

**Bridging Gaps in Mental Health Crisis Care: A RE-AIM Evaluation of the Superior North  
Specialized Treatment and Alternative Response (STAR) Team in Northwestern Ontario**

**by**

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A Thesis

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## **Abstract**

**BACKGROUND:** Northwestern Ontario (NWO) faces a mental health crisis underscored by underfunding, limited services, overreliance on emergency departments (ED), and provider burnout. Superior North Specialized Treatment and Alternative Response (STAR) is a mobile mental health crisis response team (CRT) being piloted in Thunder Bay, Ontario that includes paramedics, Crisis Response workers and Indigenous health associates to ensure culturally appropriate and timely care. STAR co-responds to EMS activations for mental crisis calls and provides an alternate, culturally appropriate pathway to care towards reducing ED burden. As STAR is in its pilot phase, metrics associated with impact have been identified towards determining potential upscale.

**OBJECTIVE:** To determine the utility and impact of STAR on reduced burden on ED admissions and other pre-determined key performance metrics using the RE-AIM theoretical framework. The RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, and Maintenance), is a robust tool for evaluating effectiveness of community-based initiatives such as STAR.

**METHOD:** Field data from (April 2025-August 2026) on, call details, disposition (patient outcome at scene), and connection choices (post-response referral options), were analysed using descriptive statistics guided by the RE-AIM framework to assess Reach (proportion of EMS calls resulting in STAR activation) and Effectiveness (ED/Hospital diversion rate). Adoption and Implementation were assessed qualitatively through thematic analysis of STAR team meeting minutes from (July 2024-August 2026), guided by RE-AIMs Adoption construct and Implementation's fidelity and adaptation sub-constructs.

**RESULTS:** Over 17-months, STAR responded to 135 Mental Health and/or Addictions (MHA) calls, with the proportion of SNEMS calls resulting in a STAR activation peaking at 0.60% before declining to 0.08% by the final quarter. Under half (46%) of calls resulted in ED/Hospital transport. Thematic analysis showed meaningful Adoption at the community and setting level, with engagement and activations increasing over time. Implementation maintained fidelity despite adaptations, though staffing constraints limited program availability over the evaluation period.

**IMPLICATIONS:** First responders are reacting to a critical mental health burden in Thunder Bay, Ontario. From the results of the evaluation using the RE-AIM framework, STAR demonstrated strong utility and impact in reducing burden on the ED through supporting individuals who are in mental health crisis in accessing appropriate community-based care.

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## Table of Contents

|                                                                         |           |
|-------------------------------------------------------------------------|-----------|
| <b>Abstract.....</b>                                                    | <b>2</b>  |
| <b>Acknowledgements.....</b>                                            | <b>4</b>  |
| <b>Chapter 1: Introduction.....</b>                                     | <b>8</b>  |
| Mental Health History in Ontario.....                                   | 9         |
| Geographical Context of Northern Communities .....                      | 12        |
| Strain on Health Care in Northern Communities .....                     | 13        |
| Caring for Indigenous People .....                                      | 14        |
| Collaborative Care.....                                                 | 15        |
| New Approach: Specialized Treatment and Alternative Response Team.....  | 17        |
| Team Roles and Responsibilities.....                                    | 17        |
| Process Evaluation.....                                                 | 20        |
| RE-AIM .....                                                            | 21        |
| <b>Research Objective and Question.....</b>                             | <b>23</b> |
| <b>Thesis Overview .....</b>                                            | <b>23</b> |
| <b>Methods.....</b>                                                     | <b>25</b> |
| Evaluation Approach.....                                                | 25        |
| Study Period.....                                                       | 26        |
| Mobilizing the Specialized Treatment and Alternative Response Team..... | 26        |
| Training and Skill Development .....                                    | 28        |
| Data Collection.....                                                    | 28        |
| Data Analysis.....                                                      | 30        |
| <b>Results.....</b>                                                     | <b>35</b> |

|                                          |           |
|------------------------------------------|-----------|
| Program Metrics.....                     | 36        |
| Program Evaluation .....                 | 48        |
| Thematic Analysis.....                   | 53        |
| <b>Discussion.....</b>                   | <b>62</b> |
| Summary of Findings .....                | 62        |
| Limitations .....                        | 67        |
| <b>Conclusion and Implications .....</b> | <b>69</b> |
| <b>References.....</b>                   | <b>70</b> |
| <b>Appendix A.....</b>                   | <b>78</b> |
| <b>Appendix B.....</b>                   | <b>83</b> |
| <b>Appendix C.....</b>                   | <b>87</b> |

## **Chapter 1: Introduction**

Canada has long faced a mental health and /or addictions (MHA) crisis, underscored by chronic underfunding, limited-service availability, and overreliance on emergency departments (ED) (Moroz et al., 2020). Reflecting this, MHA-related calls to 9-1-1 have been steadily increasing across Ontario (Meijer et al., 2024). In response, police have traditionally been the initial responders to these MHA-related 9-1-1 crisis calls (Zitars & Scharf, 2024). However, insufficient resources and lack of proper training limited the ability of these first responders to effectively resolve crisis calls (Shore & Lavoie, 2018). To mitigate this setback, Ontario introduced Crisis Response Teams (CRTs), designed to foster collaborative partnerships between law-enforcement and community partners (i.e. The Canadian Mental Health Association (CMHA)) (The Provincial Human Services and Justice Coordinating Committee, P-HSJCC, 2023). According to the P-HSJCC (2023), while different models of CRT exist in Ontario, all variations work to improve safety of and service delivery to individuals experiencing a MHA crisis, as well, to divert individuals from criminal justice involvement, reduce MHA stigma, strengthen community partnerships and ultimately reduce strain on first responders and EDs across the province.

Though there is a paucity of evidence supporting the efficacy of this approach, limited data suggests that CRTs have demonstrated positive impacts in the reduction of ED transports, apprehensions and police involvement throughout select urban communities (P-HSJCC, 2023). However, the effectiveness of CRTs, varies significantly depending on geographical location and availability of community resources (P-HSJCC, 2023). CRTs in urban centers with more health resources, tend to achieve better outcomes than rural and remote areas, as the latter faces more challenges with hiring and maintaining specialized staff, longer response times and fewer

alternative destinations to hospitalization for non-emergent calls (P-HSJCC, 2023). Additionally, police-involved CRTs in smaller, rural areas with higher Indigenous populations often face more skepticism due to concerns around the risk of involuntary detention, the criminalization of a MHA crisis and the potential escalation of situations when officers lack adequate mental health or cultural training (Zitars & Scharf, 2024). This skepticism is largely rooted in the long history of police violence and systemic discrimination that Indigenous peoples have experienced in Canada (Cauduro & Marques, 2025). These challenges underscore limitations CRT models can face, in delivering culturally appropriate, comprehensive MHA care, particularly in less resourced and/or rural settings, where geographic isolation, limited access to psychiatric services, ongoing impacts of colonialism and intergenerational trauma further compound existing barriers (Paquet et al., 2024).

As the growing frequency of crisis-related 9-1-1 calls continues to strain emergency response systems across the province, paramedics have also experienced a dramatic increase in MHA calls requiring medical assessment and transport (Meijer et al., 2024). While paramedics generally lack specialized MHA training, combining their strong clinical and stabilization skills with targeted mental health education positions them as ideal candidates for CRT models, that prioritize community-based resolutions along with hospital diversions (Phillips et al., 2024). Recognizing these limitations and the need for more collaborative health care teams, there is a clear need for an alternative approach to MHA crises care.

### **Mental Health History in Ontario**

In 2008, a significant shift occurred, when the province formally committed to reforming MHA services in Ontario through the development of a 10-year strategy (Bullock & Abelson, 2019). To shape this strategy the Ministry of Health established the Minister's Advisory Group

(MAG), a Mental Health and Addictions group tasked with developing a comprehensive 10-year mental health and addiction plan for Ontario (Minister's Advisory Group, 2009). In 2009, alongside the initiative, the Ontario Legislative Assembly (OLA) established an all-party Select Committee on Mental Health and Addiction (SCMHA) to investigate gaps, gather public input and recommend reforms (Ontario Legislative Assembly, 2010).

Both groups contributed to shaping Ontario's approach to addressing the MHA crisis, by each releasing a report informing the eventual strategy (Ministry Advisory Group, 2009; Ontario Legislative Assembly, 2010). In 2010, the SCMHA released *Navigating the Journey to Wellness*, highlighting the lack of a coherent system to ensure the consistent and comprehensive delivery of MHA services and supports across Ontario (Ontario Legislative Assembly, 2010). To address Ontario's fragmented and underfunded system, the report recommended a new umbrella organization called Mental Health and Addictions Ontario to ensure a single body was responsible for a comprehensive, coordinated, and long-term system that ensured Ontario residents had timely and equitable access to mental health and addictions aid (Ontario Legislative Assembly, 2010). That same year, MAG released *Respect, Recovery, Resilience*, which drew on nearly two years of study and consultation to outline recommendation for transforming Ontario's approach to MHA (Minister's Advisory Group, 2010).

Drawing on both reports, the Ontario Ministry of Health released *Open Minds, Healthy Minds*, in 2011 (Ontario Ministry of Health, 2011). The comprehensive 10-year mental health and addiction strategy committed \$257 million to provide integrated services and supports to Ontarians facing mental illness and addictions (Ontario Ministry of Health, 2011). The strategy aimed to support mental health across the lifespan, starting with children and youth (Ontario Ministry of Health, 2011). By 2014, the strategy received over \$65 million to expand and

transition from youth to adult services with the goal of ensuring all Ontarians received better access to quality MHA services and supports (Ontario Ministry of Health and Long-Term Care, 2014).

Since these foundational strategies, Ontario has made incremental gains in creating a more coordinated and accessible mental health system. In 2020, Ontario's Ministry of Health further introduced the *Roadmap to Wellness*, a long-term strategic plan to improve MHA services across the province (Ontario Ministry of Health, 2020). The 10-year, 3.8 billion investment was developed based on input from Indigenous communities and other priority groups, including families and caregivers, frontline healthcare professionals, health system leaders (Ontario Ministry of Health, 2020). The project outlines four main pillars; improving quality, expanding existing services, implementing innovative solutions, and improving access (Ontario Ministry of Health, 2020). Under these pillars, specific areas of focus include, expanding community-based services, supporting Indigenous mental health initiatives, enhancing crisis response options and more (Ontario Ministry of Health, 2020). The creation of the plan marks a shift from reactive crisis care to a more proactive person-centered approach for Ontario (Ontario Ministry of Health, 2020).

To help counter the growing service and support gaps, Ontario's Ministry of Health introduced a 90-million-dollar Addictions and Recovery Fund in 2022 (Ontario Ministry of Health, 2022). The three-year investment was developed to immediately increase access to addictions treatments supports that are culturally tailored to northern, rural and Indigenous communities in Ontario (Ontario Ministry of Health, 2022). The Addictions Recovery Fund allocated 3.8 million to expanding addiction treatment services specifically in Thunder Bay (St. Joseph's Care Group, 2022). The funding was used to create and expand access to new

addictions treatments beds in the city and to help meet the urgent community needs (St. Joseph's Care Group, 2022). However, with Ontario projecting to invest roughly 2 billion dollars to mental health and addictions crises for the 2024-2025 fiscal year, services were still underfunded, especially for Northern areas (Canadian Mental Health Association, 2024). Thus, according to The Government of Ontario (2024), in 2024 the province invested an additional 396 million over three years to support the creation of more addiction's recovery beds, mobile mental health clinics, crisis response teams, youth support, supportive housing, psychotherapy services and Indigenous and Northern Programs.

### **Geographical Context of Northern Communities**

Despite Ontario's investments, mental health and addictions programs across the province are still inefficient in meeting the demands of the population, particularly in rural, northern, and underserved communities such as Thunder Bay (Mandal & Burella, 2021). According to a report from Superior North EMS (SNEMS) (2026), Thunder Bay EMS responded to an estimated 5,592 - 8,183 MHA-related calls in 2025, representing roughly 22-32% of SNEMS total call volume. This range reflects variability in how calls are classified by EMS personnel (SNEMS, 2026). When MHA calls are coded under "no complaint", the annual number exceeds 8,000 calls, suggesting the true burden of MHA demand may be underreported in official counts (SNEMS, 2026). Regardless of classification, these figures demonstrate a significant and consistent demand for MHA resources in the region.

Individuals living in Northern Ontario already face numerous risk factors for MHA crises such as increased social isolation, lower socioeconomic status, as well as heightened social stigmas surrounding mental illness (Mandal & Burella, 2021; Canadian Mental Health Association (CMHA), 2009). These challenges are further compounded in rural and remote

communities, where Indigenous peoples, who have historically faced systemic barriers to care, intergenerational trauma and ongoing socioeconomic inequities are disproportionately represented and underserved (Boksa et al., 2015; Mandal & Burella, 2021; CMHA, 2009). A chronically underfunded MHA system worsens these factors by limiting vital resources and the availability of timely, accessible, and culturally appropriate care. In turn, these funding gaps lead to long wait times, shortages of healthcare professionals (overburdened providers), and gaps in care, which further increases and exacerbates negative health outcomes for these vulnerable populations (CMHA, 2024; Mandal & Burella, 2021; CMHA, 2009).

### **Strain on Health Care in Northern Communities**

While specialized outpatient programs, addictions treatment beds, and CRT's, are becoming more popular in Thunder Bay, as funding increases, there is still a shortage of these services. With limited alternative options for MHA care, community members turn to the emergency department (CMHA, 2009). According to SNEMS (2024), Thunder Bay's hospital has reported significant challenges in adapting to the surge in ambulance calls related to MHA, reporting limited bed capacity and few appropriate assessment locations for patients. Ultimately, the ED is designed for acute stabilization and is not well suited to manage complex ongoing needs of people experiencing MHA challenges (Meijer et al., 2024). According to Hudson et al. (2025), not only do hospitals experience overcrowding and resource constraints, but most departments are not adequately equipped to provide specialized psychiatric care, leading to ineffective care, patient dissatisfaction, stigma, prolonged stays, inefficient use of hospital resources and repeat visits.

For those unable to access the ED via their own means, paramedics frequently become the front-line responders to these emergencies (Meijer et al., 2024). This leads to overuse of

paramedic services as the traditional “treat-and-transport” model followed by paramedics in Ontario mandated transport to already crowded EDs regardless of hospitalization need (Meijer et al., 2024). Until 2019, the ED was in fact the only ministry-approved transport destination for land ambulances (Meijer et al., 2024). Since then, recognition that ED’s are not equipped for MHA needs, coupled with the growing pressure on both ED’s and paramedic services promoted the Ontario Ministry of Health to shift toward a “treat-and-refer” approach (Meijer et al., 2024). This allows paramedics services to develop alternative destination protocols for patients (Meijer et al., 2024). However, these remain limited due to a small number of pilot programs, and ED transport continues to be the default disposition across the province. This stems from Ontario paramedics limited specialized MHA training for complex MHA crises and/or scarce alternative crisis resources within the community (Meijer et al., 2024). The higher rate of non-emergent calls experienced by Emergency Medical Services (EMS), results in an influx of “code black” periods where ambulances are no longer available to respond to emergent calls, as they are held up on site or they are held up at the hospital waiting until care can be transferred to a physician (National Union of Public and General Employees (NUPGE), 2023). As a result, according to NUPGE (2023), paramedics report strains on capacity, access issues and significant wait times; additionally, increases in frustration, and burn-out, leading to low morale and increased staffing shortages among EMS workers.

### **Caring for Indigenous People**

The Indigenous population in Thunder Bay is the highest in Ontario and represents roughly 14.1 percent of the city’s population (Statistics Canada, 2022). The community faces unique challenges due to impacts of intergenerational trauma, systemic racism and discrimination, that contribute to higher rates of substance use, suicide, self-harm, mental health

crises, socioeconomic challenges and cultural disconnection (Boksa et al., 2015; Mandal & Burella, 2021). In Thunder Bay, Indigenous adults report disproportionate use of EDs for MHA concerns, as well as experiences of racism, barriers to primary care and mistrust of mainstream services (Browne et al., 2011; McLane et al., 2022). Inequitable access to culturally sensitive, trauma-informed care further exacerbates these disparities (Mandal & Burella, 2021). Programs that draw on the strengths of both Indigenous and Western approaches to wellness and crisis response- reflecting the principles of Two-Eyed Seeing (Bartlett et al., 2012), are needed to achieve equitable, culturally safe care, to ensure that care is not only accessible, but meaningful and trustworthy to Indigenous individuals who have historically been harmed by Western-only systems (Browne et al., 2011; Mandal & Burella, 2021; McLane et al., 2022). Without resources for MHA crises that represent all populations living in Thunder Bay, individuals will continually be forced to navigate systems not designed nor supportive of their needs, resulting in not seeking out help when facing an MHA or excessive use of EDs as default access points for crisis intervention (Mandal & Burella, 2021; McLane et al., 2022).

### **Collaborative Care**

Regardless of the type of mobile crisis team, all models rely heavily on community partnership (P-HSJCC, 2023). With the complexity of MHA cases, multi-agency collaboration is needed to adequately meet client needs (Zitars & Scharf, 2024). Community partnerships are a proposed solution to understanding complex health care needs for vulnerable populations, as partners can ensure individuals receive comprehensive, culturally response and context tailored care (Glen et al., 2024; Zitars & Scharf., 2024). Zitars & Scharf, (2024), evaluated a co-responder CRT, in Thunder Bay using a Donabedian framework. Such a framework considers context (external influences), structure (resources and organization), process (care delivery) and

outcomes (health and system results) to assess healthcare quality and program function (Donabedian, 1966; as cited in Zitars & Scharf, 2024). This CRT model paired police officers trained in crisis intervention with mental health crisis workers and responded 24/7 to high-volume MHA calls (Zitars & Scharf, 2024). Crisis de-escalation was achieved through on-scene assessment, safety planning and the crisis workers presence, which provided a “softer” approach for vulnerable groups (Zitars & Scharf, 2024). Findings indicated improved quality of care (family validation, fewer involuntary transports), and outcomes; 55% hospital diversions in 2 years, alongside referrals to detox and crisis services (Zitars & Scharf, 2024). Ultimately, demonstrating how collaborative care models like CRTs can be implemented in northern contexts.

