



UNIVERSITY OF
TORONTO
MISSISSAUGA

The Science Behind De-escalation and Use of Force Decision-Making: Policy Recommendations for Police Training

Scientific Literature Review and
Applied Data Synthesis

Responding to the Ontario Ombudsman's
Recommendations on De-escalation & Use of
Force with an Evidence-Based Approach

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Dear Minister,

On June 29th, 2016 Ombudsman Paul Dubé published a report titled “A Matter of Life and Death: Investigation into the direction provided by the Ministry of Community Safety and Correctional Services (MCSCS) to Ontario’s police services for de-escalation of conflict situations.” In this report, Ombudsman Dubé requested the MCSCS to develop Recommendations and regulations regarding the use of de-escalation techniques and police training on the topic of de-escalation. Further, the Ombudsman recommended that MCSCS develop a new Use of Force model that is easy to understand and centrally identifies de-escalation techniques as a first option response whenever possible.

In an effort to address the Ombudsman’s report from an evidence-based perspective, MCSCS entered into a collaboration with Dr. Judith Andersen and her University of Toronto research team. To address the Ombudsman’s Recommendations, the UofT team accessed research literature, conducted interviews and gathered synthesis reports from experts around the world. The research team also interviewed police agencies from across Ontario.

The research team has built upon and extended the current state of knowledge on critical decision-making, assessment, perception, learning and memory as applied to de-escalation and Use of Force decision-making among police. The research team is pleased to present you with a comprehensive report that is unique in both the breadth and depth of scientific knowledge (e.g., from neuroscience to applied practice).

The research team’s Recommendations to MCSCS are based solely on the literature, and the practical data collected, rather than opinion. The results of this evidence-based approach have yielded several important insights and Recommendations on police curriculum relating to both de-escalation and Use of Force.

It is the research team’s belief that the combined academic and practitioner perspectives as presented in this report may best inform policy Recommendations.

Sincerely,

University of Toronto Mississauga Research Team



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Executive Summary

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Academic Research & Literature Review

This report provides an evidence-based approach to addressing the Ontario Ombudsman's Recommendations, and especially those related to de-escalation (#2) and Use of Force (#3).

We begin with the assertion that *de-escalation*, and *non-escalation*¹, are a consideration in every police interaction with the public, and not just in encounters where Use of Force is the outcome. Also central to every encounter with the public is an officer's ability to make critical decisions and perform actions that are reasonable to the situation at hand. Due to the dynamic nature of these interactions, they may not require force at first. However, it is possible that the officer's actions, or situational factors beyond the officer's control², may escalate a situation to the level in which force is justified under the Criminal Code. Yet in some cases, the force used may have been avoided by the application of de-escalation or non-escalation practices.³

We refer to Sections of the Canadian Criminal Code (25 & 26) when citing academic literature that supports critical decision-making in regards to reasonable actions. As familiar to the Ministry, Section 25 outlines the parameters by which a peace officer may use force as based on '*reasonable grounds*.' Accordingly, Section 26 justifies that the level of force used is based on what is '*reasonably necessary*.'

De-escalation

1. How do officers make decisions about what is reasonable? An officer makes decisions based primarily on the assessment of what is happening. Police officers are human, and therefore we present an analysis, supported by empirical research and an evidence-based approach, of how assessments and resultant critical decisions are made to select specific actions.
2. Perception informs assessment, decision-making and action. Advancements in neurobiology and psychophysiology demonstrate how the brain works to create perceptions, and how the brain can be trained to form more accurate perceptions. In regards to policing, the officer's perception of an event will contribute to its outcome in as much as the environment (e.g., angry crowd) and/or subject's behaviour (e.g., charge towards officer) can dictate the outcome. Accurate perceptions provide better information upon which to make critical decisions that will more likely result in behaviours that are reasonable given the situational requirements.
3. How does the brain form perceptions? In order to form perceptions, the brain relies on a combination of *past exposures*, which may have been actually experienced or learned in some other way (e.g., training); *internal information*, such as physiological threat, arousal, and sensory information; and *contextual cues* in the environment (e.g., dark alley) that can trigger the other two factors. It is important to note that factors that shape perceptions may be *explicit* (i.e., within conscious awareness) or *implicit* (i.e. below conscious awareness).
4. Encounters between police officers and the public may contain features such as ambiguity, unpredictability, and uncontrollability. When humans encounter ambiguous, unpredictable or potentially uncontrollable

¹ Non-escalation is the prevention of the escalation of an event unnecessarily. De-escalation occurs when the event has already escalated.

² It is understood that the police officer does not always dictate the outcome of a call; the subject or the environment can influence outcomes beyond the individual officer's control. However, the police officer is the common denominator in every interaction with the public, meaning they bring themselves, and their decision-making skills with them, to every call.

³ This report is not implying that police do not already engage in de-escalation. This report acknowledges the fact that encounters entailing grievous bodily harm or lethal force are extremely rare in Canada.

situations, the brain and body are on heightened alert. The 'heightened alert' is primarily defined by physiological arousal, and it is most often experienced below conscious awareness. Despite the brain experiencing them implicitly, physiological arousal has the power to impact decision-making and behaviour. The appropriate level of arousal can save lives and facilitate the successful resolution of the situation, whereas maladaptive levels may negatively impact the way in which the event unfolds. Researchers working with police have demonstrated that physiological arousal is evident in police encounters even when force is not used and the event is resolved without incident.

