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Countywide implementation of crisis intervention teams: Multiple methods, measures and sustained outcomes

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The crisis intervention team (CIT) is a tool that can be used to foster pre-booking diversion of individuals with mental illness from the criminal justice system and into community treatment services. Although CIT is often implemented solely as the training of law enforcement officers, the model stipulates that CIT is a vehicle for collaboration with community stakeholders who share a similar philosophy, as well as expanded mental health services offering a 24 hour–seven days per week drop-off option for law enforcement officers. This case study presents the countywide implementation of CIT and expands previous findings on the prevalence of officer interaction with persons with mental health issues and CIT training outcomes, including changes in officer perception of individuals with mental health issues. Furthermore, analysis of the disposition of calls for officer assistance coded as mental health or suicide found significant increases in officer drop-offs to the mental health crisis center post-CIT training. Interrupted time series analysis determined that this change has been sustained over time, perhaps owing to the unique communication between county law enforcement and mental health staff. Implications for policy and practice are discussed.

1 | INTRODUCTION

Over the last four decades, the deinstitutionalization of people with mental illness from psychiatric hospitals into their communities has coincided with increased contacts with the criminal justice system (Lamb & Weinberger, 2005). Local communities, and specifically law enforcement, were not equipped with the necessary training, resources, and

community connections to effectively manage individuals experiencing severe mental health symptoms (Dupont & Cochran, 2000; Heilbrun, DeMatteo, Strohmaier, & Gallway, 2015). As first responders operating without these critical resources, law enforcement officers defaulted to the tools at their disposal (i.e., arrest and jail) to keep the public safe (Vogel, Stephens, & Siebels, 2014). In fact, it is estimated that 10% of police contacts are with individuals who have a severe mental illness (SMI) (Deane, Steadman, Borum, Veysey, & Morrissey, 1999). Consequentially, 60% of those entering jail report some mental health problem in the year preceding jail (James & Glaze, 2006), but research using validated measures has found that approximately 15% of men and 31% of women within jails have SMI, a rate four to six times greater than in the general population (Kubiak, Beeble, & Bybee, 2012; Steadman, Osher, Robbins, Case, & Samuels, 2009).

Recent calls for smart decarceration (Epperson & Pettus-Davis, 2015) have placed a focus on the diversion of persons with mental health problems from the criminal/legal system to community mental health and social services. Since the 1980s, law enforcement agencies across the country have been addressing the increasing numbers of persons with mental health problems with specialized law enforcement responses (Reuland & Yasuhara, 2015). These specialized responses prioritize referral and transport to behavioral health service providers and family in lieu of arrest. Perhaps the most familiar and most highly researched specialized law enforcement response is crisis intervention teams (CITs) (Compton, Bahora, Watson, & Oliva, 2008; Dupont & Cochran, 2000). This study expands previous research on CIT implementation and outcomes by using a county as the target of intervention (versus a city), triangulating multiple methods, and using longitudinal analysis to assess change in officer behavior over time. We begin by providing background on the intervention and previous research before explaining the multiple methods used in this study.

2 | BACKGROUND

2.1 | Crisis intervention teams

The CIT, sometimes referred to as the "Memphis Model" (Compton et al., 2008; Dupont & Cochran, 2000), is a collaborative effort within communities to improve interactions with individuals who have a mental illness (McGuire & Bond, 2011). Researchers have identified three critical elements needed to successfully implement specialized law enforcement response programs such as the CIT (Cross et al., 2014; McGuire & Bond, 2011; Reuland & Yasuhara, 2015), including: (i) philosophy and community collaboration; (ii) training (i.e., 40 hours for law enforcement); and (iii) the accessibility of mental health services (i.e., crisis center access). Although the CIT model has been widely implemented across the country, there is variation in fidelity to these critical elements (see CIT International; www.citinternational.org). For example, some communities focus only on law enforcement training with no attention to the larger community collaboration; others reduce officer training hours to reduce costs. There is also wide variation in the proportion of officers trained within municipalities, ranging from training one or two officers to mandatory training for all officers. Therefore, it is helpful to review the research on CIT as it pertains to the critical elements of specialized law enforcement response.

Philosophical differences naturally exist between law enforcement officers and mental health treatment providers. These differences may stem from the personal characteristics of individuals drawn to these fields, the type of professional education and training received in each profession, the goals of each profession, and the tools used in each profession. In order for these two systems to work collaboratively, they must come to an understanding of their differences and hold mutual respect for their differing philosophies (McGuire & Bond, 2011). Many communities that have successfully implemented CITs have created multidisciplinary groups to plan and coordinate the implementation, maintenance, and evaluation of CITs (Reuland & Yasuhara, 2015). The systems-level, collaborative approach to CITs is designed to reduce the need for crisis response by law enforcement and to increase access to other services for this population; this approach demands a concerted effort from both professions for planning, implementation, and ongoing problem-solving (Cross et al., 2014; Wood & Watson, 2017).

