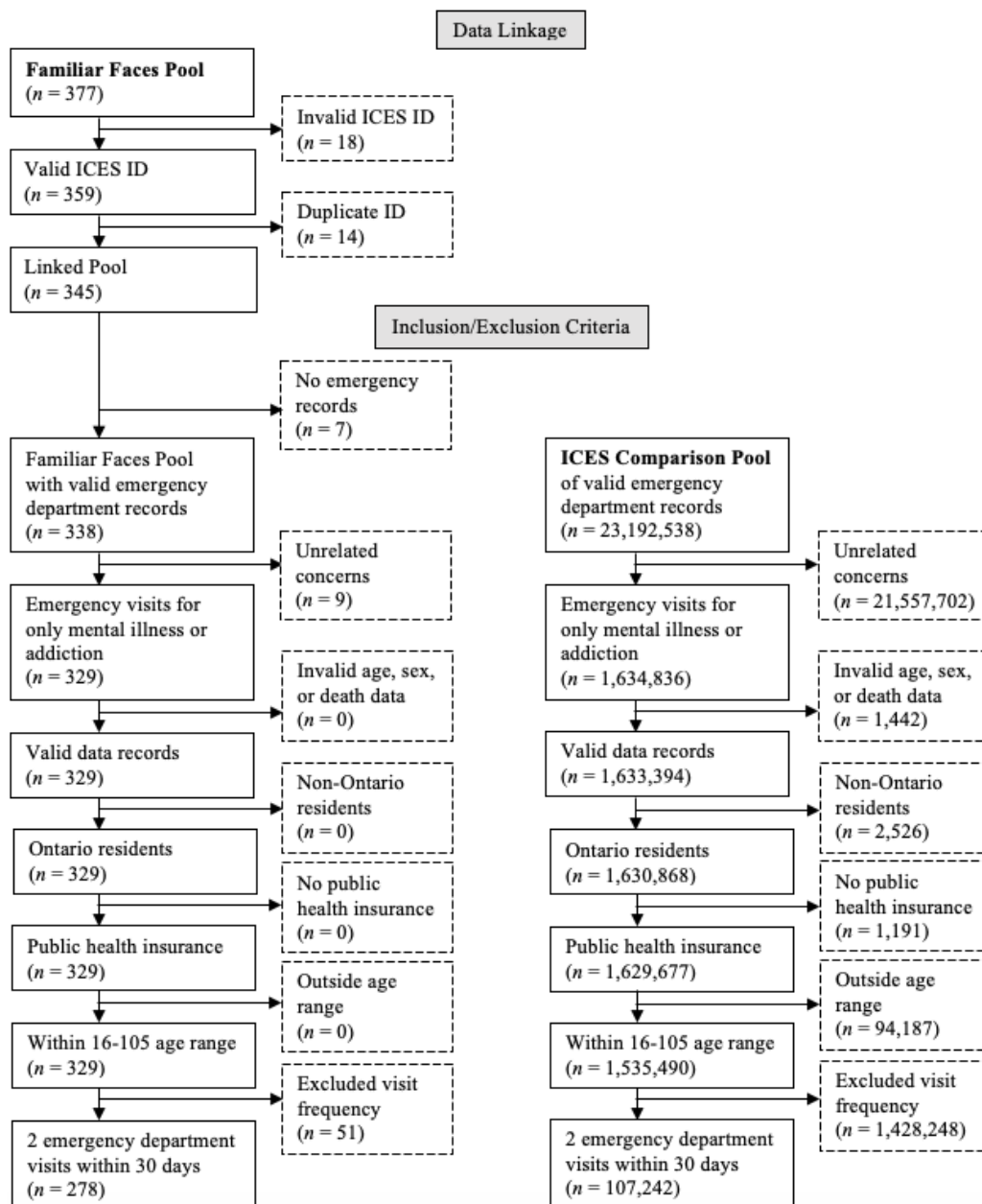
Results

Participants

Figure 1 illustrates the participant eligibility process for study inclusion, beginning with 377 Familiar Faces program clients. At the Institute for Clinical Evaluative Science's health records database level, 32 program clients (8%) were excluded due to invalid or duplicate identification. Following application of inclusion and exclusion criteria for study participation, a

further 67 (18%) were excluded due to no emergency department records, emergency department records being unrelated to mental illness or addiction, or records not reflecting the program referral criterion for experiencing two emergency department visits within 30 days. Thus, 278 Familiar Faces program clients (74%) were available for study inclusion. Institute for Clinical Evaluative Sciences comparison group participants were derived from a pool of 23,192,538 emergency department visit records across the province of Ontario. Following application of inclusion and exclusion criteria to these records, 107,242 individuals were available for comparison group matching with Familiar Faces program clients.

Figure 1

Participant Inclusion and Exclusion Flowchart

Note. ICES = Institute for Clinical Evaluative Sciences. Familiar Faces participant pool *n* reflects number of individuals. ICES comparison participant pool *n* reflects number of emergency department visits; however, the criterion for the final cell was restricted to only first experiences of two emergency department visits within 30 days for mental illness or addiction, therefore also reflecting number of individuals in the final cell.

Figure 2 illustrates the process that matched intervention and comparison group participants. The 107,242 comparison participants available for study inclusion were segmented into 100,477 available for the Ontario comparison group (i.e., all available comparison participants, minus those enrolled in the Familiar Faces program and minus those residing in Ottawa), 4,289 available for the Hamilton comparison group (i.e., only those available comparison participants residing in Hamilton), and 6,487 available for the Ottawa comparison group (i.e., only those available comparison participants residing in Ottawa, minus those enrolled in the Familiar Faces program). Following the matching process described above, all 278 Familiar Faces clients available for study inclusion (100%) were matched 1:5 with 1,390 of the Ontario comparison participants available for study inclusion, 271 Familiar Faces clients (97%) were matched 1:1 with 271 Hamilton comparison participants, and 276 Familiar Faces clients (99%) were matched 1:1 with 276 Ottawa comparison participants.

Figure 2

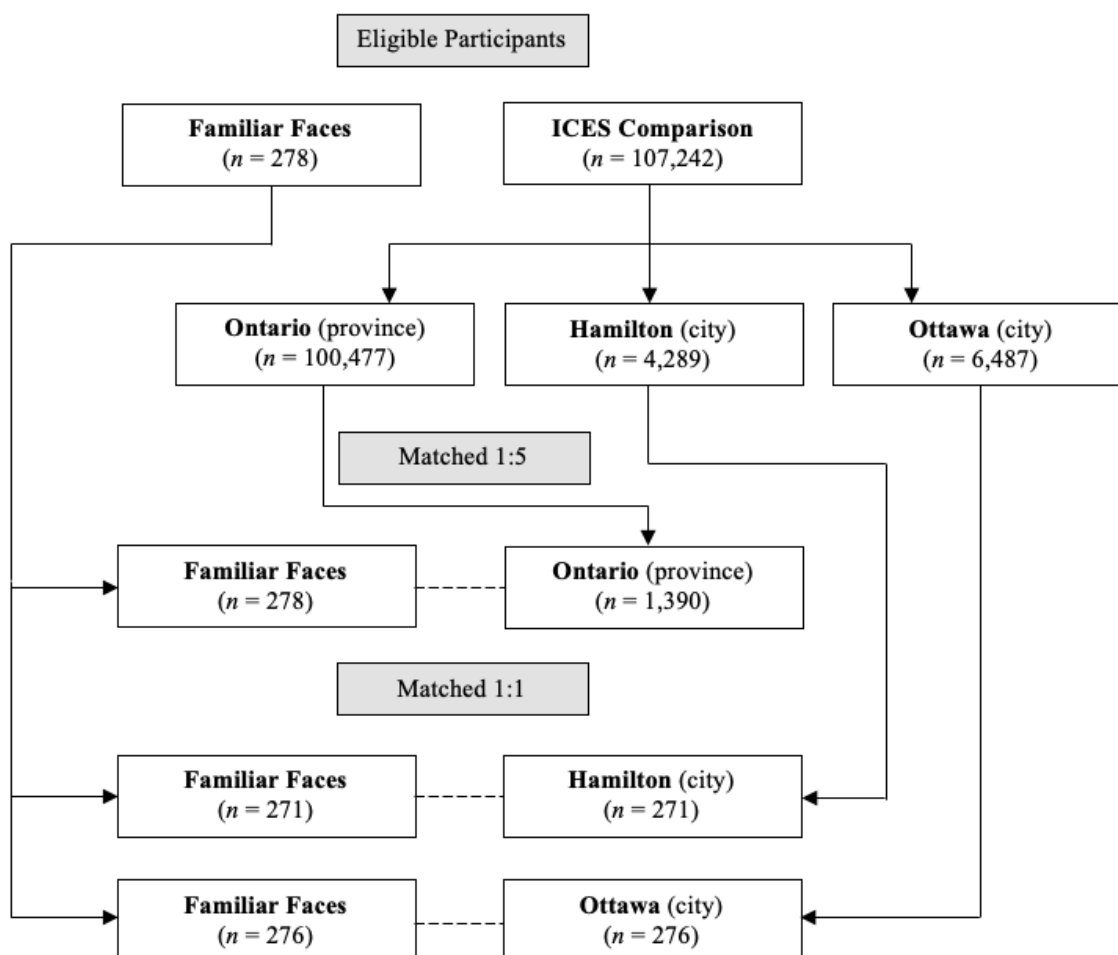
Participant Matching Flowchart

Table 5 describes participant demographic characteristics at baseline (i.e., over the one year prior to intake into the Familiar Faces program). The Familiar Faces group and comparison groups were all similar with regard to sex, age, year of the second emergency department visit within 30 days for mental illness or addiction that would have triggered referral into the program, emergency department discharge diagnosis, and number of psychiatric outpatient visits at baseline.

However, the Familiar Faces group had significantly more emergency department visits than all three comparison groups at baseline, Ontario $\chi^2(1, 1,668) = 157.12, p < .001$, incidence rate ratio = 1.92, 95% CI (1.74, 2.13), Hamilton $\chi^2(1, 542) = 48.35, p < .001$, incidence rate ratio = 1.72, 95% CI (1.48, 2.00), and Ottawa $\chi^2(1, 552) = 101.60, p < .001$, incidence rate ratio = 2.09, 95% CI (1.82, 2.40). The Familiar Faces group also had significantly more hospital admissions than all three comparison groups at baseline, Ontario $\chi^2(1, 1,668) = 29.63, p < .001$, incidence rate ratio = 1.59, 95% CI (1.34, 1.87), Hamilton $\chi^2(1, 542) = 30.77, p < .001$, incidence rate ratio = 1.90, 95% CI (1.52, 2.38), and Ottawa $\chi^2(1, 552) = 14.67, p < .001$, incidence rate ratio = 1.53, 95% CI (1.23, 1.90). Further, the Familiar Faces group had more total days in hospital than the Ontario comparison group, $\chi^2(1, 1,668) = 11.24, p < .001$, incidence rate ratio = 1.63, 95% CI (1.21, 2.20). Finally, the Familiar Faces group had more general practice outpatient visits than the Ottawa comparison group, $\chi^2(1, 552) = 10.41, p = .001$, incidence rate ratio = 1.41, 95% CI (1.15, 1.74). This indicated that, even following efforts to match intervention and comparison group participants, as described above, the Familiar Faces group still reflected individuals with higher levels of some health care service use at baseline. Note that the current

study accounted for these baseline differences, as the primary analysis already included the relevant variables, assessed across groups and time points, including at baseline.

Table 5

Demographic Characteristics of Participants at Baseline

Demographic Characteristic	Familiar Faces		Ontario		Hamilton		Ottawa	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Sex								
Female	132	48%	660	48%	128	47%	132	48%
Male	146	53%	730	53%	143	53%	144	52%
Emergency department visit year								
2014	74	27%	376	27%	72	27%	79	29%
2015	86	31%	426	31%	87	32%	83	30%
2016	79	28%	398	29%	82	30%	75	27%
2017	39	14%	190	14%	30	11%	39	14%
Discharge diagnosis								
Addiction disorders	80	29%	400	29%	80	30%	80	29%
Anxiety disorders	58	21%	290	21%	58	21%	58	21%
Deliberate self-harm	13	5%	65	5%	11	4%	12	4%
Mood disorders	39	14%	195	14%	39	14%	39	14%
Psychotic disorders	40	14%	200	14%	35	13%	39	14%
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	37.8	14.0	37.8	14.0	37.4	14.0	37.5	14.2
Emergency department visits	6.0	7.0	3.1	3.9	3.5	7.0	2.9	2.8
Hospital admissions	1.5	2.2	0.9	1.3	0.8	1.0	1.0	1.2
Hospital days	16.0	30.5	9.8	21.3	13.2	30.2	15.1	35.2
General practice outpatient visits	5.8	6.8	5.2	9.4	7.0	12.6	4.1	6.8
Psychiatric outpatient visits	3.4	5.2	3.3	6.1	3.4	6.2	3.1	6.4

Note. *N* = 278 Familiar Faces, 1,390 Ontario, 271 Hamilton, and 276 Ottawa participants. Some characteristics total less than 100% due to missing data, while others sum to greater than 100% due to rounding.