5. During periods of heightened alert, the brain relies either on the instinctual response to threat (i.e., Fight or Flight) or on information that was encoded implicitly (e.g., learned previously) that overrides instinctual responses. If implicit associations have been encoded in the brain, such as knife=life threat, then it does not matter if it is a small knife or large knife; perception of life threat is a reality of brain function. Addressing physiological arousal is an essential consideration in police training because it literally shapes visual perception. As an encounter becomes more complex and stressful, the internal physiology of the officer has a greater impact on the assessment and decisions made; this is a natural human response that police officers are not immune to.
6. Based on research, we recommend a paradigm shift in policing: a movement away from a focus only on weapons and tactics to a focus on the individual officer. The common denominator in every call is the individual officer, their skills, abilities and perceptions. No amount of regulation, media sensationalism or good intentions will change human physiology. To improve outcomes, *training* must be adapted. Regulation without training will not achieve desired results. This report reveals that the shared goal between the Ombudsman, public, the police and the Ministry is to achieve desired results – enhanced safety and lives saved. An evidence-based approach to training adaptation is the recommended method to achieve these results.
7. Our academic and applied research reveal that it **cannot be assumed**: a). that officers enter the profession with the skills to override instinctual responses; b). that *all* current training practices are successful at teaching officers to override instinctual responses by embedding the appropriate implicit information⁴; c). that experience on the job or certain types of training (e.g., 'stress inoculation/stress immersion') automatically embed correct implicit information and/or override instinctual responses; and that d). police encounter both acute and chronic stress, and sometimes traumatic events in the course of their career. All of these factors impact future performance and health, and therefore must be considered in basic constable and annual recertification training.
8. In this report, we provide a scientific review of how perception, assessment and behaviour are formed and performed. We then review the ways in which humans retain, learn, and apply the types of skills necessary *in a policing context*. We highlight that police training must be analyzed at the level of how the brain and body work during actual police encounters. The type of educational tools or formats that may be successful in a non-policing context do not always translate as successful learning strategies when the realities of police exposures are taken into account. Thus, police curriculum should be tailored to address their specialized circumstances to ensure successful application of training in the real world.

De-escalation Training

9. We present an analysis of how officers learn, retain, and likely apply de-escalation and Use of Force training by reviewing existing police training curricula across the province. We acknowledge that many current

⁴ In the representative sample of police agencies in this report, de-escalation training and practice is already being taught and considered high priority.

practices are not yet fully evidence-based and require additional research. Our analysis contains the various levels at which instruction and materials influence perception, assessment and behaviour. We show how implicit and explicit information is most optimally encoded and recalled, and suggest optimal modes of delivery.

Assessment of Training

10. Electronic assessment of curriculum implementation, officer outcomes and instructor capabilities is possible given developments in new technology. MCSCS tracking of evidence-based training outcomes needs to be instituted in an objective manner. An example of standardized recruit assessment is included in the full report. This document contains evidence-based Recommendations for assessment and training standards.

Use of Force Model

11. The scientific literature review has revealed that a Critical Decision-Making Model would best guide de-escalation and Use of Force decision-making in all police encounters. A Critical Decision-Making Model would also facilitate public understanding of Use of Force decision-making. Based on the research, we make Recommendations about what components would be contained in a Critical Decision-Making Model that is in-line with how the brain works, both to learn the information initially, and for police to perform it in the field with the realities of stress and real world factors.

Applied Research & Data Collection

Research data collection was conducted by our applied research team consisting of police practitioners and experts training in research methodology. We visited representative police agencies across the Province of Ontario (19) including urban, municipal, rural and First Nations services. Our team conducted surveys on the topic of de-escalation, training, and the Use of Force Model, as relevant to the Ombudsman's Recommendations. Respondents comprised of police officers from across the Province of Ontario (n=2,117 respondents). Further, we conducted in-depth symposia with Use of Force Instructors from the Province of Ontario and the Ontario Police College (OPC), as well as focus groups with public stakeholders from around the Greater Toronto Area in order to capture knowledge and understanding of de-escalation and Use of Force decision-making from community members (n=70).

We conducted site visits to police agencies in the U.K., including the U.K. College of Policing (5 sites). The purpose of the site visits to the U.K. was to compare Canadian policy and practice among front line officer duties, regulation and training surrounding de-escalation and Use of Force. The visit with representatives from the U.K. College of Policing provided clarification on their efforts and methods to transition to evidence-based, police training that is held to high standards and transparent to the public.

De-escalation

1. Police officers, instructors and agencies are committed to engaging in de-escalation in the field and in training. Overwhelmingly, police officers communicated that they wished the public to know their commitment to, and engagement in, the process of de-escalation, both in the field and with additional training opportunities. Police officers emphasized that it is a dangerous misconception to assume that police do not want to engage in de-escalation or that they are pushing for an 'us versus them' mentality. Overall, we found that police trainers and officers agree that non-physical techniques (i.e., verbal and non-verbal) are more conducive to de-escalation than physical techniques, and that they are applying these techniques to their calls on a regular basis. Police officers highlight that thousands of calls per day are de-escalated across the Province of Ontario,

underscoring the commitment and skill of police officers to de-escalate encounters with the public. At the same time, officers welcome new learning opportunities to increase skills of de-escalation/non-escalation, but also emphasize that new learning opportunities should not be wasted on modalities that are not effective. Scenario-based, interactive training was the most requested and most valued training type for de-escalation/non-escalation and Use of Force instruction.

2. Our research shows that the majority of police agencies in Ontario are committed to engaging in additional training opportunities for their officers surrounding critical decision-making, de-escalation and non-escalation. Many agencies are already developing programs, or using programs borrowed from other agencies, in an effort to provide members with additional material on de-escalation. Two issues remain: 1) given that de-escalation/non-escalation training is not mandated by the Ministry, and due to a lack of funding or resources for additional training, going above and beyond the Ministry's minimum standards for annual recertification training is seen as a 'luxury' by many agencies, 2) because standardized, evidence-based training is also not available, site visit data collection revealed wide disparities in the amount, type and quality of de-escalation training across the province.
3. Of the sites that we visited for the purpose of this report, de-escalation was emphasized as a theme in Use of Force training by most agencies. Almost all of the agencies highlighted de-escalation in classroom material and scenarios when teaching critical decision-making, defensive tactics, communication, and available resources. In general, all services expose officers to scenarios that involve firearms, CEW (as relevant), and verbal de-escalation, in some respect. The opportunity to participate in active scenarios typically lasted from 10-15 seconds to approximately 1-1.5minutes, and included anywhere from one to six scenarios per officer. In agencies that lacked key resources (e.g., access to a training facility or equipment, few available or qualified instructors, not enough time) had to rely more heavily on classroom or observational learning opportunities rather than scenario-based learning.
4. Data from site visits revealed significant variation in content and type of de-escalation training across the province. In the absence of standardized evidence-based curriculum, regulating de-escalation behaviour through legislation is premature. It is also not possible to assess the efficacy of de-escalation training across the province at this time, given the wide disparity in content and delivery. Our Recommendations together with our scientific literature review outline evidence-based solutions.

