

Effectiveness of Police Crisis Intervention Training Programs

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Approximately 1,000 people in the United States were fatally shot by police officers during 2018, and people with mental illness were involved in approximately 25 percent of those fatalities. Crisis Intervention Team (CIT) training is a specialized police curriculum that aims to reduce the risk of serious injury or death during an emergency interaction between persons with mental illness and police officers. CIT has been implemented widely both nationally and internationally. Given the increasing resources devoted to CIT, efforts to analyze its effectiveness and outcomes relative to other approaches are important. Studies of CIT and similar interventions are found within both the mental health and the criminal justice arenas, which use very different terminologies, approaches, and outcome studies, rendering unified analyses challenging. This article describes the CIT model and reviews several recent systematic analyses of studies concerning the effects of CIT. Studies generally support that CIT has beneficial officer-level outcomes, such as officer satisfaction and self-perception of a reduction in use of force. CIT also likely leads to prebooking diversion from jails to psychiatric facilities. There is little evidence in the peer-reviewed literature, however, that shows CIT's benefits on objective measures of arrests, officer injury, citizen injury, or use of force.

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Approximately 1,000 people in the United States were fatally shot by police officers during 2018, and people with mental illness (PMI) were involved in approximately 25 percent of those fatalities.¹ This rate has remained roughly constant between 2015 and 2018.² Police are often the first responders to PMI in acute distress, and sometimes they are the only responders.³ Over the last two decades, a diversion program known as the Crisis Intervention Team (CIT) model for police interactions in crisis situations involving persons in the community with mental, emotional, or developmental challenges has become one of the dominant paradigms in the United States for police–PMI interaction. According to Watson *et al.*,⁴ the original, primary goal of CIT was to reduce officer and citizen injuries. There is controversy in the research literature about the extent to which adoption of CIT has reduced the risk of serious injury or death for persons with mental illness

during an emergency interaction with police officers. This article describes the history of the CIT model and reviews the research literature on the extent to which it is achieving its goals, including reducing injury to officers and citizens.

Methods

Search keywords were collected by polling experts on the topic and reviewing key articles that had relatively high impact factors or that were highlighted by expert consultation. A literature search was conducted using the U.S. National Library of Medicine's MEDLINE database, Google Scholar, the Excerpta Medica dataBASE (EMBASE), The Cochrane Library, the Web of Science, ProQuest Dissertations and Theses, PsycINFO, Sociological Abstracts, OpenGrey, and the New York Academy of Medicine's Gray Literature Report. Search terms included CIT, crisis intervention, police, mental health, LEO, psychiatric, emergency, crisis, mobile, and logical combinations. Inclusion criteria included papers relating to police interventions for PMI and reports of objective measures or surveys. Priority was given to those papers reporting or analyzing experimental or quasi-experimental design with either intervention and control, matched-cohort or case-control stud-

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ies, or those with pretest and posttest data collection. Priority was given to papers published since 1989 (i.e., the deployment of the first CIT) and those written in English. Non-peer-reviewed material, such as theses, were generally excluded from substantive results. After de-duplication, the search identified 198 core CIT-related articles. Of these, two recent systematic analyses were identified as significant.^{5,6}

Origins

CIT began in response to an incident that occurred in Memphis, TN. Police encountered 27-year-old Joseph Dewayne Robinson in the street outside his mother's house as they responded to a 911 emergency dispatch called in by Mr. Robinson's mother on September 24, 1987.^{7,8} Mr. Robinson's mother had called police dispatch to report that her son, who had a reported history of mental illness and substance abuse, had been using cocaine and was cutting himself and threatening people. According to the police officers, Mr. Robinson did not respond to verbal requests and "lunged" at the officers, who shot him multiple times.

In response to this incident, community organizers, civil administrators, the Universities of Memphis and Tennessee, and the Memphis Police Department came together to organize the Memphis Police Department's Crisis Intervention Team. Its recommendations became the Memphis model of CIT, with a goal to reduce lethality during police encounters with people with mental/substance abuse disorders (i.e., PMI) and to divert such people, when appropriate, away from the criminal justice system and into the civil treatment system. Press reports in 1999 noted that in Memphis during the years prior to 1987, on average seven people with a history of mental illness had been fatally shot per annum by police officers, whereas by 1999 there had been only two such police-involved deaths of people with mental illness.⁸

The local Memphis city's chapter of the National Alliance on Mental Illness (NAMI) facilitated police-community discussions, education, and outreach in 1988. Today the national NAMI organization advocates for CIT programs and provides education and volunteer resources to establish and operate such programs throughout the United States. From a small beginning, the CIT approach has spread nationally and internationally.⁹ The

Memphis model of CIT formulated in 1988 and incrementally updated provides a template for CIT deployment.