Familiar Faces and Ontario Analysis

Table 6 displays outcome variable means, standard deviations, medians, and interquartile ranges of the matched Familiar Faces intervention group and Ontario comparison group.

Table 6

Descriptive Statistics of Familiar Faces Intervention Group and Ontario Comparison Group Over Time

Outcome	Familiar Faces		Ontario	
	<i>M (SD)</i>	Mdn (IQR)	<i>M (SD)</i>	Mdn (IQR)
Emergency department visits				
Baseline	6.0 (7.0)	4 (3-6)	3.1 (3.9)	2 (2-4)
Year 1	4.7 (7.5)	2 (1-5)	2.4 (4.1)	1 (0-3)
Year 2	3.7 (8.9)	1 (0-3)	1.5 (4.0)	0 (0-1)
Hospital admissions				
Baseline	1.5 (2.2)	1 (0-2)	0.9 (1.3)	0 (0-1)
Year 1	1.1 (2.0)	0 (0-2)	0.7 (1.6)	0 (0-1)
Year 2	0.9 (2.0)	0 (0-1)	0.4 (1.2)	0 (0-0)
Hospital days				
Baseline	16.0 (30.5)	4 (0-20)	9.8 (21.3)	0 (0-10)
Year 1	11.6 (11.7)	0 (0-17)	8.8 (12.3)	0 (0-6)
Year 2	9.7 (12.9)	0 (0-8)	6.7 (12.0)	0 (0-0)
General practice outpatient visits				
Baseline	5.8 (6.8)	3 (1-8)	5.2 (9.4)	2 (0-6)
Year 1	5.7 (8.9)	2 (1-7)	4.9 (8.9)	2 (0-6)
Year 2	4.9 (10.1)	1 (0-5)	3.7 (8.3)	1 (0-4)
Psychiatric outpatient visits				
Baseline	3.4 (5.2)	1 (0-4)	3.3 (6.1)	1 (0-4)
Year 1	5.9 (7.7)	2 (0-9)	3.9 (8.1)	1 (0-5)
Year 2	4.8 (7.9)	1 (0-7)	3.0 (7.9)	0 (0-3)

Note. $N = 278$ Familiar Faces and 1,390 Ontario participants matched 1:5. Baseline, Year 1, and Year 2 = the year prior, first year after, and second year after entry into the program, respectively. IQR = interquartile range.

Omnibus Interaction Effects

Wald chi-square tests ($\alpha = .01$) assessed the omnibus interaction effect of all modeled group and time elements combined, for each of the five outcome variables. The overall

interaction effect was not significant for emergency department visits, $\chi^2(2, 5,004) = 4.30, p = .116$, hospital admissions, $\chi^2(2, 5,004) = 7.00, p = .030$, hospital days, $\chi^2(2, 5,004) = 0.23, p = .891$, and general practice outpatient visits, $\chi^2(2, 5,004) = 1.99, p = .369$. A significant overall interaction effect was found for psychiatric outpatient visits, $\chi^2(2, 5,004) = 18.57, p < .001$, with the interaction term accounting for 22.34%, 95% CI (11.10%, 33.58%) of the model's total explanatory power.

Emergency Department Visits

Wald z-tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of emergency department visits. The main effect of time across all intervention and comparison group participants combined indicated a significant decrease in visits between baseline and the first year after intervention intake ($z = -6.01, p < .001$), as well as between baseline and the second year after intervention intake ($z = -10.89, p < .001$). The main effect of group across all time points combined indicated that Familiar Faces participants had significantly more visits than the Ontario comparison group ($z = 8.46, p < .001$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = 0.19, p = .848$), nor from baseline to the second year after intervention intake ($z = 1.82, p = .069$).

Hospital Admissions

Wald z-tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of hospital admissions. The main effect of time across all intervention and comparison group participants combined indicated a significant decrease in admissions between baseline and the first year after intervention intake ($z = -3.96, p < .001$), as well as between

baseline and the second year after intervention intake ($z = -9.99, p < .001$). The main effect of group across all time points combined indicated that Familiar Faces participants had significantly more admissions than the Ontario comparison group ($z = 4.80, p < .001$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = -0.34, p = .737$), nor from baseline to the second year after intervention intake ($z = 2.07, p = .038$).

Hospital Days

Wald z -tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of hospital days. The main effect of time across all intervention and comparison group participants combined indicated no significant difference in hospital days between baseline and the first year after intervention intake ($z = -2.10, p = .035$), and a significant decrease between baseline and the second year after intervention intake ($z = -4.56, p < .001$). The main effect of group across all time points indicated that Familiar Faces participants had significantly more days in hospital than the Ontario comparison group ($z = 3.80, p < .001$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = 0.16, p = .874$), nor from baseline to the second year after intervention intake ($z = 0.48, p = .631$).

General Practice Outpatient Visits

Wald z -tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of general practice outpatient visits. The main effect of time across all intervention and comparison group participants combined indicated no significant difference in visits between baseline and the first year after intervention intake ($z = -1.70, p = .090$), and a significant

decrease between baseline and the second year after intervention intake ($z = -6.18, p < .001$).

The main effect of group across all time points combined indicated no significant difference in visits between Familiar Faces and Ontario comparison group participants ($z = 1.33, p = .183$).

The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = 0.56, p = .576$), nor from baseline to the second year after intervention intake ($z = 1.41, p = .159$).

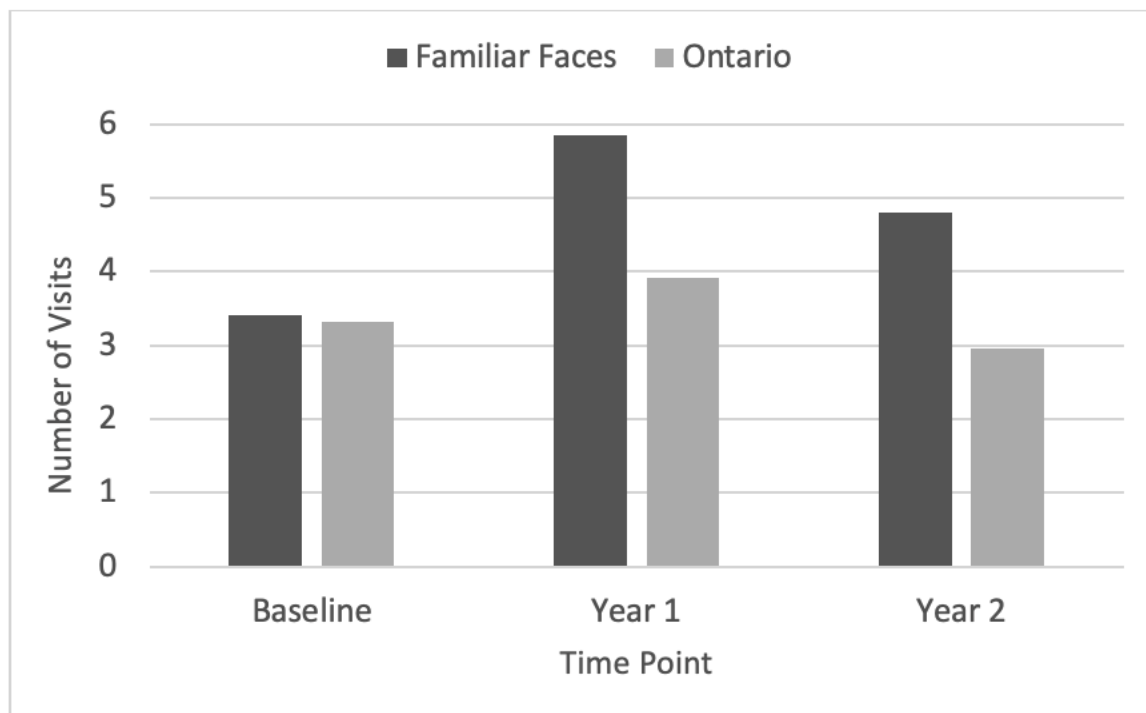
Psychiatric Outpatient Visits

Wald z -tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of psychiatric outpatient visits. The main effect of time across all intervention and comparison group participants combined indicated a significant increase in visits between baseline and the first year after intervention intake ($z = 3.27, p = .001$), and no difference between baseline and the second year after intervention intake ($z = -1.73, p = .083$). The main effect of group across all time points combined indicated no significant difference in visits between Familiar Faces and Ontario comparison group participants ($z = 0.27, p = .784$). The interaction effect between time and group was significant from baseline to the first year after intervention intake, with the Familiar Faces group visits increasing more than the Ontario group between these time points ($z = 3.89, p < .001$, incidence rate ratio = 1.46, 95% CI [1.20, 1.76]). The interaction effect was also significant from baseline to the second year after intervention intake, with the Familiar Faces group visits increasing more than the Ontario group between these time points ($z = 3.77, p < .001$, incidence rate ratio = 1.59, 95% CI [1.25, 2.01]).

Psychiatric outpatient visit effects across group and time are illustrated in Figure 3.

Figure 3

Familiar Faces Intervention Group and Ontario Comparison Group Mean Psychiatric Outpatient Visits Over Time



Post Hoc Analyses

Post hoc Wald z -tests ($\alpha = .017$) were required to further investigate the significant omnibus interaction effect of group and time on psychiatric outpatient visits described above. Results indicated that the modeled rate of psychiatric outpatient visits of Familiar Faces program clients increased significantly between baseline and the first year after intervention intake, $z = 3.68, p < .001$, incidence rate ratio = 1.71, 95% CI (1.29, 2.28), did not increase significantly between baseline and the second year after intervention intake, though approached significance, $z = 2.33, p = .020$, incidence rate ratio = 1.41, 95% CI (1.06, 1.88), and did not differ significantly between the first year and second year after intervention intake, $z = -1.36, p = .175$.

Familiar Faces and Hamilton Analysis

Table 7 displays outcome variable means, standard deviations, medians, and interquartile ranges of the matched Familiar Faces intervention group and Hamilton comparison group.

Table 7

Descriptive Statistics of Familiar Faces Intervention Group and Hamilton Comparison Group Over Time

Outcome	Familiar Faces		Hamilton	
	<i>M (SD)</i>	Mdn (IQR)	<i>M (SD)</i>	Mdn (IQR)
Emergency department visits				
Baseline	6.1 (7.1)	4 (3-6)	3.5 (7.0)	2 (2-4)
Year 1	4.7 (7.5)	2 (1-5)	2.5 (4.2)	1 (0-3)
Year 2	3.8 (9.0)	1 (0-3)	1.6 (5.5)	0 (0-1)
Hospital admissions				
Baseline	1.5 (2.2)	1 (0-2)	0.8 (1.0)	0 (0-1)
Year 1	1.1 (2.0)	0 (0-2)	0.6 (1.1)	0 (0-1)
Year 2	0.9 (2.0)	0 (0-1)	0.2 (0.6)	0 (0-0)
Hospital days				
Baseline	16.0 (30.1)	3 (0-20)	13.2 (30.2)	0 (0-11)
Year 1	11.6 (11.8)	0 (0-17)	9.5 (12.8)	0 (0-3)
Year 2	9.9 (13.0)	0 (0-8)	8.2 (13.4)	0 (0-0)
General practice outpatient visits				
Baseline	5.9 (6.9)	3 (1-8)	7.0 (12.6)	3 (1-6)
Year 1	5.9 (9.0)	2 (1-7)	6.2 (11.2)	2 (1-6)
Year 2	5.1 (10.2)	2 (0-5)	5.7 (12.2)	1 (0-5)
Psychiatric outpatient visits				
Baseline	3.4 (5.1)	1 (0-4)	3.4 (6.2)	1 (0-4)
Year 1	5.8 (7.6)	2 (0-9)	3.3 (5.8)	1 (0-5)
Year 2	4.8 (8.0)	1 (0-7)	2.5 (5.5)	0 (0-3)

Note. $N = 271$ Familiar Faces and 271 Hamilton participants matched 1:1. Baseline, Year 1, and Year 2 = the year prior, first year after, and second year after entry into the program, respectively. IQR = interquartile range.

Omnibus Interaction Effects

Wald chi-square tests ($\alpha = .01$) assessed the omnibus interaction effect of all modeled group and time elements combined, for each of the five outcome variables. The overall

interaction effect was not significant for emergency department visits, $\chi^2(2, 1,626) = 2.70, p = .260$, hospital admissions, $\chi^2(2, 1,626) = 1.72, p = .423$, hospital days, $\chi^2(2, 1,626) = 4.31, p = .116$, and general practice outpatient visits, $\chi^2(2, 1,626) = 0.97, p = .616$. A significant overall interaction effect was found for psychiatric outpatient visits, $\chi^2(2, 1,626) = 23.46, p < .001$, with the interaction term accounting for 39.91%, 95% CI (20.81%, 59.02%) of the model's total explanatory power.

