FACETS
a multidisciplinary open access science journal

REVIEW ARTICLE

Caught in the currents: evaluating the evidence for common downstream police response interventions in calls involving persons with mental illness

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OPEN ACCESS

Citation: Huey L, Andersen J, Bennell C, Ann Campbell M, Koziarski J, and Vaughan AD. 2021. Caught in the currents: evaluating the evidence for common downstream police response interventions in calls involving persons with mental illness. FACETS 6: 1409–1445. doi:10.1139/facets-2021-0055

Handling Editor: Jules M. Blais

Received: May 14, 2021

Accepted: June 16, 2021

Published: August 19, 2021

Note: This paper is part of the Royal Society of Canada's COVID-19 Task Force Collection.

Published by: Canadian Science Publishing

Abstract

The origins of this report, and of the Mental Health and Policing Working Group, can be traced to the unique situation Canadians have faced as a result of the COVID-19 pandemic. The unique circumstances of this global outbreak, which have for many Canadians resulted in serious illness and death, intensified economic uncertainties, altered family and lifestyle dynamics, and generated or exacerbated feelings of loneliness and social dislocation, rightly led the Royal Society of Canada's COVID-19 Taskforce to consider the strains and other negative impacts on individual, group, and community mental health. With the central role that police too often play in the lives of individuals in mental and (or) emotional crisis, we were tasked with exploring what can be reasonably said about the state of our current knowledge of police responses to persons with mental illness.

Key words: Policing, mental health, COVID-19, police response

In the wake of several high-profile cases involving deaths in police custody of persons with mental illness (PMIs), there has been significant public interest in police reform in this area. Much of this interest, and the resulting demands for change, is couched in the language of public health. Mental illness is seen as a health condition in which social determinants—those economic, cultural, environmental, institutional, and other factors that can influence health outcomes—can function as supports or barriers to well-being. In this language, the metaphor of a stream or river is invoked to visualize where appropriate responses to mental health conditions should lie. "Upstream" solutions are those programs, practices, policies, or other innovations that address factors which are limiting or preventing individual and community access to health care treatment. An example of an upstream initiative might be a community-based outreach program aimed at moving mentally ill, homeless citizens into secure housing and treatment. Such approaches are contrasted with "downstream" initiatives, which often entail programs or practices to respond to individuals who, lacking health care access and (or) other necessary supports, are now in immediate crisis. As decades of research has shown, one of the single biggest examples of downstream responses to individuals dealing with significant mental health issues is the use of public policing (Bittner 1967, 1990; Teplin 1984; Patch and Arrigo 1999; Lamb et al. 2002; Wells and Schafer 2006; Schulenberg

2016). To a dizzying extent, policing has in many instances become the de facto response to mental health issues (see also Wood et al. 2017).

The origins of this report, and of the Royal Society of Canada's Mental Health and Policing Working Group, can be traced to the unique situation Canadians have faced as a result of the COVID-19 pandemic. The unique circumstances of this global outbreak, which have for many Canadians resulted in serious illness and death, intensified economic uncertainties, altered family and lifestyle dynamics, and generated or exacerbated feelings of loneliness and social dislocation, rightly led the Royal Society of Canada's COVID-19 Taskforce to consider the strains and other negative impacts on individual, group, and community mental health. With the central role that police too often play in the lives of individuals in mental and (or) emotional crisis, we were tasked with exploring what can be reasonably said about the state of our current knowledge of police responses to PMIs.

In response to our charge, the Mental Health and Policing Working Group set out to assess the myriad ways in which police work results in encounters involving PMIs. The result was a working paper that documented the complex nature of these interactions (Huey et al. 2021). In this second paper, we move away from the dynamics leading to police encounters towards an exploration of some of the existing suite of downstream policing programs and initiatives in use in Canada. In the pages that follow, we present an assessment of the current evidence base for each selected, with a particular focus on reviewing experimental, evaluative, and other research conducted in Canada. Our intention is to provide policymakers and practitioners with a better-informed understanding of the strengths and limitations of the current evidence base for programs that have already been widely adopted. In this paper, we explore the knowledge base in the following areas: mental health screening tools, situation tables/hub models, nonescalation and de-escalation training, and crisis intervention and co-response models. In each section, we provide a brief overview of the intervention, program, and (or) tool. Then we move on to reviewing the evidence base for each, including presenting a discussion of what the relevant literature reveals in terms of the relative strengths and weaknesses of a given response model or tool. From there, we provide a succinct snapshot of what is both known about a model, as well as areas in which future research is critically needed. Finally, based on an analysis of the data and research gathered, we present a series of recommendations for policymakers and practitioners.

Mental health screening tools

In the rush to improve police effectiveness and efficiency in responding to calls for service involving PMIs, as well as case and clinical outcomes for those with mental illness who come into contact with police, an increasing number of Canadian police services are adopting mental health screening tools. Ostensibly, the purpose of employing such tools is to better identify individuals with mental health issues to provide appropriate responses, whether that be reframing de-escalation procedures, taking necessary suicide precautions on-scene or in police custody or, where appropriate, diversion to mental health facilities. In our review of the relevant literature, we identified two primary types of mental health tools in use by police services. These are:

- screening tools used by frontline officers to assist in decision-making, and
- screening tools for assessing depression, suicidality, and (or) other health and mental health related concerns among individuals held in police custody.

Unfortunately, despite a handful of United Kingdom based studies (Baksheev et al. 2012; Dorn et al. 2013), we could locate no Canadian evaluations or other research of in-custody screening tools. Nor

did keyword searches using online search engines[1] turn up references to such tools in the Canadian grey literature[2], media or other sources.

By way of contrast to the dearth of information available on Canadian police custody screening tools, we did locate several news releases announcing the adoption of a mobile mental health screening tool by, among other agencies, the Royal Canadian Mounted Police, Ontario Provincial Police, York Regional Police, and Sarnia Police.[3] The tool is the interRAI Brief Mental Health Screener (BMHS). Intended for nonmental health professionals who are likely to be the first responder to a person with mental health needs, the BMHS consists of 46 questions. The BMHS is intended to assist police capture a patients' mental health data retrospectively 24 h from a single point in time (Hoffman et al. 2016; Hirdes et al. 2019).

What is the BMHS? It's a mobile online form created for police by a consortium of academics based on previous screening tools developed for use in clinical and other settings (Hirdes et al. 2019). The form is to be used by frontline police officers when they encounter someone—in the field or elsewhere—who is exhibiting behaviours that may indicate an underlying mental illness (Hoffman et al. 2016). Responding officers are expected to answer questions across five sections, including: individual and incident characteristics, indicators of disordered thinking, indicators of risk of harm, time spent on the call from dispatch to clearance, and an open-ended section for recording other pertinent information (Sanders and Lavoie 2020). The process of completing the questionnaire takes approximately 5 min and the results can be electronically transferred to a local hospital or other facility (Hoffman et al. 2016). The stated goals of having officers use this tool are twofold: "(1) to enhance the ability of police officers to recognize indicators of serious mental disorder and (2) to help facilitate a more collaborative relationship between frontline staff in the criminal justice and health systems" (Hoffman et al. 2016, p. 29).

As of this writing, we could only locate one evaluation of this tool: a quasi-experimental pilot study conducted by the development team with two Ontario police services (Hoffman et al. 2016). The researchers had officers complete forms ($n = 235$) in those situations in which they had reason to believe that an individual may have a mental illness. To determine the validity of the predictions made based on the tool, researchers then accessed patient records to determine clinician diagnoses and hospital admittance rates. From this, they concluded "the results of the study indicate that the 14-variable algorithm used to construct the interRAI BMHS is a good predictor of who was most likely to be taken to hospital by police officers and who was most likely to be admitted" (Hoffman et al. 2016, p. 28). Further,

> The instrument is an effective means of capturing and standardizing police officer observations enabling them to provide more and better quality information to emergency department (ED) staff.[4] Teaching police officers to use the form constitutes enhanced training on major indicators of serious mental disorders. Further, given that items on the

[1]To perform these searches, one of the authors began by using a university library search engine against all the academic online databases available. Keywords included search terms such as "mental health screener police" and "mental health tool police". The resulting abstracts were then read online and the following were excluded: (1) any paper that was not about mental health screening devices, (2) papers not in English, and (3) any papers that did not contain an evaluation. A similar approach was then taken to locate grey literature using Google Search.

[2]Grey literature refers to nonpeer-reviewed studies. These are typically program or policy evaluations or other pieces of research conducted outside of academia.

[3]Hirdes et al. (2019) stated that, as of 2019, the InterRAI screener is in use in 4 Canadian provinces among some 40 police services.

[4]To clarify, this is tool for police to more effectively work with clinical personnel in identifying individuals in crisis. It is meant to help both parties by creating a common language and protocols.

> interRAI BMHS are written in the language of the health system, language acts as common currency between police officers and ED staff laying the foundation for a more collaborative approach between the systems (Hoffman et al. 2016, p. 28).

Although we could find no independent evaluations of this tool in Canada or elsewhere[5], we do note we were able to locate one additional study. In a recent article, Sanders and Lavoie (2020) explored the adoption of the interRAI BMHS by a Canadian police service drawing on field-based observations for a six-month period following implementation. What they found was that the medical terminology and framing of mental health issues failed to provide officers with a "shared understanding of what that language means or how to recognise and accurately assess for indicators. The lack of shared understanding, in turn, led officers to rely upon their own experiential knowledge for assessing risk and to perceive the screener as an administrative tool to be used after the fact" (Sanders and Lavoie 2020, p. 12). These researchers also observed officer frustration with being required to fill out a form in situations in which they had little spare time or had to deal with simultaneous operational or other demands. As one of their informants put this point, one doesn't always "have the time, or a person is going crazy in the back of your cruiser" (Sanders and Lavoie 2020, p. 8).

What we know

- Canadian police services are rolling out mental health screeners—and associated training, policies, and procedures—without the existence of a significant evidence base.
- Limited available research shows that the interRAI BMHS may be predictive of hospital admissions (Hoffman et al. 2016), but further independent evaluation is required.
- The screener is not intuitive for many officers, and therefore requires either extensive training and (or) adaptations to the screener for officers to better understand its use when implemented (Sanders and Lavoie 2020).
- Some officers are resistant to the tool, seeing its use as "unrealistic" in light of operational and other demands on their time (Sanders and Lavoie 2020, p. 8).

What we don't know

- Although different versions of the BMHS have been tested for different uses (Hoffman et al. 2016; Hirdes et al. 2019), lack of replication studies using policing samples means we only have one study assessing validity issues in this context.
- More research is needed to determine whether different types of screeners may be seen as having greater utility for police officers.
- More research is needed to understand whether police attitudes towards using the BMHS or similar tools change over time with increased use.
- We currently lack an evidence base that would inform improvements to training aimed at decreasing officer knowledge gaps.

Recommendations

1. Fund independent evaluations to assess both internal and external validity under different research contexts.

[5]Hirdes et al. (2019, p. 7) stated that "a pilot study of the BMHS in one US region is expected to launch in 2020".

2. Fund independent research to explore issues with adoption and adaptation to mental health screeners across police services.

3. Explore PMI perspectives and experiences with mental health tools.

4. Support internal and external assessments as to the extent to which mental health screening tools reduce communication gaps between police and health care workers, and therefore reduce barriers for PMIs to access services.

5. Explore the issue of whether training on these tools meets the required objectives of increasing police knowledge of the tool and the concepts embedded in its use.

Situation tables/hub models

In recent years, there has been a growing movement in Canada known as the Community Safety and Well-being (CSWB) movement. This movement is understood as: "the combination of social, economic, environmental, cultural, and political conditions identified by individuals and their communities as essential for them to flourish and fulfil their potential" (Wiseman and Brasher 2008, p. 358). Others, such as Ontario's Ministry of Community Safety and Correctional Services (2017, p. 3), define it as "identifying and responding to risks that increase the likelihood of criminal activity, victimization or harm, and working together to build local capacity and strong networks to implement proactive measures." While there do appear to be different conceptualizations of the CSWB movement, at its core the movement posits that the responsibility of both community safety and well-being should not lie with a single agency or institution, but rather the responsibility should lie within the collaborative effort of multiple agencies and (or) institutions—which have traditionally been fragmented—that can assist in the mitigation of risk, vulnerability, and (or) harm (Bhayani and Thompson 2017; Nilson 2018).

The origins of the movement lie within several policing-related issues, namely the economics of policing and the increasing number of calls for service containing social issues (e.g., mental health, substance abuse, homelessness, etc.), which the police have traditionally been ill-equipped to address but have nevertheless been tasked with due to gaps in social service delivery (Russell and Taylor 2014a; Lansdowne Consulting Group 2016; Bhayani and Thompson 2017). Thus, the logic behind this movement is that if the police can transfer social issue related calls for service to other agencies that are better equipped to address said issues, this would then ease not only the demand on police but also the costs that the police are incurring as a result of these calls (Babayan et al. 2015; Russell and Taylor 2015; Lansdowne Consulting Group 2016).

