

Evaluation of ‘the R-Model’ crisis intervention de-escalation training for law enforcement

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Abstract

This study presents findings from a process and outcome evaluation of a custom crisis intervention and de-escalation training for law enforcement, delivered in-house to a suburban Minnesota police department (the R-Model: Research, Respond, Refer). Individual officer survey data showed the R-Model significantly decreased stigma and increased self-reported knowledge of mental health resources over baseline. Knowledge of resources held at the 4-month follow-up. One-year follow-up data at the agency level, showed decreases in the number of crisis calls for service and the number of repeat calls to the same addresses, even when compared to crisis call rates at similar police departments. Findings provide preliminary evidence that the R-Model may be an effective model that warrants additional study.

Keywords

Mental illness, crisis intervention, policing, program evaluation

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A growing number of police calls involve people who are in the throes of a mental health crisis when officers arrive on the scene (Hails and Borum, 2003; Watson *et al.*, 2008; Wood *et al.*, 2017). The lack of mental health crisis services across the United States, coupled with the deinstitutionalization of patients with mental illness, has resulted in law enforcement officers serving as first responders to psychiatric disorders, yet police often have few options on hand for resolving crises (for a discussion, see Lurigio, 2012). While most people with mental illness are not dangerous or violent (for a review, see Varshney *et al.*, 2016), mental health advocates argue that police crisis training could prevent benign civilian encounters from turning deadly and reduce the number of people with mental illness ending up in jail (National Alliance on Mental Illness, n.d.). According to Washington Post (2019) databases, mental illness was a factor in 38% of all fatal police shootings in Minnesota (the site of the current study) from 2015 to 2018, which was higher than the national rate of 25%.

It was for this reason, amid sweeping 21st-century policing reforms (President's Task Force, 2015), that the 2017 Minnesota Legislature mandated all of the state's 11,000 peace officers to complete at least 16 hours of training on crisis intervention and mental illness, conflict management, and cultural issues within a 3-year police licensing cycle (*Minnesota Statute § 626.8469*). In January 2018, the Minnesota Board of Peace Officer Standards and Training (POST) approved learning objectives for this training and tasked the chief law enforcement officer of every one of the state's 431 police agencies to provide in-service training to their officers, beginning July 1, 2018.

Even before the mandate, on average, nearly 15% of officers in Minnesota's 12 largest law enforcement agencies (i.e. agencies with over 100 officers) had completed the 40-hour Crisis Intervention Team (CIT) training, widely considered the gold standard of training in this area (Smith, 2017; for an overview of the CIT training model, see Compton *et al.*, 2008). However, a majority of the state's law enforcement agencies do not have the capacity or resources to support the existing CIT model even if it can be scaled to meet growing demand—75% of agencies have less than 25 officers and 90% have less than 50 (Minnesota Board of Peace Officer Standards and Training, 2019). Sending personnel away for 5 days of centralized training is not affordable or feasible logistically for the average police department, and the context-specific mental health resources that buttress CIT training typically do not extend beyond the state's urban centers (see Compton *et al.*, 2010).

A new paradigm

The popular CIT model was designed to facilitate collaboration between law enforcement and mental health service providers and to divert people with mental illness to treatment. In theory, therefore, CIT is 'more than just training' for police (CIT International, 2017). However, in practice, particularly in Minnesota, CIT almost exclusively pertains to 40 hours of in-service training (see Peterson and Densley, 2018). A recent systematic review of the literature concluded that CIT training outcomes were mixed (Peterson and Densley, 2018). Another systematic review of the effectiveness of mental health training programs for nonmental health trained professionals, including law enforcement, reported wide variations in training design, delivery, and content and at

best only short-term changes in attitudes and behavior for police officers (Booth *et al.*, 2017).

One challenge is that our understanding of mental illness has changed significantly since CIT was developed 30 years ago in Memphis, Tennessee. CIT follows a medical model of mental illness, with 13.5 of the 40 hours in training spent on complex mental health didactics (<http://cit.memphis.edu/curriculum.php?id=0>). The efficacy of training police to ‘diagnose’ mental illness aside (Vitale, 2018), mental illness exists along a spectrum (Adam, 2013) and can be triggered and exacerbated by trauma, stress, and other environmental factors beyond someone’s unique diagnosis (Belsky and Poluess, 2009; Whitfield, 1998). Treatment and recovery involve not only access to medication and therapy, but also individual and group resilience factors such as a home, purpose, and social support (Davydov *et al.*, 2010; SAMHSA, 2019). Effective criminal justice interventions for individuals with mental illness involve boundary spanners who can link systems together (Steadman, 1992) and holistic approaches that support individual criminogenic needs (Skeem *et al.*, 2011). In addition to our deeper understanding of the impact of trauma on both mental illness and criminal behavior (i.e. Ford *et al.*, 2012), our understanding of secondary or vicarious trauma (Lerias and Byrne, 2003) has advanced over the last 30 years. Police officers experience high rates of stress and trauma while on duty, for example, which impact their own mental health and behavior (Loo, 2003; Pasillas *et al.*, 2006).