The CIT literature noticeably focuses on law enforcement (Cross et al., 2014), with a 40 hour specialized officer training as the pillar component. This training is intended to be voluntary (Wood & Watson, 2017) and includes lectures, mental health agency visits, and intensive exposure to, and knowledge of, individuals with mental illness (Cross et al., 2014). Oftentimes, local mental health experts provide training about mental illness in general and identify local resources available for those with mental health concerns. Scenario-based training is also provided to expand and develop officer skills, particularly in techniques for the de-escalation of individuals experiencing severe mental health symptoms (Cross et al., 2014; Wood & Watson, 2017). Often de-escalation techniques learned in the law enforcement academies focus on demonstrations of authority and strength as a mechanism to ward off possible aggression. In CIT, officers learn that demonstrations of authority and strength may escalate a situation with someone experiencing serious mental health symptoms; effective de-escalation techniques include a lowered voice, backing away from the individual, speaking calmly, and listening (Reuland & Yasuhara, 2015). Supplementary to the training for patrol officers is training for dispatchers, who can establish the need for CIT skills at the outset of a call (Compton et al., 2008).

The third element of specialized law enforcement response focuses on the availability of local mental health services. Often calls for officer assistance are from concerned family and friends who have identified that an individual is experiencing a mental health crisis. Some of these individuals are involved in varying degrees of illegal behavior (i.e., disorderly conduct to assaultive behaviors). Officers are entrusted to make decisions that safeguard the community and the individual using the resources available within the particular community. Officers typically have the option of transporting the subject to the local jail or hospital emergency room (ER) or, if available, a 24-hour mental health crisis facility (Wood & Watson, 2017). Lacking a crisis center, officers may believe that a hospital ER is preferable to the jail, though one drawback is that officers are generally required to wait at the ER until the individual is admitted. Officers complain that this wait takes them off patrol for hours. Access to 24-hour service or a crisis center with a "no-refusal" policy (i.e., the center cannot turn away officer referrals) allows officers to drop individuals with mental health professionals and return to patrol more quickly (Cross et al., 2014). Organizational collaboration may require that administrators within the mental health system reorganize or increase services for individuals who come to the attention of law enforcement or those already involved in the criminal justice system (Cross et al., 2014; Reuland & Yasuhara, 2015).

2.2 | Impact of CITs

Studies analyzing the outcomes of CITs often report on three findings: (i) the characteristics and long-term outcomes of individuals served under this model; (ii) the impact of CIT training on officers; and (iii) the outcomes from an officer contact, commonly referred to as a "call disposition" (Heilbrun et al., 2012). Individuals brought to a psychiatric hospital by CIT-trained officers were more likely to have a serious psychiatric impairment (e.g., diagnosis of schizophrenia) and to have been known to the local mental health system compared with individuals brought to the hospital by non-CIT-trained officers (Strauss et al., 2005). Long-term studies of individuals successfully diverted from jail via CIT-trained officers found that they experience improvements in mental health functioning (Cowell, Broner, & Dupont, 2004) and a reduction in the number of days in jail (Steadman & Naples, 2005) compared with individuals who were not diverted.

Studies of the impact of CIT training on officers found that they report increased confidence in their approach with individuals who exhibit symptoms of mental illness (Borum, Deane, Steadman, & Morrissey, 1998; Hanafi, Bahora, Demir, & Compton, 2008; Heilbrun et al., 2012) and perceive themselves as more efficacious at serving this population (Borum et al., 1998). Additionally, CIT-trained officers show significant increases in their knowledge of symptoms of mental illness and exhibit a change in attitude toward this population (Compton, Esterberg, McGee, Kotwicki, & Oliva, 2006; Hanafi et al., 2008; Wells & Shafer, 2006). Research has also found that CIT training improves the officer's ability to screen an individual for mental illness (Strauss et al., 2005; Wells & Shafer, 2006).

Research on call dispositions presents mixed results as well. One study comparing three specialized law enforcement response models (Steadman, Deane, Borum, & Morrissey, 2000), found that the CIT program resulted in quicker

response times to mental health calls, increased incidence of individuals taken to mental health treatment centers, and a lower rate of arrest than the other models. While some studies have demonstrated reductions in arrest by CIT officers (Compton et al., 2014; Franz & Borum, 2011), others have not found this impact (Teller, Munetz, Gil, & Ritter, 2006; Watson et al., 2010). A consistent finding across CIT studies is the increased referral or transport to a mental health treatment facility by CIT officers (Compton et al., 2008; Teller et al., 2006; Watson et al., 2010). Unfortunately, few studies have assessed if the training effect is maintained over time, or if there is a systemic effect across officers (CIT and non-CIT) in terms of referrals to treatment versus jail.