The Ontario Use of Force Model

5. Our research shows that frontline officers and Use of Force Trainers do not believe that the public understands the current Ontario Use of Force Model. Most officers were open to changing the Model to enable a better understanding by the public. Officers maintain that in the context of a training tool, the current Ontario Use of Force Model is understood by police. While officers do not believe that changing the design by explicitly adding "de-escalation" to the Model would change the way they report on their use of de-escalation, they do endorse the idea of developing a new tool to improve public understanding of police Use of Force.
6. As indicated by our applied data collected from site visits and information from Police Management, Use of Force Instructors, and Front-line Officers, the current Ontario Use of Force Model is generally regarded as a useful training tool, in particular for new officers. Experienced officers felt that they understood the underlying concepts of the Ontario Use of Force Model and did not require year-to-year reinstruction during annual Use of Force training.
7. Primary data collection indicated that the Ontario Use of Force Model is not actively considered by officers during real life incidents, rather it is used to articulate decisions and actions after the fact. This underscores

the conception that the current Ontario Use of Force Model does not directly inform the process or outcome of an incident, but is used to explain and organize an officer's decision-making *post hoc*.

8. Data collected from site visits, Use of Force Instructor symposiums and front-line officers concur that police encounters require critical decision-making skills for all police calls, not just calls that result in a Use of Force option. We also found that police apply de-escalation techniques to various situations where there is high tension, or *potential* for high tension, even including situations that do not involve mental health-related crises. The majority of agencies included in the site visits (n=19) are open to the idea of moving towards a Critical Decision-Making Model over the current Ontario Use of Force Model. Several of the larger agencies in Ontario are also moving towards creating training that supports a critical decision-making process before, during and after the incident.
9. Information collected from officers showed at times, usage of alternate decision-making models in addition to the Ontario Use of Force Model. Although these models are used by some agencies as decision-making models, there is not yet an established evidence base supporting them as instructive decision-making models. Further research would be required.
10. Data collection revealed a strong desire for the following: 1) curriculum at OPC to be updated according to evidence-based principles; 2) "awareness only" programs be replaced with aptitude and skill based learning. A repeated concern was the lack of confidence in the preparation of recruits during their time at OPC. Suggestions for improvement included an increase in the length of Basic Constable Training, with the caveat that extra time be spent on evidence-based, interactive learning and scenario instruction. There is a desire for OPC instructors to maintain real-world experience to facilitate credibility and knowledge of current occupational exposures that the recruits will face upon graduation.
11. Prior to our visit to the U.K., it was assumed that police in the U.K. would receive extensive courses on verbal de-escalation techniques given the fact that few carry firearms. Our observation of training and data collection revealed that this was not the case. Police training focused on critical decision-making and how to use the tools available, as well as defensive tactics. It may simply be a cultural difference in that if an individual decides to become a police officer in the U.K. they know they will likely not carry a firearm and thus be comfortable with the types of occupational duties and hazards. Furthermore, officers in the U.K. do not have a duty to engage in the same manner that police officers in Ontario do.
12. The U.K. College of Policing engages public and stakeholder support by making the process of curriculum development, evidence-based research efforts and finalized training products open and available on the U.K. College of Policing website. Police agencies in the U.K. use a standardized Use of Force report and routinely review the statistics (quarterly or more frequently) in order to modify training to improve public and officer safety outcomes.

Evidence-Based Recommendations

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Recommendation Summary

We recommend that:

1. MCSCS mandate a review of current curriculum at OPC, and from this review, mandate the creation and use of evidence-based curriculum at OPC.
2. MCSCS mandate a standardized, evidence-based (as defined in this report) 8-hour course on critical decision-making and de-escalation for all sworn officers, to be delivered at each agency every 12 months. This course is **in addition to** annual recertification requirements.
3. MCSCS mandate an increase in the minimum requirements for annual Use of Force training to 16 hours every 12 months (an increase from the current 8-hour minimum). The additional 8 hours should focus on critical decision-making practice and assessment.
4. MCSCS require that all new curriculum and training be developed and reviewed by a team of expert academics and practitioners in order to maintain evidence-based standards and assessment.
5. MCSCS mandate a standardized assessment of de-escalation/non-escalation skills, which will follow standardized de-escalation/non-escalation training.
6. MCSCS mandate a 'Train the Trainers' course for all new de-escalation and Use of Force training. This course is to be delivered *before* the province-wide implementation of new de-escalation curriculum. We recommend that MCSCS require that the new curriculum only be taught by Instructors trained at OPC in the Train the Trainer's course in order to maintain the validity and quality of both content and delivery.
7. MCSCS require recertification and teaching quality assessment (every 2-3 years) for Use of Force Instructors teaching de-escalation and Use of Force curriculum.
8. MCSCS mandate the development of a Critical Decision-Making Model that replaces the current Ontario Use of Force Model.
9. MCSCS develop a standardized method for teaching the Critical Decision-Making Model. The standardized curriculum accompanying the new model should be part of the Use of Force and de-escalation Train the Trainers course. The new model should be delivered to agencies across the province in combination with, and not preceding, the standardized curriculum. The new model and related curriculum should only be taught by Certified Use of Force Instructors trained at OPC.
10. MCSCS develop a 'Community of Practice' to facilitate the exchange of data and best practices across the province.
11. MCSCS commit to standardized assessment of the efficacy of curriculum, model, and training developments.
12. MCSCS facilitate public understanding of de-escalation and Use of Force training, and engage in transparent curriculum development and implementation.
13. MCSCS commit to moving forward with the evidence-based process for answering the Ombudsman's Recommendations in a timely fashion. To facilitate this process, we recommend that the MCSCS support the creation of an Ontario Centre for Excellence in Public Safety & Police Practices Research.

Ombudsman's Recommendation #2: The use of de-escalation in police encounters

Our Recommendations below are based on findings from both the academic literature review and applied data collection with practitioners (i.e., frontline officers) from a representative sample of police agencies in Ontario. De-escalation and non-escalation are a consideration in all police encounters, not just encounters in which the outcome is Use of Force. The Suspect Apprehension and Pursuit (SAP) Regulation is appropriate for the particular situation it was designed for. However, encounters with the public in a non-pursuit context are so dynamic that they do not always follow a proscribed progression lending them to regulation in the same manner as SAP. Regulation already exists (Section 25 and 26 of the Canadian Criminal Code) for officers to make reasonable decisions and actions based on the totality of the situation. Hence, reasonable force is *only* to be used to de-escalate when other de-escalation methods (e.g., verbal and non-verbal) are not viable for tactical and safety considerations.