A new model

For the above reasons, there is demand for an updated crisis intervention model for police officers that is reflective of current knowledge around mental illness, crisis, and trauma and is responsive to the current climate of policing in the United States (President’s Task Force, 2015). Because all policing is local, there is further need for a more accessible, cost-effective model that is agency-specific, drawing upon reachable crisis and mental health resources to reduce arrests and unnecessary hospitalizations, but also the occurrence of 911 crisis calls and the need for police intervention in the first place because people in crisis are connected with service providers (i.e. mental health, housing, substance abuse treatment) in their own communities (see Vitale, 2018).

Therefore, the current study examines for the first time an alternative to CIT training known as the R-Model (Research–Respond–Refer). The R-Model was developed in 2017–2018 specifically to meet the new Minnesota POST Board-approved learning objectives in mental illness crisis response and the needs of Minnesota’s typical law enforcement agencies. To develop a new crisis intervention protocol, a partnership was formed with a mid-sized suburban Minnesota police agency that comprised 57 sworn officers and 13 non-sworn support staff. The Chief of Police granted researchers’ access to all crisis call records and let the first and second authors participate in ride-alongs, as well as conduct multiple interviews with agency officers. The Chief also agreed to develop and pilot the new training model on all of his officers and to facilitate pre-, post-, and follow-up data collection.

The first aim of this study is to describe the process of developing the R-Model training for police officers that aims to increase understanding of mental illness, reduce stigma, helps officers recognize the impact of trauma, teaches effective de-escalation

skills, introduces officers to their local resources, and sets up a decision-making tree for officers on crisis calls. The second aim is to evaluate the impact of this training on officers' self-reported mental health stigma, knowledge about mental illness, and crisis intervention skills. It was hypothesized that the training would reduce stigma and increase self-reported knowledge and crisis intervention skills both directly after the training and at the 4-month follow-up. The third aim of this study is to examine the impact of this training on crisis call data including the number of crisis calls, number of repeat calls, call disposition, and use of force on crisis calls 1 year after training delivery. These are all outcomes previously examined in studies of police crisis intervention training (for a review, see Peterson and Densley, 2018). It was hypothesized that this training would reduce the overall number of crisis calls (particularly those related to suicidality, drugs, and alcohol) and the number of repeat calls because callers were getting connected to services and treatment. It was also hypothesized that the training would change call dispositions, resulting in fewer involuntary hospitalizations and lower use of force owing to increased use of de-escalation techniques by officers.

Method

The newly created R-Model protocol was delivered to 70 individuals, including 57 police officers, over a period of 3 days at the study agency in early 2018. Officers completed surveys before and immediately after the training as well as 4 months later. Crisis call data from the agency were reviewed 1 year prior and 1 year after the training to assess behavioral outcomes.

Training development

The 1-day training protocol was designed based on information gathered from record review, training protocol review, interviews, ride-alongs, and mental health resource meetings over a 3-month period. Curriculum development took place over 8 months in 2017. Qualitative notes were taken during all training sessions, interviews, and ride-alongs, and axial coding was drawn upon to identify the most salient themes (Bryman, 2016). The initial protocol draft was reviewed by three local community stakeholders to gather feedback. Presentation slides and handouts were created to go along with the 1-day protocol, including a decision-making model for officers and business cards with important mental health resource numbers to hand out on crisis calls.

Training protocols. Existing de-escalation training protocols were reviewed and qualitatively analyzed to look for themes and overlap, including CIT training, Mental Health First Aid, Crisis Prevention Institute (CPI) training, Integrating Communications, Assessment and Tactics training, and the Police-Mental Health Collaboration toolkit. One of the lead researchers participated in the 40-hour CIT training, the 8-hour CPI, and an 8-hour Mental Health First Aid course. The other lead researcher, already a licensed special education teacher, completed a 12-hour Mental Health First Aid course.

Interviews. Open-ended qualitative interviews were conducted with seven community stakeholders including three police chiefs, a crime analyst, three family members of individuals with serious mental illness who have had police contact, and the executive director of a mental health advocacy group. These interviews, averaging about 1 hour in length each, focused on the challenges police officers face when interacting with individuals with mental illness and strategies for improving these interactions. Responses were recorded by hand and transcribed.

Ride-alongs. The first and second authors participated in ride-alongs with eight police officers at the pilot agency in the development phase of this study. Ride-alongs took place both during the day shifts and during the night shifts (four daytime and four evening shift), with officers representing the full spectrum of positions and years on the force (recent hire, 10 years on the force, 20 years on the force, sergeant). Each ride-along lasted approximately 2 hours. During this process, as is the standard practice in field research, the authors recorded shorthand observations and ‘fragments of action and talk’ either in notepads or on our cell phones to draw upon later to create more detailed fieldnotes (Emerson *et al.*, 1995: 31–32).

Mental health resources. Lead researchers also interviewed representatives from local community mental health resources including the county mobile crisis team, a county Assertive Community Treatment (ACT) team serving outpatients with severe and persistent mental illness, an acute psychiatric emergency department, and an outpatient clinic that accepts sliding-scale payments, and, in many cases, toured the facilities.