3 | CURRENT STUDY

In the interest of replicating and expanding the prior research on CITs, this case study focused on Oakland County, MI. To date, all of the research identifies a city as the target of the intervention; there has been little inquiry about the larger geographic areas of implementation. In working closely with county administrators from law enforcement and community mental health, researchers were able to assess need and evaluate efforts to enhance service delivery. In an effort to elucidate the effect of CIT implementation within this county, we initially assessed the need for such intervention before triangulating methods and data sources to ask the following questions. Does CIT training for officers: (i) enhance skills and knowledge; (ii) change officer perception; and (iii) increase and sustain utilization of community mental health resources?

4 | METHODS AND RESULTS

This single case study design focuses on a critical case (Yin, 2009)—the sole county implementing CITs within the state that met two criteria: (i) availability of a 24-hour crisis center, and (ii) researcher access to countywide law enforcement records. Multiple methods were used to illustrate needs and outcomes for this case study including: use of standardized instruments for pre−/post-training assessments; semi-structured interviews with a purposive sample of those trained; and the assessment of two sources of administrative data - officer call reports and crisis center drop-off logs. Owing to the multiple methods and various outcomes, this section combines methods and results in an effort to more clearly link a specific method and the associated outcome. We begin with a brief description of the county that comprises our case study before describing each of the methods and the results attributable to that particular method.

4.1 | Case description

Oakland County is a metropolitan area in the Midwest and is home to 1.2 million people, living in 61 municipalities (i.e., cities, townships, or villages). The county sheriff's office has deputies who supervise the jail, patrol all county parks and secondary roads, and provide support to other municipal law enforcement agencies, as needed. In addition, the county sheriff serves as the primary law enforcement agency to 15 municipalities within the county, providing comprehensive security and patrol services. In 2015, the sheriff's central dispatch received a total of 212,954 calls for assistance.

The county-level community mental health authority serves approximately 25,000 county residents across 300 sites, offering services for those with developmental disabilities, serious mental illness, and substance use disorders. In addition, the community mental health authority operates a state-of-the-art 24-hour crisis center—one of a few in the state. The crisis center provides urgent psychiatric admissions, psychiatric crisis beds for adults and children, a residential "step-down" unit for those who require monitoring less than hospitalization, and a walk-in department for those in crisis. There are 14 acute care hospitals providing emergency services within the county, many of them with psychiatric services.

Law enforcement officers have the opportunity to utilize the services at the crisis center or the acute care hospitals for individuals whom they suspect to have mental health concerns. Crisis center protocol has been streamlined so that officers only have to sign in the individual, including the individual's name and their own name and agency affiliation, before returning to patrol. This process is unlike the procedures at the acute care hospitals, where officers are required to remain with the individual until he or she is either admitted or discharged. It should be noted that when the officer makes the choice to bring someone to the crisis center—rather than jail—they are attributing their behavior to the mental health issues and not formally arresting. If the crime were of a very serious nature (i.e., in danger of causing a serious public safety risk), the officer would take the individual to jail and refer to the mental health staff within the jail for assessment.

4.2 | Genesis and goals of CIT within the county

Collaboration between the county sheriff's office and the community mental health agency resulted in a state grant to implement CIT, with a particular emphasis on officer training costs. The grant focused on providing a 40-hour CIT training for up to 80 officers from the county sheriff's office and local police departments, with the goal of training 25% of the officers within the county. An officer from another county, experienced in providing CIT training, was contracted to provide two 40-hour training sessions in the spring of 2015. The curriculum was facilitated by local law enforcement and mental health professionals, a practice that is desired, but not universal. Of the 79 officers who volunteered for and participated in the training, 60 were from the county sheriff's office and 19 were from eight local police departments within the county.

4.3 | Assessing need within the county

Records from officer call reports were examined to assess baseline need and officer decision-making. In the year prior to the training (2014) there were 468 call reports written by officers that were coded by the officer as either "mental health" or "suicide" and, thereby, indicative of a mental health issue. Calls coded as suicide vary from those coded as mental health in that an action was taken that generally required medical attention (i.e., overdose or physical injury). Final disposition of these calls resulted in 56% (n = 263) of individuals being dropped off at the crisis center, 43% (n = 201) being transported to a local hospital, and less than one percent (n = 4) being transported to jail.

In 2015, the year the initial CIT training took place, there were 568 call reports coded as either mental health or suicide. In the same year, there were 456 individuals brought to the crisis center by a county sheriff deputy. Comparisons of the individual identifiers on these 568 call reports and the 456 crisis center drop-offs found that only 61 cases were linked as the same person/same call. This equates to 919 unique law enforcement interactions involving a person with a mental health problem. The resulting numbers illuminate that many police interactions involving individuals with mental health problems are not officially recorded; officers frequently dropped individuals to the crisis center without writing a formal call report.