Emergency Department Visits

Wald z-tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of emergency department visits. The main effect of time across all intervention and comparison group participants combined indicated a significant decrease in visits between baseline and the first year after intervention intake ($z = -3.41, p = .001$), as well as between baseline and the second year after intervention intake ($z = -5.23, p < .001$). The main effect of group across all time points combined indicated that Familiar Faces participants had significantly more visits than the Hamilton comparison group ($z = 3.92, p < .001$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = 0.75, p = .453$), nor from baseline to the second year after intervention intake ($z = 1.64, p = .101$).

Hospital Admissions

Wald z-tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of hospital admissions. The main effect of time across all intervention and comparison group participants combined indicated a significant decrease in admissions between baseline and the first year after intervention intake ($z = -2.64, p = .008$), as well as between

baseline and the second year after intervention intake ($z = -8.67, p < .001$). The main effect of group across all time points combined indicated that Familiar Faces participants had significantly more admissions than the Hamilton comparison group ($z = 4.79, p < .001$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = -0.86, p = .387$), nor from baseline to the second year after intervention intake ($z = 0.21, p = .830$).

Hospital Days

Wald z -tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of hospital days. The main effect of time across all intervention and comparison group participants combined indicated no significant difference in hospital days between baseline and the first year after intervention intake ($z = -1.03, p = .303$), and a significant decrease between baseline and the second year after intervention intake ($z = -4.09, p < .001$). The main effect of group across all time points indicated no significant difference between the Familiar Faces participants and the Hamilton comparison group ($z = 1.04, p = .298$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = 0.29, p = .775$), nor from baseline to the second year after intervention intake ($z = 2.05, p = .040$).

General Practice Outpatient Visits

Wald z -tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of general practice outpatient visits. The main effect of time across all intervention and comparison group participants combined indicated no significant difference in visits between baseline and the first year after intervention intake ($z = -1.56, p = .119$), nor between baseline

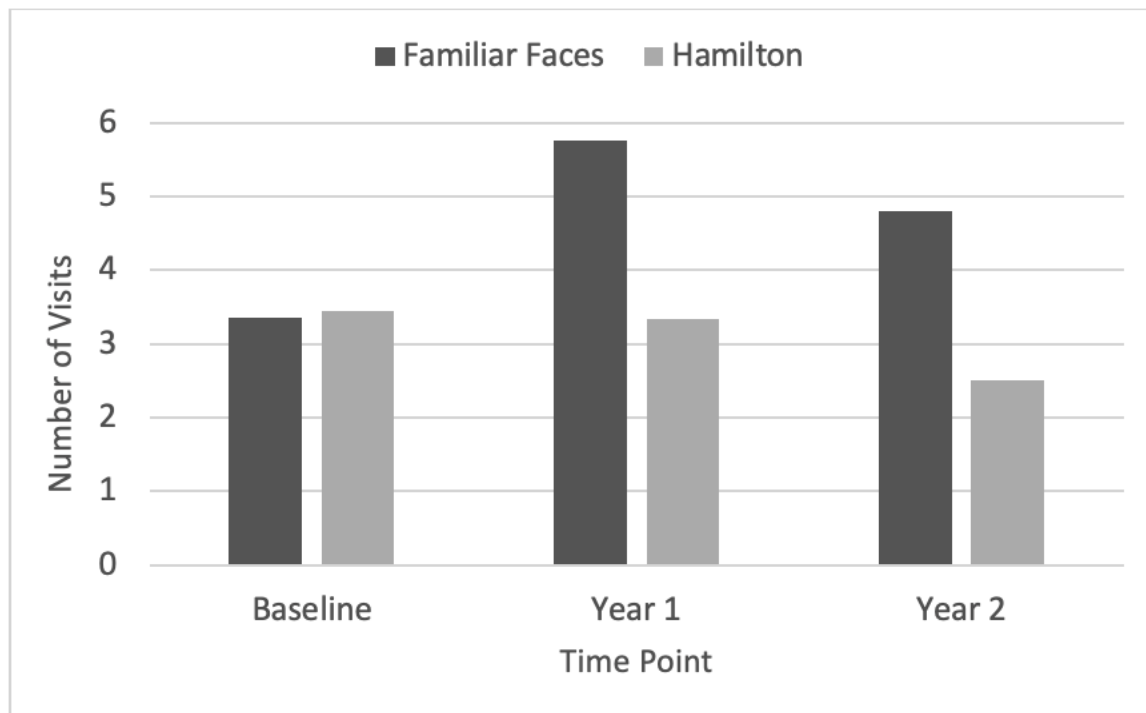
and the second year after intervention intake ($z = -1.97, p = .049$). The main effect of group across all time points combined indicated no significant difference in visits between Familiar Faces and Hamilton comparison group participants ($z = -1.27, p = .206$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = 0.96, p = .340$), nor from baseline to the second year after intervention intake ($z = 0.34, p = .730$).

Psychiatric Outpatient Visits

Wald z -tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of psychiatric outpatient visits. The main effect of time across all intervention and comparison group participants combined indicated no significant difference in visits between baseline and the first year after intervention intake ($z = -0.32, p = .751$), and a significant decrease in visits between baseline and the second year after intervention intake ($z = -2.76, p = .006$). The main effect of group across all time points combined indicated no significant difference in visits between Familiar Faces and Hamilton comparison group participants ($z = -0.18, p = .855$). The interaction effect between time and group was significant from baseline to the first year after intervention intake, with the Familiar Faces group visits increasing more than the Hamilton group between these time points ($z = 4.36, p < .001$, incidence rate ratio = 1.77, 95% CI [1.37, 2.29]). The interaction effect was also significant from baseline to the second year after intervention intake, with the Familiar Faces group visits increasing more than the Hamilton group between these time points ($z = 4.39, p < .001$, incidence rate ratio = 1.97, 95% CI [1.45, 2.66]). Psychiatric outpatient visit effects across group and time are illustrated in Figure 4.

Figure 4

Familiar Faces Intervention Group and Hamilton Comparison Group Mean Psychiatric Outpatient Visits Over Time



Post Hoc Analyses

Post hoc Wald z -tests ($\alpha = .017$) were required to further investigate the significant omnibus interaction effect of group and time on psychiatric outpatient visits described above. Results indicated that the modeled rate of psychiatric outpatient visits of Familiar Faces program clients increased significantly between baseline and the first year after intervention intake, $z = 3.62$, $p < .001$, incidence rate ratio = 1.72, 95% CI (1.28, 2.30), increased significantly between baseline and the second year after intervention intake, $z = 2.40$, $p = .017$, incidence rate ratio = 1.43, 95% CI (1.07, 1.92), and did not differ significantly between the first year and second year after intervention intake, $z = -1.22$, $p = .221$.

Familiar Faces and Ottawa Analysis

Table 8 displays outcome variable means, standard deviations, medians, and interquartile ranges of the matched Familiar Faces intervention group and Ottawa comparison group.

Table 8

Descriptive Statistics of Familiar Faces Intervention Group and Ottawa Comparison Group Over Time

Outcome	Familiar Faces		Ottawa	
	<i>M (SD)</i>	Mdn (IQR)	<i>M (SD)</i>	Mdn (IQR)
Emergency department visits				
Baseline	6.0 (7.0)	4 (3-6)	2.9 (2.8)	2 (2-4)
Year 1	4.7 (7.5)	2 (1-5)	1.9 (2.8)	1 (0-3)
Year 2	3.7 (9.0)	1 (0-3)	1.3 (2.8)	0 (0-1)
Hospital admissions				
Baseline	1.5 (2.2)	1 (0-2)	1.0 (1.2)	1 (0-2)
Year 1	1.1 (2.0)	0 (0-2)	0.6 (1.1)	0 (0-1)
Year 2	0.9 (2.0)	0 (0-1)	0.4 (1.0)	0 (0-0)
Hospital days				
Baseline	16.1 (30.6)	4 (0-20)	15.1 (35.2)	1 (0-15)
Year 1	11.6 (11.7)	0 (0-17)	7.5 (9.6)	0 (0-3)
Year 2	9.8 (12.9)	0 (0-8)	6.0 (8.7)	0 (0-0)
General practice outpatient visits				
Baseline	5.9 (6.8)	3 (1-8)	4.1 (6.8)	2 (0-5)
Year 1	5.8 (8.9)	2 (1-7)	3.5 (5.7)	1 (0-4)
Year 2	5.0 (10.2)	2 (0-5)	3.6 (7.1)	1 (0-4)
Psychiatric outpatient visits				
Baseline	3.4 (5.1)	1 (0-4)	3.1 (6.4)	0 (0-3)
Year 1	5.8 (7.6)	2 (0-9)	4.0 (7.5)	0 (0-5)
Year 2	4.8 (8.0)	1 (0-7)	2.4 (4.8)	0 (0-3)

Note. $N = 276$ Familiar Faces and 276 Ottawa participants matched 1:1. Baseline, Year 1, and Year 2 = the year prior, first year after, and second year after entry into the program, respectively. IQR = interquartile range.

Omnibus Interaction Effects

Wald chi-square tests ($\alpha = .01$) assessed the omnibus interaction effect of all modeled group and time elements combined, for each of the five outcome variables. The overall

interaction effect was not significant for emergency department visits, $\chi^2(2, 1,656) = 3.06, p = .216$, hospital admissions, $\chi^2(2, 1,656) = 5.19, p = .075$, hospital days, $\chi^2(2, 1,656) = 4.09, p = .129$, and general practice outpatient visits, $\chi^2(2, 1,656) = 2.51, p = .285$. A significant overall interaction effect was found for psychiatric outpatient visits, $\chi^2(2, 1,656) = 18.11, p < .001$, with the interaction term accounting for 20.83%, 95% CI (10.28%, 31.37%) of the model's total explanatory power.

Emergency Department Visits

Wald z-tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of emergency department visits. The main effect of time across all intervention and comparison group participants combined indicated a significant decrease in visits between baseline and the first year after intervention intake ($z = -4.71, p < .001$), as well as between baseline and the second year after intervention intake ($z = -6.18, p < .001$). The main effect of group across all time points combined indicated that Familiar Faces participants had significantly more visits than the Ottawa comparison group ($z = 8.15, p < .001$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = 1.29, p = .197$), nor from baseline to the second year after intervention intake ($z = 1.71, p = .088$).

Hospital Admissions

Wald z-tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of hospital admissions. The main effect of time across all intervention and comparison group participants combined indicated a significant decrease in admissions between baseline and the first year after intervention intake ($z = -4.30, p < .001$), as well as between

baseline and the second year after intervention intake ($z = -5.50, p < .001$). The main effect of group across all time points combined indicated that Familiar Faces participants had significantly more admissions than the Ottawa comparison group ($z = 3.67, p < .001$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = 1.83, p = .068$), nor from baseline to the second year after intervention intake ($z = 2.04, p = .041$).

Hospital Days

Wald z -tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of hospital days. The main effect of time across all intervention and comparison group participants combined indicated a significant decrease in hospital days between baseline and the first year after intervention intake ($z = -2.58, p = .010$), as well as between baseline and the second year after intervention intake ($z = -4.18, p < .001$). The main effect of group across all time points indicated no significant difference in hospital days between the Familiar Faces participants and the Ottawa comparison group ($z = 0.33, p = .743$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = 1.64, p = .102$), nor from baseline to the second year after intervention intake ($z = 1.69, p = .092$).