Themes. Qualitative analysis was conducted of our field notes and interview transcripts to look for common themes. The following themes emerged from the officer data and were incorporated into the 1-day training protocol:

Bigger picture. Frequently officers asked the question ‘what is going on?’ or ‘why are we the ones dealing with this?’ with respect to mental health crisis calls. Both police leaders and rank-and-file officers expressed a desire to understand the bigger picture of mental illness and policing, how it has changed over time, and how their agency compared to national trends.

Knowledge of behavioral cues. ‘Officers don’t need to diagnose’ was a consistent theme from officers, mental health professionals, and community members. Interview participants frequently expressed the need for identifying a mental health crisis by simple behavioral cues, avoiding detailed symptoms lists for various diagnoses.

De-escalation skills. In policing, where officer safety is paramount, de-escalation was focused on reducing or avoiding force and ‘slowing down’ an incident, which buys time to bring in supervisors, additional personnel or equipment, and other resources to a scene or to develop a coordinated response plan (PERF, 2016). However, the de-escalation strategies across disciplines (education, policing, nursing, psychology) were remarkably similar and all included strategies related to controlling oneself (i.e. not taking it

personally), the environment (i.e. avoiding crowds), and using verbal (i.e. active listening) and non-verbal (i.e. open body language) techniques.

Trauma. None of the existing crisis intervention protocols for police explicitly addressed officer trauma and officer wellness and mental health. However, this was a theme that every officer interview touched on and a topic that emerged on every ride-along. Officers commented that ‘you just get numb to it after a while’ and ‘you stop talking about it, because what’s the point’. One officer stated ‘after a close call, I lie in bed at night replaying it again and again in my head, I can’t sleep’. During one ride-along to a missing person call that resulted in finding a man who had committed suicide, the patrol officer commented ‘I can’t cry about it. I have to take the next call’.

Available resources. The training development revealed that an increasing number of police interactions occurred in what Wood *et al.* (2017) called the ‘gray zone’, where the problems at hand do not call for legal interventions such as arrest. Peace officers do have authority to take an individual into custody for medical treatment if they are in need of a mental health evaluation and are in danger of harming themselves or others if not immediately detained (*Minnesota Statute § 253B.05*). Still, officers expressed frustration that their options on crisis calls amounted to three imperfect outcomes—arrest, hospitalize, or walk away. Officers had experience and personal relationships with several high-frequency callers in their community but beyond the strain on time and resources and the sense of ‘déjà vu’, they were angry that no one was providing these ‘frequent flyers’ the reoccurring help they needed. As one officer said, ‘Going back week after week, night after night, is no good for anyone’. Calling the police is not a long-term solution to serious and persistent mental illness.

Hospitalization. Staff at the local psychiatric emergency room reported that only about 18% of individuals who arrived on transport holds were admitted for treatment, while 82% were released back into the community quickly. Officers expressed frustration that sending someone to the hospital typically resulted in them being back in their home within hours. There was a lack of understanding among officers on the role of hospitalization and what successful long-term mental health treatment looked like. The executive director of the mental health advocacy group explained:

Hospitalization is not an optimal outcome. It’s expensive and it can be traumatic. We want to help people in their homes.

Mobile crisis teams. Each county in Minnesota has a mobile mental health crisis team staffed by licensed mental health professionals that can be called directly by a person in crisis. Officers consistently expressed frustration with the long response times, which the crisis team confirmed could be 2 to 4 hours in suburban settings such as where the study occurred. Rather than the police calling the crisis team for assistance, moreover, dispatch records confirmed that more often the mobile crisis team was calling in the police for support. One community member commented that the crisis team ‘had never successfully de-escalated my son’ and that ‘getting handed the same materials every time isn’t helpful’.

ACT teams. Four ACT teams were operating in the county, but no officers had heard of them. When asked whether officers could make referrals to the ACT teams directly, one staff member responded, ‘Of course, that would be great. But that’s never happened’.

Outpatient clinic. There was one outpatient clinic located in the city of the study agency that took sliding scale payments (i.e., adjusted rates according to one’s income). Staff at the clinic indicated that they held one appointment per day for a crisis call. Officers reported responding to crisis calls at the clinic when they needed ‘the muscle’.

Innovative programming. Interviews with police chiefs revealed other innovative programming taking place around crisis and mental health. One chief described (a) a program of placing officers at group homes to establish relationships with staff and residents and (b) requiring all officers to attend one mental health appointment (paid overtime). Questions about training protocol also emerged. One chief commented:

Our training is that once you secure an area, you never give it up. These crisis calls sometimes require stepping back, giving up an area, in order to give the person space.

Another chief asked:

If the person is alone, and they want you to come in and shoot them, is it better just to walk away at that point?