5 | MEASURING AND ASSESSING OUTCOMES

5.1 | Knowledge and skills gained in CIT training

Pre- and post-surveys were implemented immediately prior to (pre-) and following (post-) the 40-hour training. The surveys, developed in collaboration with sheriff's office administrators, consisted of both open- and closed-ended questions encompassing demographic information, professional experience, and standardized instruments. With attention to time constraints, sheriff's office administrators insisted upon brevity in the pre−/post-test survey measure. Of the 79 officers participating in the training, a total of 67 officers completed both a pre- and a post-test.

5.1.1 | Opinions of psychiatric treatment (OPT)

The OPT (Broussard et al., 2011) is a 20-item measure of the officers' knowledge about psychiatric treatments within the community, as well as attitudes about psycho-pharmacotherapy, psychotherapy, and psychosocial interventions. Cronbach's alpha values were moderate, 0.59 (pre-) and 0.74 (post-) during initial development (Broussard et al., 2011). Responses are given via a six-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Examples of the questions include: (i) psychiatric medicines are like any other medicines; (ii) psychotherapy is needed because people with serious mental illnesses are often dangerous; and (iii) day treatment programs may help people with serious mental illnesses recover. The possible range of scores is 20–120. Change scores were created for each individual to test for differences by officer: gender (male, 1; female, 2), education level (high school or associate's degree, 1; bachelor's degree, 2; higher than a bachelor's degree, 3), and years working in law enforcement.

5.1.2 | De-escalation subscale of behavioral outcome scale (BOS)

Broussard et al. (2011) developed the BOS to measure two constructs: (i) de-escalation skills, and (ii) referral decisions; however, only de-escalation items were included in this study. The eight de-escalation items measure the officers' response to a vignette scenario involving an agitated man (David) with a mental health issue. Officers are asked their opinions on the effectiveness of specific actions in the situation using a four-point Likert scale ranging from 1 (very negative) to 4 (very positive). Examples of the questions include: (i) having your hand on your baton or gun when speaking to David; (ii) saying to David "The owners of this building are going to have you locked up"; and (iii) keeping some space between you and David while you talk to him.

Cronbach's alpha was low during initial instrument validation (0.48 at pre- and 0.55 at post-), with the authors suggesting that the de-escalation subscale may represent "diverse constructs, not a unitary de-escalation construct" (Broussard et al., 2011, p 461). Because of the dearth of instruments to measure police interactions with those with a mental illness (Bahora, Hanafi, Chien, & Compton, 2008), the research team elected to use the instrument so that some comparison with other CIT-trained officers across the country could be made. Change scores were created for each individual to test for differences by officer: gender (male, 1; female, 2), education level (high school or associate's degree, 1; bachelor's degree, 2; higher than a bachelor's degree, 3), and years working in law enforcement.

5.1.3 | Data analysis and results of pre−/post-test scores for patrol officers

Total scores ranged from 8 to 32. The OPT scale (Cronbach's alpha = 0.614 (pre-); 0.701 (post-)) demonstrated an average increase between pre- (M = 72.3, SD = 5.7) and post-test (M = 78.8, SD = 6.6) of 6.6 points ($t(66) = 8.722$, $p < 0.001$). Paired-sample t-tests indicate that the training improved officers' knowledge of treatment in the community. There were no significant differences in change scores by gender, education level, or number of years in law enforcement.

The De-escalation Subscale demonstrates very low reliability as a scale (Cronbach's alpha = 0.368 (pre-); 0.468 (post)); however, there was an average increase of 1.3 points from pre- (M = 26.0, SD = 2.3) to post-test (M = 27.2, SD = 2.4). This seemingly small average increase was statistically significant ($t(65) = 4.199$, $p < 0.001$), indicating that the training improved officers' knowledge of what behaviors are best to help de-escalate someone with a mental health issues. An item analysis revealed that three of the eight questions significantly changed from pre- to post-survey. These items included "Having your hand on your baton or gun when speaking to David" (−0.182, $t(65) = 2.11$, $p < 0.05$), "Saying to David 'It sounds to me like you're really frustrated and angry'" (+0.516, $t(65) = 6.611$, $p < 0.001$), and "Saying to David, 'Tell me more about what's bothering you'" (+0.309, $t(65) = 5.438$, $p < 0.001$). Thus, it appears that the officers gained an understanding of how to use open-ended questions and mirroring responses to de-escalate an individual with mental health issues. Moreover, officers grasp the importance of decreasing more assertive/aggressive behaviors that may trigger an individual having a mental health crisis. There were no significant differences in change scores by gender, education level, or number of years in law enforcement.