Instead of using SAP, a Critical Decision-Making Model will more clearly outline existing regulation, highlighting de-escalation and non-escalation in a manner that is understandable for both police and the public (see Recommendation 8a below). Given that prescriptive legislation already exists, it follows that any new regulation focus on evidence-based training. We recommend that the Ministry mandate standardized evidence-based de-escalation and non-escalation training within a critical decision-making framework. We recommend that the Ministry mandate the assessment of this new training.

Research Team Recommendations: De-escalation

Recommendations for police training begin with curriculum at the Ontario Police College. Basic Constable Training is the foundation upon which life-long skills may be encoded into an officer's memory. As reviewed in this report, scientific research indicates that ingrained, implicit skills direct verbal and non-verbal behaviour, and can even override instinctual responses that may counter de-escalation/non-escalation. OPC is the first exposure, and for many officers from smaller agencies, the most comprehensive training to instill implicit skills regarding de-escalation and Use of Force. As research demonstrates, if appropriate skills have not become implicit, instinctual responses will more likely occur (e.g., Fight or Flight response). If a skill has been learned incorrectly, but is now implicit information, it is much harder to change in subsequent training, and takes a longer time to do so. Given the limitations of agency funding and resources for annual training post-OPC, the opportunity to un-learn incorrect information and learn correct information is greatly reduced.

Research demonstrates that simply training individuals to be **aware** of a topic (e.g., mental illness, stigma, bias or signs of crisis, fear or stress) is not sufficient to train officers to manage such issues in increasingly complex encounters. Information encoded explicitly, via passive learning exposures (e.g., lecture and classroom discussion, or online videos) is not robust to real-world stress arousal as experienced by police. It is acknowledged that MCSCS and police agencies across Ontario have responded to public concerns by instituting curriculum covering a wide range of 'awareness programming'. This reactionary strategy has filled curriculum at OPC, and across Ontario agencies, at the expense of skill-based, procedural learning from interactive (i.e., group- or scenario-based) approaches, which promote implicit encoding that is robust to the stress of police encounters. However, research demonstrates that evidence-based programming is the most effective way to address areas of public and police concern (e.g., stigma, bias, threat responding, critical decision-making, etc.), and can be efficiently incorporated into interactive learning.

We recommend the following:

1. MCSCS mandate a review of current curriculum at OPC and from this review, mandate the creation and use of evidence-based curriculum at OPC.

a) A team of academics and practitioners (experts supportive of an evidence-based process) will review content and observe training at OPC. We have provided resources from which to identify academic and professional experts appropriate for such a process.

i) The academic and practitioner team will compare curriculum to evidence-based programming in existence, or that with research validity. The team will have expertise in eliminating program redundancy, and create programming that efficiently achieves training goals in critical decision-making (including de-escalation and non-escalation).

b. MCSCS will mandate the creation and use of evidence-based curriculum at OPC. Evidence-based curriculum will be created using existing curriculum *only* if it meets evidence-based standards. If current programming does not meet standards, it should be modified to reflect evidence-based material. In the event that evidence-based programming does not exist for a topic, the commitment and plan for research to evaluate program efficacy should be engaged and made transparent to the public. We support extending the number of weeks of OPC Basic Constable Training with the directive that the additional time be used for evidence-based skill-building programming (as reviewed in this report).

c. Members of the curriculum review and development team must include non-partial academics and community stakeholders and should not be made up solely of police and Ministry representatives. The police practitioners selected for the committee should consist of members who are dedicated to, and have experience with, evidence-based training initiatives.

i) Site visits have revealed some disagreement between agencies due to prior communication difficulties. Further, we encountered some insistence on continuing with past traditions because of the work that went into creating prior materials. Moving forward with evidence-based practices is not an invalidation of the hard work conducted in the past. However, as science and society evolve, so too should police curriculum and practice in order to better protect the safety of the public and police alike.

2. Post OPC: de-escalation and non-escalation cannot be separated from critical decision-making. As research demonstrates, it cannot be expected that all officers possess or maintain inherent critical decision-making skills relative to their occupation duties without appropriate training. Therefore, we recommend that MCSCS mandate standardized curriculum⁵ for critical decision-making skills in a manner that facilitates implicit encoding of de-escalation and non-escalation procedures, considering the real-world conditions in which they will need to be performed (e.g., under stress). This mandated curriculum would be delivered at all police agencies across the province on an annual basis. Police training methods and content should continue to evolve, just as society continues to evolve, presenting new developments and uncovering new threats.

a. Mandate the *content* of a standardized curriculum of evidence-base de-escalation/non-escalation training for all police officers across the province, post-OPC. The training should be at minimum 8 hours per every 12-month period. *These training hours are to be separate from annual recertification.* The purpose of a separate day of training from annual recertification is to ensure that the focus remain on evidence-based de-escalation/non-

⁵ Acknowledging that agencies across Ontario vary in size, needs, resources and types of exposures. Thus, the mandated curriculum we recommend is based on core components and procedures of learning, with built in adaptability for specific agencies. The adaptability bounds are set by the expert curriculum developers in coordination with relevant agencies representatives, but must remain evidence-based.

escalation training, and providing officers the opportunity to actually learn without the threat of being disqualified from service.

b. Mandate the *delivery method* of the standardized 8-hour de-escalation/non-escalation training to contain evidence-based learning modalities (i.e., interactive, scenario-based) that specifically address the core issues that impact the likelihood of de-escalation techniques being applied. The curriculum addressing these core components must be experiential, concrete, relevant, designed specifically for police, and researched with police. Borrowing from non-police programming, designing patchwork programs from pieces of curriculum, or putting the material into an online or lecture-based course, is not robust to the stress of performing in real world, high-stress encounters.

c. A police training focus on weapons and tactics is not sufficient in preparing officers for real world encounters as stress becomes more severe. This can be achieved by mandating training to follow the principles of learning and memory, including: a progressive and blended approach to training, interactive learning (as outlined by effective methods above), appropriate exposure to stress during training, and providing officers with individual tools to manage internal stress physiology.

3. We recommend that MCSCS mandate, and provide curriculum for, an increase in the minimum requirements for annual Use of Force training to 16 hours every 12 months (an increase from the current 8-hour minimum). The additional 8 hours should be focused on evidence-based instruction, and the assessment of critical decision-making skills. Annual requalification training should follow the course described in Recommendation 2. Given that annual recertification provides the opportunity for assessment of skills, the purely learning course (Recommendation 2) should precede annual recertification.