One mechanism through which this transfer of responsibility is facilitated are Situation Tables (otherwise known as the Hub model[6]). The structure and organization of Situation Tables can differ by jurisdiction (e.g., Nilson 2016); however, in large part, they involve weekly or twice-weekly meetings with several local agencies such as the police, social services, mental health, and education, among others, to discuss cases of acutely elevated risk (AER) (Ingersoll Nurse Practitioner-Led Clinic 2014; Brown and Newberry 2015; Lamontagne 2015; Lansdowne Consulting Group 2016; Bhayani and Thompson 2017). AER is a subjective "... threshold [that] combines both the degree of probable harm involved in any given situation, and the degree to which the operating risk factors involved cross multiple human service disciplines" (Russell and Taylor 2014b, p. 19). Put differently, Situation Tables only deal with cases in which there is not only a clear, imminent threat of criminality and (or) victimization but that also transcend various risk categories that require collaborative intervention from

[6]See Bhayani and Thompson (2017) for a discussion surrounding the differences and preferences over using the term Situation Table or Hub.

multiple agencies or services at the Table. As Sanders and Langan (2019) described, there are over 100 risk factors, nested within 26 Risk Categories[7], that are used to inform whether an individual meets the definition of AER. The overall aim of Situation Tables is to transfer cases that meet or exceed the AER threshold from one agency, such as the police, to multiple agencies or services that are collaboratively better equipped to address the risk(s) faced by the individual(s) in question.[8] In many jurisdictions with Situation Tables, the police not only appear to lead the effort in establishing their local Table, but most referrals to the Table also originate from the police (McFee and Taylor 2014; Ingersoll Nurse Practitioner-Led Clinic 2014; Babayan et al. 2015; Brown and Newberry 2015; Lamontagne 2015; Lanark County Situation Table Project 2016; Lansdowne Consulting Group 2016). Thus, although Situation Tables are a collaborative approach to addressing social issues in the community, they are undoubtedly a police-led initiative.

As discussed in Huey et al. (2021), PMIs can comprise a considerable proportion of calls for police service. Thus, it is of no surprise that Mental Health is one of the 26 Risk Categories that are of focus for Situation Tables. Indeed, a high involvement of the police in mental health matters can be a driving force behind developing a Situation Table. For example, in describing the development of the Surrey Mobilization and Resiliency Table (SMART) in Surrey, British Columbia, Bhayani and Thompson (2017) noted that a heightened focus for the Table was devoted towards a two to three block area of Surrey that was experiencing a concentration of mental health calls, as well as addictions and other noncriminal issues. Further, consulting reports show that mental health is one of the most frequently seen risk categories for cases that pass through Situation Tables (e.g., Babayan et al. 2015; Russell and Taylor 2015; Lansdowne Consulting Group 2016).

Although the mental health risk factor comprises a significant amount of Situation Table cases, there has not been a single, high-quality, independent, peer-reviewed examination of how individuals with the mental health risk factor fare before, during, and (or) after an intervention from a Situation Table. This is not a surprise given that, since the first Situation Table was established in Prince Albert, Saskatchewan, in 2011 (McFee and Taylor 2014), there has not been a single, high-quality, independent, peer-reviewed evaluation of any Situation Table in Canada or elsewhere. The lack of evidence in support of Situation Tables is not only a concern given that there are over 100 Tables currently in operation (Corley and Teare 2019; Global Network for Community Safety 2016), but also that politicians and other government officials seemingly keep supporting and investing in this unproven practice. For example, the former Ontario Minister of Community Safety and Correctional Services, Yasir Naqvi, labeled Situation Tables as the "best practice" for risk identification and proactive, collaborative resource mobilization despite there being no evidence in support of this claim (Solicitor General 2015).

Moreover, given the individuals that Situation Tables have been designed to help—which disproportionally appears to be people living with mental illness who are also simultaneously experiencing other acute risk categories—the need for independent, rigorous evaluations cannot be understated. Simply put, we need to know whether Situation Tables are not only effective at reducing or eliminating the risk of harm for PMIs and the broader group of people they serve, but also whether Table intervention has long-term impacts for PMIs such as sustained engagement with mental health care or reduced interactions with the police in the future. Indeed, scholars and others alike have long been

[7]The Risk Categories are: Alcohol, Drugs, Gambling, Mental Health, Suicide, Physical Health, Self-Harm, Criminal Involvement, Crime victimisation, Physical Violence, Emotional Violence, Sexual Violence, Elderly Abuse, Supervision, Basic Needs, Missing School, Parenting, Housing, Poverty, Negative Peers, Antisocial/Negative Behavior, Unemployment, Missing/Runaway, Threat to Public Safety, Gangs, and Social Environment.
[8]See Russell and Taylor (2014a) for a discussion on how cases proceed through different 'filters' at the Situation Table.

calling for a reduced or even eliminated police presence in mental health calls. Thus, in the event that Situation Tables are deemed to be effective, they can play a significant role in reducing the footprint of the police—and arguably the criminal justice system—in highly specific mental health cases that are deemed AER. Empirical research can also help further identify areas of the Situation Table approach that may need to be altered for them to be successful in achieving their objectives. Further, but along the same vein, empirical research can also help identify any potential areas of concern or situations in which individuals can or may experience harm through the Situation Table process. Again, given the population that is served by Situation Tables, this line of inquiry is especially important.

Ultimately, Situation Tables currently appear to have a questionable role when it comes to police involvement in mental health cases; however, whether these Tables are achieving their intended objectives—particularly as it relates to reduced contact between the police and PMIs—remains to be seen.

What we know

- Many police services in jurisdictions across Canada are leading efforts toward implementing Situation Tables as a means of shifting social-related issues to more appropriate services.
- Situation Tables are framed as a best practice within policy discourse, even though there is no evidence to substantiate this claim given the lack of independent, peer-reviewed evaluations.
- The police refer the most cases to Situation Tables relative to other participating services.
- Mental health is the most frequently seen risk factor by Situation Tables.

What we don't know

- We currently don't know whether Situation Tables are achieving their intended goals and objectives more generally.
- It is unclear whether mental health related cases seen by Situation Tables are successfully engaging in the services and resources coordinated for their assistance by the Table over time.
- We also don't know whether the outcomes of mental health related cases differ based on the number of co-occurring risk factors that are of concern to Situation Tables.
- We currently lack evidence that mental health related cases that receive Table intervention are associated with reduced interactions with the police.

Recommendations

1. Fund independent evaluations of Situation Tables broadly as well as research with a specific focus on the outcomes of mental health related cases since they appear to be the most prevalent.
2. Fund independent research to explore the perceptions and experiences of individuals who are the subject of Situation Table cases as well as their families.
3. Given the sensitive nature of the data that may be shared within a Situation Table, research is additionally needed to determine the most optimal method of information sharing while also adhering to any privacy requirements.
4. If research supports their use, governments should develop innovative approaches to increase service provider and service user participation/retention in Situation Tables.

5. Develop policy to dismantle common barriers which often impede collaboration between service providers. Doing so may ease the need for Situation Tables in the first place.

Managing encounters with persons with mental illness: nonescalation and de-escalation

As outlined in Huey et al. (2021), a significant number of calls for police service involve PMIs. Given the impact that the COVID-19 pandemic has had on people's mental health (Xiong et al. 2020), these types of calls have likely increased recently. In addition, enforcing COVID-19 related regulations (e.g., social distancing) has likely created additional challenges for police officers that require the use of nonescalation and de-escalation strategies.

While the vast majority of interactions between the police and PMIs are resolved peacefully, serious injuries and deaths do occur (McNeilly 2017). A number of high-profile deaths in Canada, where the use of force by police was perceived to be biased or excessive, have led to calls for better police training to reduce the likelihood of citizens being unnecessarily harmed during their interactions with the police (e.g., Iacobucci 2014; Dubé 2016). In response to these calls for action, several independent research projects have been completed to review scientific evidence on nonescalation, de-escalation, and use of force training, and to collect data on current police training practices (Andersen et al. 2017, 2018a; Bennell et al. 2018). These projects have helped identify knowledge, skills, and abilities (KSAs) that are critical for police officers to successfully manage interactions with the public, including PMIs. Many of these KSAs are represented in the *Decision Model for Police Encounters* (see **Fig. 1**). This model was designed to emphasize the use of nonescalation and de-escalation strategies (*Options for All Subject Behaviours*) and de-emphasize the use of force (*Options for Escalated Behaviours*) (Andersen et al. 2018a).[9,10]

In this section we describe what is known and not known about various components of the *Decision Model for Police Encounters* (see **Fig. 1**), each of which is intended to improve the quality of police–citizen interactions and enhance public and police safety.

Internal monitoring

Police officers must concurrently monitor their internal states to stay focused during their encounters with the public, while also applying trained competencies, remaining aware of their limitations and abilities, adapting to stress, and managing their emotions. Issues related to health and stress can impact how well officers learn competencies during training and how they utilize these competencies

[9]There is a lot of disagreement on how to define some of the terms used in this section of the report (e.g., Todak 2017). However, for the purpose of this report, nonescalation will refer to attempts by a police officer to prevent the escalation of conflict, tension, or harm in a police–citizen encounter. De-escalation will refer to attempts by a police officer to reduce conflict, tension, or harm in an encounter that has already escalated. Finally, use of force will refer to the use of any tactic applied by a police officer to compel compliance in a subject. Use of force intervention options (e.g., conducted energy weapons, or Tasers) can arguably be used to de-escalate situations, but for the purpose of this report, we will focus primarily on verbal and nonverbal tactics that police officers can use to de-escalate situations, including interactions with PMIs.

[10]The *Decision Model for Police Encounters* was developed using two research strategies: a comprehensive review of nonescalation and de-escalation practices, theory, and expert practitioner state of the art recommendations in 2017 (see Andersen et al. 2017 for the literature search strategy and methodology) and primary data collection, including surveys, guided interviews, focus groups, and expert guidance from cognitive and vision scientists and graphic designers (see Andersen et al. 2018a). Also see Di Nota et al. (2021) for a critical review of current training models in nonescalation and de-escalation. This work was funded by a grant from the Government of Ontario, Ministry for Community Safety and Correctional Services.

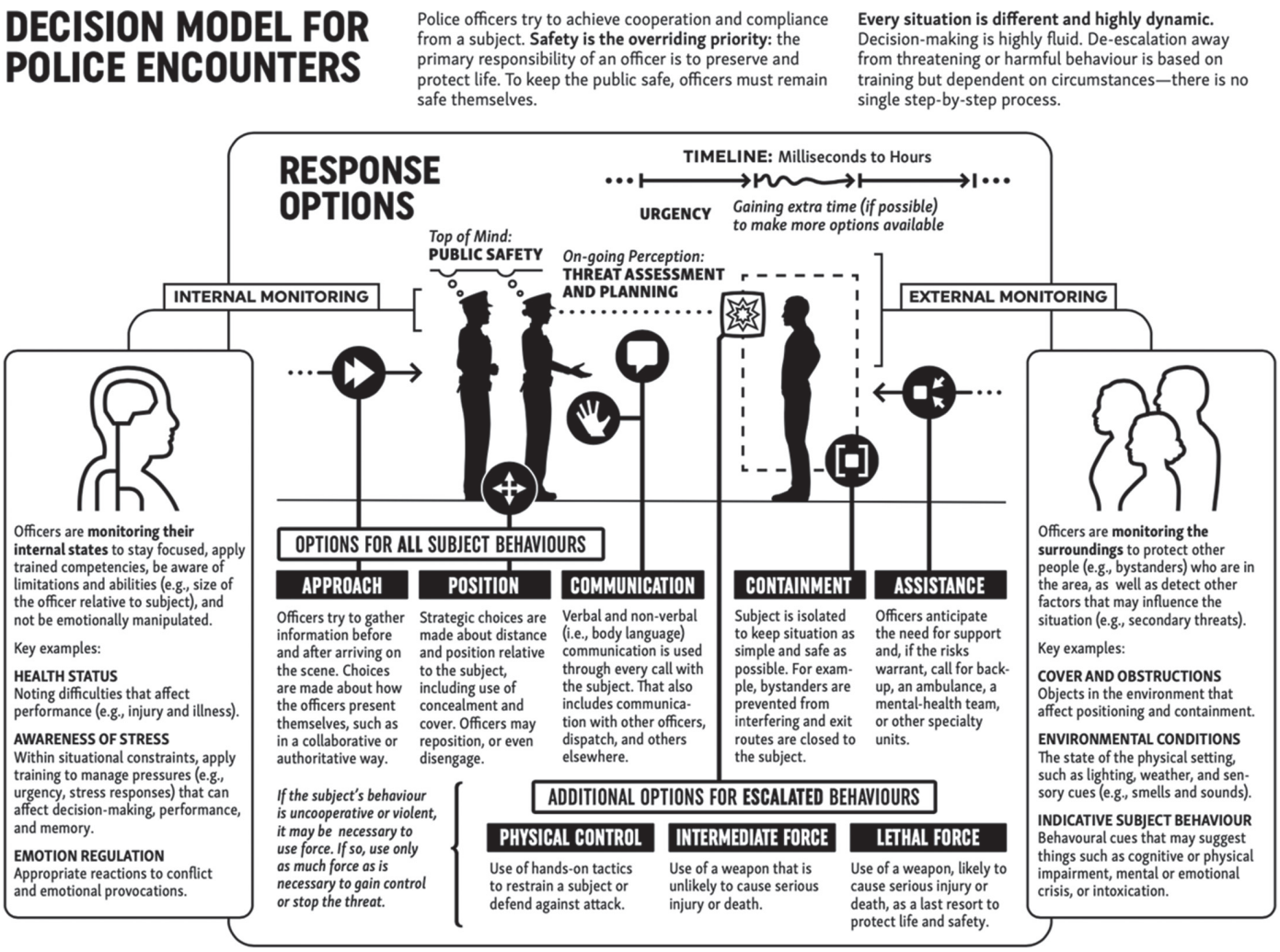

Fig. 1. A decision-making model for police: Scientific review of police decision making and visual model development (Andersen et al. 2018a). Report prepared for the Government of Ontario, Ministry for Community Safety and Correctional Services. Copyright for the image and intellectual property remain with the lead author (Judith P. Andersen).

in the field. Turning first to an officer's health status, we will focus on what is currently known and what is still unknown.

What we know

- Police work is associated with risks to physical health, including physical injuries, fatigue, sleep problems, cardiovascular disease, obesity, metabolic syndrome, endocrine dysregulation, neurological disorders, and other chronic conditions (Violanti et al. 2017).
- Policing is associated with risks to mental health, including depression, post-traumatic stress disorder (PTSD), anxiety, mortality (from suicide), psychological distress, and burnout (Carleton et al. 2018; Syed et al. 2020; Violanti 2020).
- A range of factors can exacerbate physical and mental health risks, including shiftwork, long work hours, trauma exposure, organizational stressors (e.g., supervisor and peer interaction),

workplace discrimination, excessive administrative demands, public interactions, and stress (Violanti et al. 2017; Carleton et al. 2020; Chan and Andersen 2020).