The CIT Model

Codifying specific police responses to PMI is an example of problem-oriented policing,¹⁰ which is an approach to reducing the probability of the use of force through research, interventions, and outcome analysis. Following Hails and Borum¹¹ (after work by Deane *et al.*¹²), police responses to emergencies involving PMI nationally and internationally generally fall within a tripartite typology:

Police-based specialized police response: Sworn officers obtain special training to interact with PMI. The officers function as first responders to emergency dispatch calls in the community and coordinate with local community mental health resources. CIT falls within this category.

Police-based specialized mental health response: Non-sworn police department employees with mental health training provide on-site or remote consultation and advice to sworn officers in the field. This often involves a centralized resource center and was formerly a prevalent model.¹³

Mental-health-based specialized mental health response: Police departments coordinate with independent mental health systems and workers to cooperate on emergency response in the field, with mental health workers as primary agents. Mobile crisis units fall within this category, as do neighborhood-based care coordination and street triage.¹⁴

The Memphis model CIT program as enumerated within the CIT Core Elements specifies several components.¹⁵ The first component is training for self-selected police officers comprising 40 hours of instruction from community mental health workers, PMI and their families and advocates, and police officers familiar with CIT. The University of Memphis provides a sample curriculum suitable for a recommended 40 hours of training. Many local implementations exist, sponsored or funded by state agencies or through federal agencies such as the Substance Abuse and Mental Health Services Administration.

The second component involves training and special coding for dispatch operators to enable them to

recognize community reports with a high probability of PMI involvement and to route CIT officers there preferentially. This is significant because research indicates that the characteristics of the call for service initiating the contact is a strong determinant of the probability of future use of force.¹⁶

The third component, a centralized drop-off mental health facility with an automatic acceptance policy to minimize police officer transfer time, was identified in 2000 by Steadman *et al.*¹⁷ as an important element of a successful CIT deployment. Larger metropolitan areas have deployed multiple facilities within geographically dispersed areas. Rural settings present specific challenges.¹⁸

The goals of CIT are variably defined between different stakeholders. On its website, the University of Memphis describes CIT as a prearrest jail diversion for those in a mental illness crisis. It adds that the goal of CIT is to provide a system of services that is friendly to individuals with mental illness, their family members, and the police officers.¹⁹ On its website, the Memphis Police Department describes CIT as a community partnership working with mental health consumers and family members.²⁰ It adds that the goals of CIT include setting a standard of excellence for its officers regarding treatment of PMI and joining both the police and the community together for the common goals of safety, understanding, and service to people with mental illness and their families.²⁰ NAMI describes CIT as a model for community policing that brings together law enforcement, mental health providers, hospital emergency departments, and individuals with mental illness and their families.²¹ It adds that the goal of CIT is to improve responses to people in crisis.

The University of Memphis states that outcomes for CIT programs include being able to effectively divert persons in mental health crisis away from jail and into appropriate mental health settings and to be a potent agent for overcoming the negative stereotypes and stigma associated with mental illness.²² On its website, the Memphis Police Department states an outcome for CIT is that CIT-trained officers can offer a more humane and calm approach.²⁰ On its website, NAMI states concrete claims for CIT, stating that it improves officer safety, keeps law enforcement officers' focus on crime, and reduces community spending.²¹

CIT's Success

During the Obama Administration, the U.S. Department of Justice's Community-Oriented Policing Services (COPS) published information on local policing practices and numbers. According to the President's Task Force on 21st-Century Policing,²³ at the end of 2015 there were 17,985 police agencies within the United States. The Bureau of Justice said in 2013 that there were 15,388 police agencies.²⁴ Various federal or interstate initiatives, such as the U.S. Department of Justice's Police-Mental Health Collaboration²⁵ or the Justice Center's Law Enforcement/Mental Health liaison services,²⁶ attempt to provide centralized resources for training and referral.