5.1.4 | Officer perceptions

In an attempt to assess officer attitudes about mental health and mental illness before and after CIT training, face-to-face interviews were conducted with a purposeful sample (n = 9) of trained sheriff's office deputies from three sheriff's office substations. Because we were interested in assessing their use of new skills, we selected officers stationed in specific municipalities with the highest number of calls coded as either mental health or suicide of those municipalities patrolled by the sheriff's office. Purposeful selection of officers to be interviewed came from the rosters of those officers who attended the CIT training (see Table 1) and who had varied ranks (i.e., sergeant versus deputy). Within these rank categories, the research team randomly chose interviewees from the three identified municipal substations.

The same two members of the research team attended each interview; one facilitated the interviews via a semi-structured interview schedule and the other recorded copious notes during the interviews. Participants were queried about their reasons for taking the CIT training, perspectives on what they thought the training might be like, overall response to the training, how CIT changed the way they do their work, perspectives on the effectiveness of CIT, and any challenges they encountered in using CIT. In addition, officers were asked about the types of mental health resource available in the community, their experience in using the resources, and whether there are differences in how mental health calls are handled post-CIT training. Only the salient responses emerging from these questions are presented as over-arching themes from the data. Both team members immediately wrote notes after each interview and then shared them with each other to reconcile a final transcript. Once a final transcript was agreed upon, several team members read the final transcripts to ascertain explicit and implicit themes across interviews.

5.1.5 | Data analysis and results from officer interviews

A case-level ordered meta-matrix was developed to present and analyze the data and allow for a comparison between themes for a deeper understanding (Teddlie & Tashakkori, 2009). Meta-matrices help assemble and cluster qualitative data by cases (Miles, Huberman, & Saldaña, 2014). Individual officers were listed on one axis and theme presented on the other. Additionally, meaning was generated by using clustering and counting within the meta-matrix. Clustering helped group the individual officers' experiences from the CIT training. In turn, counting was also incorporated as a method to provide overall insight of the sample. After assessing the thematic areas, similar areas were consolidated, with four primary themes emerging: (i) motivation for taking the training/responses to it; (ii) perceptions of mental illness; (iii) access to services; and (iv) techniques/approaches.

5.1.6 | Motivations for taking the training

Four officers stated that the training was particularly appealing because they regularly handle a high volume of mental health-related calls and were interested in learning new skills to handle these types of call. One participant had some experience with mental illness in her family and wanted to expand her knowledge. Another stated that he was skeptical of the validity of mental illness, but had a relative who worked with individuals who are mentally ill, which prompted him to learn more about it. All of the sergeants who were interviewed wanted to send their deputies because of the opportunity to improve their skills and expand their toolbox of strategies. One sergeant noted that

TABLE 1 Number of officers trained and interviewed by rank

			Officer rank	
County substation	Trained	Interviewed	Sergeant	Deputy
Municipality 1	3	3	0	3
Municipality 2	19	4	1	3
Municipality 3	6	2	2	0
Total	28	9	3	6

it is important for command officers to also take the training so that they can be aware of the techniques used by their deputies.

Regardless of how skeptical officers might have been prior to the training, all of the participants were extremely positive about the training in retrospect. One participant's comment summarizes what everyone stated about the training: "It was awesome." Participants noted that the mix of law enforcement and mental health professionals serving as presenters combined with role-playing made the training very well-rounded. As one stated, the scenarios were "eye opening." So too was having individuals with mental illness speak about their experiences. One participant shared how one of the CIT presenters, an individual with bi-polar disorder, described being beaten by police officers, and how this description opened the officer's eyes to what it was like to have a mental illness and interact with law enforcement.

5.1.7 | Perceptions of mental illness

Officers contrasted their perceptions of mental illness before and after CIT. Before CIT, one officer believed that mental illness did not really exist, that the behavior exhibited was just "bad behavior" or related to substance misuse. Another stated that the reasons for an individual's behavior did not matter: "If it was a crime, it was a crime." After the training, officers discussed their enhanced understanding of mental illness, including the various types, symptom presentation, and implications of psychiatric medications. One officer stated that it was a 180-degree turn from his usual approach. Another indicated that he used to think people with mental illness were like his relative who would act out and behave poorly, but was able to "flip the switch" and behave appropriately when he had to face consequences. He stated that he now understands that someone with a mental illness is actually unable to flip the switch because "they have no control over their behavior." Eight officers discussed how persons with mental health issues may respond differently than those without. All officers expressed an increase in their patience and understanding of this population and mental health disorders in general.