Glen et al. (2024) conducted an integrative review of 8 co-responding CRTs from Canada, UK, Australia and Sweden. Teams consisted of psychiatric/mental health-trained registered nurses and police officers trained in crisis intervention (Glen et al., 2024). Findings indicated teams provided improved quality of care (defined as compassionate de-escalation, patient empowerment, non-criminalizing interactions and care continuity), resulting in reduced use of force, fewer ED transports and reduced arrests, and increased community referrals (Glen et al., 2024). Teams also fostered trust, respect and stronger communication between nurses and police (Glen et al., 2024). These findings demonstrate how collaborative care teams can yield strong crisis outcomes in diverse settings.

Ultimately, each crisis response team exemplifies how community partners contribute unique expertise and resources to the team to help address and support MHA crisis for community members. The STAR team was designed around this concept and brings together three key partners (Superior North EMS (SNEMS), The Canadian Mental Health Association,

Thunder Bay (CMHA) and N'doo'owe Bensi (St. Joseph's Care Group)) to create a more robust multidisciplinary team. Together, each contribute specialized expertise, resources and perspectives that help to strengthen the programs' ability to effectively respond to vulnerable and marginalized people in Thunder Bay and surrounding areas experiencing a MHA crisis.

### **New Approach: Specialized Treatment and Alternative Response Team**

The growing reliance on paramedics for supporting MHA crises and the increased demand on EDs highlight the gaps in community-based crisis interventions and the increasing need for alternative response models within the community (Meijer et al., 2024). In response to these needs SNEMS drafted a proposal for the Superior North Specialized Treatment and Alternative Response (STAR) team, as part of their application to the Addictions Recovery Fund, administered by the Ministry of Health (Superior North Emergency Medical Services (SNEMS), 2022). In 2024, the program secured 2.7 million over 3 years to create, implement, and pilot the STAR program (Law, 2024). STAR is a multidisciplinary mobile crisis team focused on a treat and refer model, with a goal of diverting individuals from the ED by providing immediate MHA support and linking individuals experiencing MHA crisis to appropriate alternative resources when possible (Law, 2024). The following provides a review of each of the partner's roles and responsibilities in this project.

### **Team Roles and Responsibilities**

There is currently one STAR team, (two shifts) that is multidisciplinary, including a representative from SNEMS, CMHA and N'doo'owe Binesi (St. Joseph's Care Group). Roles and responsibilities within the team are complementary and interconnected to ensure continuity of care, including establishing response scene safety, de-escalation, determining referrals to alternate care pathways, communication with families on scene, system navigation and/or

advocacy. In addition to these shared roles and responsibilities, each member has their own primary roles and responsibilities.

### ***Superior North EMS (SNEMS)***

The SNEMS paramedic on the STAR teams is trained in Primary Care Paramedics or in Advanced Care Paramedics with additional training in vulnerable patient population, cultural sensitivity and safety, de-escalation techniques and MHA crisis response. Primary roles for the SNEMS paramedic are to perform medical assessments, ensure the patient meets the Ministry of Health transfer of care eligibility requirements, drive the STAR vehicle and ensure transfer of care is medically safe by completing a “STAR checklist”. Limitations or practices outside their scope include diagnosing, long-term management, mental health referrals, treatment with Indigenous medicines and legal apprehension. In instances where a patient’s condition deteriorates and becomes medically unstable, the paramedic will assume a leading role for the STAR team.

### ***The Canadian Mental Health Association (CMHA)***

The CMHA crisis response workers on the STAR team are trained in de-escalation, suicide prevention and trauma-informed care, to ensure individuals in need of help receive immediate mental health assessments and support. Their primary roles are assessing the nature of the MHA call, mitigating risk using a Crisis Triage Rating Scale (CTRS) and suicide risk assessment. They further provide de-escalation techniques to reduce risk of harm to oneself and others, coordinate with community organizations/agencies to effectively provide care and connect individuals with necessary resources, provide harm reduction services, and offer peer support during the call and thereafter. After medical safety is established and if the patient has indicated that they wish to speak with a crisis worker, CMHA will assume a primary role within

the STAR team. Following call response, CMHA then works to facilitate smooth connections to appropriate community-based services- resources and service referrals in a timely manner.

### ***N'doo'owe Binesi***

An Indigenous Health Associate support the delivery of culturally safe, respectful and trustworthy care for Indigenous patients. Ultimately, the liaison bridges the gap between Indigenous people and accessing community services. Their primary role is to provide direct and indirect access to Indigenous Traditional Medicines, create a culturally safe space through their presence, approach, lived experience(s) and knowledge, and help with system navigation and advocacy. Limitations in their scope occur when paramedic intervention is necessary. In situations where a patient feels safer speaking with the Indigenous Health Associate, N'doo'owe Binesi takes a primary role.

### ***Lakehead University***

Lakehead University serves as a research and evaluation partner, analyzing quantitative data provided by crisis team members. The university assesses the STAR program's effectiveness and efficiency implementing an evidence-informed approach using data collected by the STAR team. Results with help to inform future policy decisions and program improvements and development. Information will ensure delivery of the program is evidence-based, and client-centered. Throughout the entirety of the evaluation process, the University will collaborate closely with community stakeholders and the crisis team members to integrate feedback and promote continuous improvements.

Ultimately, the goal of STAR is to reduce ED visits by providing a more holistic, seamless transition between all levels of care, so that individuals receive timely, adequate, equitable and continuous support throughout their MHA journey. The utility of the STAR

program however depends on metrics related to its evaluation to sustain, improve and grow STAR regionally. One established way to evaluate the utility of a community-based program is through a process evaluation, which examines how a program operates and if it is operating as intended.

## **Process Evaluation**

While community partnerships are crucial in the development and delivery of effective mobile CRTs, challenges in delivery, coordination and outcomes may persist, especially with pilot programs like STAR. To understand how and why complex interventions work (or do not work) in real-world settings, a process evaluation guided by a theoretical framework is essential (Linnan & Steckler, 2002). Alone, a process evaluation provides insight into whether a program was implemented as intended (Linnan & Steckler, 2002). Process evaluations could look at fidelity (quality), dose delivered/received (how much), reach, recruitment (participants) and context (barriers/facilitators) (Linnan & Steckler, 2002, as cited in Saunders et al., 2005). Ultimately, a process evaluation explains how and why a program is successful, partially successful or a failure (Linnan & Steckler, 2002). However, without a theoretical framework to guide an evaluation, there lacks a clear ‘why’ to findings, as there is no clear link between program actions and outcomes (Linnan & Steckler, 2002). Linnan and Steckler (2002), emphasize that a theoretical framework can connect these steps, turning data into knowledge to improve the program. For this evaluation the RE-AIM framework will be used to guide process evaluation, linking implementation components to outcomes. The RE-AIM framework was chosen because it is a robust tool for assessing real-life, community-based programs across five dimensions: Reach, Effectiveness, Adoption, Implementation, and Maintenance (Glasgow et al., 1999; Glasgow et al., 2019).

This approach builds off Zitars and Scharf's (2024) article that examined Thunder Bay's IMPACT program using the Donabedian framework. The police-led co-responder program found limitations stemming from surrounding community context, including under-funded facilities, misaligned service hours and long ED wait times that hindered diversion efforts. Though STAR shifts toward a paramedic and Indigenous health-informed model, the program operates within the same area. Thus, the model draws on the same underfunded community-based services where similar barriers may impact overall outcomes. Additionally, Zitars and Scharf (2024) call for communities to evaluate crisis models based on their specific resources. Evaluating STAR using the RE-AIM framework answers that call. Whereas IMPACT was an established program ready for evaluation, STAR is still in its early pilot stage. In this case, RE-AIM was selected over the Donabedian framework because its Reach and Maintenance dimensions are better suited to assessing whether the program is reaching the right people and if that program can be sustained over time.

### ***RE-AIM***

RE-AIM is a widely used framework for planning and evaluating programs like STAR (Glasgow et al., 2019) and is a well-suited framework for this process evaluation as it captures what is being delivered and to whom, providing the groundwork for future outcome evaluations (Glasgow et al., 2019). By guiding a process evaluation with RE-AIM, researchers can provide a more comprehensive and structured assessment of the multiple components within the STAR program to determine the program's potential for real-world success, sustainability and public health impact. Table 1 summarizes the core constructs of the RE-AIM framework, including definitions from Gaglio et al. (2013).

RE-AIM is inherently a mixed methods framework, drawing on quantitative and qualitative data across all five dimensions (Glasgow et al., 2019). Quantitative measures address traditional implementation outcomes, providing numerical data on the extent to which the program is reaching its intended audience, being adopted and is delivered as intended (Glasgow et al., 2019). Qualitative approaches help us understand why and how results were obtained and can be captured using open-ended questions created for each RE-AIM domain, as these factors are not easily measured by numbers alone (Forman et al., 2017; Holtrop et al., 2018).

It is also important to note that applying RE-AIM does not require addressing all five dimensions for every evaluation (Glasgow et al., 2018). Every study, especially those with smaller budgets, do not need to assess each RE-AIM dimension (Glasgow et al., 2018). Rather, studies should evaluate components most valued and appropriate for their question, setting, stakeholders and stage of research (Glasgow et al., 2018). Consistent with this and given that STAR is at an early but critical stage of implementation, the present evaluation addresses four of the five RE-AIM dimensions: Reach, Effectiveness, Adoption, and Implementation. Each is considered relevant and necessary to provide a comprehensive assessment of the program's potential for real-world impact.

**Table 1**

*RE-AIM Framework Constructs and Definitions*

| <b>Construct</b> | <b>Definition</b>                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------------------------|
| Reach            | Absolute number, proportion, and representativeness of individuals willing to participate in each initiative.         |
| Effectiveness    | Impact of an intervention on outcomes, including potential negative effects, quality of life, and economic outcomes.  |
| Adoption         | Absolute number, proportion and representativeness of settings and intervention agents willing to initiate a program. |

---

|                |                                                                                                                                                                                                                                       |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Implementation | The intervention agents' (those responsible for program delivery) fidelity to the various elements of an intervention's protocol                                                                                                      |
| Maintenance    | Extent to which a program or policy becomes institutionalized or part of the routine organizational practices and policies OR long-term effects of a program on outcomes 6 or more months after the most recent intervention contact. |

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*Note.* Construct and definitions from Gaglio et al. (2013). Adoption was also extended to include engagement of community and EMS partner organizations (Shaw et al., 2019; Sweet et al., 2014), assessed qualitatively per Holtrop et al., 2018).

### **Research Objective and Question**

Building on this evidence base, the present study applies the RE-AIM framework to systematically assess the impact of the STAR program during its early implementation phase, in Thunder Bay. Using a descriptive analysis of pre-determined key performance indices drawn from call data collected by SNEMS and CMHA from (April 2024-August 2026), supplemented by meeting minutes from 28 partner meetings held between July 2024- August 2026, and informed by the RE-AIM framework: Reach, Effectiveness Adoption, Implementation and Maintenance, this research was guided by the foundational research question: *How does STAR perform across RE-AIM domains in reducing ED burden in Thunder Bay?*

### **Thesis Overview**

This report presents an evaluation of the STAR program from July 2024 to August 2026. It includes both a descriptive analysis of the calls that the team responded to during this time as well as a process evaluation of the implementation guided by the RE-AIM framework.

## **Chapter 2: Bridging Gaps in Mental Health Crisis Care: A RE-AIM Evaluation of the Superior North Specialized Treatment and Alternative Response (STAR) Team in Northwestern Ontario**

Crisis response teams (CRT) have emerged across Canada as an additional resource to aid in the response to the rising number of mental health and/or addiction (MHA) crises within cities and surrounding communities. These initiatives have routinely incorporated police-involvement with additional mental health professionals and are demonstrating promising results. However, these studies have commonly taken place in large urban areas with resources that are not as finite, as rural communities like Thunder Bay. Additionally, police-involved CRTs in smaller, rural areas with higher Indigenous populations often face more skepticism due to concerns around the risk of involuntary detention, the criminalization of a MHA crisis and the potential escalation of situations when officers lack adequate mental health or cultural training (Zitars & Scharf, 2024). Thus, non-police-led, paramedic-based CRT models in rural and northern communities remain almost entirely unevaluated, despite their need.

In response to the high volume of MHA-related calls and significant straining on the ED and paramedic services in Thunder Bay, Ontario (SNEMS, 2024; Meijer et al., 2024), Superior North EMS (SNEMS), in partnership with the Canadian Mental Health Association, Thunder Bay (CMHA) and N'doo'owe Binesi, launched a paramedic-initiated crisis response team (CRT) called the Superior North Specialized Treatment and Alternative Response (STAR) team in 2024. This multidisciplinary team serves a community with the highest proportion of Indigenous residents in Ontario and is a strong representation of the kind of understudied CRT model this study aims to evaluate.

Understanding how a CRT model functions in a given context requires more than measuring outcomes alone. Studies that evaluate solely if a program “worked” leave little room for identifying opportunities for improvement and lack in-depth analysis that can help explain why a program succeeds, partially succeeds or fails entirely (Linnan and Steckler, 2002). This is even more true for programs in their early implementation stage, like STAR. The RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, Maintenance) was selected to guide the present evaluation to better understand who the program is reaching, its level of effectiveness, the extent to which it has been adopted, whether it is being delivered as intended and its potential for long-term sustainability. Consequently, the aim of this study was to conduct a process evaluation to understand how a paramedic-led CRT works to help reduce ED burden in a rural community, using descriptive analysis guided by a strong theoretical framework.

## **Methods**

### **Evaluation Approach**

A process evaluation guided by the RE-AIM framework was conducted to respond to study objectives. This evaluation integrates quantitative program metrics with tenets of qualitative thematic analysis (Braun & Clarke, 2006) of documentary data sources to capture what STAR achieved and how the program worked in practice. Existing performance metrics developed by Superior North EMS (SNEMS) and the Canadian Mental Health Association (CMHA), Thunder Bay, were used for the quantitative analysis where they correspond to RE-AIM domains. Program meeting minutes were analyzed qualitatively using thematic analysis (Braun & Clarke, 2006) to understand Implementation and Adoption processes not captured by quantitative metrics alone. This approach draws on available data to explore Reach,

Effectiveness, Adoption, and Implementation, with the understanding that some domains are more fully represented in the available data than others. This study is integrated knowledge translation (Graham et al., 2006) where the research partners (SNEMS, CMHA and N'doo'owe Binesi) were actively engaged in the entire research process – from developing the research question to implementing the study and analyzing the results. Specifically, the research question stemmed from SNEMS and CMHA's prioritized key performance indicators, implantation involved structured partner meetings and ongoing outreach from all partners, and analysis included shared data access and partner reports.

### **Study Period**

Data collection for this evaluation took place over two overlapping but distinct timeframes. Quantitative program metrics (call volume, disposition, presenting issues) were reviewed and analyzed from data collected between April 2025 to August 2026, reflecting the period in which STAR was operational and generating data. Meeting minutes, from 47 program meetings spanning from July 2024 to August 2026, were reviewed as part of the qualitative thematic analysis, capturing STAR's planning phase and operational period. Thus, for this evaluation the "planning phase" (July 2024-March 2025) is represented through qualitative meeting minutes from 22 meetings, and the "operational phase" (April 2025-August 2026) is represented through both quantitative program metrics and qualitative meeting minutes from the remaining 25 meetings.

### **Mobilizing the Specialized Treatment and Alternative Response (STAR) Team**

STAR was be activated 11 a.m. to 11 p.m., seven days a week, provided both the STAR paramedic and CMHA crisis worker are on duty (Superior North EMS, 2025). The Indigenous Health Associate joined for cultural support when possible (Superior North EMS, 2025).

Following an initial 9-1-1 call to dispatch an ambulance to scene, on-site paramedics-initiated STAR team activation following a physical assessment (Superior North EMS, 2025). If the patient met the Ministry of Health (MOH) eligibility as outlined in the STAR evaluation checklist (Superior North EMS, 2025) (Appendix C, Figure C1) they are offered services of the STAR team. Verbal consent was imperative, as some clients preferred to be transported to the ED (Super North EMS, 2025). Following consent, the on-site paramedics contacted the STAR phone, providing their name and unit number, and requested whether the STAR team is available for dispatch (Super North EMS, 2025). According to Super North EMS (2025), if available, STAR responded via phone call within two minutes to confirm receipt and available and then dispatched to the scene.

Once STAR was on scene, transfer of care (TOC), started with a verbal report from initial responding frontline paramedics (Super North EMS, 2025). The attending paramedic provided a full verbal report to STAR on patient name, age, and sex; chief complaint (s); relevant history and assessment finding; treatments provided and patient response; vital signs and biometric data; and the Canadian Triage and Acuity Scale (CTAS) score (Super North EMS, 2025).

The STAR team accepted TOC following confirmation that the patient met criteria for Treat and Refer under the Mental Health and Addictions Medical Directive (Super North EMS, 2025). To confirm eligibility the STAR intake Evaluation Checklist was completed to ensure the medical directive was followed, with all questions requiring a “yes” response before TOC could proceed (See Appendix C, Figure C1) (Super North EMS, 2025). Super North EMS (2025), stated the checklist also recorded the date and time, location, call number, EMS unit number, attending paramedic, remarks and vital signs.