- Cognitive science indicates that mental health conditions are associated with "reduced cognitive flexibility, rigidity, or dysfunctional behavioural routines and rituals" (Schwabe and Wolf 2013, p. 66).
- Preliminary evidence indicates that anxiety disorders (e.g., PTSD) are related to hyperarousal of the stress response system, difficulty concentrating, and increases in impulsivity (Swick et al. 2012). PTSD severity may lead to changes in the brain that increase the risk of errors among police officers (Swick et al. 2012; Covey et al. 2013). Further, the severity of anxiety stimulates cardiovascular activity that changes emotion processing (Garfinkel et al. 2014). For example, anxious individuals may respond with more fear when they experience higher autonomic arousal (e.g., increased heart rate).
- During stress, the brain shifts from "flexible cognitive" processing to "rigid habit memory systems", which raises the risk of mental health conditions among vulnerable individuals (Schwabe and Wolf 2013, p. 60). Police officers frequently encounter stressful and potentially traumatic situations that raise the risk of psychological vulnerability.

What we don't know

- Currently, no tests exist that predict if an individual officer with a mental or physical health condition will be more likely to use force, exhibit excessive force, or commit a use of force error.
- Although it is known that stress and policing are associated with elevated risk for acquiring mental and physical health conditions, there is no test to predict, with any accuracy, if any one officer will develop a mental or physical health condition due to occupational stress exposures.
- Although it is known that cognitive flexibility is reduced during high-stress encounters, impacting an individual's ability to think and apply their training, it is not known to what degree this happens in police officers or how the shift from flexible to habitual response patterns impacts an officer's interactions with PMIs.
- If an officer has a mental health condition, such as PTSD, we don't know what effect that will have on their interactions with PMIs.
- We also don't know if interventions that improve the physical and mental health of police officers reduce use of force errors and improve police interactions with PMIs.

As reviewed in Arpaia and Andersen (2019), stress has a significant, negative, and global effect on health and performance. Stress increases social unrest and negatively effects social connections, communication skills, relationships, and effectiveness. Stress has the potential to negatively impact neurological and autonomic nervous system regulation, which are fundamental components of cognitive and behavioural control (Burke 2017; Fridman et al. 2019). The good news is that it is possible to become aware of internal physiological processing related to stress and emotion regulation (Price and Hooven 2018). Adaptive autonomic nervous system modulation is associated with improved emotion regulation (Mather and Thayer 2018). Further, studies show promise in teaching skills to modify stress responses, which may in turn facilitate effective emotion regulation practices, although more research is needed in this area (Andersen et al. 2018b; Price and Hooven 2018). We highlight what we know and don't know about stress awareness and emotion regulation during police–citizen interactions.

What we know

- Fatigue and stress are associated with changes that interfere with cognitive function (Thayer and Hansen 2009).

- Internal physiological processes occur continuously during stress to shape perception, cognition, emotion, and behaviour (Garfinkel et al. 2014; Seth 2013). Acute stress reactions (e.g., fear) suppress the parasympathetic nervous system, which is responsible for keeping the brain in a calm focused state associated with cognitive flexibility (Garfinkel et al. 2014; Berger et al. 2019). This means that physiologic stress responses may change the way a police officer thinks and acts during volatile interactions with PMIs.

- Police officers experience internal stress physiology during training and active duty, with negative implications for decision-making and use of force errors (Nieuwenhuys and Oudejans 2010; Andersen et al. 2018b; Baldwin et al. 2019; Giessing et al. 2019).

- Stress levels rise over the course of multiple encounters. Preliminary research indicates that physiological stress arousal may increase across police encounters that occur in rapid succession (Bertilsson et al. 2019) and that rising stress levels may have an impact on an officer's ability to communicate effectively over the course of multiple stressful calls (Arble et al. 2019).

- Stress impacts motor performance and communication skills. Patterns of maladaptive motor strategies have been observed in police officers during stressful encounters (Anderson et al. 2020). In addition, self-reported anxiety has been related to reduced shooting accuracy due to motor performance detriments during stress (Nieuwenhuys and Oudejans 2017). Verbal communication skills in particular are impacted by stress and appear to deteriorate more rapidly than tactical movements during stress (Arble et al. 2019).

- Stress can negatively impact decision-making. Stress-induced cortisol impacts activity in brain regions responsible for decision-making and memory, including the prefrontal cortex and hippocampus (Di Nota et al. 2020). During critical incidents, police officers have been shown to rely more on implicit, automatic decision-making strategies over more deliberate, analytical strategies (Hine et al. 2018). Therefore, it is important that KSAs that are required during critical incidents are effectively trained and stored in long-term memory

- Behaviour, such as facial movements and body posture, communicate signals to the brain that can "bias emotional judgements" about the situation at hand (Garfinkel et al. 2014, p. 6537). This means that the way an officer communicates with a subject (e.g., voice tone, body posture, and facial expression) may increase both the officer and the subject's stress levels and impact the outcome of a call.

- Research shows links between physiological control and improved emotion regulation, behavioural control, and goal-directed action (Saus et al. 2006; Smith et al. 2019).

- Various techniques to modify internal physiology during stress have shown preliminary success in supporting effective performance, wellness, and emotion regulation outcomes (Carmichael 2009; Andersen and Gustafsberg 2016, Anderson et al. 2018b; Price and Hooven 2018).

What we don't know

Despite strong evidence suggesting that police work can have a significant impact on an officer's physical and mental health, relatively little attention has been paid to the impact of stress on performance (Bennell et al. 2021), and very little is known in regard to how an officer's stress and health influence interactions with PMIs. Some key questions that still require answers include:

- Do interventions that improve a police officer's ability to modify their stress response improve interactions with PMIs?

- Does training an officer to control their physiological stress responses improve emotion regulation and behavioural control?

- Does improved emotion regulation and behavioural control increase an officer's ability to react appropriately to conflict and emotional provocation?

- Do biases and stigma-based attitudes trigger a stress response similar to responses that have been shown to impact police performance and decision-making?

Officer competencies

Researchers have identified various KSAs that will help police officers prevent interactions with the public from escalating and successfully de-escalate interactions that have become volatile, including interactions with PMIs. Bennell et al. (2018) completed a narrative review of relevant academic and grey (technical reports) literature and identified a number of KSAs that are likely to be important for these purposes. The material focused on in this sub-section draws on the findings from that review.[11]

What we know

The most essential competencies likely include:

- Knowledge of organizational policies (e.g., policies related to when various use of force options can be used; Alpert and Dunham 2010), legislation (e.g., Mental Health Act; Cotton and Coleman 2008), and laws (e.g., authority to use force; Cyr 2016).
- An understanding of mental health issues, such as an awareness of symptoms of mental illness, stigma attached to PMIs, available community mental health resources, etc. (Cotton and Coleman 2010).
- An ability to effectively interact with diverse groups, including members from marginalized communities. This should include an awareness of one's attitudes towards marginalized groups, such as PMIs, and an ability to manage the expression of biases (Fridell 2017).
- Awareness of what stress is and how it can impact officer performance, decision-making, memory, and so on, but also an understanding of how to effectively manage that stress before, during, and after an encounter (Andersen and Gustafsberg 2016).
- Communication skills, especially skills related to rapport-building, empathy, and active listening (Krameddine et al. 2013; Engel et al. 2020a, 2020b).
- Decision-making and problem solving skills, including a focus on pre-encounter planning and adaptive problem-solving during encounters to ensure optimal responses from the officer (Boulton and Cole 2016; Rajakaruna et al. 2017).
- Perceptual skills, especially those that are part of an officer's risk assessment, such as situational awareness (Saus et al. 2006).
- Motor skills, such as those involved in the use of various use of force options that might be effective for de-escalating volatile encounters (e.g., conducted energy weapons; Ho et al. 2011).[12]

[11]The review was conducted in two stages. The first stage involved an attempt to identify core competencies highlighted in existing literature as being potentially relevant to nonescalation, de-escalation, and use of force in the policing context through database searches (and further searches based on reference lists). The second stage involved a similar, but more targeted search of various databases to determine the degree to which the identified competencies were supported by empirical evidence, specifically in the form of archival data analysis, experimental studies, randomized controlled trials, systematic reviews, meta-analytic research, and other forms of empirical investigation. This work was funded by a grant from the Government of Ontario, Ministry for Community Safety and Correctional Services.

[12]While the use of such options for de-escalating interactions with the public are controversial, research suggests that conducted energy weapons can be used to avert situations that could result in injuries, For example, Ho et al. (2011) found that simply presenting the weapon or activating its laser sighting device (versus deploying the probes) is usually sufficient for gaining control over situations.

- Modulating emotions and behaviours appropriately to rise above conflicts and inhibit inappropriate responses (Owens et al. 2018).
- Professionalism during interactions with the public (Watson and Angell 2013).

There are also other competencies that, while not investigated as thoroughly by researchers, are likely to be critical when officers are attempting to prevent escalation during encounters with the public or trying to de-escalate situations:[13]

- Understanding the role of the police in a free and democratic society.
- Tactical decision-making, such as how to effectively create distance between the officer and the PMI to create time for communication and problem solving, and how to use cover and concealment appropriately.

What we don't know

Despite some level of agreement that certain competencies are likely to be important for nonescalation and de-escalation purposes, there are still many unanswered questions with respect to these KSAs:

- How can we select officers who are likely to possess these competencies or can easily learn them?
- Are certain competencies more important than others? If so, which ones, and what role do they play in police interactions with PMIs?
- How do these competencies interact with one another? For example, in the context of an interaction between an officer and a PMI, how does stress influence an officer's ability to communicate effectively?
- To what degree do officers receive training related to these competencies, and if they do receive training, how are these officers evaluated during that training to ensure they are developing mastery around these competencies?
- Can training have a positive impact on these KSAs (i.e., how easily can police officers develop these competencies if they don't already possess them)?

Nonescalation and de-escalation strategies

Officers can employ a range of nonescalation and de-escalation strategies in their interactions with PMIs. The material below is drawn from several narrative and systematic literature reviews conducted in police and nonpolice settings (e.g., Price and Baker 2012; Andersen et al. 2017; Todak 2017).

What we know

Specific strategies have been identified that may allow officers to prevent situations from escalating in the first place or to de-escalate situations that have already escalated. Many of these strategies can be categorized into Approach, Position, Communication, Containment, and Assistance strategies, as outlined in the Decision Model. While these strategies are not unique to encounters with PMIs, they are important for these encounters, and some of the strategies outlined below, such as keeping things simple and reducing stimulation, may be particularly critical when interacting with PMIs.

[13]In the study conducted by Bennell et al. (2018), these additional competencies emerged from interviews with subject matter experts.

Approach strategies

- Pre-encounter planning, which can involve assessments of what potential risks could be involved in an encounter, is a potentially useful strategy (Price and Baker 2012; Rajakaruna et al. 2017). Developing a plan on the way to a call (related to how the officer intends to handle the situation) may increase an officer's ability to remain calm and reduce the likelihood of force being required to resolve the incident.
- There are situations that require officers to confront citizens in a forceful manner (e.g., when assaultive behaviour is being exhibited). However, in the majority of cases where nonescalation or de-escalation is the goal, officers should be ready to use force if necessary, but approach the situation in a calm, non-confrontational manner, which indicates to the subject that the officer sincerely wants to help and does not wish to use force (Richmond et al. 2012).

Positioning strategies

- Officers should respect personal space to reduce subject anxiety and enhance communication efforts (Price and Baker 2012; Richmond et al. 2012).
- Another strategy is tactical repositioning, which involves the continual assessment of the situation so that officers can adjust their position relative to the subject to maximize time and distance (International Association of Chiefs of Police 2020). Tactical repositioning can also involve complete disengagement from the situation if appropriate.
- Relatedly, officers can position themselves within their environment to conceal themselves, protect themselves, and (or) put obstacles between themselves and the subject (Abanonu 2018). These strategies maximize officer safety while allowing them the time to more effectively problem solve, make decisions, and communicate.

Communication strategies

- Active listening allows officers to get to know the subject, determine what brought them to their current situation, and use information they elicit to gain cooperation (Todak 2017). Oliva et al. (2010) identified various active listening skills including: (*i*) introducing oneself, (*ii*) using "I" statements (e.g., "I can hear that you are upset"), (*iii*) restating (e.g., the subject says "He left me when I really needed him," to which the officer responds, "You feel abandoned"), (*iv*) validate/reflecting (e.g., the subject says, "I'm tired of no one listening to me, it's really pissing me off," to which the officer responds, "It makes you angry"), and (*v*) summarizing/paraphrasing (e.g., "Okay, so what you have told me is that [restating the information], and you feel [identify the emotion]. Do I understand you correctly?").
- Officers should also treat the subject with respect in terms of tone and communication content (Todak 2017). This strategy assumes that aggression on the part of individuals is often a response to a loss of dignity (Carlsson et al. 2000).
- Officers need to remain calm and manage their emotions. This needs to be conveyed to the subject to maintain control of the situation (Todak 2017).
- Being honest involves attempts by the officer to be truthful with the subject about the situation, the outcome of the interaction (e.g., legal ramifications), officer obligations, and so on (Todak 2017). Being honest can allow the officer to gain cooperation by building trust, which has been identified as a characteristic of effective de-escalators (Price and Baker 2012).
- Officers can also show empathy, which requires that the officer put themselves in the shoes of the subject so they can understand how he/she/they came to be in their current situation (Todak 2017). This can include acknowledging the subject's perspective, seeking to understand the subject, and anticipating the subject's needs.