The fragmented and overlapping U.S. law enforcement system presents challenges in terms of oversight and monitoring, and this extends to gathering statistics. Although the police power rests with the individual states and there are some state-wide police forces, most U.S. police officers work within small, local departments with limited resources.²⁷ Half of all agencies have fewer than ten officers, and nearly 75 percent have fewer than 25 officers. Testimony recorded in the President's Task Force Report on 21st-Century Policing describes significant difficulties providing training and equipment for such small departments, as well as challenges with local municipal boundaries and traditions that prevent many agencies from combining forces with neighbors. Small departments can have significant difficulties deploying or consistently operating a CIT model that closely follows the core elements of the Memphis approach.

According to Deane *et al.*,¹² in the 1990s, only 45 percent of 174 responding police departments reported any specialized response to PMI, and of those, a distinct minority ($n = 6$, or 3%) reported using the CIT model. Since then, CIT uptake has been rapid. In a 2008 comprehensive qualitative analysis of CIT, Compton *et al.*²⁸ noted that there were approximately 400 CIT programs operating across the United States. In 2019, the University of Memphis CIT Center reports 2,700 CIT programs within the United States.²² This national figure of 2,700 CIT programs, while representing only around 15 to 17 percent of the total number of police agencies, probably underestimates the absolute number of people interacting with CIT-trained officers because of CIT's relative ease of adoption within larger, ur-

ban agencies (compared with smaller, rural, or more dispersed agencies). The form of CIT deployment is also variable, and some may conform more or less closely to the elements of the Memphis model.

CIT's spread is not limited only to the United States. Two of the founders of the Memphis model CIT in 1988 (i.e., Major Sam Cochrane (Retired) of the Memphis Police Department and Dr. Randolph DuPont of the University of Memphis) are on the Board of Directors of CIT International, an advocacy and training group. CIT International and the University of Memphis CIT posts "Crisis Intervention Team Core Elements"¹⁵ on their websites. This document provides a template for establishing and operating a CIT in the Memphis model. Despite very different policing regimes globally, international uptake within common-law countries has progressed. CIT programs are now found in Canada, the United Kingdom, and Australia.

CIT's Effects and Reception

Given the broad uptake of CIT deployment nationally and internationally, the evaluation of CIT's effects and benefits is important. As many researchers have noted, this is a difficult question to answer, but it important in terms of resource allocation and social justice. Most of the studies on CIT involve analysis of the planning,²⁹ deployment, and procedural functioning of the CIT process itself, including the selection,³⁰ training,³¹ operations,³² and measurement³³ or self-report³⁴ of CIT-trained officers.

Concerns have been raised previously about evidence-based outcomes measurements for the CIT approach. The 2008 review by Compton *et al.*²⁸ limited itself to a narrative synthesis because of a paucity of eligible studies as well as heterogeneity of methodology and data. This review produced a critical response by Geller,³⁵ likening being in favor of educating officers of police departments about mental illness and mental health services with being in favor of motherhood and apple pie. The concern over an uncritical CIT adoption universally is multifactorial. There is concern about the lack of evidence of efficacy for specific goals and concern over the opportunity cost of pursuing this model to the exclusion of others. In addition, there have been concerns regarding the possibility that a jail diversion program such as CIT may shift cost burdens from police budgets (generally relatively politically favored) to community mental health budgets (potentially less relatively

politically favored). This relative favoring of one budgetary initiative over others may explain some of the growth of CIT in preference to other alternatives, such as specialized mental health-based response or street triage.

Several recent reviews and a meta-analysis have attempted to summarize the results of research on the effects of CIT with certain specific, quantifiable goals. Whereas published studies of CIT within small, relatively homogeneous regions that adhere closely to the Memphis model's parameters are often positive, larger-scale multi-site analyses are mixed. The core element of CIT involves 40 hours of training, usually for officers who are voluntary and self-selected.³⁶ Other agencies have adopted a universal training approach where training is recommended or even mandatory for all officers. Sometimes cash bonus payments are offered as incentives for officers to participate and maintain certification as being CIT-specialized. Other elements may not be available or configured differently, such as CIT-oriented dispatchers (and coding) and integrated community resources, such as a no-refusal, rapid drop-off behavioral health center. Fidelity to some or all of these core elements may be fundamental to enabling quantifiable and replicable CIT outcomes between different deployments.³⁷

