



# Mobile Mental Health Crisis Intervention

in the Western Health Region of Newfoundland and Labrador

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This Rapid Evidence Report was prepared by the Newfoundland & Labrador Centre for Applied Health Research (NLCAHR), Memorial University. It was developed through the analysis, interpretation and synthesis of scientific research and/or health technology assessments conducted by other parties. It also incorporates selected information provided by expert consultants in the subject area. This document may not fully reflect all the scientific evidence available at the time this report was prepared. Other relevant scientific findings may have been reported since completion of this synthesis report.

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## About This Report

### About NLCAHR

The Newfoundland and Labrador Centre for Applied Health Research, established in 1999, contributes to the effectiveness of health and community services in Newfoundland and Labrador and to the physical, social, and psychological wellbeing of its population. NLCAHR accomplishes this mandate by building capacity in applied health research, supporting high-quality research, and fostering the effective use of research evidence by decision makers and policy makers in the provincial healthcare system.

### Rapid Evidence Reports

NLCAHR designed Rapid Evidence Reports to provide support for evidence-based decision making in the Newfoundland and Labrador healthcare system on an expedited basis as compared to the reports that we provide in our regular Contextualized Health Research Synthesis Program. Through these expedited reports, NLCAHR provides a brief synthesis of the best available research evidence on a high-priority research topic selected by decision makers in the province.

Rapid Evidence Reports include:

- a clear statement of the issue and the background to the issue/problem;
- a description of the scope and nature of the pertinent scientific literature;
- a summary of the principal features of the available evidence - points of consensus, points of disagreement, areas of uncertainty, areas that lack evidence - on some or all of the following: effectiveness of interventions, potential benefits and harms/risks, costs and cost effectiveness;
- a comprehensive reference list of scholarly, peer-reviewed research literature from the past five years, as well as a more selective list of policy reports and other grey literature on the issue; and
- a brief analysis of the types of issues that might influence the applicability of the evidence to the Newfoundland and Labrador context.

Unlike the regular products of NLCAHR's Contextualized Health Research Synthesis Program, a Rapid Evidence Report is **not** a comprehensive and systematic synthesis of the literature on the topic. The report provides neither critical appraisal of included articles nor a full analysis of the contextual issues involved in applying evidence to the Newfoundland and Labrador healthcare setting. Rather, a Rapid Evidence Report provides decision makers with a solid view of the scope and nature of the scientific literature on the topic in question, an initial assessment of the strengths and gaps in this literature, and a review of the key points of agreement and disagreement among researchers.

## Researchers and Consultants

For this report, researchers from the Newfoundland and Labrador Centre for Applied Health Research included: Robert Kean, Research Officer, Contextualized Health Research Synthesis Program (CHRSP), Dr. Stephen Bornstein, Director of NLCAHR, and Sarah Mackey, Research Assistant. Our team consulted with Dr. Dorothy Cotton, a registered psychologist whose practice includes clinical and correctional/forensic psychology. Dr. Cotton's comments and credentials are included in Appendix A of this report.

## Background

The impetus for this research is Recommendation #15 of the 2003 Luther Inquiry into the deaths of Norman Reid and Darryl Power:

**“IT IS FURTHER RECOMMENDED** that the Regional Health Boards establish mobile health units to respond to mentally ill persons in crisis where no criminal offence is alleged. Each unit would be developed locally and based on local needs.”

Our stakeholder partners in the Western Regional Health Authority asked us to identify a range of mobile crisis intervention service models, some of which may be better suited to lower-density, rural populations and some of which may be better suited to higher-density areas like Corner Brook. Our partners expressed a particular interest in models that can be implemented with minimal additional human resources, but that involve local, face-to-face contact rather than telephone, electronic, or clinic-based models of service delivery.

The term “crisis intervention” generally refers to any immediate, short-term therapeutic interventions or assistance provided to an individual or group of individuals who are in acute psychological distress or crisis. The term encompasses a number of after-the-fact interventions – such as rape counseling and critical incident stress debriefing – that would not be relevant to the kinds of situations described in the Luther Report. Given the project parameters specified by our partners at Western Health, we formulated a research question and a literature search strategy that would enable us to focus specifically on forms of crisis intervention that are designed to manage potentially dangerous mental health crises on-site rather than to mediate their impacts after the fact. Our research question is as follows:

**“What models of mobile– i.e., face-to-face – crisis intervention have proven effective in managing potentially violent mental health crises occurring *outside the hospital setting?*”**

## Scope and Nature of the Scientific Literature

This review includes primary studies and systematic reviews published in English within the last five years. In total, we identified 33 primary studies and five systematic reviews. Upon examination, we determined that most of the literature focused on one of two models: the Crisis Intervention Team (CIT) model or the Crisis Resolution and Home Treatment (CRHT) model.