If any question on the checklist was answered “no” the patient did not meet TOC criteria, STAR declined TOC, and the patient was transported to the ED (Super North EMS, 2025). If TOC was declined by STAR, paramedics on-site followed Basic Life Support Patient Care Standards (BLS PCS) and Advanced Life Support Patient Care Standards (ALS PCS) guidelines for MHA calls, potentially transporting to the ED (Super North EMS, 2025), Similarly if Local EMS dispatch could not activate STAR due to Ontario Ministry of Health regulations, paramedics on-site followed BLS PCS/ALS PCS guidelines for MHA calls, again potentially transporting to the ED (Super North EMS, 2025)

### **Training and Skill Development**

Prior to program implementation in 2024 and continuing through program operationalization STAR team members received training in Applied Suicide Intervention Skills (ASIST), Crisis Intervention Team (CIT), Mental Health First Aid, and through ride-a long’s during orientation. Such training is presented as contextual background rather than as coded thematic findings within the results section, as it reflects staff preparation for program delivery rather than program delivery or outcomes, and therefore does not directly address the research question through the RE-AIM thematic analysis.

### **Data Collection**

#### ***STAR Documentation-Administrative Records***

Accurate, timely and appropriate documentation is critical for program evaluation. SNEMS, CMHA and N’doo’owe documented all client interactions, activities and clinical or support interventions relative to the policies, procedures and training from their respected organizations (Superior North EMS, 2025). Each team member documented information into documentation systems (electronic patient records (ePCRs), EMRs (Radius) and internal agency

records) (Superior North EMS, 2025). Systems differed between partners (Superior North EMS, 2025). CMHA maintained a separate Excel spreadsheet for crisis worker notes and shared the document weekly with STAR team members. The spreadsheet recorded information on call details (MHA call, repeat users, Form 1 requirements), presenting issues (addictions, emotional distress), disposition (patient outcome at scene), and connection choices (post-response referral options). This spreadsheet served as one of the primary data sources for program evaluation, providing quantitative and descriptive data needed to assess Reach, Effectiveness, Adoption, Implementation and Maintenance of the STAR program.

### ***Interdisciplinary Meetings***

In addition to administrative records, meeting minutes from 47 weekly, bi-weekly and monthly meetings held from July 10<sup>th</sup>, 2024, to August 12<sup>th</sup>, 2026, were used to provide supplemental insight into program implementation, and partner collaboration. Minutes for one meeting called- “Design Day”, prior to program operationalization (October 2024), involving multiple community partners was used to provide insight into early program design. Meeting documentation is an important component in multidisciplinary team research, capturing decision-making around evolving program context that is not always reflected in administrative records (Fernand & Duclos, 2005). Meetings consisted of discussions around program successes, ideas for improvements and talk around different utilizations of the STAR team during down time. All meetings were held and recorded over Microsoft Teams, documented in Microsoft Word and uploaded to SharePoint for team access.

### ***Encampment and Evacuation Data***

In addition to standard MHA call data, STAR recorded outreach efforts by the mobile team, when utilization was low. CMHA integrated encampment and evacuation data into the

main Excel spreadsheet and documented information on encampment and evacuation outreach efforts such as, the number of individuals served, the frequency of harm reduction supply distribution and other supportive outreach activities conducted during periods of lower call volume between April 2025 and August 2026.

### **Data Sharing (Lakehead)**

Lakehead received call data weekly via Excel spreadsheets, shared through email, and the research team participated in 26 bi-weekly and/or monthly meetings starting from March 26, 2025. The research team had access to the STAR team SharePoint to obtain meeting minutes as a data source. Data from both the Excel spreadsheets and SharePoint were then compiled and stored on secure, password protected Excel spreadsheets for secondary analysis by the research team. This process ensured accurate record-keeping and facilitated ongoing communication between partners throughout the evaluation period.

### **Data Analysis**

#### ***Program Metrics***

Quantitative data was analyzed in Excel using descriptive statistics to summarize field data collected between April 2025, to August 2026, including call type, disposition (outcome of the call), connection choices (where they went after) and presenting issues (reasoning for STAR activation). Descriptive statistics, including frequencies, percentages, median, mode and inter quartile ranges (IQR), were calculated to describe call volume, and patterns of service, providing key indicators across multiple dimensions of the RE-AIM framework.

Analyses examined indicators of the STAR program's impact on the local base hospital, including the number of calls resulting in transport to Thunder Bay Regional Health Science

Centre (TBRHSC) versus diversions to community-based services, and the number of calls not requiring transport.

When analyzing data on Presenting Issues, the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision manual (DSM-5-TR) was used to categorize the high volume and variability of presenting issues seen in the data (American Psychiatric Association, 2022). The manual was not used as an official categorization tool, but loosely to help group common presenting issues (grief, domestic or intimate partner violence, suicidal ideations), into consistent interpretable categories for descriptive analysis.

### ***Program Evaluation***

Program implementation was evaluated using STAR program metrics, informed by the RE-AIM framework. This approach linked program activity (call-volumes, dispositions, connection choices) to three of RE-AIM's five dimensions- Reach, Effectiveness, and Adoption to assess community impact. While Reach and Effectiveness were assessed primarily by using STAR administrative data, collected on an ongoing basis between April 15<sup>th</sup>, 2025, and August 31, 2026, Adoption was only partially assessed using this data.

#### **Reach**

Reach was measured, using provided administrative data from program partners (SNEMS, CMHA). Reach was considered demonstrated across one condition: proportion; the number of people served in the given area (Glasgow et al., 1999, Gaglio et al., 2013). Proportion was measured as the number of STAR contacts relative to total calls received and recorded by SNEMs per month during the evaluation period. A sustained upward trend in proportion data each month over the study period was taken as evidence that Reach was achieved. Given RE-AIM's conceptual nature, the framework does not provide standardized thresholds. Thus,

interpretation was informed by comparison with similar programs in the literature, alongside stakeholder input and available population-level data (Gaglio et al., 2013, Glasgow et al., 2019; Kwan et al., 2019).

### **Effectiveness**

Effectiveness was measured using administrative data, drawing from indicators most relevant to the program's goal of relieving burden on the local emergency department. Two outcomes (primary and secondary) were examined at the organizational level (looking at the program as a whole). The Primary outcome was assessed through ED/Hospital transport rate; the proportion of MHA calls (STAR activations) resulting in transport to the hospital. This target directly reflects the program's primary goal of diverting calls away from the ED. This was calculated by taking the number of ED/hospital transports over the number of MHA calls (STAR activations) recorded during the same timeframe. This was calculated for each 3-month period (quarter) across the 17-month reporting period.

Non-ED disposition rates and repeat contacts were examined as secondary outcome indicators. These metrics captured secondary impacts of the program beyond the primary resolution rate. Non- ED/Hospital disposition rates were calculated as the number of MHA calls (STAR activations) resulting in a non-ED/Hospital disposition over the total number of MHA calls recorded, per quarter. Repeat contact rate was calculated as the number of repeat STAR users over the total number of MHA calls (STAR activations), per quarter. Both were calculated for each 3-month period (quarter) across the 17-month reporting period, allowing for the identification of trends in non-ED disposition and repeat users over time.

As demonstrated by Norberg et al. (2024) the operationalization of Effectiveness within RE-AIM is broad and context specific, with researchers selecting and interpreting indicators

based on what is relevant and feasible for their program. In the absence of standardized RE-AIM thresholds for Effectiveness and pre-established targets from STAR program partners, a stable increase in non-ED/hospital disposition rates across quarters was taken as evidence that STAR was effectively relieving burden on the ED, consistent with the programs stated goal.

### **Adoption and Implementation**

Adoption and Implementation required information beyond what could be provided from administrative records. Meetings minutes from 47 STAR meetings were therefore analyzed using thematic analysis (Braun & Clarke, 2006). This analysis followed a hybrid inductive (using the data to determine themes) and deductive (using the RE-AIM framework) approach to coding and theme development highlighted by Fereday and Muir-Cochrane (2006). Data relative to the overall research question was first extracted from all 47 meeting minute documents and assigned open codes reflecting the content (e.g. program update, staffing gap, community engagement). These codes were then grouped into common themes and subthemes and reviewed, which is consistent with Braun and Clarke's (2006), phases of theme searching, reviewing and naming. One researcher conducted the initial coding of all 47 meeting minute documents. A second researcher then reviewed the resulting themes and subthemes for consistency. Resulting themes were then mapped onto RE-AIM's Adoption construct and Implementation sub-constructs - fidelity, and. adaptations.

Themes were reported descriptively, with supporting excerpts drawn from the meeting documents from July 2024- August 2026. As Adoption and Implementation are measured at the organizational and staff level withing the RE-AIM framework, content that did not correspond to an Adoption or Implementation construct- including training and skill development, was not included in this thematic analysis as that information is reflective of staff preparation for

program delivery and not program delivery or outcomes. Therefore, such information was presented separately as background information (see Training and Skill Development section).

Adoption was interpreted as meaningful if there was evidence of increasing engagement with and uptake of the STAR program by MHA community partners and frontline EMS personnel. This is consistent with RE-AIM Adoption construct, which is traditionally assessed at both the staff and setting level (Glasgow et al., 2019) but was extended in this study to also capture engagement of MHA community and SNEMS partner organizations, consistent with broader applications of the construct in the literature (Shaw et al., 2019; Sweet et al., 2014).

Implementation was interpreted as meaningful by examining whether fidelity to STAR's core functions stayed consistent even with adaptations to the design. Adaptation was treated as an expected part of Implementation, not a sign that the program was struggling consistent with research outlined by Glasgow et al. (2019) and Holtrop et al. (2021).

### **Maintenance**

Maintenance was not assessed in this current study, as the evaluation focused on the early implementation of the STAR program. According to Glasgow et al. (2019) and Holtrop et al. (2021), the minimum timeframe for Maintenance to be properly measured is 6 months post-implementation. However, the recommended standard for a credible maintenance claim is 1-2 years post implementation, as according to Glasgow et al. (2019), sustainability can only be demonstrated by observing a program after the initial implementation push has faded. Holtrop et al. (2021) further support 1-2 years, as program such as STAR need to demonstrate real community integration, not just short-term survival. Thus, sufficient time has not yet elapsed to meaningfully evaluate long-term sustainability of the STAR program.

### ***Encampment and Evacuation Data***

In addition to its core crisis response function, STAR also engaged in community outreach, including support during forest fire evacuations and for those in encampments. Because this outreach falls outside STAR's model, it is reported separately from the Reach domain. Descriptive statistics (frequency counts) were used to summarize STAR's outreach efforts related to encampment support and evacuation response. For each, data was organized by support type (e.g., wellness checks, follow ups), and reported as the number of days each support type was provided and the number of individuals helped. This data was reported for the months in which aid was provided over the 17-month evaluation period. Additionally, data provides qualitative context for adaptations identified through thematic analysis of meeting minutes, showing how the STAR program utilized periods of lower call volume for community outreach.

### **Results**

The following sections present findings from the evaluation of the implementation of the STAR program across two sources of data. Quantitative program metrics, such as call volume, presenting issues, dispositions, connection choices and outcome measures related to hospital diversion and program reach are pulled from STAR administrative records collected over the 17-month evaluation period (April 2025-August 2026).

Qualitative findings are drawn from thematic analysis of STAR team meeting minutes spanning July 2024 to August 2026, guided by the Adoption and Implementation domains of the RE-AIM framework. Two domains, four themes and six-subthemes were identified from the minutes. Table 14 present an overview of these themes, subthemes and definitions. Supporting excerpts can be found in table 15.

## Program Metrics

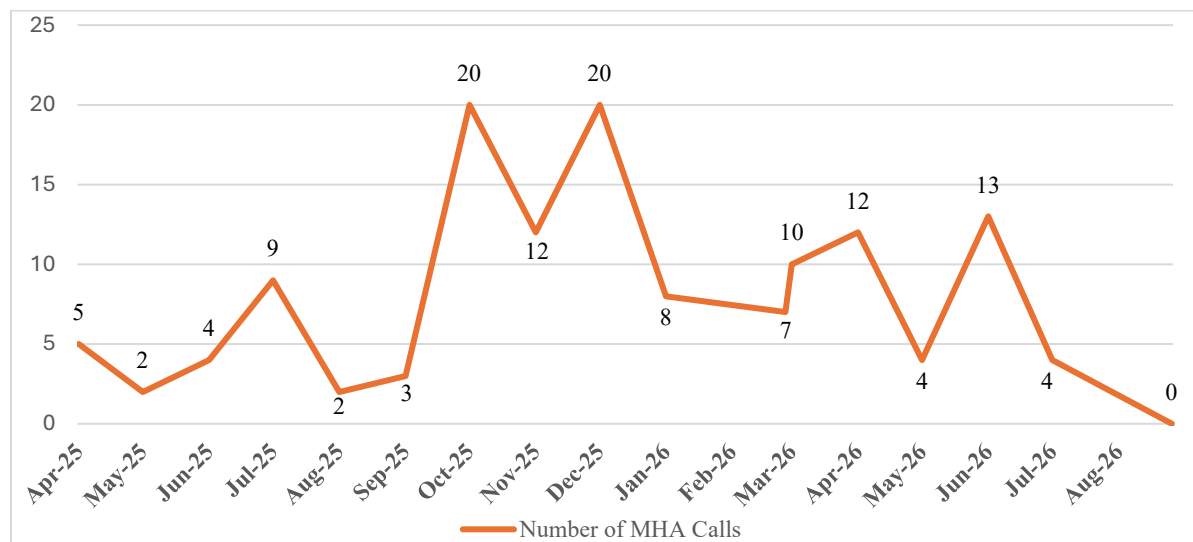
### *Call Volume Trends*

Given the skewed and non-normal distribution of call volume, median, mode and interquartile range (IQR) were used as measures of central tendency and spread as they are less sensitive to outliers seen in call volume data. Over the 17-month data collection period (April-2025-August 2026), there were a total of 135 MHA calls. The number of calls ranged from 0 to 20 depending on the month, with October and December 2025 seeing the greatest increase in MHA contacts and August 2026 seeing the least (Figure 1).

The median number of calls each month was 7, while the most frequent monthly count was 4 (mode=4). This implies that low-volume months were relatively common during the study period but were not representative of a typical month, as some higher months still pulled the median up. An IQR of 8, furthering indicated this spread, as the middle 50% vary roughly the same as the median (Table 2). These findings suggest that STAR utilization did not follow a typical monthly pattern but fluctuated meaningfully throughout the 17-month timeframe.

**Figure 1**

*Monthly Trends in Mental Health and/or Addiction Call Volume*



*Note.* MHA= Mental Health and/or Addiction. Data collected from April 2025- August 2026.

**Table 2**

*Monthly Distribution of STAR MHA Calls*

| Variable                             | N   | Median | Mode | IQR |
|--------------------------------------|-----|--------|------|-----|
| Mental Health and/or Addiction Calls | 135 | 7      | 4    | 8   |

*Note.* MHA=Mental Health and/or Addiction Calls. IQR=Interquartile Range. For raw data see Appendix A, Table A1.

***Follow-up, Repeat User and Under-18 Characteristics***

Though certain months saw no follow ups, repeat users or patients under the age of 18, most months saw at least one occurrence of each. Follow-ups occurred in 6 of the 17 months (35%), repeat users occurred in 8 of the 17-months (47%), and patients under 18 occurred in 6 of the 17 months (35%).

Follow ups accounted for 18 contacts, representing 11.8% of total STAR contacts (MHA calls and follow-ups combined, N=135). Of the 135 MHA calls recorded over the data collection period, STAR saw 10.4% (n=14) repeat users and 5.9% (n=8), patients under the age of 18 (Table 3).

**Table 3**

*Follow Up, Repeat User and Under-18 Status Among Mental Health and/or Addiction Calls*

| Variable    | n  | Months with ≥ 1 occurrence | Monthly Range (Min-Max) | Percent           |
|-------------|----|----------------------------|-------------------------|-------------------|
| Follow Ups  | 18 | 6                          | 0-9                     | 11.8 <sup>a</sup> |
| Repeat User | 14 | 8                          | 0-3                     | 10.4 <sup>b</sup> |
| Under 18    | 8  | 6                          | 0-2                     | 5.9 <sup>b</sup>  |

*Note.* <sup>a</sup>Percent of total STAR contacts (MHA calls + follow-ups, N=153). <sup>b</sup>Percent of total MHA calls (N=135). Follow-ups are recorded as distinct contacts related to an existing MHA case, rather than a characteristic of a MHA call. Therefore, the percentage reflects a different

denominator than repat user and under 18 statuses. Monthly range highlights the month with the fewest and the month with the most patients for each variable. For raw data see (Appendix A, Table A1).

### ***Form 1 Status***

The STAR team further captured information regarding the use of Form 1 (Appendix B, Table B1). Of the 135 STAR calls responded to, the vast majority of the patients either did not require a form 1 ( $n=49$ ), or it is unclear if the patient did or did not require one ( $n=75$ ) for a total of 124 (92%) of the 135 patients (table 4). Of the remaining 11 calls, one person required involuntary hospitalization ( $n=1$ ) and the remaining forms were considered uncoded/discrepant ( $n=9$ , 7.4%) (Table 4).