- Compromising can also be an important strategy. This involves rewarding good behaviour when it is possible to do so (Todak 2017). For example, an officer might provide a requested cigarette to the subject in return for their cooperation.
- It is important for the officer to show humanity, which encourages officers to focus on their human qualities over their authority as a police officer. Todak (2017) suggested there is a power differential between a subject and a police officer and by using the humanity strategy this differential can be minimized, which will assist officers in gaining trust and cooperation.
- In a similar way, officers can use an empowerment strategy, which involves making the subject a part of the decision-making process so that they feel they have more control over their situation (Todak 2017). As Klugiewicz et al. (2018) suggested, this might include providing individuals with options and allowing them to choose between them (e.g., "I need to take you to a hospital. There are several we can go to, is there a hospital that you prefer?").
- Officers can also set clear limits by telling the subject what behaviour is acceptable and the consequences for inappropriate (e.g., violent) behaviour (Richmond et al. 2012).
- Given that police–citizen interactions can be chaotic, and subjects may be confused, officers also need to keep everything simple. Most importantly, officers need to keep communication as simple and concise as possible, such as having only one person talking to the subject, using simple sentences, and only giving one direction at a time (Richmond et al. 2012).

Containment strategies

- If possible, officers can separate the subject from others. This can enhance privacy and may reduce feelings of being trapped (Richmond et al. 2012; Klugiewicz et al. 2018). This can also increase officer, subject, and public safety (e.g., by decreasing the chance that the subject will hurt others or that bystanders will interfere). Sometimes, even physical isolation can be beneficial, if appropriate. This can allow the subject the time they need to calm down and engage in communication with officers.
- As mentioned, police–citizen interactions can be chaotic and subjects, especially PMIs, can sometimes be confused. Given this, officers should try to reduce stimulation (e.g., decreasing the volume of radios, softening one's voice, turning down the lights, etc.; Price and Baker 2012; Richmond et al. 2012).

Assistance strategies

- Officers can also rely on a strategy called switching out, which requires that officers recognize when they are not getting through to a person. In these cases, officers can ask for assistance and switch out with another officer to see if they can better connect with the individual (Todak 2017).
- In a broader fashion, officers can enhance officer, subject, and public safety by activating necessary resources (White et al. 2021). This might include back-up, a mobile mental health crisis team, emergency medical services, etc.

We also know that:

- Officers report using some of the strategies described above and see value in their use (White et al. 2021).
- Officers appear to use some de-escalation strategies (e.g., respect, humanity, and honest tactics) more than others (calm and empathy tactics; Todak and James 2018).
- Some de-escalation strategies (e.g., calm and humanity tactics) have been related to encounter success (i.e., whether subjects are calm at the end of the encounter; Todak and James 2018).

- Using de-escalation strategies can be challenging for officers (Todak and White 2019). For example: (*i*) de-escalation strategies can't always be used when other priorities (e.g., officer safety) must take precedence; (*ii*) dynamic situations that are not well contained often limit how long officers can spend de-escalating a situation; (*iii*) persons under the influence of drugs and (or) alcohol, or suffering from a mental illness, often don't have the capacity to be reasoned with, thus limiting the impact of some de-escalation strategies; and (*iv*) de-escalation often doesn't work with committed individuals who have their mind set on a particular course of action (e.g., suicide).

What we don't know

Despite a recent increase in nonescalation and de-escalation research, many issues related to these strategies remain unclear. For example, we don't know:

- how nonescalation and de-escalation should be defined and what the implications of different definitions are;
- how often de-escalation strategies are used by officers across police jurisdictions;
- whether certain strategies are used more often than others across police jurisdictions;
- whether these strategies are equally effective for preventing and (or) reducing conflict, tension, or harm in a situation;
- whether the use of these strategies compromise officer safety, and if so, how;
- how various factors, such as organizational policies, influence strategy use; or
- how the competencies highlighted above (e.g., stress management) relate to strategy use and effectiveness.

Non-escalation and de-escalation training

A search of the academic and grey (technical reports) literature revealed that many police officers receive training to prevent situations, including those involving PMIs, from escalating and to de-escalate situations that have already escalated. In this section we provide a brief overview of findings related to mental health training, which is designed in part to ensure that police officers don't escalate interactions involving PMIs (this topic is also dealt with in the next section where crisis intervention training is discussed). We focus instead on what we know and don't know about de-escalation training.[14]

What we know

- Entry-level mental health training is provided to many police officers in Canada and elsewhere, although such training varies from one jurisdiction to another in terms of amount, format, content, and goals (Coleman and Cotton 2010).
- Much of this training focuses on relevant policies and legislation, symptom recognition, crisis intervention strategies, and knowledge of community mental health resources (Krameddine and Silverstone 2015).
- Evaluations of mental health training are mixed, but there is a reasonable amount of evidence that such training can increase the degree to which police officers feel confident in their interactions with PMIs (e.g., Krameddine et al. 2013) and reduce stigma toward PMIs

[14]Some of the competencies highlighted above, such as stress management and emotion regulation, are arguably not dealt with at all in typical police training. Other competencies are targeted in training, but not in nonescalation or de-escalation training. For example, relevant competencies may be dealt with in training around fair and impartial policing (fipolicing.com) or in use of force training.

(e.g., Wittmann et al. 2021). However, caution is warranted when considering such findings given that control groups are often missing from studies and relatively short follow-up times may not pick up on KSA decay.

- Studies examining training-related changes in behavioural outcomes following mental health training are relatively rare compared to more subjective outcomes, such as increased confidence or reduced stigma. However, some relevant studies exist. For example, a Canadian evaluation of scenario-based mental health training conducted by Krameddine et al. (2013) found that police officers exhibited more empathy toward PMIs, communicated more effectively with PMIs, and used more verbal de-escalation skills and less force with PMIs in the 6 months following training.

- In addition to mental health training, de-escalation training is also very popular, although it too varies across jurisdictions (Engel et al. 2020b), including the training provided to police officers in Canada (Dubé 2016).

- Well-established de-escalation training programs exist in the US, such as Tact, Tactics, and Trust (T3) social interaction training (McLean et al. 2020), Integrating Communications, Assessment, and Tactics (ICAT) training (Engel et al. 2020a), and Verbal Judo (Giacomantonio et al. 2020). The most rigorously evaluated de-escalation training program is ICAT. Recently, Engel et al. (2020a) found this training improved certain behaviours among police officers over a 2-year period, including the us of force (–28.1%) and citizen (–26.3%) and officer injuries (–36.0%).[15]

- In Canada, the most popular de-escalation training program appears to be Crisis Intervention and De-escalation (CID) training, which is a mandatory course for some officers. This training is designed to ensure officers are able to use CID techniques to effectively manage policecitizen interactions, including incidents involving PMIs (Canadian Police Knowledge Network 2020). We are not aware of any independent, peer-reviewed evaluations of this training.

- Other training programs also exist in Canada, which focus less on de-escalation strategies and more on other competencies, that will likely improve an officer's ability to de-escalate, such as Andersen's international Performance, Resilience, and Efficiency Program, which has been shown to improve performance in dynamic, high stress situations by teaching officers methods for physiological stress control (Andersen et al. 2018b).

- Evaluations of de-escalation training in any context are rare and when they are conducted, they are often of questionable quality (Engel et al. 2020b), making it difficult to draw strong conclusions about the effectiveness of current training programs.

- Like mental health training, evaluations of de-escalation training that have been undertaken present a generally favourable view, but more so for outcomes related to trainee knowledge, attitudes, and perceptions than behavioural outcomes, such as severity of incidents, application of strategies, organizational impact (Engel et al. 2020a).

- Issues beyond training need to be considered to ensure that nonescalation and de-escalation strategies are prioritized by police officers (when safe to do so) and are used effectively. In particular, organizational policy appears to play an important role in guiding officer behaviour in potentially volatile situations (e.g., Terrill and Paoline 2017; White 2000).

What we don't know

Given the limited research on nonescalation and de-escalation training (Engel et al. 2020b), many critical questions currently remain unanswered:

- Are the goals of nonescalation and de-escalation training programs being met?

[15]These improvements occurred from January 2018 to April 2020. ICAT training took place from February to November, 2019.

- Are some training programs more effective than others? If so, why?
- For training programs that are effective, what are the specific training components that make them effective?
- Do the effects of training programs go beyond knowledge and attitude changes to include changes in behavioural outcomes (e.g., actual application of strategies)?
- What is the optimal way to deliver nonescalation and de-escalation training (e.g., with respect to amount, format, content, etc.)?
- How rapidly do nonescalation and de-escalation skills degrade following training and how often is refresher training required?
- If nonescalation and de-escalation programs are effective, what impact do they have on police–public relations?

Recommendations

1. Develop a definition of nonescalation and de-escalation that is well accepted across Canadian police jurisdictions.
2. Continue studying the physical and mental health implications of policing for police officers and ensure that appropriate supports are put in place for officers to help them manage their health and well-being.
3. Study the impact of an officer's mental health on their interactions with the public, particularly with PMIs, including their ability to make sound decisions related to nonescalation, de-escalation, and use of force.
4. Study the impact of an officer's mental health on their ability to regulate their emotions and behaviour in potentially volatile situations with PMIs.
5. To the extent that the competencies highlighted in the literature positively influence the quality of police–citizen interactions, actively select for these competencies when hiring new officers.
6. Introduce competency-based training and evaluate how the various competencies highlighted above influence interactions that police have with role players in realistic scenario-based training environments and with PMIs in field settings.
7. Carry out studies to determine how frequently various nonescalation and de-escalation strategies are used by police officers and which strategies relate to success so that those strategies can be focused on in training.
8. Examine the relationship between the use of de-escalation strategies and officer safety.
9. Conduct evaluations of nonescalation and de-escalation training programs offered in Canada (e.g., CID training) to determine their impact, being sure to focus on behavioural outcomes (e.g., on-the-job performance) in addition to outcomes related to knowledge and attitudes.
10. Establish national standards for mental health and de-escalation training in Canada to ensure all officers are appropriately trained.
11. Examine issues beyond police training, in particular organizational policies related to nonescalation, de-escalation, and use of force, to determine how these influence officer responses in police–citizen interactions, including those involving PMIs.

Crisis intervention teams

The Crisis Intervention Team (CIT) model originated more than 30 years ago in Memphis, Tennessee, USA, as a frontline response to mental health related calls to police services (it is sometimes referred to as the Memphis Model). CIT was born in response to a critical incident in which a police officer shot a person with mental illness and addiction issues, which highlighted the need for a better police response to persons in mental health crisis (Compton et al. 2008). Representatives of the Memphis police force, academia, and mental health professionals developed CIT training to achieve the goal of diverting PMIs away from the criminal justice system and into appropriate mental health supports whenever possible (Hassell 2020), build better collaborations between the police and mental health services and systems to provide more accessible services to persons in crisis (Compton et al. 2008; Koziarski et al. 2020), and increase officer and client safety during these encounters (Compton et al. 2008; Rogers et al. 2019). Since its inception, CIT has become a popular police-based alternative response to calls involving PMIs in many North American police organizations (Taheri 2014).

The way CIT works is to deliver a comprehensive 40-h training package on crisis intervention and mental health to police officers typically working as frontline patrol officers. A template of the Memphis model CIT training is available through the University of Memphis (see University of Memphis CIT Centre: cit.memphis.edu). According to this template and other generic CIT training models, this training typically includes classroom delivered content intended to develop an officer's knowledge of mental illness and factors that can influence one's mental health presentation; knowledge of available community resources and services; development of diversity awareness for when engaging PMIs; and legal matters relevant to the duties of a police officer when responding to calls involving persons experiencing a mental health crisis. Via simulation-based experiential learning scenarios, the CIT training also teaches skills in de-escalation and situational assessment practices to minimize the risk of violent outcomes and enhance safety (Compton et al. 2008; Pelfrey and Young 2020). CIT also has training components for dispatch operators to identify calls for the specialized team deployment and a component for the local mental health facilities to which teams take clients in need of additional services (Rogers et al. 2019). Notably, establishing agreements with mental health service agencies that require them to receive CIT clients as referrals and in-person drop-offs is argued to be an essential element of CIT (Pelfrey and Young 2020).

A recent survey of police organizations across Canada suggests that there is variation in deployment and operational protocols of CIT programs (Koziarski et al. 2020), likely because they are adapted to the unique jurisdictional goals, resource capacities, and service options of the communities in which they are being implemented (Pelfrey and Young 2020).

What we know

Much of the available research on CIT has examined the effects of the crisis intervention training on officer knowledge and perceived confidence in responding to mental health calls, but data also exist on the effects on CIT-trained officer actions and their call outcomes. Data sources for this information typically include use of officer attitude and self-reported call response surveys, interviews with officers about their experiences with CIT training and call response, interviews and focus groups with CIT managers and community stakeholders, and official statistics concerning number of voluntary and involuntary transports to hospital/mental health services and other police actions (Pelfrey and Young 2020). Narrative and systematic literature reviews are available on CIT (Compton et al. 2008), especially in the recent literature (Steadman and Morrissette 2016; Peterson and Densley 2018; Rogers et al. 2019; Watson and Compton 2019). These reviews are beginning to include meta-analytic reviews as well (Taheri 2014). Some of this research is based on simple pre- and post-training

research designs to determine how officers changed in their knowledge, attitudes, and perceived practices from before to after training. However, studies using stronger research designs exist as well to offer insight into the influence of CIT in comparison to the knowledge, attitudes, and perceived practices of non-CIT-trained officers.