Training pilot

Ethical approval for this study was granted by the first author’s home institution. At the beginning of the training, officers were sent the baseline survey including all measures via e-mail on their agency-issued smartphones. This survey assessed officer self-reported knowledge, skills, and perceptions. The first screen on the survey included an electronic consent form explaining to the officers that participation was voluntary and all information collected would be anonymous and confidential. Badge numbers were collected to link the pretraining and posttraining surveys but were removed and replaced with a numerical code. The training was then delivered by the lead researchers following the protocol outlined in Table 1, with a 1-hour break for lunch. At the end of the 8-hour training, officers were sent a post-survey to their agency-issued smartphones, which included questions related to knowledge, skills, and attitudes.

Four months after the training took place, officers were again sent a survey via e-mail on their agency-issued smartphones. This survey included an electronic consent and the same questions related to knowledge, skills, and attitudes. The follow-up survey also asked five open-ended questions about the most useful and least useful parts of the training, what skills they had used, and whether they had handed out any business cards that were developed for the training with mental health resources on them during crisis calls.

The study agency’s crisis call data were reviewed 1-year prior to the training and 1-year after the training. Record review and coding occurred on a single day on site at the

Table 1. The R-Model protocol.

30 minutes	Introductions, welcome, survey completion
60 minutes	Problem overview: criminalization of mental illness, prevalence, use of force, community specific data, and training goals
60 minutes	Recognizing crises and mental illness: behavioral signs of mood disorders, thought disorders, and childhood disorders; the role of stress, stigma, the myth of mental illness and violence, substance use, and cultural awareness
60 minutes	Responding to a crisis: managing the environment, oneself, verbal and non-verbal de-escalation, flexibility, and suicide prevention
60 minutes	Guest speaker with serious mental illness to describe the lived experience of being in a mental health crisis
60 minutes	Trauma: prevalence, law enforcement and trauma exposure, signs of trauma, post-traumatic stress disorder, triggers, and trauma-informed responses
60 minutes	Treatment and resources: what works in mental health treatment, medication, risk-needs-responsivity, barriers to treatment, communication and boundary spanning, local resources, and decision-making model
60 minutes	Agency initiatives: specific initiatives that interest the local agency including aftercare models, in-house social workers, crisis data collection, officer mental health, or assigning officer roles
30 minutes	Conclusion, wrap-up, and survey completion

study agency. A team of 12 trained research assistants and the two lead researchers participated in the coding process. All record coders signed a confidentiality agreement provided by the city. PDF copies of the crisis call records were placed onto 14 jump drives that could be used on laptops on site only. All information coded from the records was de-identified, and no identifiable information was saved on any computers or left the premises of the study agency. 2018 crisis call records were compared to the 2017 records on the following variables of interest: number of calls, repeat calls, call disposition, nature of call, and use of force.

Participants. The training protocol was delivered in-house at the study agency to 70 people over the course of 3 days (20–30 people each day, Table 2). Of the 70 individuals at the training, 13 were unsworn staff including records managers, front desk staff, or community service officers. Of the 57 full-time sworn peace officers eligible for this study, 50 (88%) officers provided complete pre- and post-data. Participants were 78% male and 92% White, with a mean age of 39.4 (standard deviation (SD) = 9.62) years. Twenty-eight percent of officers held an associate's degree, 64% had a bachelor degree, and 8% held a graduate degree, which is consistent with Minnesota's unique statewide mandate for degreed officers (Hilal *et al.*, 2013). Seventy-five percent of participants were married. The number of years as an officer at that agency ranged from 0 to 26 with a mean of 11.13 (SD = 8.25). Of the 50 officers with complete data, 15% had experience in crisis negotiation, 33% had special weapons and tactics (SWAT) team experience, 28% had experience supervising, and 17% had gone through CIT training.

Table 2. Sample demographics.

	N or mean	% or SD	N
Male	39	78%	50
Non-White race	4	7.68%	52
BA or higher education	36	72.00%	50
Nonmarried	13	25.49%	51
Age	39.4	9.82	50
Years in agency	11.1	8.25	50
Prior CIT training	8	14.00%	50
SWAT training	19	33.33%	57
Crisis negotiation experience	8	14.04%	57

SD: standard deviation; BA: bachelor of arts; CIT: Crisis Intervention Team.

Measures

Social Distance Scale. Social distance from mental illness was assessed at baseline and again posttraining and at the 4-month follow-up with the Social Distance Scale (SDS) (Penn *et al.*, 1994; Link *et al.*, 1987). The scale is a summed score of seven items measured on a four-point scale. Items include questions about one's comfort interacting and spending time with people with mental illness. The measure has demonstrated good internal consistency ($\alpha = 0.75$) and validity (Penn *et al.* 1994). The SDS was also administered directly after the training.

Self-Efficacy Scale. Self-efficacy on crisis calls was measured using 10 questions adapted from the General Self-Efficacy Scale (Schwarzer and Jerusalem, 1995) administered at baseline, posttraining, and at the 4-month follow-up. These questions assess an officer's reported ability to recognize a crisis, remain calm, and problem-solve on crisis calls, measured on a four-point scale.