**Table 4**

*Form 1 Data as a Percentage of Total Mental Health and/or Addiction Calls*

| <b>Outcome</b>                       | <b><i>n</i></b> | <b>Percent of mental health and/or addiction calls (N=135)</b> |
|--------------------------------------|-----------------|----------------------------------------------------------------|
| Form 1 (Involuntary Hospitalization) | 1               | 0.7                                                            |
| No Form 1                            | 49              | 36.3                                                           |
| Form 1 Unknown                       | 75              | 55.6                                                           |
| Uncoded/discrepant                   | 10              | 7.4                                                            |
| <b>Total</b>                         | <b>135</b>      | <b>100</b>                                                     |

*Note.* Uncoded/discrepant= No data inputted to the master data sheet on Form 1 for those patients. For raw data see (Appendix A, Table A1).

### ***Presenting Issues***

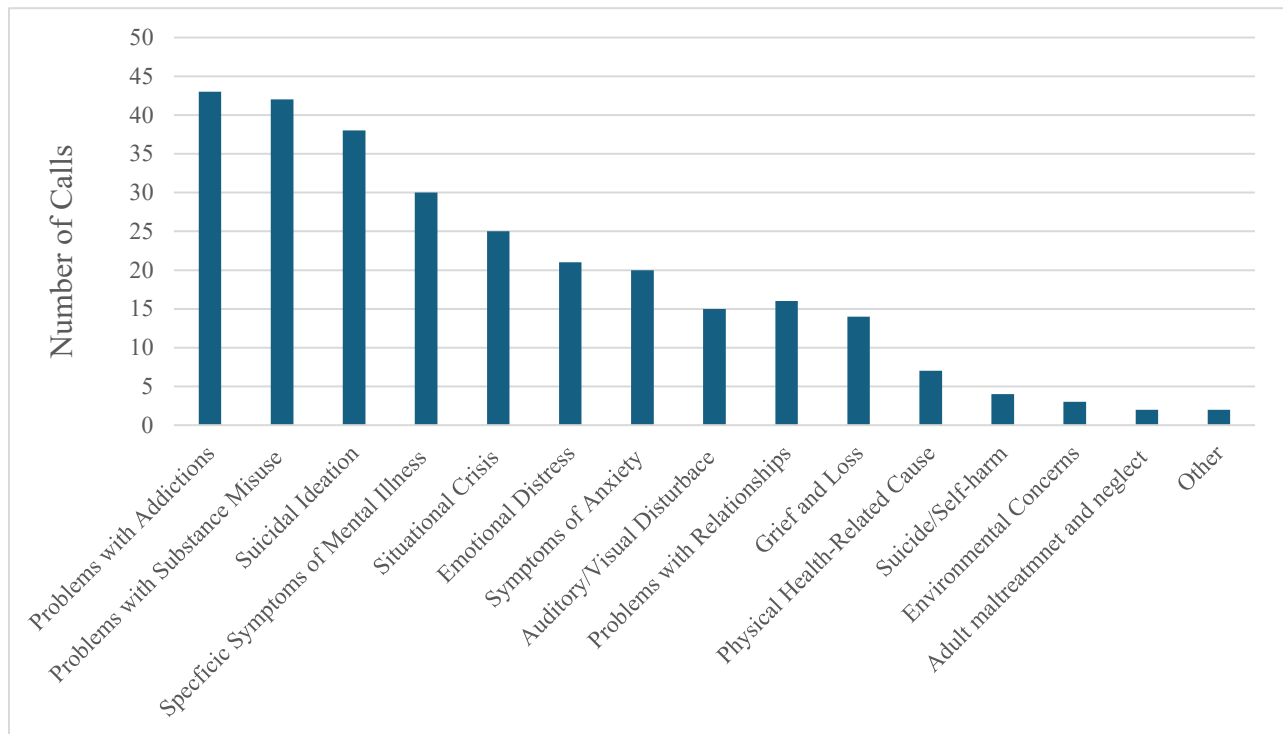
Presenting issues among MHA calls varied with some calls involving more than one concern (Table 5). The 209% total indicates that on average each call involved at least two concerns (Table 5). Of the 282 recorded concerns for the 135 MHA calls, problems with

addictions (n=43, 32.0%), problems with substance misuse (n=42, 31.1%) and suicidal ideation (n=38, 28.1%) were the three most common presenting issues (Figure 2, Table 5). Of these three concerns, problems with addictions had a median of 3.0 (mode=3.0, IQR=2.5), problems with substance misuse had a median of 2.0 (mode=1.0, IQR=2.0) and suicidal ideation had a median of 1.5 (mode=1.0, IQR=2.0) (Table 5). This indicates consistency across the three categories, suggesting that each concern was reported consistently each month, rather than occurring sporadically over the 17-month data collection period.

Adult maltreatment and neglect (n=2, 1.5%), environmental concerns (n=3, 2.2%), and other (n=2, 1.5%) (see Appendix B, Table B2) were the bottom three presenting issues (Figure 2, Table 5). Of these presenting issues, all three recorded a median of 0.0 (mode=0.0, IQR= 0.0), reflecting that these concerns did not occur most months and when present were rare and inconsistent across the 17-month period (Table 5).

## **Figure 2**

*Distribution of Presenting Issues Among Mental Health and/or Addiction Calls.*



*Note.* Presenting issues are not mutually exclusive; a single call may involve more than one presenting issue. Percentages are based on N=135 MHA calls. For a detailed explanation of each category refer to (Appendix B, Table B2).

**Table 5**

*Presenting Issues Among Mental Health and/or Addiction Calls*

| Variable                            | <i>n</i> | Median | Mode | IQR | Percent of mental health and/or addiction calls (N=135) |
|-------------------------------------|----------|--------|------|-----|---------------------------------------------------------|
| Problems with Addictions            | 43       | 3.0    | 3.0  | 2.5 | 32.0                                                    |
| Problems with Relationships         | 16       | 0.5    | 0.0  | 2.0 | 12.0                                                    |
| Problems with Substance Misuse      | 42       | 2.0    | 1.0  | 2.0 | 31.1                                                    |
| Emotional Distress                  | 21       | 1.0    | 1.0  | 1.0 | 15.6                                                    |
| Specific Symptoms of Mental Illness | 30       | 1.0    | 0.0  | 3.0 | 22.2                                                    |

|                                |            |     |     |     |            |
|--------------------------------|------------|-----|-----|-----|------------|
| Situational Crisis             | 25         | 1.0 | 0.0 | 2.5 | 18.5       |
| Auditory/Visual Disturbance    | 15         | 0.5 | 0.0 | 2.0 | 11.1       |
| Suicidal Ideation              | 38         | 1.5 | 1.0 | 2.0 | 28.1       |
| Symptoms of Anxiety            | 20         | 1.0 | 1.0 | 2.0 | 15.0       |
| Grief and Loss                 | 14         | 0.0 | 0.0 | 2.0 | 10.4       |
| Suicide/Self-Harm              | 4          | 0.0 | 0.0 | 0.0 | 3.0        |
| Adult Maltreatment and Neglect | 2          | 0.0 | 0.0 | 0.0 | 1.5        |
| Physical Health Related Cause  | 7          | 0.0 | 0.0 | 1.0 | 5.2        |
| Environmental Concern          | 3          | 0.0 | 0.0 | 0.0 | 2.2        |
| Other                          | 2          | 0.0 | 0.0 | 0.0 | 1.5        |
| <b>Total</b>                   | <b>282</b> |     |     |     | <b>209</b> |

*Note.* IQR=Interquartile Range. Percent of mental health and/or addictions calls totals to 209% as categories are not mutually exclusive and patients can present with more than one category.

### ***Disposition***

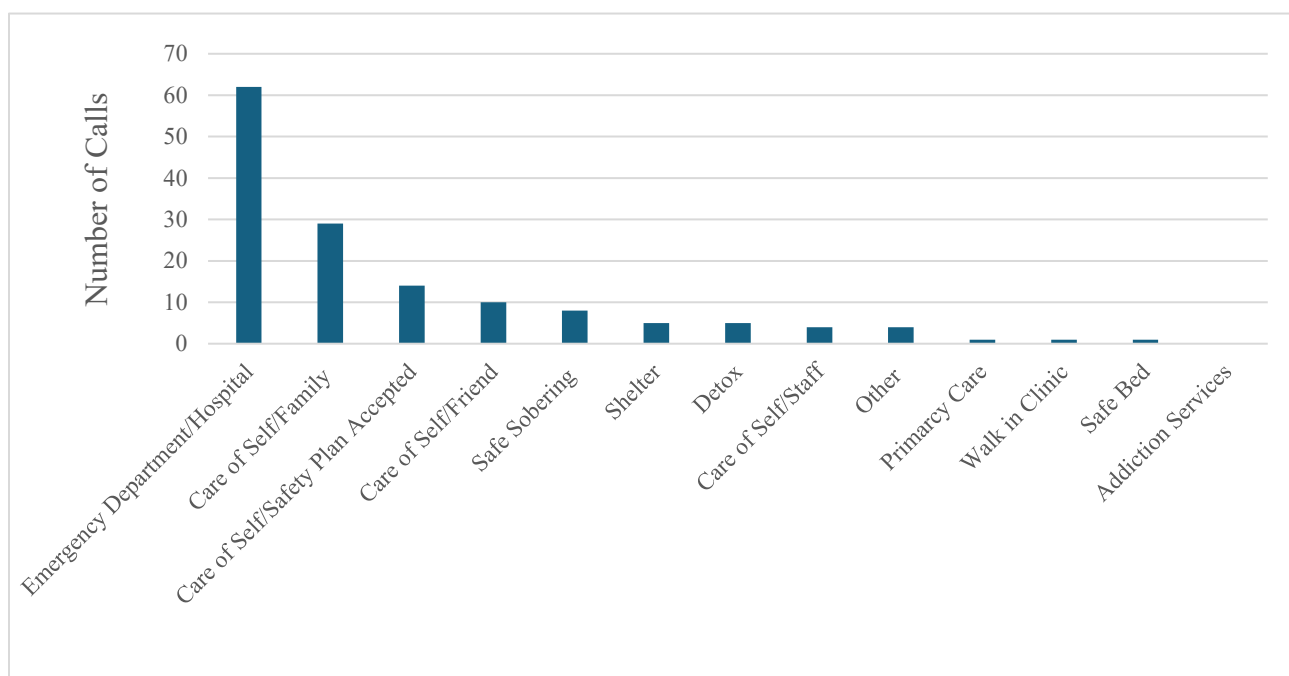
Dispositions (patient outcome at scene) among MHA calls varied with some calls involving more than one disposition (table 6). The 107% indicates that on average each call involved only one disposition, however total disposition codes (n=144) exceeded the total number of MHA calls (N=135) by 9, indicating that a small number of calls were coded with more than one disposition. Of the 144 recorded dispositions, emergency department/hospital (n=62,46.0%), care of self/family (n=29, 22.0%), and care of self/safety plan accepted (n=14, 10.4%) were the three most common dispositions (Figure 3, Table 6). Of these three, emergency

department/hospital had a median of 4.0 (mode=1.0, IQR=4.0), care of self/family had a median of 2.0 (mode=2.0, IQR=2.0) and care of self/safety plan accepted had a median of 0 (mode=0.0, IQR=1.0) (Table 7). This indicates that emergency department/hospital was the disposition with the widest monthly variability, suggesting it was not just the most common disposition but also the least predictable in that the number of emergency/hospital dispositions varied each month. Care of self/family and care of self/safety plan accepted were not as common each much, but when they occurred were more predictable and steadier over the 17-month data collection period (Table 6).

Addiction services (n=0), safe bed (n=1, 0.7%), primary care (n=1, 0.7%) and walk in clinic (n=1, 0.7%) were the bottom four disposition choices (Figure 3, Table 7). Of these dispositions, all three recorded a median of 0.0 (mode=0.0, IQR= 0.0), reflecting that these concerns did not occur most months if at all and when present were rare and inconsistent across the 17-month period (Table 6)

### **Figure 3**

*Distribution of Presenting Issues Among Mental Health and/or Addiction Calls.*



*Note.* Dispositions are not mutually exclusive; a single call may involve more than one disposition. Percentages are based on N=135 MHA calls. For a detailed explanation of each category refer to (Appendix B, Table B3).

**Table 6**

*Dispositions Among Mental Health and/or Addiction Calls*

| Variable                      | <i>n</i> | Median | Mode | IQR | Percent of mental health and/or addiction calls (N=135) |
|-------------------------------|----------|--------|------|-----|---------------------------------------------------------|
| Emergency Department/Hospital | 62       | 4.0    | 1.0  | 4.0 | 46.0                                                    |
| Primary Care                  | 1        | 0.0    | 0.0  | 0.0 | 0.7                                                     |
| Walk in Clinic                | 1        | 0.0    | 0.0  | 0.0 | 0.7                                                     |
| Care of Self/Family           | 29       | 2.0    | 2.0  | 2.0 | 22.0                                                    |
| Shelter                       | 5        | 0.0    | 0.0  | 1.0 | 3.7                                                     |
| Safe Bed                      | 1        | 0.0    | 0.0  | 0.0 | 0.7                                                     |
| Care of Shelter/Staff         | 4        | 0.0    | 0.0  | 0.0 | 3.0                                                     |

|                                   |            |     |     |     |            |
|-----------------------------------|------------|-----|-----|-----|------------|
| Care of Self/Safety Plan Accepted | 14         | 0.0 | 0.0 | 1.0 | 10.4       |
| Care of Self/Friend               | 10         | 1.0 | 1.0 | 1.0 | 7.4        |
| Addiction Services                | 0          | 0.0 | 0.0 | 0.0 | 0          |
| Detox                             | 5          | 0.0 | 0.0 | 1.0 | 3.7        |
| Safe Sobering                     | 8          | 0.0 | 0.0 | 1.0 | 6.0        |
| Other                             | 4          | 0.0 | 0.0 | 0.0 | 3.0        |
| <b>Total</b>                      | <b>144</b> |     |     |     | <b>107</b> |

*Note.* IQR=Interquartile Range. Percent of mental health and/or addictions calls totals to 107% as dispositions are not mutually exclusive and patients can present with more than one disposition.

### ***Connection Choices***

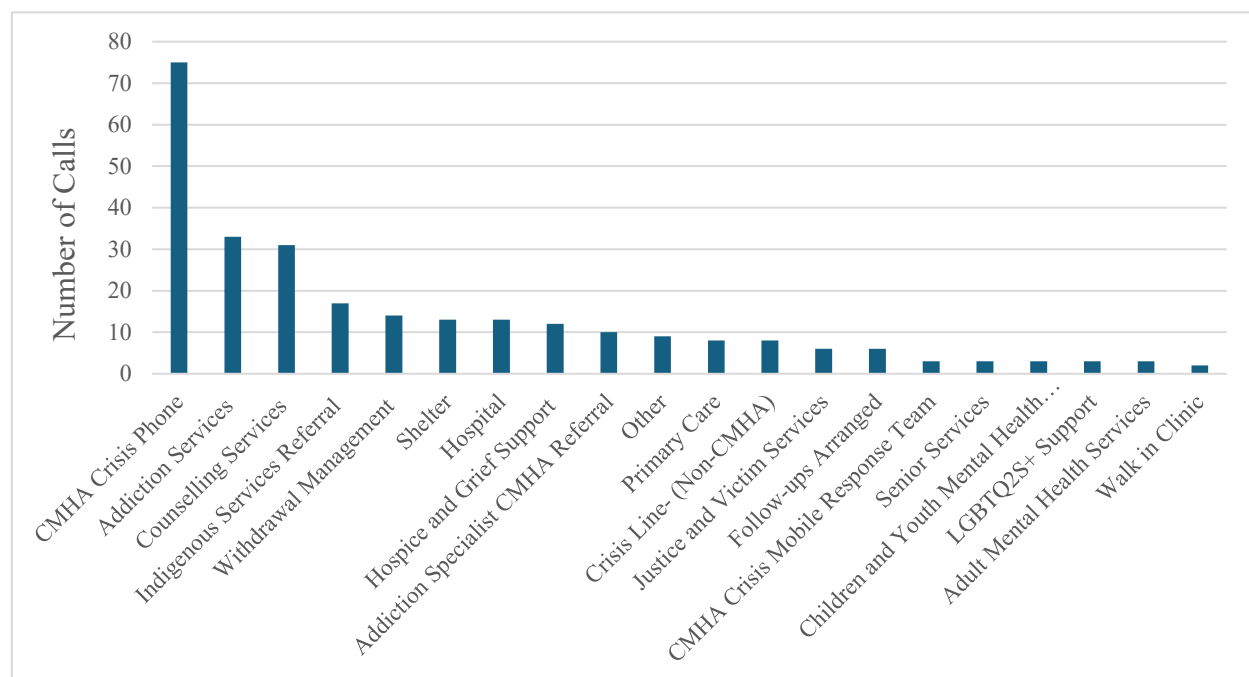
Connection choices (post-response referral options) among MHA calls varied with some calls involving more than one connection call Table 7). The 205% indicates that on average each call involved two connection choices (Table 7). Of the 272 recorded connection choices, CMHA crisis phone (n=75, 56%), addiction services (n=33, 24.4%), and counselling services (n=31, 23.0%) were the three most common connection choices (Figure 4, Table 7). Of these three, CMHA crisis phone had a median of 4.0 (mode=1.0, IQR= 5.0) indicating that it was not only the most used connection choice but was used steadily each month as a high amount almost every month (Table 7). In contrast addictions services had a median of 2.0 (mode=0, IQR=4.0) and counselling services a median of 0.5 (mode=0, IQR=3), showing more sporadic on-off usage patterns each month over the study period (Table 7).

Walk in clinic (n=2, 1.5%), was the least used connection choice (Figure 4, Table 7). The recorded median of 0.0 (mode=0.0, IQR= 0.0), reflected that this connection did not occur most months if at all, and when present was rare and inconsistent across the 17-month period (Table

7). Children and youth mental health services, CMHA crisis mobile response team, senior services, LGBTQ2S+ support and adult mental health services (n=3.0, 2.3%) reflected similar findings to the walk in clinic connection choice, in that the recorded medians of 0.0 (modes=0.0, IQR=0.0), indicated that although these connection choices were used slightly more, their occurrence did not appear most months and were relatively inconsistently across the study period.