5.1.8 | Access to services

Prior to CIT, seven officers stated that the mental health service agencies were "not on the same page" as law enforcement and they felt that jail was the only option. The officers also voiced frustration with the closing of state hospitals and taking individuals "blindly" to hospital psychiatric units, where they feared that individuals would not get the care they needed. However, officers also voiced their frustration with community mental health services and the difficulty officers faced when trying to access the crisis center (i.e., "nearly impossible to use the crisis center"; 'turned officers away'). One of the sergeants explained that most officers will try a solution only once, and that if it does not work they will not try it again because they will believe that it was a waste of their time and "they have to get on to the next call." The CIT training brought together officers and crisis center staff and, as a result, the relationship between the officers and crisis center improved significantly and created an open line of communication. The phrase "we are now on the same page" was used frequently. Officers stated that "knowing we can take them somewhere other than jail" is invaluable because, as one noted, "I am just the quick fix, getting them to the door of the crisis center where they won't kill themselves."

5.1.9 | Techniques/approaches

Officers described their approaches and the techniques used when encountering a person with mental health issues before and after CIT training. Before the training, the officers took the situation at "face value"—a person committed a crime—without considering possible extenuating circumstances. Officers discussed being easily irritated, gruff, and more aggressive prior to CIT training. One participant stated that before the training, "I wouldn't talk or assess, I would just hook 'em and book 'em." Another noted "before, everything was a hurry-up." They were always under tight time constraints, needing to deal with mental health situations quickly and sometimes hastily. This pressure led them to

want to get mentally ill individuals "out of our hair for this shift" so that it was "not my problem. Let it be a problem for the next shift."

After CIT training, officers expressed that CIT gave them more options for handling situations. Some common words or expressions used by the officers to describe these options included "talk," "de-escalate," "defuse," "take it slow," and "take time." One stated that it took the edge off his gruffness when dealing with a crisis; it made him "more human, not just a machine doing a job." Another stated he learned how to keep himself composed, "to listen, to focus on the person." Officers used phrases such as "better equipped" and "more tools" to express the heightened sense of confidence that CIT gave them for dealing with crisis situations. One stated that, before CIT, calls involving an individual with a mental illness were frustrating. He would immediately think "What am I going to do with them?" Now, he is eager to take these calls so he can use his skills to help. Several described scenarios in which an individual could have been charged with a crime, but, using CIT techniques, they were able to assess the situation differently and focus on getting the person help. As one officer said, sometimes they "just need some guidance."

Finally, all officers stated that every officer should be trained in CIT, early in an officer's career with supplemental or "booster" sessions routinely offered. Officers also noted that support from both commanding and fellow officers is essential to the success of CIT as it takes time to implement and utilize CIT techniques.

5.1.10 | Utilization of community-based services

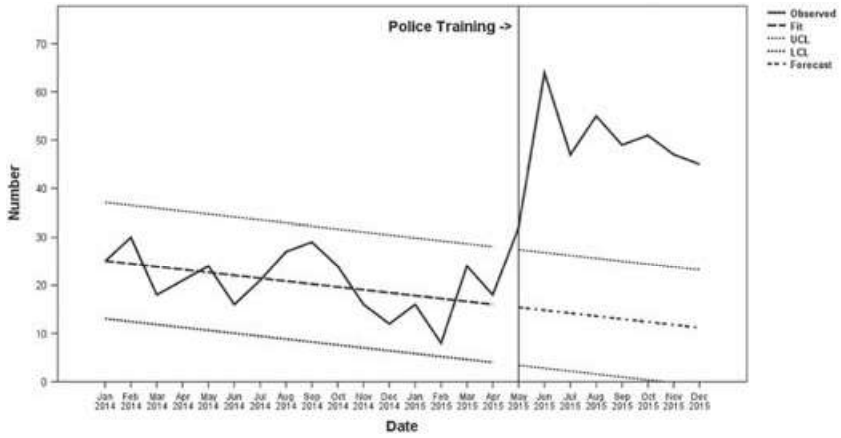
In an effort to assess if there was an increase in the utilization of the 24-hour crisis center by law enforcement, crisis center drop-off logs were collected for two full years: the year before CIT training was implemented (2014) and the year in which the training occurred (2015). The drop-off logs, otherwise known as police contact logs, were provided to the research team by the community mental health authority on a monthly basis. The logs provide the name of each individual dropped off by an officer, the date, and the officer's name and police agency affiliation. All of the information from the logs was entered into an analyzable database. In 2014, there were 263 names on the crisis center drop-off logs, compared with 456 in 2015. The monthly average was 21.8 in 2014 and 38.0 in 2015.

5.1.11 | Data analysis and results of crisis center drop-offs

In order to assess whether the number of drop-offs to the crisis center by officers changed after officers received CIT training, we used interrupted time series analysis (McDowall, McCleary, Meidinger, & Hay, 1980). This method involved building a time series model based only on the pre-intervention data points—the number of drop-offs during each month prior to the training. We then projected this pre-training model onto the subsequent months in order to estimate the number of drop-offs that would be expected if the pre-training trends persisted and the training had no discernible effect. Finally, we performed statistical tests to compare the projected with observed monthly drop-offs during the post-training period, in order to determine whether the magnitude of change exceeded chance. We also developed a separate time series model using only post-training data points in order to compare the slopes or trajectories of change in monthly drop-offs before and after training. For the modeling, we used autoregressive integrated moving average (ARIMA) methods, which account for autocorrelation and allow adjustment for nonlinearity and nonstationarity. In this case, we found that simple ARIMA (1, 0, 0) models, which account for autocorrelation between immediately adjacent points (lag 1), were sufficient to describe the data.