Knowledge and skills. Ten questions about knowledge, skills, and confidence on crisis calls were developed for the purpose of this study (i.e. how confident are you in your ability to resolve conflict through talking?). Each question was assessed using a four-point Likert-type scale. Two additional questions assessed the officer's opinion on the hardest part of crisis calls and what they were best at or most comfortable doing on a crisis call. Knowledge and skills were assessed at baseline, posttraining, and at the 4-month follow-up.

Demographics. As presented in Table 2, demographic information was collected at baseline using 11 questions related to gender, race, age, education, relationship status, law enforcement experience, weight and height, and previous training, including CIT training.

Evaluations. For the purpose of this study, 10 training evaluation questions were developed (both closed and open-ended) and administered directly after the training to measure the degree to which participants found the training enjoyable and useful and the extent to which it impacted their knowledge and skills.

Results

Officer data

For each officer, an individual change score on each measure was calculated by subtracting the pretraining score from the posttraining score. Significant differences between pre- and posttraining scores were tested using paired sample *t*-tests.

Pre- and posttraining

Social distance. For each officer, a change score on social distance was calculated by subtracting the pretraining score from the posttraining score. The change scores had a mean of 1.76, ranging from -19 to 14 . Eighteen officers increased their stigma and social distance measure, 2 had no change, and 31 (60.78%) decreased their stigma distance measure. A paired sample *t*-test shows a significant increase in social distance scores pre- and posttraining ($t(50) = 1.89, p < 0.05$, one-tailed), with officers demonstrating more willingness to engage with someone with mental illness after the training.

Self-efficacy. For each officer, a change score on self-efficacy on crisis calls (recognizing crisis, remaining calm, and problem-solving) was calculated by subtracting the pretraining score from the posttraining score. Self-efficacy change scores had a mean of 0.13, ranging from -8 to 11 . Twenty officers decreased in their efficacy score, 5 had no change, and 21 increased in efficacy. Thus, there was no *overall* change in efficacy scores before and after the training.

Empathy. For each officer, a change score on empathy was calculated by subtracting the pretraining score from the posttraining score. Change in empathy scores had a mean of 0.15 with a minimum value of -2 and a maximum of 1 . Seven officers decreased in empathy, 28 had no change, and 16 increased their empathy score after training. There was no significant change in empathy scores before and after the training.

Resource knowledge. For each officer, a change score on resource knowledge was calculated by subtracting the pretraining score from the posttraining score. Change in resource knowledge scores had a mean of 0.53 with a minimum value of -2 and a maximum value of 3 . Over half of all officers (52%) increased their scores on resource knowledge as a result of the training, while roughly one-third (32.7%) reported no change in score; eight officers (15.4%) reported a decrease in their knowledge of resources. There was a significant change in knowledge of resources pre- and posttraining ($t(51) = -3.74, p < 0.001$).

Impact of prior CIT training. There were no baseline differences between CIT and non-CIT officers on efficacy, empathy, social distance, or confidence in de-escalation skills. Those who had previous CIT training were much more likely to report lower levels of knowledge about mental illness and knowledge of treatment after the training than before. Prior to training, the eight officers who have had prior CIT training reported a mean of 3.63 on knowledge of mental illness, significantly higher than the mean of 2.93

Table 3. Summary statistics for R-Model outcomes.

Measure	T1 (Pre)					T2 (Post)					T3 (4 months)				
	Mean	SD	Min	Max	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max	N
Social distance	16.38	4.68	7	26	53	18.22	4.48	7	26	55	17.81	3.25	11	24	27
Self-efficacy	32.31	3.01	25	40	52	32.29	3.25	27	40	49	32.26	2.92	26	38	27
Empathy	2.75	0.62	1	4	53	2.93	0.42	2	4	55	2.7	0.61	2	4	27
Enjoy	2.39	0.73	1	4	49	2.63	0.78	1	4	49	2.59	0.69	1	4	27
Resourceful	3.39	0.53	2	4	54	3.45	0.5	3	4	53	3.04	0.52	2	4	27
Confidence—cool	3.37	0.66	2	4	52	3.47	0.5	3	4	53	3.41	0.5	3	4	27
Confidence—trauma	3.38	0.66	2	4	52	3.47	0.5	3	4	51	3.52	0.51	3	4	27
Confidence—talking	3.44	0.67	2	4	52	3.6	0.49	3	4	53	3.52	0.58	2	4	27
Confidence—de-escalation	3.52	0.58	2	4	52	3.6	0.53	2	4	53	3.59	0.5	3	4	27
Knowledge—mental illness	3.04	0.47	2	4	54	3.09	0.48	2	4	55	3.04	0.45	2	4	26
Knowledge—treatment	2.67	0.64	1	4	54	2.87	0.55	2	4	55	2.85	0.46	2	4	27
Knowledge—trauma	2.89	0.72	1	4	54	3.09	0.48	2	4	55	2.85	0.53	2	4	27

SD: standard deviation.

for those without prior CIT training ($t = 4.75, p < 0.001$). After training, those with prior CIT training actually reported lower (though, given the small number of cases, not statistically significant) levels of knowledge of mental illness (3.63 before vs 3.00 after), while those with no prior CIT training reported statistically significant higher levels of knowledge (2.9 vs 3.1, $t = 2.21, p < 0.05$). The change in scores between the two groups is itself significant, a 0.18 increase for those without prior CIT training versus -0.625 for those with prior CIT training ($t = 3.29, p < 0.01$).