**Figure 4**

*Distribution of Connection Choices Among Mental Health and/or Addiction Calls.*



*Note.* Connection choices are not mutually exclusive; a single call may involve more than one connection choice. Percentages are based on N=135 MHA calls. For a detailed explanation of each category refer to (Appendix B, Table B3).

**Table 7**

*Connection Choices Among Mental Health and/or Addiction Calls*

| Variable | <i>n</i> | Median | Mode | IQR | Percent of mental health and/or |
|----------|----------|--------|------|-----|---------------------------------|
|----------|----------|--------|------|-----|---------------------------------|

|                                              |            |     |     |     | <b>addiction calls<br/>(N=135)</b> |
|----------------------------------------------|------------|-----|-----|-----|------------------------------------|
| Withdrawal Management                        | 14         | 1.0 | 1.0 | 0.0 | 10.4                               |
| Children and Youth Mental Health<br>Services | 3.0        | 0.0 | 0.0 | 0.0 | 2.2                                |
| Primary Care                                 | 8.0        | 0.0 | 0.0 | 1.0 | 6.0                                |
| Addiction Specialist CMHA Referral           | 10         | 0.0 | 0.0 | 1.0 | 7.4                                |
| Shelter                                      | 13         | 0.0 | 0.0 | 1.0 | 10.0                               |
| Addiction Services                           | 33         | 2.0 | 0.0 | 4.0 | 24.4                               |
| Counselling Services                         | 31         | 0.5 | 0.0 | 3.0 | 23.0                               |
| Hospital                                     | 13         | 0.5 | 0.0 | 2.0 | 9.6                                |
| CMHA Crisis Phone                            | 75         | 4.0 | 1.0 | 5.0 | 56.0                               |
| CMHA Crisis Mobile Response Team             | 3.0        | 0.0 | 0.0 | 0.0 | 2.2                                |
| Walk in Clinic                               | 2.0        | 0.0 | 0.0 | 0.0 | 1.5                                |
| Indigenous Services Referral                 | 17         | 1.0 | 0.0 | 1.0 | 13.0                               |
| Hospice and Grief Support                    | 12         | 0.0 | 0.0 | 2.0 | 9.0                                |
| Crisis Line- (Non-CMHA)                      | 8.0        | 0.0 | 0.0 | 1.0 | 6.0                                |
| Senior Services                              | 3.0        | 0.0 | 0.0 | 0.0 | 2.2                                |
| Justice and Victim Services                  | 6.0        | 0.0 | 0.0 | 0.0 | 4.4                                |
| LGBTQ2S+ Support                             | 3.0        | 0.0 | 0.0 | 0.0 | 2.2                                |
| Adult Mental Health Services                 | 3.0        | 0.0 | 0.0 | 0.0 | 2.2                                |
| Follow-ups Arranged                          | 6.0        | 0.0 | 0.0 | 0.0 | 4.4                                |
| Other                                        | 9.0        | 0.0 | 0.0 | 1.0 | 7.0                                |
| <b>Total</b>                                 | <b>272</b> |     |     |     | <b>203</b>                         |

*Note.* IQR=Interquartile Range. Percent of mental health and/or addictions calls totals 205.4% as connection choices are not mutually exclusive and patients can request more than one connection.

### ***Evacuation***

STAR provided support across 28 days related to evacuation response. During that period STAR reached roughly 194 people (Table 8). Beyond direct evacuation support STAR also provided wellness checks (n=28), hospital transports (n=1), and arranged follow-ups (n=1). On 9 of those days, STAR also provide evacuees with information pertaining to crisis phone-Mobile crisis team for connection choices should they require further support.

**Table 8**

*Evacuation Data Across the 17-Month Collection Period*

| <b>Support Type</b>                     | <b>Number of Days</b> | <b>Number of People Served</b> |
|-----------------------------------------|-----------------------|--------------------------------|
| Neskantaga Evacuation Support           | 28                    | 194                            |
| Wellness Checks                         | -                     | 28                             |
| Hospital Transports                     | 1                     | 1                              |
| Crisis Phone-Mobile Crisis Team Support | 9                     | -                              |
| Follow-ups Arranged                     | -                     | 1                              |

*Note.* Evacuation support occurred over three months (April 2025-July 2025). Number of days was not calculated for wellness checks and follow-ups. Number of people served was not calculated for Crisis Phone- Mobile Crisis Team Support. Total number of people are not mutually exclusive, and one person could be counted in more than one category. Crisis-Phone-Mobile Crisis Team Support is reflective of providing information about the service to evacuees, should a connection choice be required. Definitions for each support type can be found in (Appendix B, Table B5).

### ***Encampment Data***

STAR provided support over 62 days to at least 856 individuals in encampments, providing water and harm reductions supplies (Table 9).

**Table 9**

*Encampment Data Across the 17-Month Collection Period*

| <b>Support Type</b>                        | <b>Number of Days</b> | <b>Number of Interactions</b> |
|--------------------------------------------|-----------------------|-------------------------------|
| Water and Harm Reduction Supplies Provided | 62                    | 856                           |

*Note.* Data reflects seven months in which encampment support was provided (Appendix B, Table 5A). Number of interactions (n=856) excludes May 2026, where interaction count was unknown.

### **Program Evaluation**

#### ***Reach***

Across the full evaluation period, STAR responded to 135 of 49,617 total SNEM calls (Table 10). The proportion of STAR calls relative to the total number of SNEMS calls was calculated for each 3-month quarter across the 17-month evaluation period (Table 10). Proportion increased from 0.12% in Q1 to a peak of 0.60% in Q3, before declining significantly to 0.08% by Q6 (Figure 5). Consistent with the pre-specific criterion for this evaluation, a sustained upward trend in proportion was observed from Q1 to Q3 but was not maintained throughout the entire evaluation period.

**Table 10**

*Proportion of all SNEMS Calls Resulting in a STAR Team Activation*

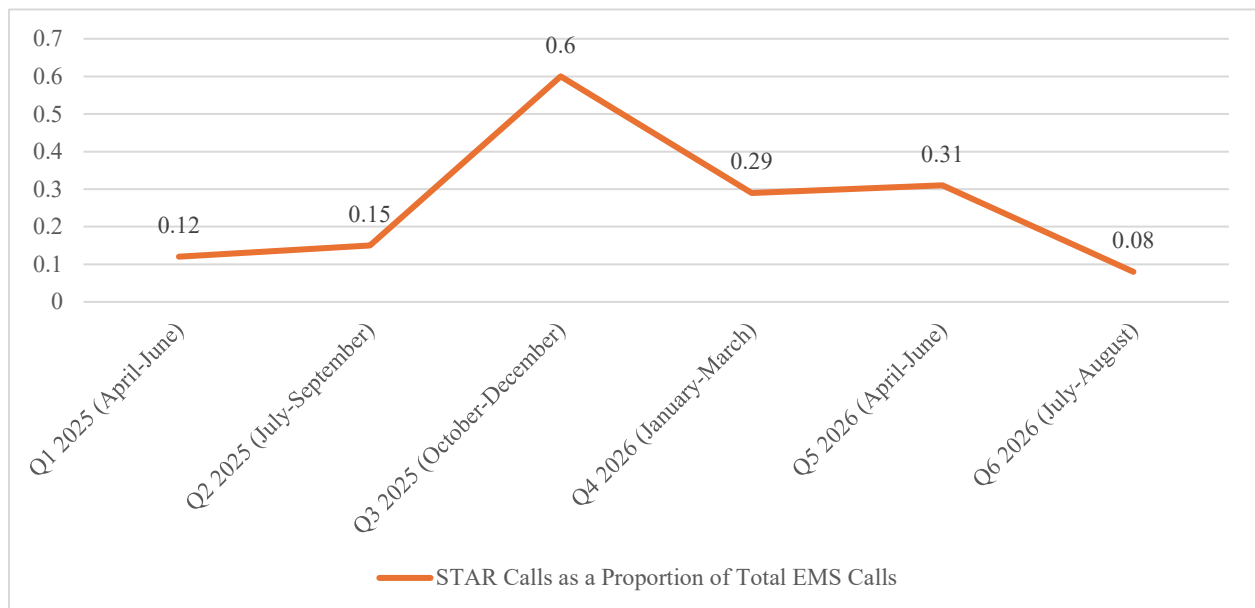
| <b>Quarter</b>           | <b>Number of SNEMS<br/>EMS Calls</b> | <b>Number of MHA Calls<br/>(STAR Activations)</b> | <b>%</b> |
|--------------------------|--------------------------------------|---------------------------------------------------|----------|
| Q1 2025 (April-June)     | 8830                                 | 11                                                | 0.12     |
| Q2 2025 (July-September) | 9080                                 | 14                                                | 0.15     |

|                            |               |            |             |
|----------------------------|---------------|------------|-------------|
| Q3 2025 (October-December) | 8654          | 52         | 0.60        |
| Q4 2026 (January-March)    | 8600          | 25         | 0.29        |
| Q5 2026 (April-June)       | 9468          | 29         | 0.31        |
| Q6 2026 (July-August)      | 4985          | 4          | 0.08        |
| <b>Total</b>               | <b>49,617</b> | <b>135</b> | <b>0.27</b> |

*Note.* SNEMS= Superior North EMS, MHA= Mental Health and/or Addiction, STAR= Specialized Treatment and Alternative Response. Each quarter contains three months, apart from Q6 which only contains two months. Percentage total is reflective of total number of MHA calls over total number of EMS calls ( $n=135/n=49,617$ ).

**Figure 5**

*Distribution of STAR Calls Compared to Total SNEMS EMS Calls*



*Note.* SNEMS= Superior North EMS, STAR= Specialized Treatment and Alternative Response. Data reflects the percentage of total SNEMS EMS calls that resulted in a STAR activation by quarter.

### ***Effectiveness***

#### **Primary Outcome**

Across the 17-month reporting period 62 of the 135 MHA calls (STAR Activations) (46%) resulted in ED/hospital transport. The proportion of calls requiring transport to the ED/hospital was highest in the first quarter (April-June) (81.8%; 9 of 11 calls). Following that spike, calls resulting in ED/hospital disposition ranged between 42.9% and 48.0% from Q2-Q5 (Table 11, Figure 6), until Q6 2026 (July and August), where no ED/Hospital dispositions were recorded.

**Table 11**

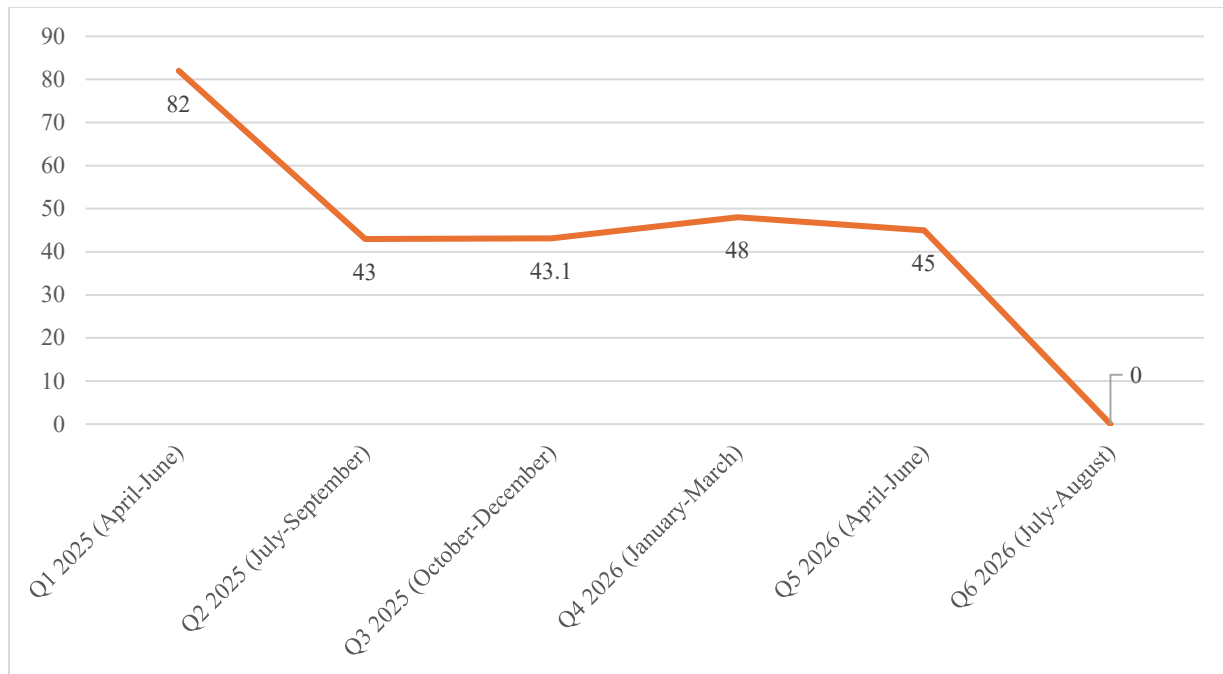
*Proportion of STAR Calls Resulting in ED/Hospital Disposition by Quarter*

| <b>Quarter</b>            | <b>ED/Hospital Disposition</b> | <b>Total STAR Calls</b> | <b>%</b>    |
|---------------------------|--------------------------------|-------------------------|-------------|
| Q1 2025 (April-June)      | 9                              | 11                      | 82.0        |
| Q2 2025 (July-September)  | 6                              | 14                      | 43.0        |
| Q3 2025(October-December) | 22                             | 52                      | 43.1        |
| Q4 2026 (January-March)   | 12                             | 25                      | 48.0        |
| Q5 2026 (April-June)      | 13                             | 29                      | 45.0        |
| Q6 2026 (July-August)     | 0                              | 4                       | 0           |
| <b>Total</b>              | <b>62</b>                      | <b>135</b>              | <b>46.0</b> |

*Note.* ED= Emergency Department. STAR= Specialized Treatment and Alternative Response. Each quarter contains three months, apart from Q6 which only contains two months. Percentage total is reflective total number of ED/Hospital dispositions over total number of STAR calls (n=63/n=135).

**Figure 6**

*Percentage of STAR Calls Resulting in ED/Hospital Disposition by Quarter*



*Note.* ED= Emergency Department, STAR= Specialized Treatment and Alternative Response. Data reflects the percentage of total STAR calls that resulted in ED/Hospital dispositions. By quarter.

## Secondary Outcomes

Across the 17-month reporting period 79 of the 135 MHA calls (STAR Activations) (59.0%) resulted in non-ED/hospital transport. The proportion of calls requiring transport to non-ED/hospital dispositions was lowest in the first quarter (April-June) (27.2%; 3 of 11 calls). Following that drop, calls resulting in non-ED/hospital disposition spiked and ranged between 56% and 100% from Q2-Q5 (Table 12, Figure 6). By Q6 all calls were diverted away from the ED/hospital (100%; 4 of 4 calls) (Table 12).

**Table 12**

*Proportion of STAR Calls Resulting in Non- ED/Hospital Disposition by Quarter*

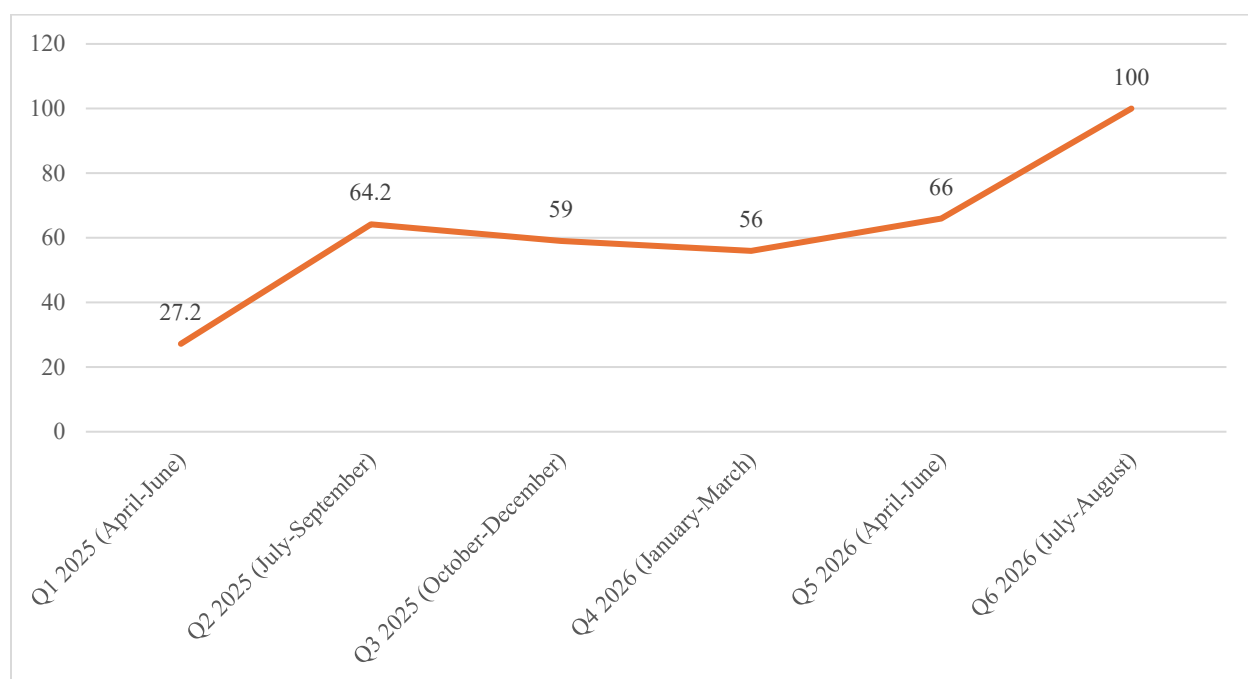
| Quarter | Non-ED/Hospital Disposition | Total MHA Calls (STAR Activations) | % |
|---------|-----------------------------|------------------------------------|---|
|---------|-----------------------------|------------------------------------|---|

|                            |           |            |             |
|----------------------------|-----------|------------|-------------|
| Q1 2025 (April-June)       | 3         | 11         | 27.2        |
| Q2 2025 (July-September)   | 9         | 14         | 64.2        |
| Q3 2025 (October-December) | 30        | 52         | 59.0        |
| Q4 2026 (January-March)    | 14        | 25         | 56.0        |
| Q5 2026 (April-June)       | 19        | 29         | 66.0        |
| Q6 2026 (July-August)      | 4         | 4          | 100         |
| <b>Total</b>               | <b>79</b> | <b>135</b> | <b>59.0</b> |

*Note.* ED= Emergency Department. MHA= Mental Health and/or Addiction, STAR= Specialized Treatment and Alternative Response. Each quarter contains three months, apart from Q6 which only contains two months. Percentage total is reflective total number of non-ED/Hospital dispositions over total number of STAR calls (n=78/n=135).