Outcomes

Much research has shown an improvement in attitudes and a reduction of stigma in police officers who received mental health training.^{38,39} There is good evidence for benefit in officer-level outcomes, such as officer satisfaction and self-perception of a reduction in the use of force.⁴⁰⁻⁴² A survey of police officers indicated that CIT-trained officers perceived themselves as less likely to escalate to the use of force in a hypothetical mental health crisis encounter.⁴³

There is also evidence for CIT's effect on prebooking jail diversion. One study, which involved 180 officers (roughly 50% CIT-trained) from multiple departments and reported on 1,063 incidents, demonstrated a CIT effect of increased verbal negotiation as the highest level of force used, with referral to mental health units more likely and arrest less likely.⁴⁴ The same study noted, however, that there was no measurable difference in the use of force between officers with CIT training and those without it. Other studies have also found a lack of evidence for a reduction in injuries associated with CIT in-

volvement.⁴⁵ One reasonable hypothesis is that environmental effects may overwhelm the detection of possible favorable effects of CIT in terms of reducing the lethality of encounters between police officers and PMI.

It has been challenging for researchers to operationalize and then evaluate the relative efficacy of different models of CIT compared to similar specialized interventions. A recent systematic literature review by Kane *et al.*⁶ considered several interventions: CIT; an approach called “liaison and diversion,” which has a primary goal of diversion where specialist mental health-trained staff are located at police custody sites or courts; and an approach called “street triage,” which has a primary goal of timely access to mental health services involving mobile crisis units and specialized mental health-trained staff deployed locally according to individualized protocols. Kane *et al.*⁶ found no clear evidence from the studies reviewed of superiority for one approach over the others in terms of benefit for various criminal justice outcomes, such as the number of arrests or days spent in detention, or for primary health outcomes, such as identification of mental illness at an earlier stage.⁴⁶ Each of the structured programs produced some beneficial effects compared with control groups within the relevant studies. The reported effects were variable between programs, however, and the significant outcome heterogeneity made quantitative comparisons challenging. CIT was assessed to be the best program in terms of reducing re-offending and improving mental health outcomes. This was postulated to be related to the fact that CIT was the only intervention that offered an integrated service combining the initial call and response triage with specialized trained police officers and mental health professional intervention.

The difficulty of establishing clear evidence for CIT’s efficacy in reducing officer and citizen injuries is illustrated by a 2016 systematic review and meta-analysis of research on CIT at multiple sites by Taheri.⁵ The difficulties in terms of heterogeneity and lack of intention-to-treat analyses encountered by the earlier study by Compton *et al.*²⁸ persisted. It remains challenging to identify agreement between studies about exactly what constitutes a mental health crisis call. Individual programs demonstrate differences in terminology and thresholds to identify an encounter as a mental health crisis.

The lack of high-quality CIT outcome studies suitable for data analysis was illustrated by Taheri’s challenge in identifying suitable candidates.⁵ Out of 820 records for potential incorporation in the analysis, only eight met criteria suitable for evaluating quantifiable outcomes for arrests, police officer injury, or use of force. The meta-analysis goal of measuring officer injury outcomes could not be achieved due to the absence of a standardized measurement across the studies satisfying inclusion criteria. None of the analyzed studies showed a positive benefit of CIT on use-of-force outcomes. Analysis of pooled studies found that CIT officers were significantly less likely to arrest PMI compared with a control group of non-CIT officers. This result was based on self-reporting by study participants, however, whereas analysis of the official arrest statistics did not show a consistent effect of CIT for either an increase or decrease in the arrest frequency for PMI.

Discussion

Despite a lack of evidence for effectiveness in terms of its original goal of reducing lethality during police encounters with people with mental health and substance use disorders, CIT has been shown to have some measurable positive effects, mainly in the area of officer-level outcomes. These include increased officer satisfaction and self-perception of a reduction in the use of force. CIT programs have also been promoted to increase diversion to psychiatric services rather than jails and to decrease costs. Studies of specific CIT programs have found some positive but mixed outcomes or trends toward statistical significance in terms of increased diversion to psychiatric services overall.⁴⁷ This may lead to cost reductions. For example, one study of the cost effects of CIT in a city with around 600,000 inhabitants found modest cost reductions mainly through a reduction of hospitalization days and inpatient referrals from jail. This was despite a significant outlay for emergency psychiatric evaluations.^{48,49}