Officer impact

- CIT-trained officers self-report gains in mental health knowledge and greater competency in illness detection relative to pretraining knowledge levels (Compton et al. 2008; Bonfine et al. 2014; Ellis 2014; Hassell 2020; Seo et al. 2021), as well as enhanced de-escalation skills (Compton et al. 2014). Some of these reported gains are measured shortly after CIT training (Ellis 2014), whereas others measure officer knowledge and perceived competency gains more than 2 years after CIT training (e.g., Bonfine et al. 2014), suggesting sustained impact beyond the immediate effects of training. However, direct observations of these competencies are less often a focus of available research and research on skills and abilities related to mental health and crisis responding in service provider populations show some degradation over time (Holmes et al. 2019). Thus, more long-term longitudinal research is needed to understand the long-term field competency of CIT to determine the appropriate timing of refresher training. CIT-trained officers report feeling better prepared to respond to situations involving persons with mental illness relative to non-CIT-trained officers (Borum et al. 1998; Compton et al. 2008; Ritter et al. 2010; Bonfine et al. 2014), including greater confidence in how to respond to individuals experiencing psychosis and suicidal ideation/behaviours (Compton et al. 2014).
- CIT training knowledge and self-efficacy benefits for officers has been sustained at least for 1-2 years post-training (Compton et al. 2014).
- Officers working in the same organization as the CIT-trained officers tend to view the program as meeting its goals of reduced criminalization of PMIs, minimizing time spent on mental health calls, and better community safety (Borum et al. 1998).
- One study indirectly examined the benefits of recruiting officers who volunteer (self-select) for CIT training rather than assigning them to these roles. Compton et al. (2017) compared self-selected officers for CIT training to those without CIT training (a proxy for any officer assigned to do this work rather than seeking these roles) on knowledge, attitudes, and crisis intervention skills, as well as call response in actual crisis call situations. Two years post-training, the CIT group maintained generally more positive attitudes about mental illness, displayed stronger de-escalation skills, and made more informed referral decisions when responding to calls than did the non-CIT-trained group. Although CIT officers were more likely to use physical force (which included handcuffing) than the non-CIT officers in their citizen encounters, they were also more likely to refer individuals to treatment services and less likely to arrest the individual when they did use physical force relative to the practice of the non-CIT officers. Statistical adjustments for such factors as officer gender, use of empathy, and prior exposure to the mental health field did not change these findings. Compton et al. (2017) concluded that self-selection for CIT training and team membership has value over obligating an officer to accept this role.
- Reduced adherence to mental health stereotypes and stigmatizing beliefs have been a consistent finding among CIT-trained officers relative to pretraining attitudes and that of officers not trained in CIT (Compton et al. 2008; Ellis 2014).
- Relative to pretraining knowledge, CIT-trained officers tend to be more knowledgeable of local resources available to respond to the needs of PMIs (Compton et al. 2008). CIT-trained officers also tend to view emergency services systems as more helpful than officers without this type of training (Borum et al. 1998).
- The frequency of using informal (i.e., resolved on scene or no formal action taken) resolutions to mental health calls is similar regardless of whether CIT or non-CIT officers respond (Watson et al. 2021).

Client impact

- Clients referred to psychiatric services by CITs are similar in characteristics to clients referred to such services by non-CIT officers (Broussard et al. 2010), suggesting that CIT training does not affect the type of client referred for emergency mental health services by police.
- Some research suggests that CIT clients are less likely to be arrested and more likely to be redirected to mental health services in police organizations that have CIT initiatives relative to those that do not (Compton et al. 2008). However, more recent data suggest that a CIT response did not significantly influence the odds of whether a client is arrested, whereas simply having the call pre-identified as a mental health call reduced the likelihood of arrest by both CIT and non-CIT responding officers (Watson et al. 2021).
- When CIT officers are involved, the balance shifts from involuntary apprehensions for mental health reasons to greater use of voluntary treatment referrals (Hassell 2020).
- CIT teams have a moderate effect on diversion away from jail and hospital resources (Seo et al. 2021).

System impact

- CIT implementation has been widespread with adoptions in various policing contexts, including rural and small communities (Strassle 2019; Semple et al. 2021); large urban centres (Helfgott et al. 2016), U.S. state (but not province/territory) level (Oliva et al. 2010), and airports (McGriff et al. 2010).
- Some studies have found a reduction in the rate of involuntarily transports to mental health facilities for both CIT and non-CIT-trained officers relative to the preceding years before CIT was initiated in an organization (Teller et al. 2006), suggesting spillover benefits in nontrained officers in how they perceive and respond to mental health calls.
- Some research suggests that CIT officers have faster response times to mental health crisis calls than non-CIT officers (Compton et al. 2008), and CIT can reduce time spent on scene (Seo et al. 2021).
- Cost–benefit analyses usually favour CIT models due to deferred hospitalizations and reduced detention/jail time, though savings are described as modest in the few studies formally examining this issue (El-Mallakh et al. 2014).

What we don't know

- Although the University of Memphis provides a template for the CIT training, there is variation in this training across jurisdictions given the tendency to use local resources to develop and provide this training (Pelfrey and Young 2020). Thus, the nature of the 40-h training is not standardized per se unless deliberately following the Memphis CIT model.
- It is unclear how well the knowledge and de-escalation competencies learned with CIT are sustained over time post-training given that very little research examines this question with prospective long-term follow-up studies, and what does exist is limited to 2 years post-training at most. Thus, it is not clear how often training should be provided to officers and others involved in CIT delivery to sustain gains in knowledge, competencies, and system benefits, and to minimize program drift.
- Most of the research on CIT focuses on the effects of the training rather than the functional aspects of the model (Watson and Compton 2019). For example, research is lacking on the operational aspects of CIT, such as the ideal call threshold for deployment of CIT and which forms of mental health crisis calls CIT may be more effective working with versus calls where it may be less impactful. Research is also lacking on the factors that influence the degree to

which clients are more successfully engaged with appropriate services post-CIT contact, despite this being one of the goals of CIT.

- Data are lacking on the degree to which CIT reduces criminalization among the individuals receiving a CIT response (Rogers et al. 2019). Very few studies examine detention and arrest/charge outcomes following a CIT response using official data sources (versus officer perception and self-report; Peterson and Densley 2018) and the only meta-analysis on CIT outcomes found no effect of CIT response on arrest rates (Taheri 2014).

- It is unclear whether availability of CIT-trained officers affects the need for deployment of emergency tactical teams by police forces. Compton et al. (2009) found that CIT availability had no effect on the likelihood of tactical team deployment, arguably due to the low utilization of tactical teams and the different functions of these two teams. However, earlier studies did report reduction in use of tactical teams for mental health related calls (see review by Pelfrey and Young 2020).

- It is unclear whether CIT achieves its goals of increased officer and client safety and reduces the need for use of force (Rogers et al. 2019; Taheri 2014). A recent meta-analysis found only a small impact on use of force, arrests, and injuries for CIT (Seo et al. 2021).

- Research on the role of officer characteristics and the impact of community resources on the outcomes achieved from CIT is lacking (Peterson and Densley 2018).

- Most sites where CIT has been implemented train one-quarter or less of their frontline officers in CIT, which may be insufficient to meet higher volume mental health crisis calls and recommendations have been made to provide some form of crisis intervention training for all officers (Seo et al. 2021). However, research is lacking on the benefits and limitations of having both CIT for some officers alongside delivery of lighter versions of this training for all frontline officers.

- Most of what is known about CIT comes from CIT implementation research in the US. Gaps remain in how well CIT works within a Canadian context (Koziarski et al. 2020). Furthermore, this research often does not rely on randomized or matched control study designs that best determine outcomes for clients, officers, and systems when CIT has been implemented (Peterson and Densley 2018).

Co-response teams

Co-response Teams (CRTs) have existed for more than 20 years. Although several CRT models operate in Canada (Koziarski et al. 2020; Shapiro et al. 2015), their common feature is a dedicated mental health professional who responds to mental health crisis calls alongside a police officer. In full team models, this clinician works in an integrated manner with police officers specifically trained in mental health crisis response and de-escalation, often in the form of CIT training or equivalent (e.g., Helfgott et al. 2016). In other models, the mental health professional works with general duty patrol officers. Some models operate 24 hours/7 days per week, whereas others operate within specific hours of service and have gaps in service access (Koziarski et al. 2020). The mental health professional is often a nurse or a social worker, and there is sometimes a consulting psychiatrist attached to the service. In most cases, co-response teams are a secondary response service (i.e., called to scene after patrol officers have responded and determined the need for CRT), which is likely due to the presence of a civilian on the team; however, some teams in Canada do operate as a first response point of access (Koziarski et al. 2020). The service is usually delivered on-scene, though some models use phone/remote access support to officers on scene (Shapiro et al. 2015). The goals of CRTs are similar to those of CIT in terms of reduced criminalization of PMIs, strengthening opportunities for de-escalation, diversion from hospitalization to community services, and safer outcomes for clients and officers (Koziarski et al. 2020; Shapiro et al. 2015). The joint police–clinician response is argued to be of value as the clinician is the expert in crisis intervention and mental health care, whereas the police officer is

there to support de-escalation while also being attentive to safety risks and has the capacity to enact appropriate response options for safety purposes when warranted (Shapiro et al. 2015).

What we know

A search of the academic and grey (technical reports) literature was conducted to learn about the format of CRT models and their impact for officers, clients, and systems, with emphasis given to peer-reviewed literature in the reporting of these findings. This review indicated that various evaluations of CRT have been conducted, including recent peer-reviewed evaluations of this model in Canada where they are more commonly used relative to CIT models (Koziarski et al. 2020). These evaluations typical use pre- and post-evaluation designs and (or) comparison sites to speak to the team impact relative to general patrol responses.

Officer/mental health professional impact

- Clinical crisis staff report feeling safer when attending community crisis calls alongside police officers (Baess 2005).
- Police who receive crisis intervention training tend to show greater tendency towards valuing the use of verbal de-escalation and active listening techniques with individuals in crisis (Allen Consulting Group 2012; Canada et al. 2012).
- There is positive impact on officers' understanding and perception of mental illness (Seo et al. 2021). For example, CRT officers report a better understanding of mental health issues (i.e., diagnostic criteria and behavioural interventions, Baess 2005), greater tolerance for responding to PMIs, and more strongly endorse their role in supporting PMIs than officers working in departments without these programs (Abbott 2011).
- Use of force is infrequent in police–citizen interactions, but persons in mental health crisis are more likely to be the subject of use of force incidents (Livingston et al. 2014; Morabito et al. 2017). Blais et al. (2020) recently examined use of force rates for the Mobile Crisis Intervention Team in Sherbrooke, Quebec. They found a significant decrease in the rate of use of force when CRT responded relative to the control group. Specifically, the rate of use of force was 12.1% for control group units compared to 4.2% for CRT units.
- The effect of CRTs on arrest rates is small (Seo et al. 2021), though few studies are available to examine this outcome.

Client benefits

- Clients served by CRTs display greater engagement in follow-up services relative to matched control cases not serviced by these teams (Kisely et al. 2010) and report positive experiences with CRT responders (Kirst et al. 2014; Lamanna et al. 2018).
- CRT results in a larger proportion of referrals to treatment/community services (Semple et al. 2021) and are more likely to be managed within their own social networks (Blais et al. 2020) than when general patrol responds, with positive impact on diversion of clients away from jail/hospital resources (Seo et al. 2021).
- *Involuntary Mental Health Act* apprehensions tend to occur less frequently when CRT responds to mental health calls relative to general patrol (Blais et al. 2020). For example, Semple et al. (2021) found a decline from 37.9% to 11.8% involuntary apprehensions after a CRT model was implemented in an Ontario police service.
- Ambulances are more commonly used for client transport to hospital than police vehicles when CRT is involved relative to control sites without such teams (Allen Consulting Group 2012).

- Hospitalization rates tend to be lower for CRT-served clients relative to general patrol as there is better screening of who needs to be transported to the hospital with CRT (Scott 2000).

System benefits

- Research has demonstrated that the number of crises to which teams were able to respond tends to increase after implementing a CRT model relative to control sites (Kisely et al. 2010), though these teams tend to have minimal impact on response time given that they are often deployed as secondary responders (Seo et al. 2021).
- CRT results in decreased on-site handling time by other officers, thereby reducing the burden on police resources (Kisely et al. 2010; Allen Consulting Group 2012) and making them more available for other calls. In one Canadian study from Vancouver Island, the average on-site handling time was 52 min for CRT compared with 3 h in the control region (Allen Consulting Group 2012).
- With CRT models, average police wait times in the emergency department were consistently shorter (less than one hour) than calls involving non-CRT police officers (Fahim et al. 2016). This finding reflects potential for reduced burden on emergency departments and acute mental health services (Allen Consulting Group 2012). However, a Canadian survey of CRT/CIT programs indicated that the time it takes to transfer care from teams to hospital services remains a barrier for some jurisdictions (often 2–3 h wait time) and reduces the teams' ability to respond to other crisis calls while waiting for these transfers to take place (Koziarski et al. 2020).
- CRT may be efficient at reserving the intensive hospital emergency services for those most in need (Allen Consulting Group 2012). For example, in Hamilton, Ontario, Mobile Crisis Response Teams produced a 49% reduction in the overall rate of mental health crisis calls brought to the emergency department (Fahim et al. 2016).
- Although funding can be an obstacle for crisis response programs at the outset, and cost–benefit analyses are often not reported, the little data available suggests that CRTs can be cost-effective for police organizations due to reduced time spent on calls and time spent waiting in hospitals (Scott 2000; Allen Consulting Group 2012; Shapiro et al. 2015; Semple et al. 2021).
- In general, CRT staff, clients, and community stakeholders tend to have favourable views of co-responding police–mental health teams (Ligon and Thyer 2000; Baess 2005; Allen Consulting Groups 2012), though these views are sometimes contextualized by implementation and resources challenges that may limit positive outcomes (Koziarski et al. 2020).
- A recent comparison of CIT and CRT models in a meta-analysis by Seo et al. (2021) found that CRT produced stronger overall outcome effects. They suggested that co-responding partnerships between police and mental health may be more impactful than models that only rely on crisis intervention training for officers.

What we don't know

Despite emerging research speaking to the potential gains from using CRTs, there are gaps in knowledge that need to be understood before we can fully understand the essential elements of this model and its full impact on citizen outcomes, officer safety, organizational change, etc.