**Figure 7**

*Percentage of STAR Calls Resulting in Non- ED/Hospital Disposition by Quarter*



*Note.* ED= Emergency Department, STAR= Specialized Treatment and Alternative Response. Data reflects the percentage of total STAR calls that resulted in non-ED/Hospital dispositions. By quarter.

Across the 17-month reporting period 14 of the 135 MHA calls (STAR Activations) (10.4%) were repeat users. The proportion repeat users was lowest in the first quarter 2025 (April-June) (0%; 0 of 11 calls). Following that low, repeat users spiked to 5 (20%; 5 of 25 calls) in Q4 2026 (January-March). By Q6 though calls had dropped significantly, repeat users still represented 25% of the calls (n=1; 1 of 4 calls).

**Table 13**

*Proportion of STAR Calls that had a Repeat User by Quarter*

| <b>Quarter</b>             | <b>Repeat STAR Users</b> | <b>Total MHA Calls (STAR Activations)</b> | <b>%</b>    |
|----------------------------|--------------------------|-------------------------------------------|-------------|
| Q1 2025 (April-June)       | 0                        | 11                                        | 0           |
| Q2 2025 (July-September)   | 1                        | 14                                        | 7.1         |
| Q3 2025 (October-December) | 4                        | 52                                        | 8.0         |
| Q4 2026 (January-March)    | 5                        | 25                                        | 20.0        |
| Q5 2026 (April-June)       | 3                        | 29                                        | 10.3        |
| Q6 2026 (July-August)      | 1                        | 4                                         | 25.0        |
| <b>Total</b>               | <b>14</b>                | <b>135</b>                                | <b>10.4</b> |

*Note.* MHA= Mental Health and/or Addiction Calls.

## **Thematic Analysis**

Table 14 and 15 contain the summary data from qualitative analysis for the Adoption and Implementation dimension of the framework. Results within these are given below.

**Table 14**

*Qualitative Analysis Themes*

| <b>Domain</b>  | <b>Theme</b>               | <b>Subtheme</b>               | <b>Description</b>                                                                                                            | <b>Supporting Excerpts #s</b> |
|----------------|----------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Adoption       | Community Uptake           | Design Day                    | Meeting with community partners to discuss logistics of the STAR program on how it will run and support the greater community | 1-4                           |
| Adoption       | Community Uptake           | Partner Relationship Building | Ongoing outreach with community organizations to build awareness s and referral pathways for the program                      | 5                             |
| Adoption       | Community Uptake           | Frontline EMS Engagement      | Sustained effort to build awareness and buy-in among frontline EMS staff                                                      | 6                             |
| Implementation | Adapting the Program Model | Adaptation                    | Modifications to the scope of the STAR program in response to community need and a result of low utilization periods          | 7-8                           |
| Implementation | Program Build-Out          | Fidelity                      | STAR program ongoing refinement to original design- model structure, resource development, and team logistics                 | 9-12                          |
| Implementation | Staffing                   | Fidelity                      | Recruitment/onboarding, recurring challenges with coverage                                                                    | 13                            |

*Note.*

**Table 15**

*Supporting Excerpts (Synthesized)*

| <b>#</b> | <b>Domain</b> | <b>Theme (Sub-theme)</b>                         | <b>Date-Range</b> | <b>Synthesized Excerpt</b>                                                                                                                                                                            |
|----------|---------------|--------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | Adoption      | Community Uptake-<br><i>Design Day-Questions</i> | Nov-2024          | Discussion with community partners around which districts will be involved in the initial launch of STAR, what kind of MHA screen tools will be used and how consent is to be obtained from patients. |

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|   |          |                                                               |                         |                                                                                                                                                                                                                                                                                                                                                                            |
|---|----------|---------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Adoption | Community Uptake-<br><i>Design Day-<br/>Suggestions</i>       | Nov-2024                | Partners provided suggestions around a specific ED form to be provided to physicians, notifying primary care providers when STAR helps one of their patients, how to facilitate strong communication between STAR and community organizations, and the importance of cultural competency training for all STAR members.                                                    |
| 3 | Adoption | Community Uptake-<br><i>Design Day Discussion</i><br>1        | Nov- 2024               | Partners engaged in a group discussion on how to set STAR up for success, particularly discussing care pathways that will provide the largest positive impact to individuals as well as STAR and its objective.                                                                                                                                                            |
| 4 | Adoption | Community Uptake-<br><i>Design Day Discussion</i><br>2        | Nov- 2024               | A second discussion encompassed how STAR can meet agency needs/challenges within the community.                                                                                                                                                                                                                                                                            |
| 5 | Adoption | Community Uptake-<br><i>Partner Relationship<br/>Building</i> | Aug 2024-<br>March 2026 | Partner outreach ran continuously across the program in both directions. STAR initiated efforts (e.g. COP, Hart Hub) as well as several organizations initiating contact with STAR in turn (e.g. IMPACT, Thunder Bay Fire, TBPS). By 2026 the team was still discussing expanding meet-and-greets to additional community locations and holding another engagement session |
| 6 | Adoption | Community Uptake-<br><i>Frontline EMS<br/>Engagement</i>      | Sept 2024-<br>Nov 2025  | The team ran repeated engagement efforts aimed at frontline EMS staff to help with STAR activations. These included dedicated engagement sessions, to hear from staff and STAR information document development.                                                                                                                                                           |

These efforts in turn helped increased EMS' likelihood in activating STAR.

|    |                |                                                                          |                   |                                                                                                                                                                                                                                                                                                                        |
|----|----------------|--------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7  | Implementation | Adapting the Program Model- <i>Adaptation-Community Support</i>          | Apr 2025-Feb 2026 | During low utilization periods STAR adapted its scope in response to emergent community needs- including Neskantaga evacuation support, encampment outreach, and VSA support.                                                                                                                                          |
| 8  | Implementation | Adapting the Program Model- <i>Adaptation-Formalizing Program Policy</i> | Apr 2025-May 2026 | Discussions occurred around downtime usage. Documents finalized around downtime policy covering community support and professional development                                                                                                                                                                         |
| 9  | Implementation | Program Build-out- <i>Fidelity-Model Structure</i>                       | Jul 2024-2026     | The program's core agreements and model structure evolved substantially; The MOU and Patient Care Model (PCM) were sent and revised on numerous occasions. SNEMS proposed a fundamental shift- from a passive-waiting response to an activate response alongside first response unit- did not continue                 |
| 10 | Implementation | Program Build-out- <i>Fidelity- Program Launch</i>                       | Apr 2025-2026     | Service delivery unfolded in stages: a soft launch initially involved working in the ED with offload delays. Launch day in 2025 officially involved the use of the program as designed.                                                                                                                                |
| 11 | Implementation | Program Build-out- <i>Fidelity- Data Reporting</i>                       | Aug 2024-Jan 2026 | Data infrastructure developed over time; data collection methods, staff reporting and a formal evaluation plan were finalized by April-2025. A Unique patient identifier was discussed but found to be too difficult to build. New software was also texted to connection CAD data to the STAR phone in near-real time |
| 12 | Implementation | Program Build-out- <i>Fidelity- Team Logistics</i>                       | Jul 2024-May 2026 | Operational and team logistics were established and periodically revisited: Initial schedule changed to 11am-11pm, to accommodate Team-                                                                                                                                                                                |

|    |                |                           |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----|----------------|---------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                |                           |                      | building efforts continued and included role clarifications discussions                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 13 | Implementation | Staffing- <i>Fidelity</i> | Jul 2024-August 2026 | Recruitment and onboarding proceeded steadily: CMHA, N'doo'owe and SNEM posted positions and filled them with qualified members over the entire 17-month period as staff came and left. Each team requires to individuals to rotate through 4-on-4-off. Roughly 100 days went without the STAR team as no staff were available from CMHA or SNEMS. Both are required for the program to run. A coverage pool was discussed as an option for SNEMS employees with 11 people signing up but ultimately did not work out due to staffing shortages. |

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*Note.*

### ***Adoption***

#### **Community Uptake**

##### *Design Day*

Community uptake of the STAR program unfolded through a mix of scheduled engagement opportunities, ongoing partner relationship-building meetings and outreach efforts. Design Day, held in November of 2024, served as the program's largest day with community partners. The one-day event saw roughly 30 community partners ranging from Thunder Bay Police Services to MHA community supports, to First Nations groups and Hospital staff. The day allowed for partners to voice concerns, ideas and ask questions that would help shape adoption of the STAR program in the months that followed. Partners raised questions about which districts would be involved in the STAR program, what screening tools would be used to assess mental health status, and how patient consent would be obtained (Excerpt #1). In response, the team clarified that the initial launch would be limited to Thunder Bay, the Crisis Triage Rating Scale

(CTRS) and that frontline paramedics will do the initial assessment on scene regarding mental health conditions and determine need to activate STAR once consent is obtained prior.

The second part of Design Day involved a round table discussion with members providing suggestions for how STAR could integrate into the community effectively. One suggestion involved designing a document that can be filled out on-scene and provided to hospital physician and nurses should the patient be transported to the Hospital. The idea is to understand assessments that have already taken place and avoid duplicate screening (Excerpt #2). Another suggestion included asking if STAR can notify primary care providers if their clients receive services from STAR and are experiencing a suspected MHA crisis. Further suggestions proposed developing pathways with community organizations to ensure data sharing is up to date (bed/detox availability, dispatch destination facilities accepting clients) and to ensure strong collaboration with patterns to help develop future care plans together (Excerpt #2). One final point was to ensure STAR receives cultural competency training for all members prior to program roll-out (Excerpt #2).

Structured discussion as the event built on these themes, with one session focussed on setting the STAR team up for success through immediate care pathways that can be implemented at start-up and will have the largest impact on patients needing care, and STAR objectives (Excerpt #3). Examples of ideas included but were not limited to, home/family/friend supports, pathways to safe sobering beds and withdrawal management services, pathways to local community services, and the need to involve indigenous community representatives who have lived experience and/or experience in taking care of Indigenous populations. Discussion two, pertained to how STAR can meet agency needs and challenges (Excerpt #4). Examples of ideas included but are not limited to, building rapport with different agencies to serve clients and have

ongoing engagement with partners, embed the STAR program into Integrated Care Pathways, have open and transparent and consistent communication between agencies to understand what needs to be shared and support clients to safe spaces.

### *Partner Relationship Building*

Beyond design day, partner relationship-building continued as an ongoing process throughout the program implementation. Outreach ran in both directions as STAR reached out to Community Outreach Program (COP) members for information on their programs as well holding meetings with Hart Hub to determine what resources they off and how both partners can work together to support clients. Meanwhile, other organizations reached out to determine if STAR could be of service to them or if they could provide help. IMPACT invited STAR team members to meet their workers to gain insight into how their Crisis Response Team (CRT) works, as well as Thunder Bay Fire was provided STARs number to help with inclement weather services in the winter. Thunder Police services (TBPS) further reached out to see if STAR could take some of the MHA call load. By early 2026, the team was still actively working to expand network connection, discussion planning more engagement sessions like Design Day with community organizations, that STAR does not currently have strong relationships with to help create more pathways.

### *Frontline EMS Engagement*

Engagement also extended to frontline EMS staff, whose buy-in was distinct from broader community partnership as frontline EMS are responsible for STAR call activation (Excerpt #6). The team ran repeated, dedicated engagement sessions with EMS staff and developed a STAR information document to support these efforts (Excerpt #6). During engagement sessions staff discussed what would make it easier for frontline EMS to activate

STAR, with one suggestion being having lanyards that are visible and encourage them to remember that STAR is a resource. By late 2025, STAR activations were starting to increase (Excerpt #6).

## ***Implementation***

### **Adapting the Program Model (Adaptation)**

During the spring of 2025, STAR began adapting its scope of practice in response to low utilization periods. STAR adapted its scope to respond to emerging community needs, outside of its original mandate (Excerpt #7). The team helped with Neskantaga Evacuation support for three months in 2025 (Appendix A, Table 5A) Encampment outreach from 2025-2026 (Appendix A, Table 6A) and extended its response to Vital Signs Absent (VSA) support in 2026 (Excerpt #7). These were areas of community needs that had not been anticipated in the programs initial design. As these patterns of adaptation continued the STAR team turned to formalizing it. Discussions were had around continuously incorporating community engagement opportunities with downtime periods, as well as adding in staff professional development when needed or desired. (Excerpt #8). Together, these adaptations created a program that remained responsive to real-time community conditions.

### **Program Build-out (Fidelity)**

STAR's core agreements and operating structure evolved continuously between 2024 and 2026. The Memorandum of Understanding (MOU) and Patient Care Model (PCM) were sent for approval and revised numerous times, as the program matured. In 2026 SNEMS proposed a fundamental structural shift in moving from a passive-waiting response model, where STAR must be activated by frontline EMS, to a model where

STAR would respond alongside the first response unit. However, that did not follow through (Excerpt #9). Additionally, program roll-out unfolded in multiple stages. In 2024, an initial “soft launch” took place, having STAR work within the ED to address offload delays (patient cannot be transferred at hospital because of no beds). By 2025, an official launch day took place marked as the point where the program began operating as originally designed (Excerpt #10)

Alongside these structural and operational milestones, STAR built out the data infrastructure needed to support the program. By April 2025, the team had finalized data collection methods, staff reporting processes and a formal evaluation plan. One data change suggested during this time was the use of a unique identifier to help link patient data within partner databases but was found to be too difficult to implement (Excerpt #11). The team further tested new equipment to connect computer-aided dispatch data (CAD) to STAR phones to received call data in near-real time (Excerpt #11).

Furthermore, operational and team logistics were revisited as the program matured, including a shift in program hours from 12pm-12am, to 11am-11pm, to better accommodate STAR staff. Ongoing team bonding events continued to take place from 2025-2026 to encourage collaboration with the three partners and help with role clarification.

### **Staffing (Fidelity)**

Staffing for the STAR program was managed continuously throughout the formation and implementation of the program. All three organizations struggled with staffing turnover and worked diligently to recruit and onboard qualified personnel every step of the way to maintain the two-person staffing requirement

for SNEMS and CMHA to work the 4-on, 4-off schedule, interchangeably (Excerpt #12). As positions required filling, jobs were posted within each organization. Nonetheless, since the program started operating as intended in April 2025, until present, roughly 100 days required modified duties, in which the team worked out of their own offices (CMHA, St. Josephs or SNEMS), as there were no crisis worker employees available or there were no EMS personnel available (Excerpt #12). For STAR to run, both CMHA and SNEMS are required to be present. To help mitigate program shut down during staffing shortages, SNEMS discussed creating a casual pool for times when STAR EMS personnel were unavailable, to which 11 individuals signed up (Excerpt #12). However, due to staffing shortages within SNEMS this was not always feasible, resulting in days where SNEMS could not provide coverage for STAR.

## **Discussion**

### **Summary of Findings**

The purpose of this study was to apply the RE-AIM framework to systematically assess the development and implementation of a paramedic-initiated CRT and its ability to reduce ED burden in Thunder Bay. Findings suggest a program that experienced external and internal uptake over the evaluation period, evidenced by an increase in community partnerships, increased engagement from frontline EMS staff and an increase in STAR activations following these efforts. Program growth was reflected quantitatively as well, with the proportion of STAR calls increasing through the program's initial three quarters. However, this trajectory declined sharply by the fifth and sixth quarters, as staffing shortages limited the STAR team's ability to

run during that time. This was a persistent challenge throughout the program's implementation, as both CMHA and SNEMS require personnel to be present for STAR to operate. Additionally, STAR showed promising results in its ability to divert individuals from the ED to community partners, showing that by last quarter all STAR calls were successfully diverted from the ED, though this finding is based on a small number of calls (n=4) during a quarter marked by significant staffing shortages and should be interpreted with caution. Overall, findings point to a program that achieved meaningful adoption and implementation, but whose growth remained constrained by staffing capacity.

### *Program Metrics*

Call volume data did not follow a steady predictable monthly pattern, fluctuating from 0-20 calls throughout the evaluation period. Such variability suggests that program utilization is impacted by external factors beyond program maturity. One factor is seasonality. The peak number of calls occurs during the winter months. However, the literature on seasonal patterns for MHA crisis presentations is mixed. Some studies report winter peaks, like seen for the STAR program, while other research found peaks in spring and summer instead (Della et al., 2024). Staffing availability may also play a role. A study by Koziarski et al. (2021) also reported staffing constraints as a structural barrier, which limited the effectiveness of co-response crisis teams. Finally, frontline EMS uptake, in which paramedics remember to call for the STAR team may also influence call volume, as paramedics may not consistently remember to activate STAR. These findings are mirrored in Yang et al. (2024) where a suburban-rural co-response program saw low service uptake that limited programme impact despite positive frontline staff feedback.