General Practice Outpatient Visits

Wald z -tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of general practice outpatient visits. The main effect of time across all intervention and comparison group participants combined indicated no significant difference in visits between baseline and the first year after intervention intake ($z = -1.87, p = .061$), nor between baseline

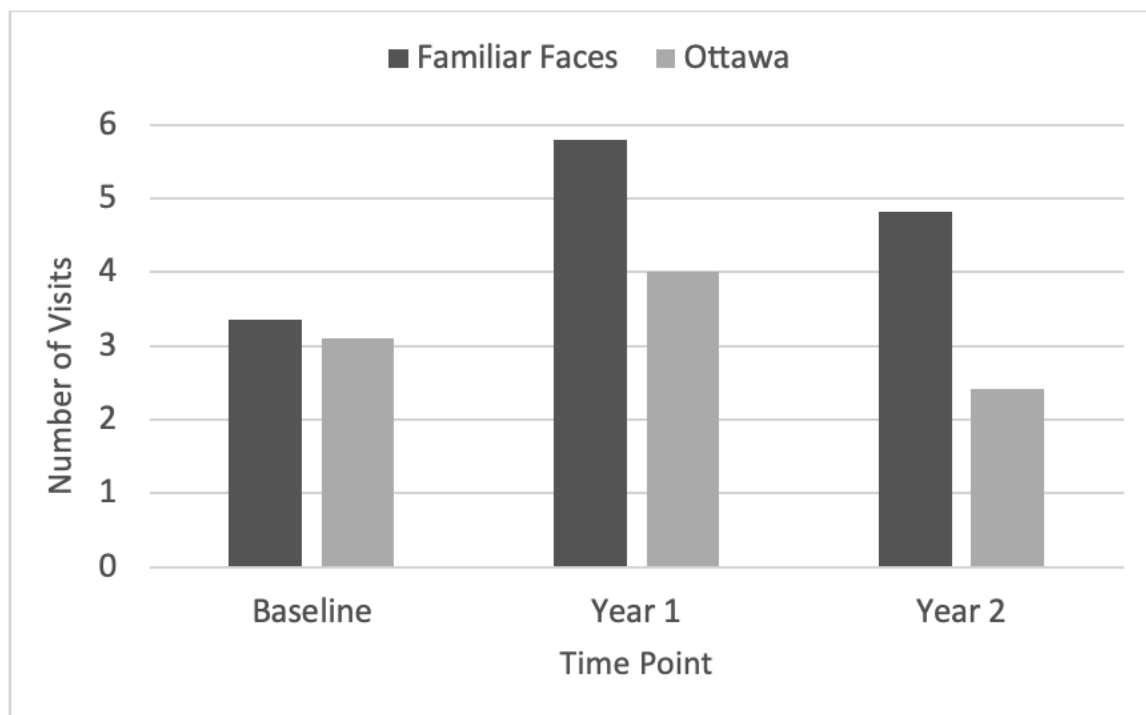
and the second year after intervention intake ($z = -1.22, p = .223$). The main effect of group across all time points combined indicated that Familiar Faces participants had significantly more visits than the Ottawa comparison group ($z = 2.84, p = .005$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = 1.26, p = .207$), nor from baseline to the second year after intervention intake ($z = -0.15, p = .881$).

Psychiatric Outpatient Visits

Wald z -tests ($\alpha = .01$) assessed the effects of group, time, and their interaction, on the modeled rate of psychiatric outpatient visits. The main effect of time across all intervention and comparison group participants combined indicated a significant increase in visits between baseline and the first year after intervention intake ($z = 2.65, p = .008$), and no difference between baseline and the second year after intervention intake ($z = -2.42, p = .016$). The main effect of group across all time points combined indicated no significant difference in visits between Familiar Faces and Ottawa comparison group participants ($z = 0.52, p = .600$). The interaction effect between time and group was not significant from baseline to the first year after intervention intake ($z = 2.29, p = .022$; though approached significance, incidence rate ratio = 1.34, 95% CI [1.04, 1.72]), but was significant from baseline to the second year after intervention intake, with the Familiar Faces group visits increasing more than the Ottawa group between these time points ($z = 4.23, p < .001$, incidence rate ratio = 1.84, 95% CI [1.39, 2.44]). Psychiatric outpatient visit effects across group and time are illustrated in Figure 5.

Figure 5

Familiar Faces Intervention Group and Ottawa Comparison Group Mean Psychiatric Outpatient Visits Over Time



Post Hoc Analyses

Post hoc Wald z -tests ($\alpha = .017$) were required to further investigate the significant omnibus interaction effect of group and time on psychiatric outpatient visits described above. Results indicated that the modeled rate of psychiatric outpatient visits of Familiar Faces program clients increased significantly between baseline and the first year after intervention intake, $z = 3.73$, $p < .001$, incidence rate ratio = 1.73, 95% CI (1.30, 2.30), increased significantly between baseline and the second year after intervention intake, $z = 2.45$, $p = .014$, incidence rate ratio = 1.43, 95% CI (1.07, 1.91), and did not differ significantly between the first year and second year after intervention intake, $z = -1.28$, $p = .199$.

Discussion and Conclusions

The current study investigated health care service use outcomes of a novel community mental health program providing system navigation and intensive case management supports for individuals in the Ottawa, Ontario, Canada area who had experienced frequent emergency department visits related to mental illness or addiction presentations. The examined outcomes included the number of mental illness or addiction-related emergency department visits, hospital admissions, days in hospital, general practice outpatient visits, and psychiatric outpatient visits assessed over three years (i.e., one baseline year and two follow-up years) and compared to three comparison groups (i.e., across the province of Ontario, city of Hamilton, and city of Ottawa). Results notably indicated differences in some health care service use indicators between groups at baseline, with the Familiar Faces group exhibiting more service use than comparison groups, as well as no interaction effects on outcome variables between intervention and comparison groups over time, other than for psychiatric outpatient visits, with the Familiar Faces group increasing their frequency of psychiatric outpatient visits over time at a higher rate than the comparison groups.

Baseline Group Differences

The health care service use variables examined in the current study exhibited similar trends over time for both the Familiar Faces group and the comparison groups. However, while the trends over time were similar, it was notable that the Familiar Faces group started with significantly higher frequency of emergency department visits and hospital admissions at baseline compared to all comparison groups, despite matching intervention and comparison participants categorically on these variables. It was unclear based on data in the current study

why the Familiar Faces group had this higher health care service use at baseline, though may reflect that the program was successfully identifying and enrolling those individuals most in need of assistance. In this regard it was encouraging that, despite higher service use at baseline, Familiar Faces program clients still experienced decreases in emergency department visits and hospital admissions over time, even if no related interaction effects were found in the study to distinguish these changes from the comparison groups.

Further, the Familiar Faces group had significantly more days in hospital at baseline than the Ontario comparison group, but not more than the Hamilton and Ottawa comparison groups. While unclear why, this may reflect more access to hospital resources in larger centers like Hamilton and Ottawa, as opposed to across the whole province, which included more rural areas with fewer and smaller hospitals. The Familiar Faces group also had significantly more general practice outpatient visits at baseline than the Ottawa comparison group, but not more than the Ontario and Hamilton comparison groups. While again unclear why, this may reflect that Ottawa had less access to general practitioners compared to the other areas, in conjunction with Familiar Faces program clients having higher levels of need than others in Ottawa, thereby leading to program clients exhibiting higher baseline frequency of general practice outpatient visits.

Health Care Service Use Outcomes

Results indicated no statistically significant interaction effects on outcome variables across groups and time points, other than for psychiatric outpatient visits. Thus, there was no indication that the Familiar Faces stepped-care intervention provided additional benefits to program clients compared to the treatment as usual comparison groups on these variables, other than program clients experiencing significantly greater increases in psychiatric outpatient visits

over time. This lack of interaction effects replicated previous research findings of other interventions targeted to support frequent emergency department users.

Stergiopoulos et al. (2017) conducted a randomized controlled trial of a case management service for frequent emergency department users with mental illness or addiction in Toronto, Ontario, Canada. Their findings indicated that both intervention and treatment as usual participant groups experienced reductions in emergency department visits and days in hospital over one year, with no statistically significant differences found between the two groups. Finkelstein et al. (2020) conducted a randomized controlled trial of an intensive clinical and social care program, including system navigation, for individuals with frequent hospital admissions and various other criteria, which could include mental illness or addiction, in Camden, New Jersey, United States of America. They found no statistically significant differences between intervention and treatment as usual participant groups in hospital admissions over six months. Cohen et al. (2022) conducted a randomized controlled trial of a case management intervention designed to reduce frequent emergency department use in York, North Yorkshire, England. They found no statistically significant differences between the intervention and treatment as usual participant groups in overall primary care use over two years.

Taken together, this past research suggests that even targeted interventions may not be sufficient to significantly improve the health care service use outcomes of frequent emergency department and hospital users with complex needs, that some of these individuals may already be well-connected to various other services such that adding another intervention does not add noticeable benefit related to health care service use, that these interventions may be helpful but ultimately cannot replace the accessibility of emergency departments and hospitals, and that at

the same time these interventions may still be important to assist individuals in need even if they do not obtain improved health care service use outcomes compared to treatment as usual (Finkelstein et al., 2020; LaCalle & Rabin, 2010; Roland & Abel, 2012; Stergiopoulos et al., 2017).

Ultimately, while the provision of system navigation and intensive case management services, such as the Familiar Faces program, may reflect additional intervention offered beyond the usual supports available for frequent emergency department users with mental illness or addiction, these still may not be sufficient to reduce emergency department visits and hospital admissions more than treatment as usual. Indeed, others have noted that frequent emergency department users often have needs that require more comprehensive and personalized supports integrated across various health and social support systems (Kanzaria et al., 2019; Meng et al., 2017; Weir et al., 2022).

Prior research of the Familiar Faces program itself revealed that clients experienced concerns across a broad range of life domains that brought them to the emergency department, including addictions, employment issues, financial difficulties, housing challenges, mental illness, physical illness, relationship problems, suicidal or self-harm ideation or behaviour, and system navigation barriers (Samosh, Agha, et al., 2024). It may be the case that different care needs are differentially impacted by a program like Familiar Faces, such that when individuals with diverse needs are all grouped together, the beneficial effects of the program for some are lost in the group analysis.

Further, given the varied concerns of frequent emergency department users, some of these may also be experienced as more acute crises, which may have led to study results

exhibiting regression to the mean effects (e.g., Finkelstein et al., 2020; Shadish et al., 2002). In this scenario, individuals would have experienced reductions in health care service use as their acute crises were resolved over time, with or without intervention support.

Finally, lack of significantly different outcomes between the Familiar Faces and treatment as usual groups may also reflect a referral threshold issue. It may be that the Familiar Faces program received referrals for a subset of people who had substantial needs and high frequency of health care service use prior to program intake, and that these individuals were supported by the program in a significant manner. However, if the program also received referrals for individuals who had less substantial needs and lower frequency of service use prior to program intake, as in the treatment as usual group, these individuals may not have benefited similarly from the program, thereby obscuring statistical significance when grouped together.

This may be reflected in the negative binomial distributions found in the current study, as illustrated across the descriptive statistics of outcome variables (i.e., means, standard deviations, medians, and interquartile ranges). Most participants exhibited lower levels of service use, as seen in the medians and interquartile ranges reported. However, at the same time, standard deviations larger than means indicated wide variation within each outcome variable regarding frequency of participant health care service use. Further, means that were higher than medians suggested that this variation reflected the presence of a subset of participants engaged in higher frequency of health care service use. Thus, programs like Familiar Faces may be receiving referrals for substantially different subsets of individuals with substantially different care needs.

In this regard, there were no widely-accepted standardized definitions of frequent emergency department use when the current study was conducted. However, Doupe et al. (2012)

found that there were differences between groups characterized as less frequent visitors (one to six visits per year), frequent visitors (seven to 17 visits per year), and highly frequent visitors (18 or more visits per year). Most notably, they found that moving from the less frequent to frequent to highly frequent groups showed corresponding increases with regard to rates of mental illness and especially addiction, as well as for having a history of seven or more emergency department visits over the prior year (0.5% of less frequent users, 17.8% of frequent users, and 70.0% of highly frequent users).

It may therefore be relevant that the Familiar Faces definition of frequent emergency department use sufficient to trigger a referral into the program was two emergency department visits for mental illness or addiction within 30 days, thereby potentially including individuals with less severe needs than this type of program may be intended to support. This poses a challenge for health care policymakers and administrators, given conflicts between providing support to the larger subset of individuals with less substantial needs, which could make a greater impact on systems-level indicators like overall number of emergency department visits and emergency department wait times, while simultaneously looking to support the smaller subset of individuals with more substantial needs, though doing so might not lead to as impactful systems-level effects (Roland & Abel, 2012).

Psychiatric Outpatient Visit Outcomes

While the current study indicated no statistically significant interaction effects on most outcome variables across group and time, this was not the case for psychiatric outpatient visits. The Familiar Faces group experienced greater increases, with large effect sizes, in the frequency of psychiatric outpatient visits over time compared to all three treatment as usual comparison

groups. This finding may reflect that the program was successful in connecting program clients to more specialized outpatient services. The Familiar Faces program did have access to in-house psychiatric consultation services for clients at the Canadian Mental Health Association's Ottawa Branch, where the program was delivered. However, this would typically provide up to one or two psychiatric outpatient visits at most, meaning that the differences seen between the Familiar Faces group and the comparison groups regarding psychiatric outpatient visit frequency would not be fully explained by in-house psychiatric consultations alone and would have likely included connections to external psychiatric outpatient services as well. The Familiar Faces program included explicit advocacy for program clients to receive psychiatric supports, if considered relevant, as well as other services that may have also led to psychiatry referrals later on (e.g., counseling services).

At the same time, while intervention and comparison groups had similar levels of psychiatric outpatient visits at baseline, it cannot be ruled out that program clients in the current study may have had more psychiatric outpatient visits after program intake than comparison group participants due to the program clients having had higher frequencies of emergency department visits and hospital admissions at baseline, which may reflect higher levels of need that would have translated into more psychiatry referrals regardless of program enrollment. However, it may be more plausible that Familiar Faces program clients obtained more connection to psychiatric outpatient services directly due to program intervention, given that this increase in psychiatric outpatient services corresponded with decreases in emergency department visits and hospital admissions over time.