- Given diversity in the operational models of CRTs, it is not yet clear which co-responding model works best for which type of mental health crises and clients, or if it matters. For example, it is not clear whether teams that pair general duty patrol officers with the mental health professional are as, more, or less effective in achieving safety outcomes for clients and team members than use of a fully integrated, specialty-trained crisis response officer, though CIT research suggests the latter is likely to be more effective for de-escalation.

- Many CRTs receive some form of mental health awareness, de-escalation, and service resource training, but it is not yet clear what the ideal intensity of training is for these teams and this level of need may depend on the adopted CRT model.
- Cross-training is often lacking for mental health/social service providers to help them understand the roles, competencies, and responsibilities of police officers when responding to mental health calls (Steadman and Morrissette 2016).
- Arrest is not a common response to mental health crisis calls (Morabito et al. 2018), but PMIs are more likely to be arrested in general relative to persons without mental illness (Boyce et al. 2015). Thus, tracking arrest data are necessary to determine whether CRTs reduce criminalization of persons in mental health crisis. Unfortunately, data are mixed on whether CRTs reduce arrest rates relative to police jurisdictions without CRTs (Watson et al. 2019); however, some data suggest that CRTs can divert individuals away from the criminal justice system as evidenced through reduced use of police detention when CRT responds (Puntis et al. 2018; Seo et al. 2021).
- Research on the cost savings to the health sector are lacking, though findings of fewer emergency department visits and reduced hospitalization for CRT-served clients may contribute to cost savings for those sectors as well.

Recommendations

1. Jurisdictional scans of available resources should be conducted to understand local need for crisis response, available resources, and identify gaps to determine need for CIT, CRT, or other crisis response models.
2. Use of evidence-based strategies and models should be prioritized for informing police response to persons in mental health crisis, with some experts calling for all frontline officers to be trained in CIT (Hassell 2020).
3. Given available data on police-involved crisis response models, consideration should be given to reliance on CRT which blends aspects of CIT with deliberate inclusion of a mental health professional in the crisis response and allows for more direct linkages to service access for persons in crisis.
4. Investment is needed in research funding to evaluate best-practice CIT, CRT, and alternative crisis response models in the Canadian context and in specific jurisdictions and cultural contexts.
5. Effective police–community partnerships are needed to design and implement any crisis response strategy or program aimed at supporting police with how they respond to persons in mental health crisis.
6. Any crisis response model must have sufficiently resourced mental health, addiction, social, and other community support services available to refer clients beyond the crisis point.
7. Models that dispatch nonpolice service providers to mental health calls coming through emergency services points of contact, such as the Crisis Assistance Helping Out On The Streets (CAHOOTS) initiative in Oregon, US, and the Mental Health Ambulance Service in Stockholm, Sweden, and recently in Toronto, Canada, should be explored and evaluated.
8. Standardization is needed in the definition of mental health crisis police calls to allow for consistent data tracking and comparability across Canadian jurisdictions.

Acknowledgements

Judith P. Andersen was funded by The Ontario Ministry of Community Safety and Correctional Services (now Ministry of the Solicitor General) for the development of the *Decision Model for Police Encounters*.

Author contributions

LH, JA, CB, MAC, JK, and ADV conceived and designed the study. LH, JA, CB, MAC, JK, and ADV performed the experiments/collected the data. LH, JA, CB, MAC, JK, and ADV analyzed and interpreted the data. LH, JA, CB, MAC, JK, and ADV contributed resources. LH, JA, CB, MAC, JK, and ADV drafted or revised the manuscript.

Competing interests

The authors have declared that no competing interests exist.

Data availability statement

All relevant data are within the paper.

References

Abanonu R. 2018. De-escalating police-citizen encounters. Southern California Review of Law and Social Justice, 27: 239–269.

Abbott SE. 2011. Evaluating the impact of a jail diversion program on police officer's attitudes toward the mentally ill. Unpublished doctoral dissertation, Northeastern University, Boston, Massachusetts. [online]: Available from semanticscholar.org/paper/Evaluating-the-impact-of-a-Jail-Diversion-Program-Abbott/4ddd73104939d6d2193cceb2a1b55f045bb30f09

Allen Consulting Group. 2012. Police, Ambulance, and Clinical Early Response (PACER) Evaluation: Final Report. Author, Melbourne, Australia. [online]: Available from www2.health.vic.gov.au/about/publications/researchandreports/Police-Ambulance-and-Clinical-Early-Response-PACER-Evaluation-Report.

Alpert G, and Dunham R. 2010. Policy and training recommendations related to police use of CEDS: Overview of findings from a comprehensive national study. Police Quarterly, 13(3): 235–259. DOI: 10.1177/1098611110373993

Andersen JP, Boychuk E, Di Nota P, Back D, and Poplawski S. 2018a. Decision model for police encounters: A science-based approach for decision-making in police encounters. Final report to the Ministry of Community Safety and Correctional Services. University of Toronto, Toronto, ON.

Andersen JP, Di Nota PM, Beston B, Boychuk EC, Gustafsberg H, Poplawski S, and Arpaia J. 2018b. Reducing lethal force errors by modulating police physiology. Journal of Occupational and Environmental Medicine, 60: 867–874. DOI: 10.1097/JOM.0000000000001401

Andersen JP, Di Nota P, Poplawski S, Pitel M, Zurowski J, and Azmi P. 2017. The science behind de-escalation and use of force decision-making: Policy recommendations for police training. Final report to the Ministry of Community Safety and Correctional Services. University of Toronto, Toronto, ON.

Andersen J, and Gustafsberg H. 2016. A training method to improve police use of force decision making: A randomized controlled trial. SAGE Open, 6: 215824401663870–13. DOI: 10.1177/2158244016638708

Anderson G, Di Nota P, Metz G, and Andersen J. 2020. The impact of acute stress physiology on skilled motor performance: Implications for policing. Frontiers in Psychology, 10: 2501. DOI: 10.3389/fpsyg.2019.02501

Arble E, Daugherty AM, and Arnetz B. 2019. Differential effects of physiological arousal following acute stress on police officer performance in a simulated critical incident. Frontiers in Psychology, 10: 750. DOI: 10.3389/fpsyg.2019.00759

Arpaia J, and Andersen JP. 2019. The unease modulation model: An experiential model of stress with implications for health, stress management, and public policy. Frontiers in Psychiatry, 10: 379 [online]: Available from ncbi.nlm.nih.gov/pmc/articles/PMC6567485/. PMID: 31231255 DOI: 10.3389/fpsyt.2019.00379

Babayan A, Landry-Thompson T, and Stevens A. 2015. Evaluation of the Brant community response team initiative: Six-month report. Brantford, ON. [online]: Available from globalcommunitysafety.com/sites/default/files/brantford-six-month-evaluation.pdf

Baess EP. 2005. Integrated mobile crisis response team (IMCRT): Review of pairing police with mental health outreach services. Vancouver Island Health Authority. [online]: Available from citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.583.1431&rep=rep1&type=pdf

Baksheev G, Ogloff J, and Thomas S. 2012. Identification of mental illness in police cells: A comparison of police processes, the Brief Jail Mental Health Screen and the Jail Screening Assessment Tool. Psychology, Crime and Law, 18(6): 529–542. DOI: 10.1080/1068316X.2010.510118

Baldwin S, Bennell C, Andersen JP, Semple T, and Jenkins B. 2019. Stress-activity mapping: Physiological responses during general duty police encounters. Frontiers in Psychology, 10: 2216. [online]: Available from frontiersin.org/articles/10.3389/fpsyg.2019.02216/full. PMID: 31636582

Bennell C, Alpert G, Andersen JP, Arpaia J, Huhta J-M, Kahn KB, et al. 2021. Advancing police use of force research and practice: Urgent issues and prospects. Legal and Criminological Psychology, DOI: 10.1111/lcrp.12191

Bennell C, Blaskovits B, Jenkins B, Semple T, Khanizadeh A, Brown A, and Jones N. 2018. A framework for assessing non-escalation, de-escalation, and use of force training in Ontario. Final report to the Ministry of Community Safety and Correctional Services. Carleton University, Ottawa, ON.

Berger J. 2019. Mediation of the acute stress response by the skeleton. Cell Metabolism, 30, 890–902.e8. PMID: 31523009 DOI: 10.1016/j.cmet.2019.08.012

Bertilsson J, Niehorster DC, Fredriksson, PJ, Dahl M, Granér S, Fredriksson O. 2019. Stress levels escalate when repeatedly performing tasks involving threats. Frontiers in Psychology, 10: 1562. DOI: 10.3389/fpsyg.2019.01562

Bhayani G, and Thompson S. 2017. SMART on social problems: Lessons learned from a Canadian risk-based collaborative intervention model. Policing, 11(2): 168–84.

Bittner E. 1967. The police on skid-row: A study of peace keeping. American Sociological Review, 32(5): 699–715. DOI: 10.2307/2092019

Bittner E. 1990. Aspects of police work. Northeastern University Press, Boston.

Blais E, Landry M, Elazhary N, Carrier S, and Savard A-M. 2020. Assessing the capability of a co-responding police-mental health program to connect emotionally disturbed people with community resources and decrease police use-of-force. Advanced online publication. Journal of Experimental Criminology. DOI: 10.1007/s11292-020-09434-x.

Borum R, Deane MW, Steadman, HJ, and Morrissey J. 1998. Police perspectives on responding to the persons with mental illnesses in crisis: Perceptions of program effectiveness. Behavioral Sciences and the Law, 16(4), 393–405. PMID: 9924765 DOI: 10.1002/(SICI)1099-0798(199823)16:4<393::AID-BSL317>3.0.CO;2-4

Bonfine N, Ritter C, and Munetz MR. 2014. Police officer perceptions of the impact of Crisis Intervention Team (CIT) programs. International Journal of Law and Psychiatry, 37(4): 341–350. PMID: 24630739 DOI: 10.1016/j.ijlp.2014.02.004

Boyce J, Rotenberg C, and Karam M. 2015. Mental health and contact with police in Canada 2012. Juristat, Catalogue no. 85-002-X, Statistics Canada [online]: Available from www150.statcan.gc.ca/n1/en/pub/85-002-x/2015001/article/14176-eng.pdf?st=uwMaW5wj.

Broussard B, McGriff JA, Demier Neubert BN, D'Oria B, and Compton MT. 2010. Characteristics of patients referred to psychiatric emergency services by crisis intervention team police officers. Community Mental Health Journal, 46(6), 579–584. PMID: 20140754 DOI: 10.1007/s10597-010-9295-3

Brown J, and Newberry J. 2015. An evaluation of the connectivity situation tables in Waterloo Regionregion: addressing risk through system collaboration. Guelph, ON. [online]: Available from cfbsjs.usask.ca/documents/research/research_papers/AnEvaluationoftheConnectivitySituation-TablesinWaterlooRegion.pdf.

Boulton L, and Cole J. 2016. Adaptive flexibility: Examining the role of expertise in the decision making of authorized firearms officers during armed confrontation. Journal of Cognitive Engineering and Decision Making, 10: 291–308. DOI: 10.1177/1555343416646684

Burke RJ. (Editor). 2017. Stress in policing. Sources, consequences and interventions. Routledge, New York, NY.

Canada KE, Angell B, and Watson AC. 2012. Intervening at the entry point: Differences in how CIT trained and non-CIT trained officers describe responding to mental health-related calls. Community Mental Health, 48(6): 746–755. DOI: 10.1007/s10597-011-9430-9

Canadian Police Knowledge Network. 2020. Crisis intervention and de-escalation. Canadian Police Knowledge Network. [online]: Available from cpkn.ca/en/course/crisis-intervention-and-de-escalation/.

Carlsson G, Dahlberg K, and Drew N. 2000. Encountering violence and aggression in mental health nursing: A phenomenological study of tacit caring knowledge. Issues in Mental Health Nursing 21: 533–545. PMID: 11261076 DOI: 10.1080/01612840050044276

Carleton R, Afifi T, Turner S, Taillieu T, Duranceau S, and LeBouthillier DM. 2018. Mental disorder symptoms among public safety personnel in Canada. Canadian Journal of Psychiatry, 63: 54–64. PMID: 28845686 DOI: 10.1177/0706743717723825

Carleton RN, Afifi T. O, Taillieu T, Turner S, Mason JE, Ricciardelli R, et al. 2020. Assessing the relative impact of diverse stressors among public safety personnel. International Journal of Environmental Research and Public Health, 17: 1234. DOI: 10.3390/ijerph17041234

Carmichael J. 2009. Post-traumatic stress disorder in police and military personnel: Assessment and treatment methods from psychophysiology and neuroscience—Essential preliminary information. Biofeedback, 37: 32–35. DOI: 10.5298/1081-5937-37.1.32

Chan J, and Andersen J. 2020. The influence of organizational stress on reported depressive symptoms among police. Occupational Medicine, 70: 496–502. PMID: 32804235 DOI: 10.1093/occmed/kqaa141

Coleman TG, and Cotton D. 2010. Police interactions with persons with a mental illness: Police learning in the environment of contemporary policing. Mental Health and the Law Advisory Committee. Mental Health Commission of Canada. [online]: Available from mentalhealthcommission.ca/sites/default/files/Law_Police_Interactions_Mental_Illness_Report_ENG_0_1.pdf.

Compton MT, Bahora M, Watson AC, and Oliva JR. 2008. A comprehensive review of extant research on Crisis Intervention Team (CIT) programs. Journal of the American Academic of Psychiatry and Law, 36(1): 47–55.

Compton MT, Bakeman R, Broussard B, D'Orio B, and Watson AC. 2017. Police officers' volunteering for (rather than being assigned to) Crisis Intervention Team (CIT) training: Evidence for a beneficial self-selection effect. Behavioral Sciences and the Law, 35(5–6): 470–479.