Top presenting issues among STAR calls were predominantly problems with addictions, substance misuse and suicidal ideation, demonstrating a pattern consistent with the broader

MHA burden described in northern rural communities in Canada, including higher rates of substance use and self-harm relative to other regions (Hirsch et al., 2025). Findings suggest STAR is in fact engaging with the population it was designed to help, rather than lower-acuity crisis calls.

Disposition and connection choice data suggests the program is successful in connecting individuals to community resources beyond the ED; however, the ED is still highly used as a top disposition (46%). With the high number of unknown Form 1 completions (56%), there is also a limitation in our ability to confidently interpret involuntary hospitalization patterns, suggesting there may be more people being taken to the hospital than recorded. Nonetheless when connected to community resources CMHA crisis phone was by far the most popular connection choice, suggesting STAR functions well in connecting clients to existing community mental health infrastructure. However, the relatively low uptake of other connection choices such as primary care, walk in clinics and Safe Bed programs suggests there may be accessibility challenges to these services.

Finally, STAR's response to the Neskantaga evacuations and ongoing encampment outreach demonstrate a capacity for the program to expand beyond its intended plan to help meet emergent community needs.

### *Reach*

Findings from this evaluation suggest that STAR achieved partially meaningful reach during the early to middle portion of the 17-month evaluation period. Data shows that the proportion of clients served increased from the first quarter (0.12%) to a peak of (.60%) by the third quarter, consistent with the pre-specified criterion for this evaluation that required a sustained upward trend in the proportion of calls resulting in STAR activation to demonstrate

Reach (Holtrop et al., 2021; Glasgow et al., 2019). However, following the third quarter this criterion was not met, as the proportion decreased steadily by the final quarter to 0.08%. This indicates that external factors may be influencing results and ultimately stopping a sustained upward trend. Particularly, that this proportion reflects STAR activations relative to the total number of EMS calls within the community at the same time, rather than just calls that were specifically MHA related. This approach thus likely underestimates the true reach of STAR among its intended population. A more precise denominator (total number of MHA calls responded to) would have helped, but data was not available, as EMS calls are coded by presenting complaint rather than a distinct MHA category, and extracting and aggregating relevant complaint codes across the full call volume was not feasible for this study.

### *Effectiveness*

Results suggest primary outcomes indicate the program demonstrated meaningful Effectiveness, through the entirety of the evaluation period. Findings indicate that during the initial quarter the proportion of calls resulting in ED/Hospital transport was at its highest (81.8%), however over the next five quarters, calls dropped sharply and remained relatively stable, ranging between 43% and 48%. By the end of the sixth quarter all calls were successful diverted from the ED/Hospital. This finding is consistent with the pre-specified criterion for this evaluation, which required a sustained downward trend in the proportion of calls resulting in ED/Hospital transport to demonstrate Effectiveness (Holtrop et al., 2021; Glasgow et al., 2019). It is important to note that the data from the last quarter is strongly influence by a low number of MHA calls (n=4), impacting the proportion of MHA calls resulting in ED/Hospital transport. Additionally, Q1 may have seen such a high percentage as that period (April 2025- June 2025), coincides with STAR's soft launch period, when the team was still mainly engaging in offload

delays at the hospital, rather than functioning as a community program. The stabilization seen through the middle quarters coincides with the programs official launch in mid 2025.

### *Adoption*

Findings suggest that STAR achieved meaningful Adoption across both the setting and staff levels. At the community level adoption was seen by sustained engagement with community partners. The most evidence came from Design Day, where STAR met with over 30 communities' members to discuss how program implementation could be strengthened moving forward. Additional evidence came from continued engagement from community organizations that independently approached STAR, like IMPACT and TBPS and the continued acceptance from organizations that accepted STAR to come introduced the program and its offerings (Hart Hub). This pattern of organizations approaching STAR suggest the program achieved an organic community recognition early in its implementation period, a dynamic not always evident in CRT programs operating in rural communities. Where buy-in and support can be persistent barriers (Bratina et al., 2021).

At the staffing level was similarly meaningful. After continuous engagement sessions, frontline EMS staff appeared to experience a behavioural shift and requested STAR involvement more as the evaluation period went on. This is evidence that sustained engagement translated into genuine buy-in from staff.

### *Implementation*

Findings suggest that STAR largely maintained fidelity throughout the evaluation period, even with all the structural and document changes to the program. Continued MOU revisions, development of data infrastructure, and on-going team building meetings show a program that continuously refined itself without abandoning its main objectives. The proposed shift from a

passive-waiting response mode to a co-deployed model along initial first responders that did not proceed suggested that while adaptation was considered, the team was cautious in changing the program model. This is consistent with Holtrop et al's. (2021) framing of adaptation, where it should be deliberate and trackable and not just on a whim.

Additionally, the long discussions around program expansion into VSA calls, evacuation support and encampment outreach during periods of low utilization demonstrate adaptation functioning as intended with RE-AIM's Implementation domain. The program worked to respond to community needs but remained consistent in providing MHA help. This formalization into downtime policy suggested mature implementation, as outlined in the RE-AIM literature (Glasgow et al., 2011; Holtrop et al., 2021).

Unfortunately, fidelity was not maintained without strain. Due to STAR requirement that both SNEMS and CMHA must be present for the program to operate as intended, created significant vulnerability with the program. Approximately 100 days since implementation occurred without full staff and the proposed casual pool to help alleviate this gap proved insufficient due to SNEMS staffing shortages. This demonstrated that even though STAR's design fidelity was strong, its operational fidelity was severely impacted.

## **Limitations**

This evaluation has several limitations worth noting. Firstly, qualitative findings come only from STAR team meeting minutes, demonstrating a lack of community partner/frontline staff voices. While meetings minutes are filled with rich content that supported program development, they reflect only what leadership chose to document. They do not in turn reflect the perspectives, concerns or lived experiences of those directly involved with STAR's

operation. Future evaluation would benefit from incorporating interviews or survey data to complement this administrative record.

Secondly, the Reach metric relied on total SNEMS call volume per quarter as its denominator, as MHA specific call data was not available. This likely resulted in a conservative estimate of STARs true Reach among the intended population, meaning the observed upward trend may reflect an even more pronounced increase in Reach than the data suggests. Thus, the absolute Reach values should be interpreted with caution, as they do not directly reflect the community-level MHA need without a more precise denominator, such as total number of MHA calls. This data would have helped to support Adoption reports as well, to help demonstrate the number of EMS personnel that activated STAR. Ultimately, that data had to be excluded resulting in only qualitative adoption data.

Third, RE-AIM does not specify specific universal benchmarks for its domains. Where possible the evaluation drew comparison benchmarks from adjacent mobile crisis literature, as the STAR team also did not set its own benchmarks. However, there was no direct comparison of a paramedic-initiated CRT model in a northern community context such as this study. Ultimately, this limited the extent to which STAR findings could be directly benchmarked to similar programs.

Fourth this study was conducted within a rural northern community in Canada. This may limit program generalizability, as it may not apply to large communities, communities without a comparable Indigenous population or within different countries, where policies and systems. Case studies such as this can help to identify practices that function well or poorly within a particular context, and this insight can be useful for programs facing similar conditions.

## **Conclusion and Implications**

First responders across Thunder Bay are responding to a significant and ongoing MHA burden, that EMS-only response models are not designed to address. This study demonstrated how a paramedic-initiated CRT model can be applied within a rural northern community in Canada to help meet this unmet need for specialized MHA crisis response. Findings using the RE-AIM framework suggest STAR has meaningful utility in reducing burden on the ED by connecting individuals to appropriate community support, rather than transporting clients to the ED/Hospital. Furthermore, this study provides specific information on program components and processes that may be useful for other communities planning to implement a similar model.

In addition, the study highlights an important consideration to be made when pursuing a CRT model with multiple partners. While STAR achieved meaningful adoption and maintained fidelity, its ability to consistently respond was constrained by staffing concerns, as both CMHA and SNEMS partners were required. Communities adapting a smaller model may benefit from targeting staffing concerns prior to implementation.

For communities already implementing CRT, this study helps demonstrate the importance and value in ongoing program evaluation and monitoring for strengths and operational gaps. Continued evaluation of CRT programs; particularly those operating outside large urban areas will help build the evidence base needed to guide information, context-specific decisions about crisis response in similarly under-resources community such as Thunder Bay.

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## Appendix A

**Table A1**

*Call Data Raw Numbers*

| <b>Month</b>   | <b>Number<br/>of<br/>Contacts</b> | <b>MHA<br/>Calls</b> | <b>Follow<br/>Ups</b> | <b>Repeat<br/>Users</b> | <b>Under<br/>18</b> | <b>Form<br/>1</b> | <b>No<br/>Form<br/>1</b> | <b>Form 1<br/>Unknown</b> |
|----------------|-----------------------------------|----------------------|-----------------------|-------------------------|---------------------|-------------------|--------------------------|---------------------------|
| April 2025     | 5                                 | 5                    | 0                     | 0                       | 1                   | 0                 | 2                        | 3                         |
| May 2025       | 3                                 | 2                    | 1                     | 0                       | 2                   | 0                 | 2                        | 0                         |
| June 2025      | 4                                 | 4                    | 0                     | 0                       | 0                   | 0                 | 0                        | 3                         |
| July 2025      | 11                                | 9                    | 2                     | 0                       | 0                   | 0                 | 5                        | 2                         |
| August 2025    | 2                                 | 2                    | 0                     | 0                       | 0                   | 0                 | 2                        | 0                         |
| September 2025 | 4                                 | 3                    | 1                     | 1                       | 0                   | 0                 | 1                        | 1                         |
| October 2025   | 29                                | 20                   | 9                     | 0                       | 1                   | 1                 | 6                        | 13                        |
| November 2025  | 12                                | 12                   | 0                     | 1                       | 0                   | 0                 | 7                        | 5                         |
| December 2025  | 20                                | 20                   | 0                     | 3                       | 2                   | 0                 | 7                        | 13                        |
| January 2026   | 8                                 | 8                    | 0                     | 3                       | 0                   | 0                 | 1                        | 5                         |
| February 2026  | 7                                 | 7                    | 0                     | 2                       | 0                   | 0                 | 1                        | 6                         |
| March 2026     | 11                                | 10                   | 1                     | 0                       | 0                   | 0                 | 4                        | 6                         |
| April 2026     | 12                                | 12                   | 0                     | 1                       | 1                   | 0                 | 3                        | 9                         |
| May 2026       | 4                                 | 4                    | 0                     | 0                       | 1                   | 0                 | 2                        | 1                         |
| June 2026      | 17                                | 13                   | 4                     | 2                       | 0                   | 0                 | 6                        | 4                         |
| July 2026      | 4                                 | 4                    | 0                     | 1                       | 0                   | 0                 | 0                        | 4                         |
| August 2026    | 0                                 | 0                    | 0                     | 0                       | 0                   | 0                 | 0                        | 0                         |
| <b>Total</b>   | <b>152</b>                        | <b>135</b>           | <b>18</b>             | <b>14</b>               | <b>8</b>            | <b>1</b>          | <b>49</b>                | <b>75</b>                 |

*Note.* MHA= Mental Health and/or Addiction Call. Form 1 definition can be found in Appendix B Table B1).

**Table A2**

*Presenting Issue Raw Numbers*

| <b>Month</b>   | <b>Problems with Addictions</b> | <b>Problems with Relationships</b> | <b>Problems with Substance Misuse</b> | <b>Emotional Distress</b> | <b>Specific Symptoms of Mental Illness</b> | <b>Situational Crisis</b> | <b>Auditory/Visual Disturbance</b> | <b>Suicidal Ideation</b> | <b>Symptoms of Anxiety</b> | <b>Grief and Loss</b> | <b>Suicide/Self Harm</b> | <b>Adult Maltreatment and Neglect</b> | <b>Physical Health Related Cause</b> | <b>Environmental Concerns</b> | <b>Other</b> |
|----------------|---------------------------------|------------------------------------|---------------------------------------|---------------------------|--------------------------------------------|---------------------------|------------------------------------|--------------------------|----------------------------|-----------------------|--------------------------|---------------------------------------|--------------------------------------|-------------------------------|--------------|
| April 2025     | 1                               | 0                                  | 1                                     | 1                         | 0                                          | 0                         | 1                                  | 1                        | 1                          | 1                     | 0                        | 0                                     | 0                                    | 0                             | 0            |
| May 2025       | 1                               | 1                                  | 1                                     | 2                         | 0                                          | 0                         | 1                                  | 3                        | 0                          | 2                     | 0                        | 0                                     | 0                                    | 0                             | 0            |
| June 2025      | 0                               | 0                                  | 2                                     | 1                         | 1                                          | 1                         | 1                                  | 2                        | 1                          | 0                     | 0                        | 0                                     | 1                                    | 0                             | 0            |
| July 2025      | 5                               | 1                                  | 2                                     | 1                         | 2                                          | 0                         | 0                                  | 1                        | 1                          | 0                     | 0                        | 0                                     | 0                                    | 0                             | 1            |
| August 2025    | 0                               | 0                                  | 0                                     | 0                         | 0                                          | 1                         | 0                                  | 1                        | 0                          | 0                     | 0                        | 0                                     | 1                                    | 0                             | 0            |
| September 2025 | 4                               | 0                                  | 0                                     | 0                         | 0                                          | 0                         | 0                                  | 1                        | 0                          | 0                     | 0                        | 0                                     | 0                                    | 0                             | 0            |
| October 2025   | 4                               | 3                                  | 6                                     | 2                         | 7                                          | 3                         | 4                                  | 9                        | 4                          | 1                     | 0                        | 1                                     | 1                                    | 0                             | 1            |
| November 2025  | 3                               | 2                                  | 3                                     | 2                         | 2                                          | 0                         | 1                                  | 1                        | 4                          | 3                     | 1                        | 0                                     | 1                                    | 0                             | 0            |
| December 2025  | 10                              | 3                                  | 9                                     | 4                         | 4                                          | 0                         | 3                                  | 3                        | 2                          | 3                     | 3                        | 0                                     | 1                                    | 0                             | 0            |
| January 2026   | 3                               | 3                                  | 3                                     | 2                         | 3                                          | 4                         | 2                                  | 6                        | 1                          | 1                     | 0                        | 0                                     | 1                                    | 1                             | 0            |
| February 2026  | 3                               | 0                                  | 3                                     | 0                         | 1                                          | 2                         | 2                                  | 2                        | 1                          | 0                     | 0                        | 0                                     | 0                                    | 2                             | 0            |
| March 2026     | 3                               | 0                                  | 2                                     | 1                         | 3                                          | 1                         | 0                                  | 3                        | 3                          | 0                     | 0                        | 1                                     | 0                                    | 0                             | 0            |
| April 2026     | 2                               | 1                                  | 2                                     | 1                         | 5                                          | 2                         | 0                                  | 3                        | 1                          | 3                     | 0                        | 0                                     | 0                                    | 0                             | 0            |
| May 2026       | 3                               | 0                                  | 1                                     | 1                         | 0                                          | 2                         | 0                                  | 1                        | 0                          | 0                     | 0                        | 0                                     | 0                                    | 0                             | 0            |
| June 2026      | 0                               | 0                                  | 6                                     | 1                         | 1                                          | 6                         | 0                                  | 1                        | 1                          | 0                     | 0                        | 0                                     | 1                                    | 0                             | 0            |
| July 2026      | 1                               | 2                                  | 1                                     | 2                         | 1                                          | 3                         | 0                                  | 0                        | 0                          | 0                     | 0                        | 0                                     | 0                                    | 0                             | 0            |
| August 2026    |                                 |                                    |                                       |                           |                                            |                           |                                    |                          |                            |                       |                          |                                       |                                      |                               |              |
| <b>Total</b>   | <b>43</b>                       | <b>16</b>                          | <b>42</b>                             | <b>21</b>                 | <b>30</b>                                  | <b>25</b>                 | <b>15</b>                          | <b>38</b>                | <b>20</b>                  | <b>14</b>             | <b>4</b>                 | <b>2</b>                              | <b>7</b>                             | <b>3</b>                      | <b>2</b>     |

*Note.*

**Table A3**  
*Disposition Raw Data*

| Month          | ED/<br>Hospital | Primary<br>Care | Walk in<br>Clinic | Care of<br>Self/Family | Shelter  | SafeBed  | Care if<br>Self/Staff | Care of<br>Self/Safety<br>Plan<br>Accepted | Care of<br>Self/Friend | Addiction<br>Services | Detox    | Safe<br>Sobering | Other    |
|----------------|-----------------|-----------------|-------------------|------------------------|----------|----------|-----------------------|--------------------------------------------|------------------------|-----------------------|----------|------------------|----------|
| April 2025     | 5               | 0               | 0                 | 0                      | 0        | 0        | 0                     | 0                                          | 0                      | 0                     | 0        | 0                | 0        |
| May 2025       | 1               | 0               | 0                 | 2                      | 0        | 0        | 0                     | 0                                          | 0                      | 0                     | 0        | 0                | 0        |
| June 2025      | 3               | 0               | 0                 | 0                      | 0        | 0        | 0                     | 0                                          | 1                      | 0                     | 0        | 0                | 0        |
| July 2025      | 4               | 0               | 0                 | 3                      | 0        | 0        | 0                     | 0                                          | 1                      | 0                     | 1        | 3                | 0        |
| August 2025    | 1               | 0               | 0                 | 1                      | 0        | 0        | 0                     | 0                                          | 0                      | 0                     | 0        | 0                | 0        |
| September 2025 | 1               | 0               | 0                 | 1                      | 0        | 1        | 0                     | 1                                          | 0                      | 0                     | 1        | 0                | 0        |
| October 2025   | 10              | 1               | 1                 | 2                      | 1        | 0        | 0                     | 1                                          | 1                      | 0                     | 1        | 2                | 0        |
| November 2025  | 6               | 0               | 0                 | 3                      | 0        | 0        | 0                     | 1                                          | 2                      | 0                     | 0        | 0                | 0        |
| December 2025  | 6               | 0               | 0                 | 5                      | 1        | 0        | 0                     | 1                                          | 1                      | 0                     | 1        | 2                | 3        |
| January 2026   | 2               | 0               | 0                 | 3                      | 1        | 0        | 2                     | 0                                          | 0                      | 0                     | 0        | 0                | 0        |
| February 2026  | 4               | 0               | 0                 | 1                      | 1        | 0        | 0                     | 0                                          | 1                      | 0                     | 0        | 0                | 0        |
| March 2026     | 6               | 0               | 0                 | 1                      | 1        | 0        | 0                     | 1                                          | 1                      | 0                     | 0        | 0                | 0        |
| April 2026     | 7               | 0               | 0                 | 3                      | 0        | 0        | 1                     | 1                                          | 0                      | 0                     | 0        | 0                | 0        |
| May 2026       | 2               | 0               | 0                 | 0                      | 0        | 0        | 0                     | 0                                          | 0                      | 0                     | 1        | 0                | 1        |
| June 2026      | 4               | 0               | 0                 | 2                      | 0        | 0        | 0                     | 8                                          | 1                      | 0                     | 0        | 1                | 0        |
| July 2026      | 0               | 0               | 0                 | 2                      | 0        | 0        | 1                     | 0                                          | 1                      | 0                     | 0        | 0                | 0        |
| August 2026    |                 |                 |                   |                        |          |          |                       |                                            |                        |                       |          |                  |          |
| <b>Total</b>   | <b>62</b>       | <b>1</b>        | <b>1</b>          | <b>29</b>              | <b>5</b> | <b>1</b> | <b>4</b>              | <b>14</b>                                  | <b>10</b>              | <b>0</b>              | <b>5</b> | <b>8</b>         | <b>4</b> |

*Note.* ED=Emergency Department.