Highlights from site visit data contained in the full report revealed that although agencies are doing their best to provide specific de-escalation/non-escalation training, not all are able to due to limited resources or time. Further, there is limited evidence-based programming available. In spite of these observations, the majority of police agencies are setting aside additional time and resources to focus on de-escalation/non-escalation because they value this topic and are dedicated to providing members with instruction. We recommend that the Ministry mandate the content of de-escalation training rather than state 'suggested content.' For example, although 'judgement training' is currently required, the interpretation of the content and mode of delivery of 'judgement training' varies widely across the province.

4. We recommend that MCSCS require that all new curriculum and training be developed and reviewed by a team of expert academics and practitioners in order to maintain evidence-based standards and ability for assessment

5. MCSCS mandate a standardized assessment of de-escalation/non-escalation skills, following standardized de-escalation/non-escalation training. We recommend that the Ministry assess de-escalation/non-escalation skills during every annual recertification. The team of expert academics and practitioners will develop objective assessment outcomes. Assessment of performance will be evaluated using technology that can be uploaded and viewed by both the agency and by the Ministry. Our site visit data collection revealed that there is already a large police agency in Ontario following this objective and efficient format, providing evidence that objective assessment is achievable and efficient.

6. We recommend that MCSCS mandate a 'Train the Trainer' course for Use of Force Instructors that is in line with the evidence-based principles of teaching to facilitate maximal student learning.

a. The province-wide Use of Force 'Train the Trainer's' course should be expanded by 8 hours in order to capture the material required on the newly mandated provincial 8-hour de-escalation and non-escalation training

(Recommendation 2). The Train the Trainer's course, including the new de-escalation/non-escalation curriculum, will provide consistency and standardization in the way the course is delivered at all agencies across the province.

b. The 'Train the Trainer's' course should be in addition to, and in coordination with, the Train the Trainer's course for Use of Force at OPC. This course should follow the evidence-based principles of teaching and learning as laid out in this document. Trainers should be assessed on their ability to deliver the content according to evidence-based standards.

7. We recommend that MCSCS mandate a recertification process for the Use of Force Instructors 'Train the Trainer' course. Research supports a recertification schedule of every 2-3 years.

Ombudsman's Recommendation #3: The Ontario Use of Force Model

We recognize, and support, the urgency with which the Ombudsman recommends the development and adoption of a new Use of Force Model. However, we caution the Ministry *not* to rush to adopt a non-evidence-based model that may not serve the needs of officers and the public in Ontario, simply because it has been 'standardized' in another province. Standardization alone does not achieve an evidence base.

Research Team Recommendations: Ontario Use of Force Model

8. MCSCS mandate the development of a Critical Decision-Making Model that replaces the current Ontario Use of Force Model.

We recommend that the Ministry develop a Critical Decision-Making Model for Ontario that is based on the components that research has revealed to impact assessment, and the use of de-escalation/non-escalation responses when safety and tactical considerations are met. The revised Model will visually represent how de-escalation and non-escalation underlie the Assess, Plan, and Act foundation of decision-making. The team appropriate to inform the development of a new Model includes: police practitioners who are supportive of evidence-based policing; academic researchers specializing in police-specific issues (e.g., memory, stress, etc.); a visual graphic designer with experience in modeling dynamic, complex processes that are understandable to the public.

- a. The revised Model should capture the fact that, according to academic and applied research, de-escalation and non-escalation underlies police assessments, planning, and actions in every encounter, not just those that result in a Use of Force.
- b. Training on the revised Critical Decision-Making Model should reflect the core components that impact how critical decisions influence the Use of Force.
 - i) Training should include a focus on past experiences (including prior knowledge, training, and experiences), how they impact implicit decision-making, and how to override prior maladaptive implicit responses.
 - ii) Training should provide tools to modulate internal physiology because it drives threat responses, and can result in errors and poor Use of Force decisions during complex or very stressful situations (particularly when a potential weapon or aggressive behaviour is present in the subject).
- c. Specific training content should address what implicit associations regarding Use of Force are being trained by the revised Model (is it behaviour=response? Knife = gun in all situations?) and modify training accordingly.

- i) We recommend the Ministry conduct research testing a). the efficacy of this new Model as a tool for training critical decision-making, including de-escalation and Use of Force decisions; and b) whether the new Model facilitates an improved public understanding of critical decision-making by police, including instances requiring Use of Force.

9. MCSCS develop a standardized method for teaching the Critical Decision-Making Model. The standardized curriculum accompanying the new Model should be part of the Use of Force and de-escalation Train the Trainers course. The new Model should be delivered to agencies across the province in combination with, and not preceding, the standardized curriculum. The new Model and related curriculum should only be taught by Certified Use of Force Instructors trained at OPC.

General Recommendations

10. MCSCS should develop a 'Community of Practice' to facilitate the exchange of data and best practices across the province.

Applied research data and site visits to police agencies across the province revealed many innovative developments in program delivery, use of technology, and collaborative research efforts with academics to develop evidence-based programming. What was also clear was the lack of communication between police agencies, and hesitancy to share resources or developments (potentially resulting from prior negative experiences). As the Ministry moves forward to implement the evidence-based Recommendations put forth in the present document, funding and time will be of key concern. In order to reduce redundancies in development, and to capitalize on resources that have already been invested in evidence-based programming, we Recommend the following:

- a. The Ministry open a secure web-based platform for agency communication, program development, and innovation/technology sharing. The Ministry review developments/innovation across the province, and facilitate implementation of evidence-based developments province-wide.
- b. Academics around the province and abroad are interested in collaborating with police agencies to tackle real world issues (e.g., Canadian Society of Evidence-Based Policing (Can-SEBP), Canadian Institute for Public Safety Research and Treatment (CIPSRT)). These resources should be utilized to drive results for the Recommendations described above.

11. MCSCS commit to standardized assessment of the efficacy of curriculum, model, and training developments. We recognize the enormity of shifting long-standing traditions to evidence-based practices. We have recommended a step-wise approach to doing so in the full report.

12. We recommend that MCSCS facilitate public understanding of de-escalation and Use of Force training by engaging in transparent curriculum development and implementation. MCSCS, with the aid of the expert team, should make transparent to the public and police agencies the way in which this new curriculum and program delivery replaces prior 'awareness-based' programming with effective, evidence-based content and delivery.