Those who had prior CIT training also reported moderately higher mean levels of knowledge about treatment prior to training (3.00 vs. 2.56). However, again there were significant differences in knowledge about treatment change; those without CIT training raised their average score from 2.56 to 2.92 ($t = 2.89, p < 0.01$), while those with prior CIT training reported lower knowledge scores after training than before (2.625 vs. 3.00), though not significantly so. The changes between the two groups are itself significant ($t = 2.37, p < 0.05$).

Four-month follow-up

Survey data were collected from 27 officers 4 months after the training occurred (approximately half of the original sample); therefore, all follow-up results are preliminary (Table 3). The significant positive change in resource knowledge pre-/posttraining held over the 4-month follow-up period, with officers knowing significantly more about mental health resources after 4 months than at baseline (baseline $M = 2.65$ (SD = 0.68), follow-up $M = 3.04$ (SD = 0.52); $t(24) = -1.77, p < 0.05$). The significant change in social distance after the training faded by the 4-month follow-up. The significant

difference between CIT and non-CIT officer's change on knowledge of mental illness held at the 4-month follow-up, with CIT officers reporting lower levels of knowledge about mental illness 4 months posttraining, compared to higher levels of knowledge for non-CIT officers ($t(20) = -2.39, p < 0.05$). However, only four CIT officers completed the 4-month follow-up, so these findings should not be overstated.

In the open-ended survey response, eight officers reported initiating less transport holds resulting in hospitalization, eight officers reporting 'slowing down' crisis calls more often and listening more on crisis calls, and four officers reported that they were more comfortable explaining mental health treatment options. As one officer commented:

We sign far less holds now. . . . We see a crisis is a crisis but not an emergency. Are they an immediate threat to self or others? No. Do they have means? No. Okay, so can we make a call and get family and friends involved instead?

The average number of resource referral cards handed out ranged from 0 to 10, with a mean of 2.7 per officer. Three officers reported wanting to have this type of training more often, with a suggestion of twice per year.

Participants also provided feedback that the training had changed the culture of the agency—taking more time on calls and trying to connect community members with services. For example, one participant noted:

In all honesty, I think we've changed our ways. We are slowing things down. We're looking at these calls and cases a little differently. We aren't pushing quite so hard.

Another officer commented 'We are making the extra call—trying to talk to the family first. Trying to get other people involved'. Further, it was revealed that the training officers in the department had begun to incorporate some of the de-escalation strategies learned in the R-Model into their regular use of force training sessions:

Our trainers put together a training based on a suicidal guy who was barricaded inside with a gun. . . . It was all about slowing it down and talking to him.

Agency crisis call data

In a decade, crisis calls at the study agency had increased 198%. This increase may reflect changes in dispatch and data coding practices over time, not simply more people in crisis, but internal police data revealed 393 crisis calls for service to the study agency in 2017, an all-time high (see Figure 1). In 2018, 1 year after the R-Model training intervention, the number of calls for service reduced 23.2% to 302 (Figure 2). The number of repeat calls (calls to the same address within the year) dropped from 59% in 2017 to 53% in 2018. When the five major group homes in the community were removed from the analysis, the number of repeat calls fell from 51% in 2017 to 42% in 2018.

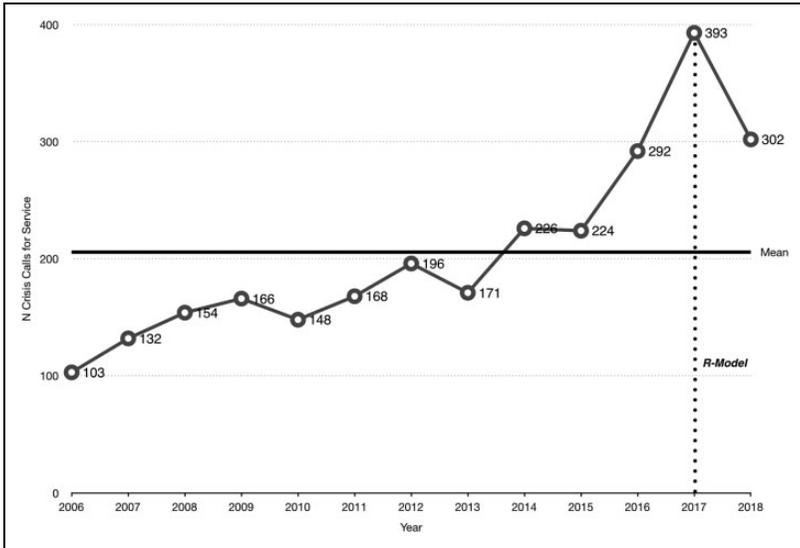


Figure 1. Number of crisis calls by year at the study agency.