Compton MT, Bakeman R, Broussard B, Hankerson-Dyson D, Husbands L, Krishan S. 2014. The police-based crisis intervention team (CIT) model: I. Effects on officers' knowledge, attitudes, and skills. Psychiatric Services, 65(4): 517–522. PMID: 24382628 DOI: 10.1176/appi.ps.201300107

Compton MT, Demir B, Oliva JR, and Boyce T. 2009. Crisis intervention team training and special weapons and tactics callouts in an urban police department. Psychiatric Services, 60(6): 831–833. PMID: 19487355 DOI: 10.1176/ps.2009.60.6.831

Corley C, and Teare G. 2019. The hub model: It's time for an independent summative evaluation. Journal of Community Safety and Well-Being, 4(1): 10–12. DOI: 10.35502/jcswb.93

Cotton D, and Coleman T. 2008. A study of police academy training and education for new police officers related to working with people with mental illness. Mental Health Commission of Canada. [online]: Available from mentalhealthcommission.ca/sites/default/files/Law_Police_Academy_Training_Education_Mental_Illness_Study_ENG_0_1.pdf.

Cotton D, and Coleman T. 2010. Understanding mental illness: A review and recommendations for police education and training in Canada. Canadian Alliance on Mental Illness and Mental Health, Ottawa, ON.

Covey T, Shucard J, Violanti J, Lee J, and Shucard D. 2013. The effects of exposure to traumatic stressors on inhibitory control in police officers: A dense electrode array study using a go/nogo continuous performance task. International Journal of Psychophysiology, 87: 363–375. PMID: 23528305 DOI: 10.1016/j.ijpsycho.2013.03.009

Cyr K. 2016. Police use of force: Assessing necessity and proportionality. Alberta Law Review, 53: 663–679. DOI: 10.29173/alr424

Di Nota PM, Stoliker B, Vaughan A, Andersen J, and Anderson G. 2020. Stress and memory: A systematic state-of-the-art review with evidence-gathering recommendations for police. Advanced online publication. An International Journal, Policing.

Di Nota P, Stoyko P, Jenkinson J, Boychuk E, and Andersen J. 2021. Critical review of visual models for police use of force decision-making. Vision, 5(1): 6. PMID: 33525603 DOI: 10.3390/vision5010006

Dorn T, Ceelen M, Buster M, and Das K. 2013. Screening for mental illness among persons in Amsterdam police custody. Psychiatric Services, 64(10): 1047–1050. PMID: 24081404 DOI: 10.1176/appi.ps.201200009

Dubé P. 2016. A matter of life and death: Investigation into the direction provided by the Ministry of Community Safety and Correctional Services to Ontario's police services for ed-escalation of conflict situations. Ombudsman Ontario. [online]: Available from ombudsman.on.ca/resources/reports-and-case-summaries/reports-oninvestigations/2016/a-matter-of-life-and-death#Training%20wheels.

Ellis HA. 2014. Effects of Crisis Intervention Team (CIT) training program upon police officers before and after crisis intervention team training. Archives of Psychiatric Nursing, 28: 10–16. PMID: 24506981 DOI: 10.1016/j.apnu.2013.10.003

El-Mallakh PL, Kiran K, and El-Mallakh RS. 2014. Costs and savings associated with implementation of a police crisis intervention team. Southern Medical Journal 107(6): 391–395. PMID: 24945178 DOI: 10.14423/01.SMJ.0000450721.14787.7d

Engel R, Corsaro N, Isaza G, and McManus H. 2020a. Examining the impact of Integrating Communications, Assessment, and Tactics (ICAT) de-escalation training for the Louisville Metro Police Department: Initial findings. University of Cincinnati. [online]: Available from theiacp.org/sites/default/files/Research%20Center/LMPD_ICAT%20Evaluaton%20Initial%20Findings%20Report_FINAL%2009212020.pdf.

Engel R, McManus H, and Herold T. 2020b. Does de-escalation training work?: A systematic review and call for evidence in police use-of-force reform. Criminology and Public Policy 19: 721–759. DOI: 10.1111/1745-9133.12467

Fahim C, Semovski V, and Younger J. 2016. The Hamilton mobile crisis response team: A first-responder mental health service. Psychiatric Services, 67(8): 929. PMID: 27476897 DOI: 10.1176/appi.ps.670802

Fridman J, Barrett LF. Wormwood JB, and Quigley KS. 2019. Applying the theory of constructed emotion to police decision making. Frontiers in Psychology, 11: 1–12.

Fridell L. 2017. Producing bias-free policing: A science-based approach. Springer Publishing, Switzerland.

Garfinkel S, Ludovico Minati L, Gray M, Seth A, Raymond J, Dolan R, and Critchley R. 2014. Fear from the heart: Sensitivity to fear stimuli depends on individual heartbeats. The Journal of Neuroscience, 34: 6573–6582. PMID: 24806682 DOI: 10.1523/JNEUROSCI.3507-13.2014

Giessing L, Frenkel MO, Zinner C, Rummel J, Nieuwenhuys A, Kasperk C, et al. 2019. Effects of coping-related traits and psychophysiological stress responses on police recruits' shooting behavior in reality-based scenarios. Frontiers in Psychology, 10: 1523 [online]: Available from frontiersin.org/articles/10.3389/fpsyg.2019.01523/full. PMID: 31333547 DOI: 10.3389/fpsyg.2019.01523

Giacomantonio C, Goodwin S, and Carmichael G. 2020. Learning to de-escalate: Evaluating the behavioural impact of verbal judo training on police constables. Police Practice and Research, 21: 401–417. DOI: 10.1080/15614263.2019.1589472

Global Network for Community Safety. 2016. 1st Canada-Wide Account of Hub/Situation Table Adopter Sites and Situations Triaged for Acutely Elevated Risk. [online]: Available from globalcommunitysafety.com/sites/default/files/Hub-Situation-Table-Adoption-1.pdf.

Hassell KD. 2020. The impact of Crisis Intervention Team training for police. International Journal of Police Science and Management, 22(2): 159–170.

Helfgott JB, Hickman MJ, and Labossiere AP. 2016. A descriptive evaluation of Seattle Police Department's crisis response team officer/mental health professional partnership pilot program. International Journal of Law and Psychiatry, 44(Jan–Feb), 109–122. DOI: 10.1016/j.ijlp.2015.08.038

Hine K, Porter L, Westera N, Alpert G, and Allen A. 2018. Exploring police use of force decision-making processes and impairments using a naturalistic decision-making approach. Criminal Justice and Behavior, 45: 1782–1801. DOI: 10.1177/0093854818789726

Hirdes J, van Everdingen C, Ferris J, Franco-Martin M, Fries B, Heikkilä J, et al. 2019. The interRAI suite of mental health assessment instruments: An integrated system for the continuum of care. Frontiers in Psychiatry, 10: 926–956. PMID: 32076412 DOI: 10.3389/fpsyt.2019.00926

Ho JD, Clinton JE, Lappe MA, Heegaard WG, Williams MF, and Miner JR. 2011. Introduction of the conducted energy weapon into a hospital setting. The Journal of Emergency Medicine, 41(3): 317–323. PMID: 20117901 DOI: 10.1016/j.jemermed.2009.09.031

Hoffman R, Hirdes J, Brown G, Dubin J, and Barbaree H. 2016. The use of a brief mental health screener to enhance the ability of police officers to identify persons with serious mental disorders. International Journal of Law and Psychiatry, 47(1): 28–35. DOI: 10.1016/j.ijlp.2016.02.031

Holmes G, Clacy A, Hermens DF, and Lagopoulos J. 2019. The long-term efficacy of suicide prevention gatekeeper training: A systematic review. Archives of Suicide Research, 25(2): 177–207. PMID: 31809659 DOI: 10.1080/13811118.2019.1690608

Huey L, Ferguson L, and Vaughan AD. 2021. The limits of our knowledge: tracking the size and scope of police involvement with persons with mental illness. FACETS, 6: 424–448. DOI: 10.1139/facets-2021-0005

Iacobucci F 2014. Police encounters with people in crisis: An independent review conducted by The Honourable Frank Iacobucci for Chief of Police William Blair, Toronto Police Service. Toronto Police Service. [online]: Available from torontopolice.on.ca/publications/files/reports/police_encounters_with_people_in_crisis_2014.pdf.

Ingersoll Nurse Practitioner-Led Clinic. 2014. Oxford Situation Table – 6 Month Pilot Report. Ingersoll, ON [online]: Available from web65048.mysolarhost.com/wp-content/uploads/2019/10/Oxford-Situation-Table-6-MONTH-REPORT-3-1.pdf.

International Association of Chiefs of Police. 2020. The national consensus policy and discussion paper on use of force. International Association of Chiefs of Police. [online]: Available from theiacp.org/sites/default/files/2020-07/National_Consensus_Policy_On_Use_Of_Force%2007102020%20v3.pdf

Kirst M, Narrandes R, Pridham KF, Yogalingam J, Matheson F, and Stergiopoulos V. 2014. Toronto Mobile Crisis Intervention Team (MCIT) program implementation evaluation final report. St. Michael's Hospital. Centre for Research on Inner City Health. [online]: Available from stmichaelshospitalresearch.ca/wp-content/uploads/2016/12/MCIT-evaluation-report-final-April30-2014.pdf.

Kisely S, Campbell LA, Peddle S, Hare S, Pyche M, Spicer D, and Moore B. 2010. A controlled before-and-after evaluation of a mobile crisis partnership between mental health and police services in Nova

Scotia. Canadian Journal of Psychiatry, 55(10): 662–668. PMID: 20964945 DOI: 10.1177/070674371005501005

Klugiewicz G, Young D, and Oelschlaeger A. 2018. Conflict management for law enforcement: Non-escalation, de-escalation, and crisis intervention for police officers. Vistelar, Milwaukee, WI.

Koziarski J, O'Connor C, and Frederick T. 2020. Policing mental health: The composition and perceived challenges of Co-Response Teams and Crisis Intervention Teams in the Canadian context. Police Practice and Research, 22(1): 977–995. DOI: 10.1080/15614263.2020.1786689

Krameddine Y, DeMarco D, Hassel R, and Silverstone P. 2013. A novel training program for police officers that improves interactions with mentally ill individuals and is cost-effective. Frontiers in Psychiatry, 4: 1–10. DOI: 10.3389/fpsyt.2013.00009

Krameddine Y, and Silverstone P. 2015. How to improve interactions between police and the mentally ill. Frontiers in Psychiatry. [online]: Available from frontiersin.org/articles/10.3389/fpsyt.2014.00186/full#B12.

Lamb H, Weinberger L, and DeCuir W. 2002. The police and mental health. Psychiatric Services, 53(10): 1266–1271. PMID: 12364674 DOI: 10.1176/appi.ps.53.10.1266

Lamanna D, Shapiro GK, Kirst M., Matheson FI, Nakhost A, and Stergiopoulos V. 2018. Co-responding police-mental health programmes: Service user experiences and outcomes in a large urban centre. International Journal of Mental Health Nursing, 27(2): 891–900. PMID: 29044920 DOI: 10.1111/inm.12384

Lamontagne E. 2015. Rapid mobilization table data analysis. Sudbury, ON [online]: Available from cfbsjs.usask.ca/documents/research/research_papers/RMTDataAnalysisReport.pdf

Lanark County Situation Table Project. 2016. Lanark County situation table project. Smiths Falls, ON [online]: Available from cfbsjs.usask.ca/documents/LanarkCounty20152016ReportFinal.pdf.

Lansdowne Consulting Group. 2016. Multiagency early risk intervention table(s) pilot project review. Ottawa, ON [online]: Available from cfbsjs.usask.ca/documents/Merit2016ReviewFinalReport.pdf.

Ligon J, and Thyer BA. 2000. Client and family satisfaction with brief community mental health, substance abuse, and mobile crisis services in an urban setting. Crisis Intervention and Time-Limited Treatment, 6(2): 93–99. DOI: 10.1080/10645130008951135

Livingston JD, Desmarais SL, Verdun-Jones S, Parent R, Michalak E, and Brink J. 2014. Perceptions and experiences of people with mental illness regarding their interactions with police. International Journal of Law and Psychiatry, 37(4): 334–340. PMID: 24684784 DOI: 10.1016/j.ijlp.2014.02.003

Mather M, and Thayer J. 2018. How heart rate variability affects emotion regulation brain networks. Current Opinion in Behavioral Sciences, 19: 98–104. PMID: 29333483 DOI: 10.1016/j.cobeha.2017.12.017

McFee D, and Taylor N. 2014. The Prince Albert hub and the emergence of collaborative risk-driven community safety [online]: Available from cfbsjs.usask.ca/documents/research/research_papers/ChangeAndInnovationInCanadianPolicing.pdf.

McGriff JA, Broussard B, Demir Neubert BN, Thompson NJ, and Compton MT. 2010. Implementing a crisis intervention team (CIT) police presence in a large international airport setting. Journal of Police Crisis Negotiations, 10(1–2): 153–165. DOI: 10.1080/15332581003756885

McLean K, Wolfe S, Rojek J, Alpert G, and Smith M. 2020. Randomized controlled trial of social interaction police training. Criminology and Public Policy, 19: 805–832. DOI: 10.1111/1745-9133.12506

McNeilly G. 2017. Police interactions with people in crisis and use of force: OIRPD systematic review. Interim report. OIRPD. [online]: Available from oiprd.on.ca/wp-content/uploads/Police-Interactions-with-People-in-Crisis-and-Use-of-Force-Systemic-.

Ministry of Community Safety and Correctional Services. 2017. Community safety and well-being in Ontario: A snapshot of local voices (Booklet 2). Toronto, ON. [online]: Available from mcscs.jus.gov.on.ca/sites/default/files/content/mcscs/docs/ec167634.pdf.