- i) The transparency of the curriculum, both in its content and development, can be accomplished by making the process and documents public and accessible on a web platform hosted by the Ministry. The U.K. College of Policing (CP) follows this method of transparency. The public (or any interested party) can search CP's website to locate training standards, and the standards according to which the training was developed.
- ii) Transparency can be further enhanced by allowing and encouraging the public to observe training at OPC as safety permits.

13. We recommend that MCSCS move forward with the evidence-based process outlined in this report for answering the Ombudsman's Recommendations in a timely fashion. To facilitate this process, we recommend that the MCSCS support the creation of an Ontario Centre for Excellence in Public Safety & Police Practices Research. Creating and funding a Centre of Excellence will better enable research in the field of public safety and police practices by effectively coordinating academic and provincial resources, and facilitate collaborations nationally and internationally.

Ontario already provides numerous examples of successful research centres integrating science and practice. For example, the Institute for Clinical Evaluative Studies (ICES) uses health data collected by the Ministry of Health and Long Term Care and research undertaken by scientists at the main medical centres in Ontario to better inform clinical practice standards. Work from ICES has been integral in informing better health policy for the Province of Ontario, as well as helping clinicians and hospitals implement evidence-based best practices. ICES has helped improve both patient health outcomes and the health care system as a whole. We propose a similar organization with a parallel mandate be established to better inform policy and evidence-based police practices for the benefit of public safety and police effectiveness.

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Section 1. A Matter of Life and Death: Addressing the Ontario Ombudsman's Recommendations

1.1 The Ombudsman's Recommendations

Below are listed the 22 Recommendations from the June 2016 Ontario Ombudsman's Report on de-escalation. The main purpose of the present report is to address Recommendations #2 and #3, which pertain to de-escalation and the current Ontario Use of Force Model, respectively. For the remaining Recommendations, we have included relevant links to areas in the present document for further reading.

#2: The Ministry of Community Safety and Correctional Services should develop and implement a regulation of de-escalation, modelled on the Suspect Apprehension Pursuit Regulation, which requires officers to use communications and de-escalation techniques in all situations of conflict before considering force options, wherever tactical and safety considerations permit. This should be done as quickly as possible, and no later than 12 months after the publication of this report.

#3: The Ministry of Community Safety and Correctional Services should institute a new Use of Force model that is easy to understand and clearly identifies de-escalation options rather than use-of force options. Both the B.C. and Las Vegas models have clarity and balance, But Ontario should lead by developing its own model that builds on the best of what others have done. Given the urgency of this issue, a new model should be developed and rolled out to all police services as quickly as possible and no later than 12 months after the publication of this report.

#4: The Ministry should formally and publicly respond to all coroners' jury Recommendations involving police Use of Force and de-escalation. This should be completed on a priority basis. The Ministry should also keep a complete and accurate record of actions taken to address coroner's jury Recommendations.

#5: The Ministry of Community Safety and Correctional Services should offer more guidance to recruits and in-service officers on the use of police challenge, including when the challenge has not been successful in de-escalating a situation and when, so long as safety and tactical considerations permit, to use the de-escalation techniques. This guidance should be incorporated into a de-escalation regulation.

#6: The Ministry of Community Safety and Correctional Services should revise edged-weapons training for recruits and in-service officers to stress the de-escalation techniques as the first option when facing a person with an edged weapon, provided that public and officer safety and tactical considerations permit.

#7: The Ministry of Community Safety and Correctional Services should expand the training period for training recruits at the Ontario Police College and use the additional time for more explicit training on de-escalation techniques and for practicing more de-escalation scenarios (see Recommendation 1b).

#8: The Ministry of Community Safety and Correctional Services should use the expanded OPC curriculum to offer more training on mental illness and strategies to de-escalate situations involving persons in crisis (see Recommendation 1).

#9: The Ministry of Community Safety and Correctional Services should expand mandatory annual Use of Force refresher/requalification training to two days; with one day dedicated to Use of Force techniques and one day to de-escalation techniques (see Recommendations 2a, b, and 3). This should also include clear guidelines to evaluate an officer's use of de-escalation techniques. The Ministry should monitor the police service's implementation of this expanded course (see Recommendation 11).

#10: The Ministry of Community Safety and Correctional Services should require scenario-based training as part of the annual refresher training and provide recommended content.

#11: The Ministry of Community Safety and Correctional Services should develop a standard syllabus on de-escalation, with definitions and training techniques, to ensure a consistent, high standard of in-service training of police officers across the province (see Recommendation 5).

#12: The Ministry of Community Safety and Correctional Services should revise the curriculum for use-of-force trainers to better enable them to provide training on de-escalation techniques as part of the annual training for police officers. Rather than repeat basic concepts from recruit training, the trainers' course should focus on teaching de-escalation techniques and strike a better balance between Use of Force tactics and de-escalation (see Recommendation 6a, b, and 7).

#13: The Ministry of Community Safety and Correctional Services should set guidelines for the selection of use-of-force trainers, so that de-escalation and communication expertise is given equal weight with weapon training experience.

#14: The Ministry of Community Safety and Correctional Services should institute and monitor a mandatory two-year recertification for Use of Force trainers, the same as it does for those who teach officers to use Tasers (Recommendation 7).

#15: The Ministry of Community Safety and Correctional Services should develop a standard reporting process that enables feedback and learning on de-escalation. The process should be used after all interactions with people perceived from suffering a mental illness or who are otherwise in crisis, where force was an option but was not used, and where the situations were successfully de-escalated.

#16: The Ministry of Community Safety and Correctional Services should monitor de-escalation reports to identify best practices, and use the information as a learning tool for recruits and in-service training (Recommendation 5 and 10a). Successful de-escalation should be shared among police services as a model of expected behaviour.

#17: The Ministry of Community Safety and Correctional Services should work with the Ministry of the Attorney General and Special Investigations Unit to analyse information collected in SIU investigations into incidents involving the death or serious injury of persons perceived to be suffering with mental illness or who are otherwise in crisis, and incorporate relevant lessons into the police training process (Recommendation 10).

#18: The Ministry of Community Safety and Correctional Services should actively monitor ongoing police pilot projects in the use of body-worn video to assess its value as an accountability and de-escalation tool (see Body Worn Camera Synthesis Document provided by authors to Minister). Based on the results of existing pilot projects, the Ministry should consider providing direction to police forces on the use of body-worn video, by no later than May 2017.