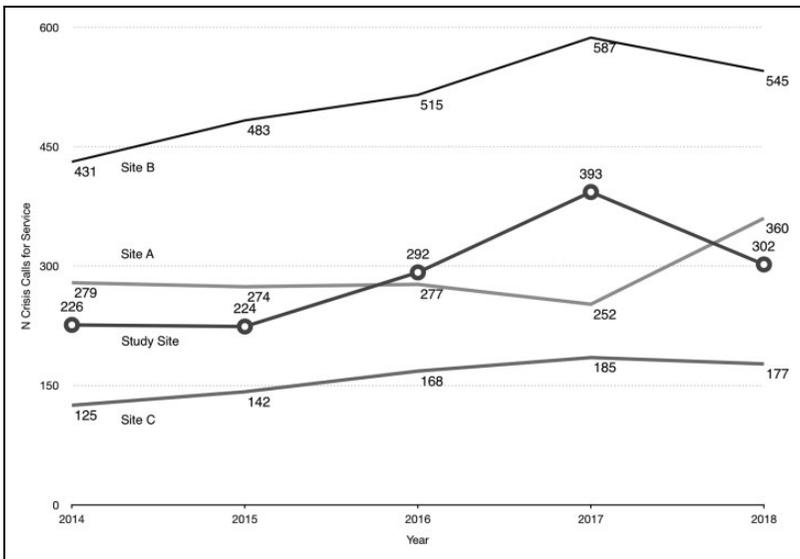


Figure 2. Number of crisis calls by year at study agency compared to three comparison agencies.

In 2017, those 393 crisis calls resulted in 189 incident reports, compared to 124 incident reports in 2018. The data from these incident reports are presented in Table 4. Notably, there was a decrease in the number of calls, the percentage of repeat calls, the percentage of calls with alcohol use or drug use present, the percentage of calls related to

Table 4. 2017 and 2018 Crisis call data from study agency.

	2017	2018	% Change
Crisis calls for service	393	302	-23.2
Repeat calls	229	158	-31.0
Repeat calls (no group homes)	168	107	-36.3
Incident reports	189	124	-34.4
Mean <i>N</i> of officers on scene	1.9	2.7	+42.1
Hospitalizations	154	98	-36.4
Calls for suicidality	112	68	-39.3
Call with alcohol	43	16	-62.8
Call with drug use	38	13	-65.8
Calls for psychosis	34	33	-2.9
Arrests	6	11	+83.33
Violence at call	63	51	-19.5
Weapon present	24	25	+4.17
Use of force	28	33	+17.9

Table 5. The study agency compared to three comparison agencies.

Department	<i>N</i> sworn officers	Population (community)	Median age (community)	Median household income (USD)	Poverty rate (%)	<i>N</i> Crisis calls 2017	<i>N</i> Crisis calls 2018	% change	5-year average	2018 vs 5-year average (%)
A	55	50,000	36	68,000	7.5	252	360	+42.86	288.4	24.83
B	75	62,000	36	66,000	9.6	587	545	-7.16	512.2	6.4
C	67	63,000	40	101,000	4.3	185	177	-4.32	159.4	11.04
Site	57	53,000	45	81,000	4.7	393	302	-23.2	287.4	5.08

suicidality, and the percentage of calls resulting in hospitalizations. There was a significant increase in the percentage (though not overall number) of calls with weapons or violence present, calls that resulted in arrest, and calls where force was used. One-third of all calls in 2018 where force was used had both a weapon and violence present, compared to just 7% of calls in 2017.

Data from the study site were compared to crisis call data from three similarly sized agencies in neighboring and similarly situated communities, for a quasi-experimental, albeit imperfect, comparison (Table 5 and Figure 2). None of these agencies had implemented the R-Model training or made substantial changes in policy or practice relevant to this evaluation. One of the comparison agencies saw an increase in the number of crisis calls (42.9% increase), while two of the comparison agencies saw small decreases (7.1% and 4.3% decrease). The 23.2% decrease in crisis calls at the study agency was the largest decrease in 2018. Further, when looking at crisis calls for service in 2018 versus the 5-year average for the comparison sites, all sites were higher, but the study site had the smallest increase, indicating that if the study site was regressing to the mean, it was in some ways unique in doing so.

Discussion

Police response to people with mental illness has been described as ‘an area ripe for research and community partnerships’ (Lurigio, 2012: 1). As hypothesized, this study found that the R-Model training had a significant impact on decreasing social distance/stigma and increasing officer knowledge of mental health resources. The knowledge of resources held at the 4-month follow-up measure. The fact that this could be accomplished in 8 hours of training as opposed to 40 hours is helpful for smaller and medium-sized agencies. This training also specifically focused on connecting officers to local, tailored resources, which translated into long-term knowledge.