This suggests that support may have therefore shifted away from the hospital and toward community-based outpatient services, a promising finding when considered in the context of the potential for adverse and traumatic experiences reported in psychiatric inpatient settings internationally (Hallett et al., 2025), inadequate outpatient care being a primary reason for frequent emergency department use (Fleury et al., 2024), frequent emergency department use disproportionately burdening health care systems (Doupe et al., 2012), and one or more psychiatric outpatient visit being associated with lower odds of subsequent emergency department visits among individuals with serious mental illness or addiction (Lavergne et al., 2022). Thus, if the Familiar Faces program was assisting clients to better access specialty outpatient services, such as psychiatry, this could represent a substantial benefit of the program for both the clients and health care systems involved.

Recommendations and Future Research

Various recommendations and future research opportunities follow from the study results. Programs aiming to support frequent emergency department users should carefully define what frequent use means for referral purposes and consider if the program is relevant for all clients being referred or if it might be better suited to certain subsets of individuals based on variables like emergency department visit frequency, diagnostic categorization, and the acute or chronic nature of the presenting problem. Future research could help look for differential program outcomes based on these kinds of indicators, as well as study the predictors of zero emergency department visits at follow-up. Also, to obtain a more comprehensive understanding of program client experiences, future research might investigate not only health care service use outcomes but also various psychosocial measures simultaneously. Finally, it would be important

to assess, when possible, if research participants receive other services while also receiving the program services being studied, as this can complicate interpretation of study results.

Limitations

While a rigorous process was conducted to match intervention and comparison group participants, this was done categorically and ultimately led to important differences between groups at baseline. Namely, the Familiar Faces intervention group exhibited higher frequency of some health care service use than the comparison groups at baseline. However, despite these differences, study results remained consistent with similar research conducted using randomized controlled designs. Threats to internal validity, such as maturation and regression to the mean, may have also been present due to the quasi-experimental nature of this study (Shadish et al., 2002). However, the Familiar Faces program operated universally across the Ottawa area, preventing random assignment in a controlled trial.

Further, while most findings indicated no statistically significant differences regarding health care service use outcomes between groups, this did not necessarily mean there were no clinically significant differences present. Given that the Familiar Faces group began with higher frequency of some health care service use at baseline, it may be that statistically significant differences were not found in the current study, but that clinically significant differences were still experienced by Familiar Faces program clients (e.g., Samosh, Pettey, et al., 2024). Finally, the current study examined concrete behavioural measures of health care service use, not other psychosocial indicators, such as coping skills and quality of life, which may have shown other potential differences between intervention and comparison groups over time (e.g., Samosh, Agha, et al., 2024).

Conclusions

Frequent emergency department users with mental illness or addiction remain a population in need of support, with limited research and evidence-based practice standards available to pursue this aim (Meng et al., 2017; Roland & Abel, 2012; Stergiopoulos et al., 2017). The current study investigated the health care service use outcomes of a stepped-care community mental health program, including system navigation and intensive case management, for frequent emergency department users with mental illness or addiction, along with three treatment as usual comparison groups. Study findings indicated no significant differences in outcomes experienced between intervention and comparison groups over time regarding frequency of emergency department visits, hospital admissions, days in hospital, and general practice outpatient visits. However, results did indicate significant differences related to frequency of psychiatric outpatient visits, with the intervention group experiencing greater increases in psychiatric outpatient visit frequency over time relative to all comparison groups.

The current study thus replicated past research findings showing that even a targeted intervention did not reduce emergency department visits and hospital admissions among frequent emergency department users beyond what others experienced without the intervention (e.g., Cohen et al., 2022; Finkelstein et al., 2020; Stergiopoulos et al., 2017). However, this study also added promising findings regarding benefits of the assessed intervention, particularly for increasing access to psychiatric outpatient services. Future research is needed to investigate more about frequent emergency department users with mental illness or addiction and how to best assist them and the health care systems in which they seek support.

References

- Althaus, F., Paroz, S., Hugli, O., Ghali, W. A., Daepfen, J., Peytremann-Bridevaux, I., & Bodenmann, P. (2011). Effectiveness of interventions targeting frequent users of emergency departments: A systematic review. *Annals of Emergency Medicine*, 58(1), 41-52. <https://doi.org/10.1016/j.annemergmed.2011.03.007>
- Barker, L. C., Sunderji, N., Kurdyak, P., Stergiopoulos, V., Gonzalez, A., Kopp, A., & Vigod, S. N. (2020). Urgent outpatient care following mental health ED visits: A population-based study. *Psychiatric Services*, 71(6), 616-619. <https://doi.org/10.1176/appi.ps.201900466>
- Cherner, R., Polillo, A., Samosh, J., Sylvestre, J., Rae, J., Pettey, D., & Aubry, T. (2022). Bridging the gap between hospital and community mental health services for frequent emergency department visitors. *Canadian Journal of Community Mental Health*, 41(1), 1-17. <https://doi.org/10.7870/cjcmh-2022-001>
- Cohen, J. N., Nguyen, A., Rafiq, M., & Taylor, P. (2022). Impact of a case-management intervention for reducing emergency attendance on primary care: Randomised control trial. *British Journal of General Practice*, 72(723), e755-e763. <https://doi.org/10.3399/BJGP.2021.0545>
- Data and Analytic Services. (2023). *ICES Data and Analytic Services (DAS) publication guidelines - Third party research projects*. Ontario Institute for Clinical Evaluative Sciences.

- Davis, R. A., Lookabaugh, M., Christnacht, K., & Stegman, R. (2024). Strategies to reduce frequent emergency department use among persons experiencing homelessness with mental health conditions: A scoping review. *Journal of Urban Health*, 101(5), 968-978. <https://doi.org/10.1007/s11524-024-00917-0>
- Doupe, M. B., Palatnick, W., Day, S., Chateau, D., Soodeen, R. A., Burchill, C., & Derksen, S. (2012). Frequent users of emergency departments: Developing standard definitions and defining prominent risk factors. *Annals of Emergency Medicine*, 60(1), 24-32. <https://doi.org/10.1016/j.annemergmed.2011.11.036>
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175-191. <https://doi.org/10.3758/BF03193146>
- Finkelstein, A., Zhou, A., Taubman, S., & Doyle, J. (2020). Health care hotspotting – A randomized, controlled trial. *The New England Journal of Medicine*, 382(2), 152-162. <https://doi.org/10.1056/NEJMs1906848>
- Fleury, M. J., Ferland, F., Farand, L., Grenier, G., Imboua, A., & Gaida, F. (2025). Reasons explaining high emergency department use in patients with mental illnesses: Different staff perspectives. *International Journal of Mental Health Nursing*, 34(1), e13442. <https://doi.org/10.1111/inm.13442>
- Fleury, M. J., Imboua, A., & Grenier, G. (2024). Barriers and facilitators to high emergency department use among patients with mental disorders: A qualitative investigation. *Community Mental Health Journal*, 60(5), 869-884. <https://doi.org/10.1007/s10597-024-01239-w>

Giannouchos, T. V., Washburn, D. J., Kum, H. C., Sage, W. M., & Ohsfeldt, R. L. (2020).

Predictors of multiple emergency department utilization among frequent emergency department users in 3 states. *Medical Care*, 58(2), 137-145.

<https://doi.org/10.1097/MLR.0000000000001228>

Hallett, N., Dickinson, R., Eneje, E., & Dickens, G. L. (2025). Adverse mental health inpatient experiences: Qualitative systematic review of international literature. *International*

Journal of Nursing Studies, 161, 104923. <https://doi.org/10.1016/j.ijnurstu.2024.104923>

Kanzaria, H. K., Niedzwiecki, M., Cawley, C. L., Chapman, C., Sabbagh, S. H., Riggs, E., Chen,

A. H., Martinez, M. X., & Raven, M. C. (2019). Frequent emergency department users: Focusing solely on medical utilization misses the whole person. *Health Affairs*, 38(11),

1866-1875. <https://doi.org/10.1377/hlthaff.2019.00082>

LaCalle, E., & Rabin, E. (2010). Frequent users of emergency departments: The myths, the data, and the policy implications. *Annals of Emergency Medicine*, 56(1), 42-48.

<https://doi.org/10.1016/j.annemergmed.2010.01.032>

Lavergne, M. R., Loyal, J. P., Shirmaleki, M., Kaoser, R., Nicholls, T., Schutz, C. G., Vaughan,

A., Samji, H., Puyat, J. H., Kaulius, M., Jones, W., & Small, W. (2022). The relationship between outpatient service use and emergency department visits among people treated for mental and substance use disorders: Analysis of population-based administrative data in British Columbia, Canada. *BMC Health Services Research*, 22(1), 477-488.

<https://doi.org/10.1186/s12913-022-07759-z>

- Meng, X., Muggli, T., Baetz, M., & D'Arcy, C. (2017). Disordered lives: Life circumstances and clinical characteristics of very frequent users of emergency departments for primary mental health complaints. *Psychiatry Research*, 252, 9-15.
<https://doi.org/10.1016/j.psychres.2017.02.044>
- Mental Health and Addictions Program Framework Research Team. (2021). *Mental health and addictions system performance in Ontario, 2021 scorecard, chart pack*. Ontario Institute for Clinical Evaluative Sciences.
- Mullen, J. N., Levitt, A., & Markoulakis, R. (2023). Supporting individuals with mental health and/or addictions issues through patient navigation: A scoping review. *Community Mental Health Journal*, 59(1), 35-56. <https://doi.org/10.1007/s10597-022-00982-2>
- Roland, M., & Abel, G. (2012). Reducing emergency admissions: Are we on the right track? *BMJ: British Medical Journal*, 345, e6017. <https://doi.org/10.1136/bmj.e6017>
- Samosh, J., Agha, A., Pettey, D., Sylvestre, J., & Aubry, T. (2024). Community mental health services for frequent emergency department users: A qualitative study of outcomes perceived by program clients and case managers. *Professional Case Management*, 29(4), 139-148. <https://doi.org/10.1097/NCM.0000000000000692>
- Samosh, J., Pettey, D., Sylvestre, J., & Aubry, T. (2024). Self-reported mental health and addiction outcomes of a novel community-based case management program for frequent emergency department users. *Canadian Journal of Community Mental Health*, 43(2), 93-99. <https://doi.org/10.7870/cjcmh-2024-009>

- Samosh, J., Polillo, A., Sylvestre, J., & Aubry, T. (2019). *Implementation evaluation of the Familiar Faces Transitional Case Management service at the Canadian Mental Health Association - Ottawa Branch*. Ottawa, ON: University of Ottawa, Centre for Research on Educational and Community Services.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Wadsworth Cengage Learning.
- Soril, L. J. J., Leggett, L. E., Lorenzetti, D. L., Noseworthy, T. W., & Clement, F. M. (2015). Reducing frequent visits to the emergency department: A systematic review of interventions. *PLoS ONE*, 10(4), e0123660. <https://doi.org/10.1371/journal.pone.0123660>
- Soril, L. J. J., Leggett, L. E., Lorenzetti, D. L., Noseworthy, T. W., & Clement, F. M. (2016). Characteristics of frequent users of the emergency department in the general adult population: A systematic review of international healthcare systems. *Health Policy*, 120(5), 452-461. <https://doi.org/10.1016/j.healthpol.2016.02.006>
- StataCorp. (2021). Stata (Release 17) [Computer software]. StataCorp LLC.
- Stergiopoulos, V., Gozdzik A., Cohen, A., Guimond, T., Hwang, S. W., Kurdyak, P., Leszcz, M., & Wasylenki, D. (2017). The effect of brief case management on emergency department use of frequent users in mental health: Findings of a randomized controlled trial. *PLoS ONE*, 12(8), e0182157. <https://doi.org/10.1371/journal.pone.0182157>
- Walker, E. R., Fukuda, J., McMonigle, M., Nguyen, J., & Druss, B. G. (2021). A qualitative study of barriers and facilitators to transitions from the emergency department to outpatient mental health care. *Psychiatric Services*, 72(11), 1311-1319. <https://doi.org/10.1176/appi.ps.202000299>

Weir, B., Struthers, R., Reid, L., Wild, C., & Robinson, L. (2022). Psychological recovery in a step 4 service: A qualitative study exploring the views of service users and clinicians.

Journal of Mental Health, 31(2), 220-226.

<https://doi.org/10.1080/09638237.2021.1922640>

General Discussion

This dissertation evaluated outcomes of a community-based mental health care program for frequent emergency department users presenting with mental illness or addiction in Ottawa, Ontario, Canada. The program, known as Familiar Faces, aimed to support client health and social needs while alleviating resource burden on local hospital emergency departments, by providing a stepped-care intervention including system navigation and intensive case management. The three dissertation studies employed varied research designs, different methods, multiple data sources, and diverse participant pools to enable a comprehensive and rigorous evaluation of program outcomes.