#19: The Ministry of Community Safety and Correctional Services should institute new mandatory training standards for coach officers, recognizing that these on-the-job mentors are a vital force shaping new officer's skills and perceptions. The training for coach officers should be in line with a revised approach to de-escalation that will flow from the new use-of-force model and expanded de-escalation model at the OPC (see Recommendation 6).

#20: The Ministry of Community Safety and Correctional Services should make review of the police services' coach officer programs as part of its regular inspections of police services.

#21: The Ministry of Community Safety and Correctional Services should institute new training for supervisory officers to help them develop skill in teaching de-escalation and in debriefing officers on how armed confrontations with persons experiencing a crisis were handled.

#22: The Ministry of Community Safety and Correctional Services should report back to the Ombudsman Office on a quarterly basis until all Recommendations have been implemented.

1.2 Defining an Evidence-Based Approach

Use of the term 'evidence-based' is becoming popular and can be used to enhance the credibility of information. We caution that there are various types of evidence, some reliable and others not. In science, evidence is classified by its strength, with the strongest evidence drawn from meta-analyses, systematic reviews, and randomized controlled trials. Other types of scientific research, such as from case-control studies, cohort, or correlational studies provide weaker evidence, but can be valuable tools for informing Recommendations and future research.

Evidence-based practices use current scientific evidence in making decisions about how to treat a patient (medical), or in this case, how to train an officer. Evidence-based practices for policing is defined as a research approach that evaluates policies and programs through scientific analysis to determine "what works" (Sherman, 2013). In the case of de-escalation training, evidence-based research first outlines the goals of the specific program (i.e., operational definition) by which to measure the success of the program over time. The main goals of de-escalation training are to decrease physical force, weapon force, injuries, and fatalities, so that both police and those they interact with can stay safe. The evaluation of training as seen in Krameddine et al. (2013) requires measurements taken before, immediately after, and at long term follow up (i.e., 3, 6, 12, 18 months or more) in order to determine intervention gains and retention. After scientific analysis, the organization needs to assess if incident rates have decreased significantly, utilizing whatever measures were established at the outset of the study. For example, fewer interactions with persons in crisis result in Use of Force reports, or fewer complaints registered. The program should then be monitored in an ongoing assessment to maintain its utility or make adjustments. If assessment is not completed, programs may be continued that waste time or resources that could be spent on evidence-based programming.

In a recent IACP consensus report, the most urgent approach to addressing community concerns on the Use of Force is "to establish and implement viable, well-researched, state-of-the-art policies on how and when officers should use force" (Dziejma & De Sousa, 2017, p. 22). In the present report, we base our strongest Recommendations on practices supported by well-designed and well-conducted research, and highlight areas for future research. We also provide a scientific literature review of the physiological, cognitive, and health sciences as they pertain to training police officers, both new recruits and seasoned experts, in de-escalation tactics and communications. The purpose of relying on strong empirical evidence is to optimize decision-making in regards to creating policy and legislation for police training and practice in Ontario.

Our report advocates that, to the greatest extent possible, decisions and policies should be based on evidence, not just the personal beliefs or opinions of practitioners, experts, or the general public.

We do not mean that an evidence-based approach invalidates the expertise or experience of police practitioners and officers. Rather, this approach acknowledges the expertise, but also highlights that practitioner's opinions, which may be limited by knowledge gaps or biases, should be supplemented with all available knowledge from the scientific literature so that best practice can be determined and applied. We recommend the use of formal, explicit and transparent methods to analyze evidence and then make this evidence available to decision makers and the public.

In Sum: Our shared goal is for police encounters with the public to be resolved with the best outcomes possible. During our data collection and site visits from around the Province of Ontario, it was clear that front line officers, Use of Force Instructors, and Police Agencies are open to, and already engaging in efforts to promote de-escalation. Agencies and officers welcome the idea of enhanced de-escalation police training, as long as it is evidence-based, not simply more programming that fills already stretched time and limited budgets.

We highlight the complexity that is inherent in the process of answering the Ombudsman's Recommendations. We believe that an evidence-based response to the Recommendations is what science supports as the path most likely to attain set goals. That said, the process of conducting an evidence-based response is multifaceted, takes careful planning, and time to complete the process correctly. Research demonstrates that simply legislating behaviour (i.e., you must de-escalate in every situation or be held criminally accountable) is not a scientifically supported way to successfully modify behaviour. However, evidence-based research does support specialized police training in critical decision-making as a means to *increase the use of de-escalation* and *improve Use of Force decision-making*. We hope that Ombudsman's office will consider the complexity of this process and that the Ministry will be accountable for engaging in the evidence-based process, and doing so in a timely manner.

Ontario has the opportunity to lead the charge as an example both nationally and internationally for introducing evidence-based practices into police policy for de-escalation and Use of Force.

Costs of a non-evidence-based approach

A report from the Coalition for Evidence-Based Policy commissioned by the U.S. Department of Education reviewed the efficacy of 77 major education interventions that were not evidence-based. The report found that 91% produced weak or no positive effects (Coalition, 2015).

Examples:

Military: An example of a large-scale program to enhance resilience and performance among military personnel affords a case from the United States. Comprehensive Soldier Fitness (CSF) was a \$125 million-dollar program adopted before scientific basis had been established. A meta-analysis conducted to assess the efficacy of this program revealed modest results from self-reported information, but *no objective improvements* (Eidelson: The dark side of CSF, 2011; McCord: Cures that Harm, 2003; (<https://www.psychologytoday.com/blog/dangerous-ideas/201103/the-dark-side-comprehensive-soldier-fitness>)). Scientists believe that at best this program will have no measurable results among a population that faces extreme circumstances and high risk of health problems, but at worst may actually cause harm.

Policing: In reaction to the public outcry over Eric Garner's death in police custody, New York Police Commissioner Bill Bratton rapidly introduced a police 'retraining' program that was not backed by empirical research. This two-day retraining program primarily consisted of classroom lectures on ethics and nobility, and half a day on gym mats practicing grips and subject control techniques. This program instructed officers to *close their eyes* and breathe if in a difficult situation. Closing one's eyes in a time-sensitive, potentially life or death situation is not only not evidence-based, it is potentially harmful and life threatening.

The costs associated with these and other programs include wasted time, money, and even potential harm for both the public and the officer. The costs attributed to rapidly adopting non-evidence-based programming means that although some action is taken quickly, the real problem is not solved, resulting in continued problems and potential harm.