Also as hypothesized, at the 1-year follow-up, the number of overall crisis calls decreased, the number of repeat calls to the same household decreased, and the number calls involving alcohol, drugs, or suicide decreased. These were the types of calls specifically addressed by the training by focusing on connecting community members in crisis with local services (so they do not make repeat 911 calls in the future). The percentage of calls where weapons, violence, psychosis, arrest, or force were present increased at the 1-year follow-up. These calls were not targets of the training, so as a result of the overall number of crisis calls going down, the proportion of calls involving violence or force went up, even as the absolute number of calls remained steady or even decreased. The implication being that these were calls that *truly* required a police response (Vitale, 2018).

One unanticipated finding was the impact of prior CIT training on change scores. Officers who had attended the 40-hour CIT training previously started out with higher scores on self-reported knowledge of mental illness and treatment at baseline but were significantly more likely to have a decrease in their scores posttraining. This could be due to an overconfidence in CIT-trained officers at baseline, a more realistic view of the officers’ role after the training, or the fact that the R-Model has an updated mental illness curriculum that embraces the complexity of mental health (i.e. the role of stress, culture, substance use), potentially challenging CIT officers’ preconceptions.

Officers reported specific behavioral changes during the 4-month follow-up related to a shift in department culture, changes in crisis call response, reduced use of emergency hospitalization, and using the resource cards—outcomes validated by the agency’s own crisis call data. Although the training model was only 1 day, the fact that it was delivered in-house to an entire agency at once meant the training provided a common ground to start from. The training started new conversations about crisis calls that continued after the trainers left and changed the culture of the agency, which cannot be accomplished by sending a small number of select officers to a one-size-fits-all training model.

Limitations

There are several limitations to this study. Namely, this study uses a small sample of one mid-sized, suburban police department. While this level of access to a police agency’s records and officers is rare, data from other departments are needed to understand the impact of the R-Model in other contexts (i.e. urban or rural agencies). The protocol for this study involved the lead researchers embedding themselves in the agency to establish

credibility, buy-in, and trust, both delivering and evaluating the training program. It is unclear how this impacted the overall results of the training and the extent to which this could be replicated at different agencies. Minnesota's unique police education and training model (see Bumgarner *et al.*, 2016) and legislative mandate for crisis training also are threats to validity. During the year after the R-Model was delivered, moreover, the study agency switched dispatch centers and changed reporting systems. It is unclear whether this system changed how crisis calls were being processed or reported, which could have an impact on the overall numbers. However, this concern is mitigated by the fact that the comparison agencies in this study use the same dispatch center.

At the 4-month follow-up, less than half of the officers participated in the survey, so all follow-up results are preliminary. This is likely because the survey was sent to their e-mail address and had to be taken on officers' own time. The survey data were self-reported confidence, knowledge, and skills, and self-reported behavioral change may or may not reflect true changes in behavior or knowledge. A randomized controlled trial or rigorous quasi-experimental study would obviously alleviate many of the limitations described (Ratcliffe, 2019). Hence, the next step planned for this research is a study with at least four experiment and four control agencies, using independent trainers and evaluators. This design will use census blocks or tracts as the unit of analysis, matched on the dependent variable (the number of crisis calls), plus additional confounders that could influence the number of crisis calls, such as population size, crime rate, and socioeconomic factors. Ecological units of analysis and synthetic controls should help generate sufficient sample size and statistical power to detect differences between the treatment and control agencies.

Implications for research and practice

There is a need for evidence-based protocols in policing (Ratcliffe, 2019). While other criminal justice fields have embraced the evidence-based movement (MacKenzie, 2000), there is a lack of empirical evidence on police training, especially in the area of mental health (Booth *et al.*, 2017). The President's Task Force on 21st Century Policing (2015) calls specifically for officer training and training of this kind, but little is known about its impact, the role of individual characteristics in responding to training, and the long-term impact of training on measurable behavioral outcomes and officer-citizen interactions (Peterson and Densley, 2018). The current study, therefore, adds to an emerging literature in this area but also promotes multiple avenues for future research.

This study highlights the fact that officer training on mental health is only as effective as the community resources available. During the training, officers expressed continued frustration at the lack of alternatives and resources other than the emergency room. The impact of community resources has also been highlighted as a factor in the effectiveness of CIT (Compton *et al.*, 2006; Watson *et al.*, 2011). The implication is that police training alone will not solve the problem of increased crisis calls in a community and policymakers must look beyond a law enforcement training mandate, even a well-funded one, for a holistic solution (Dupont and Cochran, 2000; Vitale, 2018).

Police are currently on the front lines of mental health crises in the United States (Lamb *et al.*, 2002). However, effectively handling a mental health crisis is something

that more than just police officers need to be trained on. Hospital staff, therapists, schools, family, and the general public could also utilize de-escalation skills so that the police do not need to be called to a scene. The presence of police is escalating in itself (Vitale, 2018), and helping other sectors effectively handle a crisis and direct individuals to resources is an area that has received less attention and action. The R-Model is different from other standardized trainings in that it is tailored to a specific agency's needs and resources and delivered in-house to start new conversations within the agency about long-term cultural change. There is potential to export this model to other service providers so that community stakeholders talk to each other and speak the same language on this issue.

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