Study 1 findings indicated improved client outcomes over time related to self-reported overall functioning and severity of anxious and depressive symptoms. Study 2 findings indicated improved client outcomes related to perceptions of quality of life and severity of mental illness symptoms. Perceived mechanisms of change identified in this study included the importance of fostering positive working relationships between program clients and staff, as well as the program's focus on supporting clients to develop practical skills. Study 3 findings indicated that both Familiar Faces program clients and treatment as usual participants improved on health care service use outcomes over time, including for frequency of emergency department visits and hospital admissions. However, no interaction effects were found on outcomes between groups over time in this study, other than for psychiatric outpatient visits, with program clients experiencing greater increases in psychiatric outpatient visit frequency over time than comparison participants.

Findings were consistent across the dissertation studies in illustrating that the Familiar Faces intervention was associated with positive client outcomes over time related to quality of life, mental illness symptoms, frequency of emergency department visits, and frequency of hospital admissions, as well as challenges promoting positive change related to addiction symptoms. These findings were also consistent with past research showing that positive client outcomes associated with program participation were not significantly different than treatment as usual outcomes (e.g., Cohen et al., 2022; Finkelstein et al., 2020; Stergiopoulos et al. 2017), and that improving addiction-related outcomes likely required more targeted services with greater intensity of support and longer-term duration of intervention (e.g., Cherner et al., 2017; David et al., 2022; Lappan et al., 2020; Zamboni et al., 2021).

Dissertation Contributions

This dissertation contributes empirical evidence that stepped-care interventions supporting frequent emergency department users presenting with mental illness or addiction, such as the Familiar Faces program, may add significant value beyond treatment as usual conditions, by increasing client access to outpatient psychiatric services in conjunction with decreasing emergency department visits and hospital admissions over time. This is a notable finding given program goals to increase client access to more relevant community-based supports while reducing resource burden on local hospitals and emergency departments, all within the context of similar programs generally experiencing challenges improving health care service use outcomes compared to treatment as usual (e.g., Cohen et al., 2022; Finkelstein et al., 2020; Stergiopoulos et al., 2017). This is also relevant given past research indicating that inadequate outpatient care is one of the main reasons given for frequent emergency department

use (Fleury et al., 2024), frequent emergency department use disproportionately burdens health care systems (Doupe et al., 2012), and psychiatric outpatient visits are associated with lower odds of emergency department visits among individuals with serious mental illness or addiction (Lavergne et al., 2022).

This dissertation also contributes evidence regarding mechanisms of change that may support the development of more effective interventions to support frequent emergency department users with mental illness or addiction. Findings indicated that a combination of relational factors (e.g., positive working relationships between program clients and staff), program service factors (e.g., practical skills development), and support access factors (e.g., program connections to other supports internal and external to the organization) may contribute to positive client outcomes. This was paired with findings indicating that an impediment to positive client outcomes may include the short-term duration of program services (i.e., three months of system navigation and nine months of intensive case management), which could be particularly problematic when efforts to engage clients into the service can take time (Cherner et al., 2022; Poremski et al., 2016; Samosh et al., 2019). These results are supported by research indicating the importance of therapeutic alliance and interpersonal relationships in the lives of clients receiving mental health care services (Crits-Christoph & Connolly Gibbons, 2021; Kidd et al., 2017; Kondrat & Teater, 2012; Napierala et al., 2022; Roebuck et al., 2022), that practical skills development is a common mechanism of change found in treatment outcome research (Crits-Christoph & Connolly Gibbons, 2021; Mueser et al., 2002), and that access to a broad network of health and social services can contribute to positive client outcomes (Kumar & Klein, 2013; Mullen et al., 2023).

This dissertation also contributes to developments regarding how frequent emergency department use is framed in research and applied contexts. In the past, this topic has been conceptualized primarily in the context of individuals with mental illness or addiction representing a small proportion of emergency department users who make up a disproportionately large number of emergency department visits. However, writing on this topic has also increasingly considered broader systems-level factors that contribute to a lack of other service options in existence beyond the emergency department, as well as barriers to accessing other service options even when they do exist. This includes research indicating that limited outpatient services contribute to frequent emergency department use (Fleury et al., 2024), that lack of integration across health and social support systems means that many individuals fail to receive the personalized and coordinated care they need (Kanzaria et al., 2019; Meng et al., 2017), and that other service options often cannot match the availability and accessibility provided by emergency departments (Roland & Abel, 2012). Dissertation findings show that systems-level factors related to various life domains, including education, employment, finances, housing, and system navigation, may contribute to frequent emergency department use. Thus, broader understandings of frequent emergency department use, including a focus on social determinants of health, are required to more effectively understand and support frequent emergency department users with mental illness or addiction.

Limitations

This dissertation has limitations. While one study included comparison groups, no studies included a control group in the context of a randomized controlled trial. This aspect of the study designs may have increased susceptibility to internal validity threats, such as attrition, history,

maturation, and regression to the mean (Shadish et al., 2002). However, the Familiar Faces program operated universally across the Ottawa area, preventing opportunity to implement a randomized controlled trial. Further, dissertation findings were consistent with randomized controlled trials of related programs in other jurisdictions (Cohen et al., 2022; Finkelstein et al., 2020; Stergiopoulos et al., 2017), suggesting that the dissertation results were sufficiently robust and interpretable, despite lacking both random participant assignment and control groups.

The Familiar Faces program also experienced various developments over the course of the dissertation studies. Dissertation data ranged from 2012 to 2020, during which time the program grew from inception to establishment in the local community, moved office locations multiple times, and was staffed with different program managers, case managers, and system navigators. This timespan also meant that different dissertation studies included participants who experienced the program in different years. The timing of dissertation data also led to evaluation of the program prior to the COVID-19 pandemic, such that there may have been subsequent developments to the program and local health care systems afterward that were not considered in this dissertation.

Finally, the Familiar Faces services operated in the context of an electronic hospital records system that automatically identified and referred frequent emergency department users presenting with mental illness or addiction to the program. The hospital emergency departments and Familiar Faces services studied in this dissertation were all publicly funded in Ontario, Canada. Further, the program itself was a novel stepped-care intervention combining community-based system navigation and intensive case management services. The generalizability of dissertation findings may therefore be limited to similar contexts.

Research Implications

This dissertation has implications for ongoing research aiming to further understand and support frequent emergency department users with mental illness or addiction. Given the diversity of program client presentations, future research should assess for differential program outcomes based on client subpopulations, using indicators such as emergency department visit frequency, diagnostic categorization, and the acute or chronic nature of presenting problems. Future research should also investigate the predictors of zero emergency department visits at follow-up time points.

Research of stepped-care programs, such as Familiar Faces, should also study each component of the program separately, not only together, to understand the effects of each program component in more detail. Further, research should continue studying both the implementation and outcomes of related programs, as well as associated mechanisms of change and barriers to change. Research should also continue exploring and attempting to better define what frequent emergency department use means. Even if such definitions require some degree of flexibility in accordance with varied local community health care contexts and needs, enhanced definition still has the potential to help standardize research and practice in this field. Finally, future research should also include efforts to study frequent emergency department use not only at the individual level but also within broader sociocultural and systems levels of analysis.

Program and Policy Implications

This dissertation has implications for program and policy development. Determining how to invest limited financial and other resources into mental health care services can be challenging. Programs aiming to support frequent emergency department users with mental

illness or addiction should carefully consider and define what frequent use means for their referral purposes. Given the diversity of client presentations in this context, programs should assess if their services are relevant for all clients, or only certain subsets, based on factors like emergency department visit frequency, diagnostic categorization, and the acute or chronic nature of presenting problems. This is especially true for the added challenge of attempting to address addiction symptoms with a short-term intervention.

For the Familiar Faces program itself, future developments should consider whether the referral threshold of two emergency department visits within 30 days for mental illness or addiction presentations is too low. Ultimately, limited program resources might be better utilized in the future with a focus on supporting those individuals with greater frequencies of health care service use and more complex care needs.

With regard to service duration, programs should also recognize that some clients require more time to engage with services, such that ending their program participation just as engagement begins may impede positive outcomes. Further, to promote beneficial client outcomes, programs should emphasize the development of positive working relationships between clients and staff, practical skills training for clients, and client access to broad networks of other health and social services in the local community.

General Conclusions

This dissertation highlights challenges to effectively supporting frequent emergency department users presenting with mental illness or addiction beyond outcomes obtained from treatment as usual, while also illustrating added value that community-based mental health care services may offer this population. This dissertation contributes empirical evidence and practical

insights to inform mental health care program and policy development in this regard. In particular, the stepped-care Familiar Faces program, offering community-based system navigation and intensive case management services in Ottawa, Ontario, Canada, was associated with improved client outcomes related to quality of life, mental illness symptom severity, and access to psychiatric outpatient supports. Improved client outcomes were perceived to be fostered most by the program's efforts to develop positive working relationships between clients and staff, as well as its focus on supporting clients to develop practical skills. While further research is needed in this growing field of public health and mental health care, this dissertation contributes to ongoing efforts to develop effective interventions that assist frequent emergency department users with mental illness or addiction and the health care systems that support them.

General References

- Althaus, F., Paroz, S., Hugli, O., Ghali, W. A., Daepfen, J., Peytremann-Bridevaux, I., & Bodenmann, P. (2011). Effectiveness of interventions targeting frequent users of emergency departments: A systematic review. *Annals of Emergency Medicine*, 58(1), 41-52. <https://doi.org/10.1016/j.annemergmed.2011.03.007>
- Barker, L. C., Sunderji, N., Kurdyak, P., Stergiopoulos, V., Gonzalez, A., Kopp, A., & Vigod, S. N. (2020). Urgent outpatient care following mental health ED visits: A population-based study. *Psychiatric Services*, 71(6), 616-619. <https://doi.org/10.1176/appi.ps.201900466>
- Beck, A., Sanchez-Walker, E., Evans, L. J., Harris, V., Pegler, R., & Cross, S. (2017). Frequent users of mental health liaison services within emergency departments. *Psychiatry Research*, 258, 194-199. <https://doi.org/10.1016/j.psychres.2017.08.006>
- Birmingham, L. E., Cochran, T., Frey, J. A., Stiffler, K. A., & Wilber, S. T. (2017). Emergency department use and barriers to wellness: A survey of emergency department frequent users. *BMC Emergency Medicine*, 17(16), 1-8. <https://doi.org/10.1186/s12873-017-0126-5>
- Brennan, J. J., Chan, T. C., Hsia, R. Y., Wilson, M. P., & Castillo, E. M. (2014). Emergency department utilization among frequent users with psychiatric visits. *Academic Emergency Medicine*, 21(9), 1015-1022. <https://doi.org/10.1111/acem.12453>
- Buhumaid, R., Riley, J., Sattarian, M., Bregman, B., & Blanchard, J. (2015). Characteristics of frequent users of the emergency department with psychiatric conditions. *Journal of Health Care for the Poor and Underserved*, 26(3), 941-950. <https://doi.org/10.1353/hpu.2015.0079>

Canadian Mental Health Association Ottawa Branch. (2025). *About us*. Retrieved from <https://ottawa.cmha.ca/about-cmha/>

Canadian Mental Health Association Ottawa Branch, & The Ottawa Hospital. (2015).

Memorandum of understanding for the Familiar Faces Emergency Department – Mental Health Project between the Canadian Mental Health Association Ottawa Branch and The Ottawa Hospital. Canadian Mental Health Association Ottawa Branch & The Ottawa Hospital.