Morabito MS, Socia K, Wik A, and Fisher WH. 2017. The nature and extent of police use of force in encounters with people with behavioral health disorders. International Journal of Law and Psychiatry, 50(January–February): 31–37. DOI: 10.1016/j.ijlp.2016.10.001

Morabito M., Savage J, Sneider L, and Wallace K. 2018. Police response to people with mental illnesses in a major U.S. city: The Boston experience with the Co-Responder Model. Victims and Offenders, 13(8): 1093–1105. DOI: 10.1080/15564886.2018.1514340

Nieuwenhuys A. and Oudejans R. 2017. Anxiety and performance: Perceptual-motor behavior in high-pressure contexts. Current Opinion in Psychology, 16: 28–33. PMID: 28813350 DOI: 10.1016/j.copsyc.2017.03.019

Nieuwenhuys A, and Oudejans, R. 2010. Effects of anxiety on handgun shooting behavior of police officers: A pilot study. Anxiety, Stress, and Coping, 23: 225–233. PMID: 19462309 DOI: 10.1080/10615800902977494

Nilson C. 2016. Chatham-Kent's fast intervention risk specific teams: Final evaluation report. Toronto, ON. [online]: Available from cfbsjs.usask.ca/documents/FIRSTFINALEvaluationReportNovember2016.pdf

Nilson C. 2018. Community safety and well-Being: Concept, practice, and alignment. Saskatoon, SK. [online]: Available from albertacrimeprevention.com/wp-content/uploads/2018/05/CSWB-Concept-Practice-Alignment_May2018_final_DIGITAL_revised_2.pdf.

Oliva JR, Morgan R, and Compton MT. 2010. A practical overview of de-escalation skills in law enforcement: Helping individuals in crisis while reducing police liability and injury. Journal of Police Crisis Negotiations, 10: 15–29. DOI: 10.1080/15332581003785421

Owens E, Weisburd D, Amendola KL, and Alpert GP. 2018. Can you build a better cop? Experimental evidence on supervision, training, and policing in the community. Criminology and Public Policy 17: 41–87.DOI: 10.1111/1745-9133.12337

Patch P, and Arrigo B. 1999. Police officer attitudes and use of discretion in situations involving the mentally ill: The need to narrow the focus. International Journal of Law and Psychiatry, 22(1): 23–35. PMID: 10086288 DOI: 10.1016/S0160-2527(98)00014-4

Pelfrey WV, and Young A. 2020. Police crisis intervention teams: Understanding implementation variations and officer-level impacts. Journal of Police and Criminal Psychology, 35(1): 1–12. DOI: 10.1007/s11896-019-9314-4

Peterson J, and Densley J. 2018. Is Crisis Intervention Team (CIT) training evidence-based practice? A systematic review. Journal of Crime and Justice, 41(5): 521–534. DOI: 10.1080/0735648X.2018.1484303

Price O, and Baker J. 2012. Key components of de-escalation techniques: A thematic synthesis. International Journal of Mental Health Nursing, 21: 310–319. PMID: 22340073 DOI: 10.1111/j.1447-0349.2011.00793.x

Price C J, and Hooven C. 2018. Interoceptive awareness skills for emotion regulation: Theory and approach of mindful awareness in body-oriented therapy (MABT). Frontiers in Psychology, 9: 798. PMID: 29892247 DOI: 10.3389/fpsyg.2018.00798

Puntis S, Perfect D, Kirubarajan A, Bolton S, Davies F, Hayes A. et al. 2018. A systematic review of co-responder models of police mental health 'street' triage. BMC Psychiatry 18(256). DOI: 10.1186/s12888-018-1836-2

Rajakaruna N, Henry PJ., Cutler A, and Fairman G. 2017. Ensuring the validity of police use of force training. Police Practice and Research, 18: 507–521. DOI: 10.1080/15614263.2016.1268959

Richmond J, Berlin J, Fishkind A, Holloman G, Zeller S, Wilson M, et al. 2012. Verbal de-escalation of the agitated patient: Consensus statement of the American Association for Emergency Psychiatry Project BETA de-escalation workgroup. Western Journal of Emergency Medicine, 13: 17–25. DOI: 10.5811/westjem.2011.9.6864

Ritter C, Teller JLS, Munetz MR, and Bonefine N. 2010. Crisis Intervention Team (CIT) training: Selection effects and long-term changes in perceptions of mental illness and community preparedness. Journal of Police Crisis Negotiations, 10(1–2): 133–152. DOI: 10.1080/15332581003756992

Rogers MS, McNiel DE, and Binder RL. 2019. Effectiveness of police crisis intervention training programs. Journal of the American Academic of Psychiatry and the Law, 47(4): 414–421.

Russell H, and Taylor N. 2014a. An interpretive guide to information sharing practices in Ontario within the context of collaborative, risk-driven community safety and well-being. [online]: Available from ckfirst.ca/wp-content/uploads/2018/06/3-Interpretive-Guide-for-Info-Sharing-Practices-in-Ontario.pdf

Russell H, and Taylor N 2014b. Collaborative analysis for systemic improvements. [online]: Available from ckfirst.ca/wp-content/uploads/2018/06/5-Collaborative-Analysis-for-Systemic-Improvements.pdf

Russell H, and Taylor N. 2015. Gaining momentum: Multi-sector community safety and well-being in Ontario. [online]: Available from cfbsjs.usask.ca/documents/research/research_papers/OntarioWorkingGroupOnCRDCSW.pdf

Sanders C, and Langan D. 2019. New public management and the extension of police control: Community safety and security networks in Canada. Policing and Society, 29(5): 566–578. DOI: 10.1080/10439463.2018.1427744

Sanders C, and Lavoie J. 2020. Boundary objects and technological frames: Officer's perceptions and experiences using mental health screeners on the frontline. Advanced online publication. Policing and Society.

Saus ER, Johnsen B, Eid F, Riisem P, Anderson R, and Thayer J. 2006. The effect of brief situational awareness training in a police shooting simulator: An experimental study. Military Psychology, 18(Suppl. 1): S3–S21. DOI: 10.1207/s15327876mp1803s_2

Schulenberg J. 2016. Police decision-making in the gray zone: The dynamics of police–citizen encounters with mentally ill persons. Criminal Justice and Behavior, 43(4): 459–482. DOI: 10.1177/0093854815606762

Schwabe L, and Wolf O. 2013. Trends in Cognitive Sciences 17: 60–68. PMID: 23290054 DOI: 10.1016/j.tics.2012.12.001

Scott RL. 2000. Evaluation of a mobile crisis program: Effectiveness, efficiency, and consumer satisfaction. Psychiatric Services, 51: 1153–1156. PMID: 10970919 DOI: 10.1176/appi.ps.51.9.1153

Semple T, Tomlin M, Bennell C, and Jenkins B. 2021. An evaluation of a community-based mobile crisis intervention team in a small Canadian police service. Community Mental Health Journal, 57(3): 567–578. PMID: 32676879 DOI: 10.1007/s10597-020-00683-8

Seo C, Kim B, and Kruis NE. 2021. A meta-analysis of police response models for handling people with mental illnesses: Cross-country evidence on the effectiveness. International Criminal Justice Review, 31(2): 182–202. DOI: 10.1177/1057567720979184

Seth AK. 2013. Interoceptive inference, emotion, and the embodied self. Trends in Cognitive Sciences, 17: 565–573. PMID: 24126130 DOI: 10.1016/j.tics.2013.09.007

Shapiro GK, Cusi A, Kirst M, O'Campo P, Nakhost A, and Stergiopoulos V. 2015. Co-responding police-mental health programs: A review. Administration and Policy in Mental Health and Mental Health Services Research, 42(5): 606–620. PMID: 25239523 DOI: 10.1007/s10488-014-0594-9

Smith TW, Deits-Lebehn C, Williams PG, Baucom BRW, and Uchino BN. 2019. Toward a social psychophysiology of vagally mediated heart rate variability: Concepts and methods in self-regulation, emotion, and interpersonal processes. Social and Personality Psychology Compass 14: e12516.

Solicitor General. 2015. Public Safety Canada – 2nd Summit on the economics of policing and community safety. Ottawa, ON. [online]: Available from news.ontario.ca/en/speech/31960/public-safety-canada—2nd-summit-on-the-economics-of-policing-community-safety.

Steadman HJ, and Morrissette D. 2016. Police responses to persons with mental illness: Going beyond CIT training. Psychiatric Services, 67(10): 1054–1056. PMID: 27524373 DOI: 10.1176/appi.ps.201600348

Strassle CG. 2019. CIT in small municipalities: Officer-level outcomes. Behavioural Sciences and the Law, 37(4): 342–352. DOI: 10.1002/bsl.2395

Swick D, Honzel N, Larsen J, Ashley V, and Justus T. 2012. Impaired response inhibition in veterans with Post-traumatic stress disorder and mild traumatic brain injury. Journal of the International Neuropsychological Society, 18: 917–926. PMID: 22595028 DOI: 10.1017/S1355617712000458

Syed S, Ashwick R, Schlosser M, Jones R, Rowe S, and Billings, J. 2020. Global prevalence and risk factors for mental health problems in police personnel: A systematic review. Occupational and Environmental Medicine, 77: 737–747. PMID: 32439827 DOI: 10.1136/oemed-2020-106498

Taheri SA. 2014. Do crisis intervention teams reduce arrests and improve officer safety? A systematic review and meta-analysis. Criminal Justice Policy Review, 27(1): 76–96. DOI: 10.1177/0887403414556289

Teller JLS, Munetz MR, Gil KM, and Ritter C. 2006. Crisis intervention team training for police officers responding to mental disturbance calls. Psychiatric Services, 57(2): 232–237. PMID: 16452701 DOI: 10.1176/appi.ps.57.2.232

Teplin L. 1984. Criminalizing mental disorder: The comparative arrest rate of the mentally ill. American Psychologist, 39(7): 794–803. DOI: 10.1037/0003-066X.39.7.794

Terrill W, and Paoline E. 2017. Police use of less lethal force: Does administrative policy matter? Justice Quarterly, 34: 193–216. DOI: 10.1080/07418825.2016.1147593

Thayer JF, and Hansen A. 2009. Heart rate variability, prefrontal neural function and cognitive performance: The neurovisceral integration perspective on self-regulation, adaptation, and health. Annals of Behavioral Medicine, 37, 141–153. PMID: 19424767 DOI: 10.1007/s12160-009-9101-z

Todak N. 2017. De-escalation in police-citizen encounters: A mixed methods study of a misunderstood policing strategy. Unpublished Doctoral dissertation. Arizona State University, Tempe, US.

Todak N, and James L. 2018. A systematic social observation study of police de-escalation tactics. Police Quarterly, 21: 509–543. DOI: 10.1177/1098611118784007

Todak N, and White MD. 2019. Expert officer perceptions of de-escalation in policing. Policing: An International Journal, 42: 832–846. DOI: 10.1108/PIJPSM-12-2018-0185

Vaughan AD, Ly M, Andresen MA, Wuschke K, Hodgkinson T, and Campbell A. 2018. Concentration and specialization of mental health-related calls for police service, Victims and Offenders, 13(8): 1153–1170. DOI: 10.1080/15564886.2018.1512539

Violanti J. 2020. On policing—A matter of psychological survival. JAMA Network Open, 3: e2020231.d. DOI: 10.1001/jamanetworkopen.2020.20231

Violanti JM, Charles LE, McCanlies E, Hartley TA, Baughman P, Andrew ME, et al. 2017. Police stressors and health: A state-of-the-art review. Policing: An International Journal, 40: 642–656.

Watson AC, and Angell B. 2013. The role of stigma and uncertainty in moderating the effect of procedural justice on cooperation and resistance in police encounters with persons with mental illnesses. Psychology, Public Policy, and Law, 19: 30–39. PMID: 24920876 DOI: 10.1037/a0027931

Watson AC, and Compton MT. 2019. What research on Crisis Intervention Teams tells us and what we need to ask. Journal of the American Academy of Psychiatry and the Law, 47: 422–426.

Watson AC, Compton MT, and Pope LG. 2019. Crisis response services for people with mental illnesses or intellectual and developmental disabilities: A review of the literature on police-based and other first response models. Vera Institute of Justice. [online]: Available from vera.org/downloads/publications/crisis-response-services-for-people-with-mental-illnesses-or-intellectual-and-developmental-disabilities.pdf.

Watson AC, Owens LK, Wood J, and Compton MT. 2021. The impact of Crisis Intervention Team response, dispatch coding, and location on the outcomes of police encounters with individuals with mental illnesses in Chicago. Advanced online publication. Policing: A Journal of Policy and Practice.

Wells W, and Schafer J 2006. Officer perceptions of police responses to persons with a mental illness. Policing: An International Journal of Police Strategies and Management, 29(4): 578–601. DOI: 10.1108/13639510610711556

White M 2000. Assessing the impact of administrative policy on use of deadly force by on- and off-duty Police. Evaluation Review, 24: 295–318. PMID: 10947519 DOI: 10.1177/0193841X0002400303

White MD, Mora VJ, Orosco C, and Hedberg EC. 2021. Moving the needle: can training alter officer perceptions and use of de-escalation? Policing: An International Journal, 44(3): 418–436. DOI: 10.1108/PIJPSM-08-2020-0140

Wiseman J, and Brasher K. 2008. Community wellbeing in an unwell world: Trends, challenges, and possibilites." Journal of Public Health Policy, 29: 353–366. PMID: 18701903 DOI: 10.1057/jphp.2008.16

Wittmann L, Dorner R, Heuer I, Bock T, and Mahlke C. 2021. Effectiveness of a contact based anti-stigma intervention for police officers. International Journal of Law and Psychiatry, 76: 101697. PMID: 33836436 DOI: 10.1016/j.ijlp.2021.101697

Wood J, Watson A, and Fulambarker A. 2017. The "gray zone" of police work during mental health encounters: Findings from an observational study in Chicago. Police Quarterly, 20(1): 81–105. PMID: 28286406 DOI: 10.1177/1098611116658875

Xiong J, Lipsitz O, Nasri F, Lui LM, Gill H, Phan L. et al. 2020. Impact of COVID-19 pandemic on mental health in the general population: A systematic review. Advanced online publication. Journal of Affective Disorders.