The benefits of evidence-based programming and assessment

Police training programs based on empirical evidence, including large scale longitudinal studies and randomized controlled trials (see for example: Andersen & Gustafsberg, 2016; Andersen et al., 2018; Arntez, et al., 2009; Krameddine et al., 2013), have found significant improvements in de-escalation and decision-making regarding Use of Force actions that are relevant for practice. For example, researchers working with front-line officers in Ontario in 2016 demonstrate a 67% decrease in Use of Force decision-making errors following an experimental intervention addressing physiological arousal and critical incident decision-making. Six-months post-training, errors in decision-making further decreased to under one percent (Andersen et al., 2018). Krameddine and colleagues (2013) also found significant improvements in verbal de-escalation, communication and empathy with the public among Edmonton police officers up to six months following a one-day mental health training program. The authors note that the reduction in time spent on mental health calls resulted in a total of approximately \$84,000CAD in cost savings over six months. These savings exceed the cost of the study and training program, including training and hiring actors for a 19-day training period, costing approximately \$120 per officer. In comparison to other costs spent on officer training and equipment, this program successfully achieved the study goals and resulted in measurable improvements in police-public interactions despite a higher incidence of mental health calls, further underscoring the compelling nature of an evidence-based approach to de-escalation training.

In order to have evidence, we first need data: Evaluating the effectiveness of any training program requires long-term assessment of officers in the field. Knowing the incidence and details of Use of Force reports is an important source of such information, but whether they are regularly submitted, completed with sufficient detail, or the circumstances that make these reports a mandatory process all vary across organizations. To address this lack of data, the Federal Bureau of Investigation initiated a National Use-of-Force Data Collection portal and the IACP concurrently increased the scope of its Model Policy on Reporting Use of Force to include interactions involving "physical, chemical, impact, electronic, firearms, and vehicular force, whether or not they result in serious injury or death" (Dziejma & De Sousa, 2017, p. 25). These policies not only provide curriculum developers with much-needed data to accurately assess the effectiveness of new training paradigms, but also protects officers by recording more detailed accounts of any justifiable Use of Force interactions, which ideally should be 100% of cases.

1.3 A Comprehensive Approach to Addressing the Ombudsman's Recommendations: Current and Next Steps

Our systematic approach to addressing the Ombudsman's Recommendations can be divided into three phases. The document herein (Step 1) forms the foundation of critical knowledge upon which to base curriculum development in Step 2, and research validation in Step 3.

Step 1 – Academic and applied research outlining the critical components of evidence-based training and the Ontario Use of Force Model. These are foundational materials for Step 2.

Step 2 – We recommend that the Ministry take a national and global lead in developing curriculum for police training for critical decision-making, de-escalation and Use of Force, using the science-based components reviewed in this report.

A team of experts and Ministry representatives should lead this step. We recommend that this team include the following:

- Academic leaders specializing in scientific concepts as presented in this report;
- Scientists with a specialty in the neurobiology of learning and memory should be consulted for curriculum design in order to maximize a trainees' potential to learn, retain and apply information in the field;
- Other experts may include Use of Force experts and practitioners from police agencies across Ontario, including the Ontario Police College;
- Relevant community stakeholders and advocates for an evidence-based approach to curriculum development;
- Knowledge translation experts charged with educating the public on the importance of this process.

To identify experts for the proposed team, the Ministry can utilize several national and international directories and initiatives that focus on evidence-based research in policing. These include: Canadian Association for Chiefs of Police Research Foundation (<https://cacp.ca/research.html#14>), the Canadian Society of Evidence-Based Policing (www.can-sebp.net), and the Canadian Institute for Public Safety Research and Treatment (CIPSRT, <http://www.cipsrt-icrtsp.ca>).

We recommend that curriculum be developed (or modified appropriately) for each level of police training (i.e., Basic Constable Training – OPC; Post OPC and Coach Officer training; and Annual Recertification). Based on the data collection from the site visits collected for this report, our team has provided the Ministry with a representative sample of programs being conducted across the province. Further data collection is not necessary to begin the process of standardized curriculum development and modifications for Annual Recertification programming on de-escalation and a Critical Decision-Making Model for Use of Force. We recommend that, once the curriculum is developed, MCSCS distribute the curriculum across Ontario and to mandate that police organizations follow the format. The process will include core curriculum based on science with the flexibility to be adapted based on the needs of specific police agencies.

Guidance should be given by MCSCS on the ways in which the material can be modified – the expert team will give the guidance as the curriculum is rolled out across the province. The expert teams should visit police agencies across Ontario to provide in person guidance, and to assess that the curriculum is being applied within the bounds of the scientific base, considering the modifications per agency needs. If the application of the standardized curriculum is not assessed, then the results in Step 3 will not be reliable, and measurement of the outcomes will be meaningless.

In our Step 1 research data gathered, we have observed that police agencies are already undertaking many programs focused on de-escalation and improving Use of Force decision-making. An essential concern remains, however, in that taking bits and pieces of curriculum from various current programming – some of which are not evidence-based, or delivered in an evidence-based manner, may result in less than optimal outcomes. Hence the need for the Ministry to provide standardized curriculum, and the bounds within which modifications can be made based on the size and resources of individual police agencies.

We highlight that this review has uncovered that some of the programming occurring at police agencies across Ontario contains evidence-based components in both training and delivery. We recommend building on the efforts and current curriculum whenever possible. To this end, we have included in the Recommendations section ways in which to capitalize on programming innovation already present in agencies across Ontario.

Regarding Basic Constable Training at OPC, a thorough review of the curriculum was outside of the scope of this project. A scientific evaluation, based on the Recommendations herein would include an *academic review of course work*, and *site visit data collection* in order to fully understand teaching and delivery. Curriculum development would follow the academic and applied review.

Step 3 – Similar to Step 2, we recommend compiling a team of leaders and academics to measure the success of the new standardized curriculum through systematic scientific measurement of outcome goals. The experts on this team should have expertise in research development and measurement, and will review the planned outcomes every six months or annually, depending on the appropriate measurement schedule. For instance, the team could implement a longitudinal within-subject design to track individual officers as they enter new recruit training (OPC) and proceed to active duty. Evaluation measures could include behavioural assessments like the number of reported Use of Force incidents (Krameddine et al., 2013), or physiological measurements such as heart rate and stress hormone levels at rest and during stressful (i.e., scenario-based) training modules (Andersen et al., 2016, 2018).

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