**Table 4A**  
*Connection Choices Raw Data*

| Month          | Withdrawal Management | Children & Youth Mental Health Services | Primary Care | Addiction Specialist CMHA Referral | Shelter | Addiction Services | Counselling Services | Hospital | Crisis Phone | CMHA Crisis Mobile Response Team | Walk in Clinic | Indigenous Services Referral | Hospice and Grief Support | Crisis Lines (Non-CMHA) | Senior Services |
|----------------|-----------------------|-----------------------------------------|--------------|------------------------------------|---------|--------------------|----------------------|----------|--------------|----------------------------------|----------------|------------------------------|---------------------------|-------------------------|-----------------|
| April 2025     | 0                     | 2                                       | 0            | 0                                  | 0       | 0                  | 0                    | 0        | 6            | 0                                | 0              | 0                            | 1                         | 0                       | 0               |
| May 2025       | 0                     | 0                                       | 0            | 1                                  | 0       | 0                  | 0                    | 0        | 7            | 1                                | 0              | 0                            | 0                         | 0                       | 0               |
| June 2025      | 0                     | 0                                       | 0            | 0                                  | 0       | 0                  | 0                    | 0        | 3            | 0                                | 0              | 0                            | 0                         | 0                       | 0               |
| July 2025      | 1                     | 1                                       | 0            | 0                                  | 0       | 1                  | 0                    | 0        | 8            | 0                                | 0              | 1                            | 0                         | 0                       | 1               |
| August 2025    | 1                     | 0                                       | 1            | 1                                  | 0       | 0                  | 0                    | 0        | 1            | 0                                | 0              | 1                            | 0                         | 0                       | 0               |
| September 2025 | 1                     | 0                                       | 0            | 0                                  | 1       | 4                  | 0                    | 0        | 1            | 0                                | 0              | 0                            | 0                         | 0                       | 0               |
| October 2025   | 1                     | 0                                       | 2            | 3                                  | 3       | 2                  | 3                    | 2        | 4            | 0                                | 1              | 3                            | 0                         | 4                       | 0               |
| November 2025  | 2                     | 0                                       | 0            | 1                                  | 0       | 2                  | 3                    | 2        | 6            | 0                                | 0              | 1                            | 4                         | 0                       | 2               |
| December 2025  | 1                     | 0                                       | 1            | 0                                  | 5       | 2                  | 7                    | 3        | 11           | 0                                | 0              | 1                            | 2                         | 1                       | 0               |
| January 2026   | 1                     | 0                                       | 1            | 2                                  | 0       | 4                  | 7                    | 0        | 8            | 0                                | 0              | 3                            | 2                         | 1                       | 0               |
| February 2026  | 1                     | 0                                       | 1            | 0                                  | 1       | 5                  | 3                    | 0        | 3            | 0                                | 1              | 1                            | 0                         | 0                       | 0               |
| March 2026     | 2                     | 0                                       | 1            | 0                                  | 1       | 5                  | 3                    | 1        | 5            | 0                                | 0              | 5                            | 0                         | 2                       | 0               |
| April 2026     | 1                     | 0                                       | 0            | 1                                  | 0       | 3                  | 4                    | 1        | 8            | 0                                | 0              | 1                            | 2                         | 0                       | 0               |
| May 2026       | 1                     | 0                                       | 0            | 0                                  | 0       | 0                  | 0                    | 2        | 2            | 0                                | 0              | 0                            | 0                         | 0                       | 0               |
| June 2026      | 1                     | 0                                       | 1            | 1                                  | 1       | 5                  | 0                    | 1        | 7            | 2                                | 0              | 0                            | 0                         | 0                       | 0               |
| July 2026      | 0                     | 0                                       | 0            | 0                                  | 1       | 0                  | 1                    | 1        | 4            | 0                                | 0              | 0                            | 1                         | 0                       | 0               |
| August 2026    |                       |                                         |              |                                    |         |                    |                      |          |              |                                  |                |                              |                           |                         |                 |
| Total          | 14                    | 3                                       | 8            | 10                                 | 13      | 33                 | 31                   | 13       | 75           | 3                                | 2              | 17                           | 12                        | 8                       | 3               |

*Note.*

**Table 5A***Evacuation Raw Data*

| <b>Month</b> | <b>Number of Days</b> | <b>Interactions</b> | <b>Wellness Checks</b> | <b>Hospital Transports</b> | <b>Crisis Phone-Mobile Crisis Team Support (Days)</b> | <b>Follow-ups Arranged</b> |
|--------------|-----------------------|---------------------|------------------------|----------------------------|-------------------------------------------------------|----------------------------|
| April 2025   | 5                     | 70                  | 28                     | 0                          | 5                                                     | 0                          |
| May 2025     | 18                    | 124                 | 0                      | 0                          | 4                                                     | 1                          |
| July 2025    | 5                     | 0                   | 0                      | 1                          | 0                                                     | 0                          |
| <b>Total</b> | <b>28</b>             | <b>194</b>          | <b>28</b>              | <b>1</b>                   | <b>9</b>                                              | <b>1</b>                   |

*Note.***Table 6A***Encampment Raw Data*

| <b>Month</b>   | <b>Number of Days</b> | <b>Interactions (Water and Harm Reduction Supplies Provided)</b> |
|----------------|-----------------------|------------------------------------------------------------------|
| August 2025    | 7                     | 0                                                                |
| September 2025 | 3                     | 50                                                               |
| October 2025   | 22                    | 342                                                              |
| November 2025  | 9                     | 174                                                              |
| May 2026       | 3                     | -                                                                |
| June 2026      | 10                    | 129                                                              |
| July 2026      | 8                     | 161                                                              |
| <b>Total</b>   | <b>62</b>             | <b>856</b>                                                       |

*Note.*

## Appendix B

**Table B1**

*Glossary of Terms- Call Details*

| <b>Term</b>                                | <b>Description</b>                                                                                                                                                                              |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of Contacts                         | Number of individuals with whom EMS were in contact without requiring STAR activation                                                                                                           |
| Mental Health and/or Addiction (MHA) Calls | Number of individuals for whom STAR was activated                                                                                                                                               |
| Follow Ups                                 | Number of STAR calls where patients received follow-up contact from the STAR team after the initial call                                                                                        |
| Repeat STAR User                           | Individuals with prior use of STAR services                                                                                                                                                     |
| Under 18                                   | STAR patients assisted who were under the age of 18                                                                                                                                             |
| Form 1                                     | Individuals assessed as posing a threat to themselves or the community, resulting in police escort to the hospital for involuntary psychiatric hold; Form 1 is completed by attending physician |
| No- Form 1                                 | Cases where a form 1 is not required                                                                                                                                                            |
| Form 1 Unknown                             | Cases where STAR is not informed whether a form 1 was completed.                                                                                                                                |

*Note.* Definitions reflect current operational terminology used by the STAR team. EMS= Emergency Medical Services. STAR= Specialized Treatment and Alternative Response Team.

**Table B2**

*Glossary of Terms- Presenting Issues*

| <b>Term</b>                         | <b>Description</b>                                                                                                                                                                                                                                  |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Problems with Addictions            | Presenting concerns related to substance use and addictive behaviour (e.g. continued use despite harmful consequences, compulsive drug seeking as the primary reason for the call)                                                                  |
| Problems with Relationships         | Presenting concerns involving conflict, breakdown or distress within personal, family or intimate relationships.                                                                                                                                    |
| Problems with Substance Misuse      | Presenting concerns related to the misuse of drugs, alcohol or other substances distinct from addiction (i.e. maintain a level of control over their usage and do not experience a compulsive, uncontrollable psychological or physical dependence) |
| Emotional Distress                  | Presenting concerns involving overwhelm, upset or psychological distress                                                                                                                                                                            |
| Specific Symptoms of Mental Illness | Presenting concerns involving identifiable symptoms consistent with a diagnosed or suspected mental illness (e.g., ADHD, postpartum depression, dissociative disorder, major depressive disorder)                                                   |
| Situational Crisis                  | Presenting concerns arising from a specific, unforeseen event that has disrupted the patient's ability to cope                                                                                                                                      |
| Auditory/Visual Disturbance         | Presenting concerns involving reported hallucinations or perceptual disturbances                                                                                                                                                                    |

|                                      |                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suicidal Ideation                    | Presenting concerns involving thoughts of suicide without an accompanying attempt or specific disclosed plan                                                                                                                                                                                                                                                         |
| Symptoms of Anxiety                  | Presenting concerns involving reported symptoms of anxiety, such as excessive worrying or physiological distress                                                                                                                                                                                                                                                     |
| Grief and Loss                       | Items in this category align with the dms-5-TR-Z-code <i>Uncomplicated Bereavement</i> , as well as the diagnostic classification Prolonged Grief Disorder. Presenting concerns include sudden loss/death, death in community, grief from infant loss and grief and loss                                                                                             |
| Suicide/Self Harm                    | Items in this category align with the <i>Suicidal Behaviour and Non-suicidal Self-Injury</i> classification within the DMS-5-TR; Presenting concerns include suicide attempt, threat to self and self-harm                                                                                                                                                           |
| Adult Maltreatment and Neglect       | Items in this category align with the <i>Adult Maltreatment and Neglect Problems</i> classification within the DSM-5-TR; Presenting concerns include domestic violence and non-spousal sexual assault                                                                                                                                                                |
| Physical Health Related              | Items in this category reflect general medical or somatic concerns unrelated to the initial mental health and/or addictions presenting concerns, rather than a formal DSM-5-TR diagnostic classification. Presenting concerns include infection, chronic pain management medical concern for finger, all over pain, and “other” medial concerns that are unspecified |
| Psychosocial/Environmental Stressors | Items in this category are grounded in the DSM-5-TR-Z-code: <i>Housing and Economic Problems</i> section, which encompasses financial vulnerability. Presenting concerns include financial vulnerability, no income source and inability to afford medication                                                                                                        |
| Other                                | Unlabeled items not captured in the above categories, including loneliness, history of mental illness and one “unknown” category where the concern was not labelled                                                                                                                                                                                                  |

*Note.* Categories from Grief and Loss, suicide/self-harm adult maltreatment and neglect and psychosocial/environmental stressors were informed by classifications from the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision* (DSM-5-TR; American Psychiatric Association, 2022), used as an organizing framework to group related presenting concerns. Additional categories reflect current operational terminology used by the STAR team, defined by CMHA.

**Table B3**  
*Glossary of Terms Disposition*

| Term                          | Description                                                                |
|-------------------------------|----------------------------------------------------------------------------|
| Disposition                   | Where the patient was left following STAR intervention                     |
| Emergency Department/Hospital | Patient requested transport to Thunder Bay Regional Health Sciences Centre |

|                                   |                                                                                                    |
|-----------------------------------|----------------------------------------------------------------------------------------------------|
| Primary Care                      | Patient was transported to their primary care provider (e.g., family doctor) for follow up.        |
| Walk in Clinic                    | Patient transported to clinic of choosing within the city of Thunder Bay                           |
| Care of Self Family               | Patient remained in the care of themselves and/or a family member following STAR intervention      |
| Shelter                           | Patient was transported to a shelter within Thunder Bay                                            |
| Safe Bed                          | Patient taken to a short-term crisis stabilization residence for individuals 16 and up             |
| Care of Self/Staff                | Patient remained in their own care and the care of facility/program staff following intervention   |
| Care of Self/Safety Plan Accepted | Patient remained in their own care after accepting a safety plan developed during the intervention |
| Care of Self/Friend               | Patient remained in their own care and within the care of a friend following STAR intervention     |
| Addiction Services                | Patient was taken to a form of addiction service in Thunder Bay                                    |
| Detox                             | Patient transported to a detoxification/withdrawal management service in Thunder Bay               |
| Safe Sobering                     | Patient was transported to a facility providing short-term supervises sobering support             |
| Other                             | Disposition outcomes not captured by the above categories                                          |

*Note.* Categories reflect operational terminology used the STAR team, defined by the Canadian Mental Health Association (CMHA), Thunder Bay.

**Table B4**

*Glossary of Terms- Connection Choices*

| <b>Term</b>                               | <b>Description</b>                                                                                                                        |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Connection Choice                         | Referral and connections to downstream services (could be multiple referrals per client)                                                  |
| Withdrawal Management                     | Patient referred to a withdrawal management (detox) service                                                                               |
| Children and Youth Mental Health Services | Patient referred to mental health services specific to children and youth (individuals under 18), Example; Children's centre Thunder Bay) |
| Primary Care                              | Patient referred to their primary care provider (e.g., family physician, North West Community Health Centres (NWCHC))                     |
| Addiction Specialist CMHA Referral        | Patient referred to a CMHA addiction specialist                                                                                           |
| Shelter                                   | Patient referred to a local shelter within Thunder Bay                                                                                    |
| Addiction Services                        | Patient referred to general addiction support services (such as Rapid Access Addiction Medicine (RAAM) Clinic.                            |
| Counselling Services                      | Patient referred to a counselling service, such as Thunder Bay Counselling or Dilico Anishinabek Family Care                              |

|                                  |                                                                                                                                                                                                                                       |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hospital                         | Patient was referred to Thunder Bay Regional Health Sciences Centre, for further assessment or care                                                                                                                                   |
| Crisis Phone                     | Patient was referred to a crisis phone line, such as CMHA Thunder Bay's 24/7 crisis line                                                                                                                                              |
| CMHA Crisis Mobile Response Team | Patient referred to CMHA's crisis response team in person follow-up                                                                                                                                                                   |
| Walk in Clinic                   | Patient referred to walk in clinic of their choosing within Thunder Bay                                                                                                                                                               |
| Indigenous Services Referral     | Patient was referred to a service specific to Indigenous individuals, such as Thunder Bay Friendship Centre or Dilico Anishinabek Family Care                                                                                         |
| Hospice and Grief Support        | Patient referred to hospice and/or grief support services, such as Hospice Northwest                                                                                                                                                  |
| Crisis Lines (Non-CMHA)          | Patient referred to crisis lines outside of CMHA, such as Nan Hope, 211 and/or Klinik Crisis Line (Winnipeg)                                                                                                                          |
| Senior Services                  | Patient referred to services specific to older adults, such as Thunder Bay 55 plus and/or Margaret Gray Nursing Centre- Cat Lake                                                                                                      |
| Justice and Victim Services      | Patient referred to justice-related or victim support services, such as Thunder Bay Court House, Thunder Bay Police- Trafficking Division and/or Thunder Bay Victim Services,                                                         |
| LGBTQ2S+ Support                 | Patient referred to services specific to LGBTQ2S+ individuals, such Gender Journeysm LGBT drop-in groups, Rainbow Collective and/or Thunder Pride                                                                                     |
| Adult Mental Health Services     | Patient referred to general adult mental health services, such as Thunder Bays Assertive Community Treatment team (ACT)                                                                                                               |
| Other                            | Referral connections not captured but the categories above such as, Elevate, Canadian Hearing Society, Immigration support, Lakehead Social Planning Council, Home Support, Bank, Lutherine Community Care and/or Boots on the ground |

*Note.* Categories reflect operational terminology used the STAR team, defined by the Canadian Mental Health Association (CMHA), Thunder Bay.

## Appendix C

### Figure C1

#### *Specialized Treatment and Alternative Response Team- Evaluation Checklist*

*Note.* The evaluation form provided by SNEMS evaluates STAR clients referred by SNEMS paramedics.