Champlain Local Health Integration Network. (n.d.). *Integrated health service plan 2016-19*. Retrieved from <https://www.champlainlhin.on.ca/GoalsandAchievements/OurStratPlan.aspx>

Chang, G., Weiss, A. P., Orav, E. J., & Rauch, S. L. (2014). Predictors of frequent emergency department use among patients with psychiatric illness. *General Hospital Psychiatry*, 36(6), 716-720. <https://doi.org/10.1016/j.genhosppsych.2014.09.010>

Cherner, R., Aubry, T., Sylvestre, J., Boyd, R., & Pettey, D. (2017). Housing First for adults with problematic substance use. *Journal of Dual Diagnosis*, 13(3), 219-229. <https://doi.org/10.1080/15504263.2017.1319586>

Cherner, R., Polillo, A., Samosh, J., Sylvestre, J., Rae, J., Pettey, D., & Aubry, T. (2022). Bridging the gap between hospital and community mental health services for frequent emergency department visitors. *Canadian Journal of Community Mental Health*, 41(1), 1-17. <https://doi.org/10.7870/cjcmh-2022-001>

- Cohen, J. N., Nguyen, A., Rafiq, M., & Taylor, P. (2022). Impact of a case-management intervention for reducing emergency attendance on primary care: Randomised control trial. *British Journal of General Practice*, 72(723), e755-e763.
<https://doi.org/10.3399/BJGP.2021.0545>
- Crits-Christoph, P., & Connolly Gibbons, M. B. (2021). Psychotherapy process–outcome research: Advances in understanding causal connections. In M. Barkham, W. Lutz, & L. G. Castonguay (Eds.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (50th anniv. ed., pp. 263-295). Wiley.
- David, A. R., Sian, C. R., Gebel, C. M., Linas, B. P., Samet, J. H., Sprague Martinez, L. S., Muroff, J., Bernstein, J. A., & Assoumou, S. A. (2022). Barriers to accessing treatment for substance use after inpatient managed withdrawal (detox): A qualitative study. *Journal of Substance Abuse Treatment*, 142, 108870.
<https://doi.org/10.1016/j.jsat.2022.108870>
- Davis, R. A., Lookabaugh, M., Christnacht, K., & Stegman, R. (2024). Strategies to reduce frequent emergency department use among persons experiencing homelessness with mental health conditions: A scoping review. *Journal of Urban Health*, 101(5), 968-978.
<https://doi.org/10.1007/s11524-024-00917-0>
- Dieterich, M., Irving, C. B., Bergman, H., Khokhar, M. A., Park, B., & Marshall, M. (2017). Intensive case management for severe mental illness. *Cochrane Database of Systematic Reviews*, 1(1), CD007906. <https://doi.org/10.1002/14651858.CD007906.pub3>

- Doupe, M. B., Palatnick, W., Day, S., Chateau, D., Soodeen, R. A., Burchill, C., & Derksen, S. (2012). Frequent users of emergency departments: Developing standard definitions and defining prominent risk factors. *Annals of Emergency Medicine*, 60(1), 24-32.
<https://doi.org/10.1016/j.annemergmed.2011.11.036>
- Finkelstein, A., Zhou, A., Taubman, S., & Doyle, J. (2020). Health care hotspotting – A randomized, controlled trial. *The New England Journal of Medicine*, 382(2), 152-162.
<https://doi.org/10.1056/NEJMsa1906848>
- Fleury, M. J., Ferland, F., Farand, L., Grenier, G., Imboua, A., & Gaida, F. (2025). Reasons explaining high emergency department use in patients with mental illnesses: Different staff perspectives. *International Journal of Mental Health Nursing*, 34(1), e13442.
<https://doi.org/10.1111/inm.13442>
- Fleury, M. J., Imboua, A., & Grenier, G. (2024). Barriers and facilitators to high emergency department use among patients with mental disorders: A qualitative investigation. *Community Mental Health Journal*, 60(5), 869-884.
<https://doi.org/10.1007/s10597-024-01239-w>
- Giannouchos, T. V., Washburn, D. J., Kum, H. C., Sage, W. M., & Ohsfeldt, R. L. (2020). Predictors of multiple emergency department utilization among frequent emergency department users in 3 states. *Medical Care*, 58(2), 137-145.
<https://doi.org/10.1097/MLR.0000000000001228>

- Kanzaria, H. K., Niedzwiecki, M., Cawley, C. L., Chapman, C., Sabbagh, S. H., Riggs, E., Chen, A. H., Martinez, M. X., & Raven, M. C. (2019). Frequent emergency department users: Focusing solely on medical utilization misses the whole person. *Health Affairs*, 38(11), 1866-1875. <https://doi.org/10.1377/hlthaff.2019.00082>
- Kidd, S. A., Davidson, L., & McKenzie, K. (2017). Common factors in community mental health intervention: A scoping review. *Community Mental Health Journal*, 53(6), 627-637. <https://doi.org/10.1007/s10597-017-0117-8>
- Kondrat, D. C., & Teater, B. (2012). The looking-glass self: Looking at relationship as the mechanism of change in case management of persons with severe mental illness. *Families in Society*, 93(4), 271-278. <https://doi.org/10.1606/1044-3894.4237>
- Kumar, G. S., & Klein, R. (2013). Effectiveness of case management strategies in reducing emergency department visits in frequent user patient populations: A systematic review. *The Journal of Emergency Medicine*, 44(3), 717-729. <https://doi.org/10.1016/j.jemermed.2012.08.035>
- LaCalle, E., & Rabin, E. (2010). Frequent users of emergency departments: The myths, the data, and the policy implications. *Annals of Emergency Medicine*, 56(1), 42-48. <https://doi.org/10.1016/j.annemergmed.2010.01.032>
- Lappan, S. N., Brown, A. W., & Hendricks, P. S. (2020). Dropout rates of in-person psychosocial substance use disorder treatments: A systematic review and meta-analysis. *Addiction*, 115(2), 201-217. <https://doi.org/10.1111/add.14793>

- Lavergne, M. R., Loyal, J. P., Shirmaleki, M., Kaoser, R., Nicholls, T., Schutz, C. G., Vaughan, A., Samji, H., Puyat, J. H., Kaulius, M., Jones, W., & Small, W. (2022). The relationship between outpatient service use and emergency department visits among people treated for mental and substance use disorders: Analysis of population-based administrative data in British Columbia, Canada. *BMC Health Services Research*, 22(1), 477-488.
<https://doi.org/10.1186/s12913-022-07759-z>
- Leporatti, L., Ameri, M., Trincherio, C., Orcamo, P., & Montefiori, M. (2016). Targeting frequent users of emergency departments: Prominent risk factors and policy implications. *Health Policy*, 120(5), 462-470. <https://doi.org/10.1016/j.healthpol.2016.03.005>
- Manuel, J. I., Nizza, M., Herman, D. B., Conover, S., Esquivel, L., Yuan, Y., & Susser, E. (2023). Supporting vulnerable people during challenging transitions: A systematic review of critical time intervention. *Administration and Policy in Mental Health and Mental Health Services Research*, 50(1), 100-113. <https://doi.org/10.1007/s10488-022-01224-z>
- Meng, X., Muggli, T., Baetz, M., & D'Arcy, C. (2017). Disordered lives: Life circumstances and clinical characteristics of very frequent users of emergency departments for primary mental health complaints. *Psychiatry Research*, 252, 9-15.
<https://doi.org/10.1016/j.psychres.2017.02.044>
- Mental Health and Addictions Leadership Advisory Council. (2016). *Moving forward: Better mental health means better health*. Mental Health and Addictions Leadership Advisory Council.

- Mental Health and Addictions Program Framework Research Team. (2021). *Mental health and addictions system performance in Ontario, 2021 scorecard, chart pack*. Ontario Institute for Clinical Evaluative Sciences.
- Mueser, K. T., Corrigan, P. W., Hilton, D. W., Tanzman, B., Schaub, A., Gingerich, S., Essock, S. M., Tarrier, N., Morey, B., Vogel-Scibilia, S., & Herz, M. I. (2002). Illness management and recovery: A review of the research. *Psychiatric Services*, 53(10), 1272-1284. <https://doi.org/10.1176/appi.ps.53.10.1272>
- Mullen, J. N., Levitt, A., & Markoulakis, R. (2023). Supporting individuals with mental health and/or addictions issues through patient navigation: A scoping review. *Community Mental Health Journal*, 59(1), 35-56. <https://doi.org/10.1007/s10597-022-00982-2>
- Napierala, H., Kruger, K., Kuschick, D., Heintze, C., Herrmann, W. J., & Holzinger, F. (2022). Social prescribing: Systematic review of the effectiveness of psychosocial community referral interventions in primary care. *International Journal of Integrated Care*, 22(3), 11. <https://doi.org/10.5334/ijic.6472>
- Ontario Ministry of Health and Long-Term Care. (2011). *Open minds, healthy minds: Ontario's comprehensive mental health and addictions strategy*. Queen's Printer for Ontario.
- Ponka, D., Agbata, E., Kendall, C., Stergiopoulos, V., Mendonca, O., Magwood, O., Saad, A., Larson, B., Sun, A. H., Arya, N., Hannigan, T., Thavorn, K., Andermann, A., Tugwell, P., & Pottie, K. (2020). The effectiveness of case management interventions for the homeless, vulnerably housed and persons with lived experience: A systematic review. *PLoS One*, 15(4), e0230896. <https://doi.org/10.1371/journal.pone.0230896>

- Poremski, D., Harris, D. W., Kahan, D., Pauly, D., Leszcz, M., O'Campo, P., Wasylenki, D., & Stergiopoulos, V. (2016). Improving continuity of care for frequent users of emergency departments: Service user and provider perspectives. *General Hospital Psychiatry, 40*, 55-59. <https://doi.org/10.1016/j.genhosppsych.2016.01.004>
- Rapp, C. A., & Goscha, R. J. (2012). *The strengths model: A recovery-oriented approach to mental health services* (3rd ed.). Oxford University Press.
- Roebuck, M., Aubry, T., & Manoni-Millar, S. (2022). A qualitative study of the working alliance in the strengths model of case management with people with severe mental illness. *Community Mental Health Journal, 58*(5), 944-954. <https://doi.org/10.1007/s10597-021-00903-9>
- Roland, M., & Abel, G. (2012). Reducing emergency admissions: Are we on the right track? *BMJ: British Medical Journal, 345*, e6017. <https://doi.org/10.1136/bmj.e6017>
- Samosh, J., Polillo, A., Sylvestre, J., & Aubry, T. (2019). *Implementation evaluation of the Familiar Faces Transitional Case Management service at the Canadian Mental Health Association—Ottawa Branch*. Centre for Research on Educational and Community Services, University of Ottawa.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Wadsworth Cengage Learning.
- Soril, L. J. J., Leggett, L. E., Lorenzetti, D. L., Noseworthy, T. W., & Clement, F. M. (2015). Reducing frequent visits to the emergency department: A systematic review of interventions. *PLoS ONE, 10*(4), e0123660. <https://doi.org/10.1371/journal.pone.0123660>

Soril, L. J. J., Leggett, L. E., Lorenzetti, D. L., Noseworthy, T. W., & Clement, F. M. (2016).

Characteristics of frequent users of the emergency department in the general adult population: A systematic review of international healthcare systems. *Health Policy*, 120(5), 452-461. <https://doi.org/10.1016/j.healthpol.2016.02.006>

Stergiopoulos, V., Gozdzik A., Cohen, A., Guimond, T., Hwang, S. W., Kurdyak, P., Leszcz, M.,

& Wasylenki, D. (2017). The effect of brief case management on emergency department use of frequent users in mental health: Findings of a randomized controlled trial. *PLoS ONE*, 12(8), e0182157. <https://doi.org/10.1371/journal.pone.0182157>

Walker, E. R., Fukuda, J., McMonigle, M., Nguyen, J., & Druss, B. G. (2021). A qualitative

study of barriers and facilitators to transitions from the emergency department to outpatient mental health care. *Psychiatric Services*, 72(11), 1311-1319. <https://doi.org/10.1176/appi.ps.202000299>

Walsh, R. (2003). The methods of reflexivity. *The Humanistic Psychologist*, 31(4), 51-66.

<https://doi.org/10.1080/08873267.2003.9986934>

Weber, E. J. (2012). Defining frequent use: The numbers no longer count. *Annals of Emergency*

Medicine, 60(1), 33-34. <https://doi.org/10.1016/j.annemergmed.2012.02.019>

Wise-Harris, D., Pauly, D., Kahan, D., Tan de Bibiana, J., Hwang, S. W., & Stergiopoulos, V.

(2017). "Hospital was the only option": Experiences of frequent emergency department users in mental health. *Administration and Policy in Mental Health*, 44(3), 405-412. <https://doi.org/10.1007/s10488-016-0728-3>

Zamboni, L., Centoni, F., Fusina, F., Mantovani, E., Rubino, F., Lugoboni, F., & Federico, A.

(2021). The effectiveness of cognitive behavioral therapy techniques for the treatment of substance use disorders: A narrative review of evidence. *The Journal of Nervous and Mental Disease*, 209(11), 835-845. <https://doi.org/10.1097/NMD.0000000000001381>

Zhang, Z., & Das, S. (2024). Unveiling the patterns: Exploring social and clinical characteristics of frequent mental health visits to the emergency department – a comprehensive systematic review. *Discover Mental Health*, 4(17), 1-15.
<https://doi.org/10.1007/s44192-024-00070-9>

Appendix A

Alcohol Use Disorders Identification Test (AUDIT)

The Alcohol Use Disorders Identification Test: Self-Report Version						
PATIENT: Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential so please be honest. Place an X in one box that best describes your answer to each question.						
Questions	0	1	2	3	4	
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week	
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
					Total	

Note: This questionnaire (the AUDIT) is reprinted with permission from the World Health Organization. A free AUDIT manual with guidelines for use in primary care is available online at www.who.org.

Appendix B

Drug Abuse Screening Test (DAST-10)

Drug Abuse Screening Test, DAST-10

The following questions concern information about your possible involvement with drugs *not including alcoholic beverages* during the past 12 months.