The pre-training time series model, along with the projected and observed post-training monthly drop-offs, is displayed in Figure 1. The graph shows a large increase in the number of monthly drop-offs following training. This change was significant and largely persisted through the observed period: the ARIMA model parameters in the month immediately following training (June, 2015) were estimated to be 38.46 times more drop-offs than projected ($p < 0.001$); six months later (December, 2015), the number had declined somewhat, but remained 27.35 times higher than the model projected ($p < 0.001$).

During the period prior to CIT training, the number of crisis center drop-offs remained relatively stable month to month, with a slight, but not significant, negative slope ($\beta = -0.264$, $p = 0.47$). The slope for the post-training period



Note: The dotted lines show upper (UCL) and lower (LCL) confidence bands around the fitted and forecast trend lines.

FIGURE 1 Number of crisis center drop-offs by month, before and after officer training

was not significantly different from the pre-training slope (difference in $\beta = -1.854$, $p = 0.19$), indicating no significant decline over the post-training months. Collectively, these results suggest that CIT training resulted in an abrupt increase in the level of monthly crisis center drop-offs, and that over the seven-month period following training this change persisted with no significant decay.

6 | DISCUSSION

This paper reports the findings associated with one Midwest county's implementation of CIT. Need assessment data found that officer interactions with persons with mental health issues may be undercounted if assessing only formal reports. In this study, we found that there were 919 unique officer encounters with a person with a mental health issue (between crisis center drop-offs and call reports) and that 87% of crisis center drop-offs had no accompanying formal report. This may explain why the proportion of officer interactions with individuals having an SMI is much lower than the 10% reported by Deane et al. (1999). If 87% of crisis center drop-offs were not formally reported, it is likely that similar officer interventions (i.e., connecting an individual with a family member or other support person) are not reported either.

Reported program outcomes include officer pre−/post-tests, officer interviews, and officer use of the crisis center. Like other studies, the 40-hour officer training resulted in an increased understanding of mental illness and the needs of individuals who are experiencing a mental health crisis (Compton et al., 2006; Hanafi et al., 2008; Wells & Shafer, 2006). Increases in the officer post-test scores on both the OPT and De-escalation scales suggest practice implications. Officers have more positive opinions regarding therapeutic and residential services for individuals with SMI and also increased their understanding of three de-escalation tools: open-ended questions, mirroring responses, and the importance of the officer's body language.

Interviews with officers revealed that they frequently self-select into CIT training because of prior experience with someone who had mental illness (Cross et al., 2014; Wood & Watson, 2017) or they believed they would benefit from having the enhanced skills as a response to the demand for it in their jurisdiction. Similarly to other studies, officers report that the training gave them an increased sense of confidence when taking crisis calls (Borum et al., 1998; Canada, Angell, & Watson, 2012; Hanafi et al., 2008; Heilbrun et al., 2012).

Confirming previous findings (Canada et al., 2012; Compton et al., 2008; Steadman et al., 2000; Teller et al., 2006; Watson et al., 2010), this study found that officers increased their use of mental health services by comparing crisis

center drop-offs before and after the CIT training. This is the first study to provide evidence that the impact of CIT training is sustained over time: seven months after officers received training, crisis center drop-offs were 36 times greater than what was projected based on pre-training estimates.

This growth in crisis center utilization also offers evidence that collaboration with community mental health is instrumental in successful implementation of CIT. Officers in this study reported previous difficulties gaining access to mental health services for individuals they encountered in the community. Interview statements suggest that the local mental health system and law enforcement officials were not operating under a shared understanding of how mental health was defined and what services were needed. This resulted in officers being turned away at the crisis center because the individual's mental health status did not meet the eligibility criteria for the crisis facility. McGuire and Bond (2011) argue that differing philosophies exist between criminal justice and mental health practitioners that must be discussed, and resolved, to increase the CIT's success. A primary tenet for CIT implementation is that the crisis center has a "no refusal policy" for officers so that they can quickly return to their patrol duties (Cross et al., 2014). As part of the CIT planning and implementation process within Oakland County—as well as discussions with officers during the training—mental health administrators in the county heard and understood the officer's concerns and adapted policies and practices to enable a more efficient and accepting drop-off procedure for officers.