CIT may influence the prevalence and frequency of early-stage, outpatient psychiatric referrals. Such emergency services triage may result in an overall reduction in psychiatric health care costs due to a reduction in significantly more expensive inpatient or hospital services. This may represent an analog of preventive health care, where money spent earlier can produce greater benefit than money spent later in a disease process. The variability, effectiveness, and

vertical coordination of the psychiatric services available to PMI referred after CIT intervention is difficult to quantify. There are bound to be significant location- and insurance-specific factors that affect whether such individuals respond to treatment or resume behaviors likely to result in repeat CIT interactions. These unknown variables may also account for the difficulty in demonstrating many consistent, measurable health outcomes of CIT.

Another factor to consider is that, with the thousands of CIT programs deployed, there may be a publication bias leading to a reduction in the likelihood of publication or dissemination of studies identifying a null effect or adverse cost increases or shifts associated with a specific CIT program.

Another important goal of CIT programs is to improve officer and citizen safety. This outcome is harder to demonstrate. After 20 years of CIT training programs and the recent increase in dissemination, large-scale studies of the quantifiable benefits of CIT as applied to the reduction of lethality and effect on overall arrest rates remain limited.⁵⁰ Some studies have demonstrated little significant difference between CIT-trained officers and untrained officers in terms of the characteristics of PMI diverted to psychiatric emergency services.⁵¹ Studies have not shown consistent reduction in the risk of mortality or death during emergency police interactions.

These studies, however, are limited by variability in how CIT is implemented across the heterogeneous U.S. police systems and the reality that state and federal databases tend to undercount officer-involved shooting fatalities by wide margins of 30 to 50 percent.^{52,53} This data imprecision could limit sensitivity for detecting improvement associated with CIT. Police use of deadly force itself is relatively rare,⁵⁴ and this low base rate, coupled with relatively underpowered studies, creates an elevated risk of Type II error (i.e., false negative error).

There also may be larger trends at work in U.S. society whose effects obscure or counteract those of CIT, including: the effects of race⁵⁵ on officer-involved shootings, where African Americans are nearly three times more likely to be killed by police than white Americans;⁵⁶ officer characteristics;⁵⁷ increased militarization of policing;⁵⁸ and gun ownership patterns.⁵⁹ One study concluded that there were two significant neighborhood characteristics important in officers' decisions to use force. One factor was the actual threat level in a neighborhood, as mea-

sured by the number of active resistance incidents by residents. The other factor was the officers' perceived level of threat, as measured by the percentage of non-white residents.⁶⁰ The high comorbidity of substance use in PMI⁶¹ means that many people involved in emergency police interactions may be intoxicated.⁶² Intoxication is an additional risk factor for violence and a strong predictor of force use during police interactions.^{63,64} This is probably due to increases in aggressiveness and perceived threat of violence.^{65,66} Police officers perform dangerous jobs within a society distinguished by relatively high homicide rates, high levels of gun ownership, and concomitant gun homicide.⁶⁷⁻⁶⁹ The individual characteristics of the encounter are often cited by officers as the primary element informing the decision to use force.^{70,71} This decision to use deadly or injurious force during an encounter may be largely a function of the incidence of high-risk encounters and may remain relatively insensitive to preencounter training such as CIT.⁷²

Another concern about the use of CIT programs relates to cost effectiveness and opportunity costs, i.e., not spending money on alternatives. These alternatives could include increased use of mental health-based specialized response or street triage,⁷³ increased funding for comprehensive or assertive community outreach programs, or an increase in the number of beds at inpatient acute or long-term residential facilities. Alternatives could also include increased focus and intervention on the social determinants of mental health or additional resources devoted to preventive mental health.^{74,75} In their recent systematic literature review, Kane *et al.*⁶ concluded that, in general, diversion programs resulted in lower criminal justice costs and greater health-funded intervention costs. Even if CIT may reduce overall costs to the criminal justice system, this needs to be measured against potential costs shifted to the community mental health systems associated with successful diversion to treatment.⁷⁶ Further research is warranted to measure the quantifiable outcomes of CIT, and to consider the opportunity costs versus the benefits of continuing to expand CIT programs.

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