"Drug abuse" refers to (1) the use of prescribed or over-the-counter drugs in excess of the directions, and (2) any nonmedical use of drugs.

The various classes of drugs may include cannabis (marijuana, hashish), solvents (e.g., paint thinner), tranquilizers (e.g., Valium), barbiturates, cocaine, stimulants (e.g., speed), hallucinogens (e.g., LSD) or narcotics (e.g., heroin). Remember that the questions *do not* include alcoholic beverages.

Please answer every question. If you have difficulty with a statement, then choose the response that is mostly right.

In the past 12 months...		Circle	
1	Have you used drugs other than those required for medical reasons?	Yes	No
2	Do you use more than one drug at a time?	Yes	No
3	Are you always able to stop using drugs when you want to? (If never use drugs, answer "Yes")	Yes	No
4	Have you ever had blackouts or flashbacks as a result of drug use?	Yes	No
5	Do you ever feel bad or guilty about your drug use? (If never use drugs, answer "No")	Yes	No
6	Does your spouse (or parents) ever complain about your involvement with drugs?	Yes	No
7	Have you neglected your family because of your use of drugs?	Yes	No
8	Have you engaged in illegal activities in order to obtain drugs?	Yes	No
9	Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	Yes	No
10	Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding)?	Yes	No

Drug Abuse Screening Test (DAST-10). (Copyright 1982 by the Addiction Research Foundation.)

Appendix C

Global Appraisal of Individual Needs – Short Screener (GAIN-SS)

GAIN Short Screener (GAIN-SS)
Version [GVER]: GAIN-SS ver. 3.0.1 CAMH

The following questions are about common psychological, behavioural, and personal problems. These problems are considered significant when you have them for two or more weeks, when they keep coming back, when they keep you from meeting your responsibilities, or when they make you feel like you can't go on.		Past month	2 to 3 months ago	4 to 12 months ago	1+ years ago	Never
After each of the following questions, please tell us the last time, if ever, you had the problem by answering whether it was in the past month, 2 to 3 months ago, 4 to 12 months ago, 1 or more years ago, or never.		4	3	2	1	0
IDScr 1.	When was the last time that you had significant problems with...					
a.	feeling very trapped, lonely, sad, blue, depressed, or hopeless about the future?	4	3	2	1	0
b.	sleep trouble, such as bad dreams, sleeping restlessly, or falling asleep during the day?	4	3	2	1	0
c.	feeling very anxious, nervous, tense, scared, panicked, or like something bad was going to happen?	4	3	2	1	0
d.	becoming very distressed and upset when something reminded you of the past?	4	3	2	1	0
e.	thinking about ending your life or committing suicide?	4	3	2	1	0
f.	seeing or hearing things that no one else could see or hear or feeling that someone else could read or control your thoughts?	4	3	2	1	0
EDScr 2.	When was the last time that you did the following things two or more times?					
a.	Lied or conned to get things you wanted or to avoid having to do something	4	3	2	1	0
b.	Had a hard time paying attention at school, work, or home.	4	3	2	1	0
c.	Had a hard time listening to instructions at school, work, or home.	4	3	2	1	0
d.	Had a hard time waiting for your turn.	4	3	2	1	0
e.	Were a bully or threatened other people.....	4	3	2	1	0
f.	Started physical fights with other people	4	3	2	1	0
g.	Tried to win back your gambling losses by going back another day.	4	3	2	1	0
SDScr 3.	When was the last time that...					
a.	you used alcohol or other drugs weekly or more often?	4	3	2	1	0
b.	you spent a lot of time either getting alcohol or other drugs, using alcohol or other drugs, or recovering from the effects of alcohol or other drugs (e.g., feeling sick)?	4	3	2	1	0
c.	you kept using alcohol or other drugs even though it was causing social problems, leading to fights, or getting you into trouble with other people?	4	3	2	1	0
d.	your use of alcohol or other drugs caused you to give up or reduce your involvement in activities at work, school, home, or social events?	4	3	2	1	0
e.	you had withdrawal problems from alcohol or other drugs like shaky hands, throwing up, having trouble sitting still or sleeping, or you used any alcohol or other drugs to stop being sick or avoid withdrawal problems?	4	3	2	1	0

(Continued)					
	Past month	2 to 3 months ago	4 to 12 months ago	1+ years ago	Never
After each of the following questions, please tell us the last time, if ever, you had the problem by answering whether it was in the past month, 2 to 3 months ago, 4 to 12 months ago, 1 or more years ago, or never.	4	3	2	1	0

CVScr 4. When was the last time that you...

a. had a disagreement in which you pushed, grabbed, or shoved someone?	4	3	2	1	0
b. took something from a store without paying for it?	4	3	2	1	0
c. sold, distributed, or helped to make illegal drugs?	4	3	2	1	0
d. drove a vehicle while under the influence of alcohol or illegal drugs?	4	3	2	1	0
e. purposely damaged or destroyed property that did not belong to you?	4	3	2	1	0

Additional questions (CAMH modified)

	Past month	2 to 3 months ago	4 to 12 months ago	1+ years ago	Never
After each of the following questions, please tell us the last time, if ever, you had the problem by answering whether it was in the past month, 2 to 3 months ago, 4 to 12 months ago, 1 or more years ago, or never.	4	3	2	1	0

AQ5. When was the last time you had significant problems with... (not related to alcohol/drug use)

a. missing meals or throwing up much of what you did eat to control your weight?	4	3	2	1	0
b. eating binges or times when you ate a very large amount of food within a short period of time and then felt guilty?	4	3	2	1	0
c. being disturbed by memories or dreams of distressing things from the past that you did, saw, or had happen to you?	4	3	2	1	0
d. thinking or feeling that people are watching you, following you, or out to get you?	4	3	2	1	0
e. videogame playing or internet use that caused you to give up, reduce, or have problems with important activities or people of work, school, home or social events?	4	3	2	1	0
f. gambling that caused you to give up, reduce, or have problems with important activities or people at work, school, home, or social events?	4	3	2	1	0

Appendix D

Program Client Interview Protocol

Client Interview Protocol

Introduction

The purpose of this meeting is to learn about your experience receiving services from [case worker name] in the Transitional Case Management program at the Canadian Mental Health Association in Ottawa. I will be meeting with other people who have also been in the same program to hear about all of your experiences and try to get a good understanding of how the program works.

[Review the consent form, confirm informed consent, and confirm \$20 gift card options, before continuing.]

Do you have any questions before we begin?

I will start audio recording now – is that okay?

[Begin audio recording. Note the Date and Participant #.]

Client Use of Emergency Department and Entry into Program

First I would like to ask you some questions about your experiences around the time you started to receive services from [case worker name] in the System Navigation service.

- If you remember and are comfortable sharing with me, could you let me know what was going on in your life around the time when you were first contacted by [case worker] in the System Navigation service?
- Was there anything going on in your life at the time you were contacted by [case worker] in the System Navigation service that you thought the service could help you with, or hoped the service could help you with?
- Many people receiving System Navigation services have had previous experience visiting the emergency department for mental health or substance use. If you are comfortable discussing it with me, could you let me know if you were visiting the emergency department before you starting receiving System Navigation services with [case worker], and what those visits were for?

Client Understanding of the Program

The rest of my questions will no longer be about the System Navigation services you received from [case worker name]. Instead, for the rest of this interview, my questions will now be asking only about your experiences in the Transitional Case Management program (“the program”) with [case worker name].

- What kinds of services have you been receiving from [case worker name] in the Transitional Case Management program?

- Counseling supports, practical supports, community referrals, nursing, treatment groups, etc.?

- If you were to describe the services you receive from [case worker name] in the program to someone else, what would you say are the most important things the program does for you?

Program Outcomes Experienced by Clients

- Thinking back over your time in the program, would you say being involved in it has in any way made a difference in your life?

- A big difference, no difference, somewhere in the middle?
- How has it made a difference or how has it not made a difference?

- Has there been anything about you that has changed over your time in the program?

- Mental health, substance use, emergency department use, stages of change, social factors, housing, employment, etc.?
- If so, do you believe the change was due to the program? How so?

- Have you learned new things during your time in the program?

- If so, what have you learned?

- Has the program changed your outlook for the future in any way?

- If so, how?

Aspects of Program that Promote Client Change

- Has there been anything in particular about the program that you think has helped you make these changes in your life?

- What parts of the program have you learned the most from?

- Is there anything about the program that has gotten in the way of you being able to change or progress in your life?

- What are they?

- What parts of the program have you learned the least from or have not helped you change?

- When you transition out of the program at some point in the future, do you think any aspects of the program will have an ongoing influence on you?

- Do you think this will help you or get in your way? How so?
- Do you think you will face any ongoing barriers when you transition out of the program?

Client Satisfaction with Program and Recommendations

- Taking into account all that we have spoken about today, are you satisfied with the services being provided to you by the program?
- What are the strongest parts of the program?
- What are the weakest parts of the program?
- If you could make changes to anything about the program, what would they be?
- Would you recommend the program to others who are visiting the emergency department for mental health or substance use? Why or why not?

Conclusion

- Those are all of my questions. Is there anything else that you think would be important for me to know about the program that we have not discussed yet today?

Thank you for sharing with me today. I am now stopping the audio recording.

[End audio recording.]

Do you have any other questions about this meeting or what happens next?

[Remind client that they can still withdraw consent if they wish.]

Again, thank you for participating in this meeting with me today. The information you provided about your experience here will go a long way to help us learn about and improve the Transitional Case Management program at the Canadian Mental Health Association in Ottawa.

Appendix E

Program Case Manager Focus Group Protocol

Staff Focus Group Protocol

Introduction

The purpose of this meeting is to learn about your perspectives of the Transitional Case Management program in which you work. I will also be meeting with program clients to hear about their experiences in the program. Focus groups work best when as many of you as possible participate and describe your own personal experiences whether they are similar or different from those of the others here.

[Review the consent form and confirm informed consent before continuing.]

Do you have any questions before we begin?

I will start audio recording now – is that okay?

[Begin audio recording. Note the Date.]

Introductions

- Could you all please introduce yourselves by stating your role in the Transitional Case Management program (“the program”) and how long you have been working with the program?

Client Use of Emergency Department and Entry into Program

- What is usually going on in the lives of clients around the time they are contacted by System Navigation?
 - What challenges are clients usually facing at that time?
- People are referred to the program because they have been to the emergency department for mental health or substance use. What are the most common things you have noticed in clients’ lives that led them to visit emergency departments?

Program Outcomes Experienced by Clients

- Do you think client involvement in the program leads to any changes in their lives?
 - If so, what are the changes you see in clients?
 - Mental health, substance use, emergency department use, stages of change, social factors, housing, employment, etc.?
- Do you think clients learn new things during their time in the program?
 - If so, what do they learn?
- Do you think the program changes clients’ outlook for the future in any way?
 - If so, how?

- Are there some program clients that do not seem to change?
 - What do you think distinguishes clients that do and do not change (e.g., characteristics of the client, the program, the fit between client and program, resource availability, etc.)?

Aspects of Program that Promote Client Change

- What aspects of the program do you think have been the cause of any changes in clients' lives?
 - Therapeutic alliance, strengths-based approach, treatment groups, community referrals, counseling supports, etc.?
- What parts of the program do clients learn the most from?
- What parts of the program do you think clients learn the least from or do not help them change?
- Are there client issues that the program cannot help with?
 - What are they?
- After clients transition out of the program, do you think any aspects of the program have an ongoing influence on them?
 - What are they?
 - Thoughts, feelings, behaviours, knowledge, skills, techniques that sustain change, etc.?

Client Satisfaction and Staff Recommendations

- Do you think clients are satisfied with the services the program provides?
 - What are they satisfied about?
 - What are they dissatisfied about?
- What do you think are the strongest parts of the program?
- What do you think are the weakest parts of the program?
- If you could make changes to anything about the program, what would they be?
- Given your experiences working with the program, if colleagues in another city were going to create something similar, what advice would you give to them?

Other Information

- Is this program different than other case management programs you know about?
- How so?
- Are clients in this program different than clients in other case management programs you know about?
- How so?

- As part of this research we asked you to provide us with names of program clients to invite for research interviews. We know that you were not able to ask some of your otherwise-eligible clients to participate in interviews. Could you let me know what were the reasons why some of your clients had to be excluded from the research?

- Symptom severity, safety concern, ongoing hospitalization, ongoing incarceration, etc.?

Conclusion

- Those are all of my questions. Is there anything else that you think would be important for me to know about the Transitional Case Management program that we have not discussed yet today?

Thank you for sharing with me today. I am now stopping the audio recording.

[End audio recording.]

Do you have any other questions about this meeting or what happens next?

[Remind staff that they can still withdraw consent if they wish.]

Again, thank you for participating in this meeting with me today. The information you provided will go a long way to help us learn about and improve the Transitional Case Management program at the Canadian Mental Health Association in Ottawa.