The CIT model is more than training for law enforcement officers (Compton et al., 2008; McGuire & Bond, 2011; Wood & Watson, 2017). The model requires key law enforcement and mental health stakeholders to continually dialogue to establish and maintain the program, most often through an advisory board comprised of administrators in both systems, to help integrate the differing perspectives in each field and problem-solve across systems (Compton et al., 2008; Cross et al., 2014; Wood & Watson, 2017). Other studies have reported the use of a "boundary spanner" (Steadman, 1992) or a diversion program coordinator (McGuire & Bond, 2011) to take on such tasks. These roles are often held by an individual who is connected to and has built trust with professionals in both the criminal justice and mental health systems and can be a strong advocate for diversion services. The community represented in this study does not have a formal advisory board, nor a boundary spanner/diversion coordinator; however, monthly calls for the study's evaluation and periodic emails between the community stakeholders involved on the calls became the format and vehicle for ongoing dialogue and problem-solving. It is hopeful that these discussions will become more formalized, with greater community participation, in the upcoming months.

As echoed by other studies (Wood & Watson, 2017), officers in this study were hesitant in taking individuals to the local hospital because they were concerned the individual would not receive appropriate care or that it was only a temporary solution. In particular, officers showed concern for vulnerable individuals who are unable to meet their basic needs, such as stable housing and food.

6.1 | Limitations

While this case study highlights the impacts of the CIT model, there are methodological limitations to discuss. First, this study is the experience with CIT implementation of only one county, which is one of a few in the state that had a 24-hour crisis drop-off center. It is likely that other jurisdictions would not be able to produce the same findings if they do not have the same level of mental health services.

Second, a purposeful sample was used for the officer interviews. While the study paid particular attention to capturing various experiences by officer jurisdiction and rank, it was a small sample. The CIT model requires that officers self-select into the training; therefore, it is possible that officers who did not participate in the training or the interviews would have different perceptions and experiences than those who did participate.

Third, the CIT model notes that diversion can only be successful if the community has mental health services for individuals in crisis. Historically, officers have used hospital psychiatric units for diversion purposes. This study did not include local hospital data. Our findings might have been different if we reported both the hospital and crisis center data, in that there may have been trade-offs in numbers between these services (i.e., crisis center drop-offs increasing while hospital drop-offs were decreasing).

Fourth, an intended goal of the CIT model is the decreased use of jail for individuals with SMI. However, during the accompanying implementation evaluation study we did not depend upon jail as an outcome, because prior studies were inconclusive as related to recidivism and baseline data collected for the study revealed very few jail dispositions among those calls coded as mental health or suicide. It is possible that, assessing calls already coded as mental health, as well as officer drop-offs to the crisis center, we may not be capturing individuals whom officers do not recognize as having a mental health issue, but may in fact have a problem that impairs judgment. In our future studies, we will assess jail interface for those individuals dropped at the crisis center during this study period to determine if they were remanded to the jail in other situations.

The fifth limitation is related to the statistical analysis used to assess officer use of the 24-hour crisis center. Interrupted time series is among the strongest quasi-experimental designs, assuming that the point of anticipated change can be identified a priori and that a sufficiently large number of pre- and post-intervention data points can be obtained. In this case, it was straightforward to identify the point of anticipated change (i.e., post-training). The number of pre-intervention data points was sufficient to support a stable baseline model, although the period was not long enough to allow for adjustment of possible seasonality. The number of post-intervention data points was limited to seven months, a time frame sufficient to verify initial stability of the increase in crisis center drop-offs, but not to gauge long-term impact. Future data collection efforts will address this concern.

7 | CONCLUSIONS

An important component of the CIT model is the collaboration between systems. To date, this has not been published in the research literature. Future research should assess the impact that an advisory board, boundary spanner, or diversion coordinator has on the outcomes of individuals diverted by CIT-trained officers. We surmise that communities that incorporate one or all of these system components will orchestrate a more efficient and effective CIT program. When possible, studies should use statistical analyses that can predict the impact that system and individual components have on officer and individual outcomes (e.g., nested models, hierarchical linear regression, etc.).

The CIT model is designed to solve the problem of over-representation of individuals with mental illness in the criminal justice system. While evidence has demonstrated the positive impact of CIT, there are other mechanisms by which individuals with SMI can be diverted from the criminal justice system. These mechanisms include co-responder teams with follow-up services and the use of a "hotline" staffed by mental health professionals that officers call when they encounter an individual with mental health issues while on patrol (Wood & Watson, 2017). Outside of these additional law enforcement services, Epperson et al. (2014) called for a "modularized" view of mental health service provision for this population, which would address the multitude of risk factors experienced by this population. These include services that address medication management, addiction and co-occurring disorders, trauma, stress, and social and environment disadvantage (Wolff et al., 2013). In summary, the long-term needs of this population go far beyond what law enforcement officers and mental health professionals can provide, and thus communities must find and expand holistic solutions for this population beyond CIT.

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