We describe these models and the research that supports them in the following sections. It should be noted that there is an older body of research on joint mobile response teams and other community development options (see comments by Dr. Dorothy Cotton in Appendix A.) Because this research was not published within the last five years, it is not included in this report; however, it may be worth investigating as part of a larger project with a longer timeline.

The body of research we reviewed included only one randomized controlled trial (RCT), but several of the primary studies employed non-randomized comparative designs. These studies analyzed either administrative data culled from the records of the police and/or health authority, or data from surveys and interviews with front-line deliverers. In those studies in which persons involved with CIT programs were surveyed or interviewed, samples were generally small ( $n < 200$ ) and respondents were chiefly police officers, although health personnel, service users, and family members were also included in some studies. The studies on CRHT tended to rely more heavily on retrospective analyses of administrative data. We have also included three other comparative studies of interventions that could not be classified as either CIT or CRHT.

Because this was a rapid review project, we have not critically appraised any of the included articles. However, each of the systematic reviews we identified appraised its own set of included studies, and we have reproduced those appraisals here to provide some perspective on the quality of recent crisis intervention research. Compton et al. (2008), for example, found that the existing research on CIT failed to demonstrate a causal connection between officer-level outcomes (such as self-efficacy, attitudes, and knowledge of mental illness) and patient-level outcomes. Other methodological limitations noted by these authors include a failure to include comparison groups, relatively small sample sizes, and findings with limited generalizability. On the other hand, the authors concede that real-world programs like CIT are very difficult to study, and RCTs are often impossible as a result of ethical and logistical difficulties. We would also add that, since the publication of the review by Compton et al. in 2008, a number of studies with comparison groups have been published, and these have been included in this review.

Recent systematic reviews on CRHT have also identified a number of methodological limitations in that body of research. The lone Cochrane review in our set of included articles plainly states that “there are very few data on the role crisis intervention plays in treatment of people with severe mental illnesses. Currently it is implemented without good evidence” [(1): p. 28]. Sjolie et al. (2010) note a “paucity of studies addressing clinical intervention methods specific in CRHT” and “a need for further research describing specific characteristics of home treatment, different clinical interventions that are used by CRHT teams, and the directions with which clinical interventions need to be developed further” [(2): p. 890]. According to Toot et al. (2011), the research on CRHT is compromised by: a lack of good quality, well-designed trials; a failure to randomize participants to interventions; and poorly defined and inappropriate comparison groups. (3) However, as with CIT, there are considerable ethical and logistical hurdles to overcome when attempting to apply the RCT ‘gold standard’ to health services research of this kind.

## Crisis Resolution and Home Treatment (CRHT)

### Description of the Model

The U.K.’s National Health Service (NHS) made CRHT a national priority in 2000 when it stipulated that 335 CRHT teams should be established in England by 2004. The NHS envisaged that these teams would serve individuals who experience acute mental health crises and who would otherwise require inpatient admission. Teams would provide immediate, time-limited, and home-based interventions, and would stream users to the appropriate mental health services. Service provision has increased substantially in recent years and 75,868 people received CRHT input in England in 2006 [(4): 76-7].

The U.K. Department of Health’s 2001 *Mental Health Policy Implementation Guide* lays out the original vision for the service: “People experiencing severe mental health difficulties should be treated in the least restrictive environment with the minimum of disruption to their lives.” The guide stipulates that CRHT teams should operate 24 hours a day, seven days a week, and should be able to conduct initial assessments within one hour of referral. A standard CRHT team would comprise fourteen members, including psychiatrists, community psychiatric nurses, psychologists, social workers, occupational therapists, and various other support workers. As a general rule, each team would cover a population of approximately 150,000 and handle a caseload of 20 to 30 services users at any given time, though this would vary according to geography and other factors. CRHT teams would liaise with other community-based services – such as the assertive outreach service and the early intervention service – that provide less intensive, longer-term forms of treatment. The

teams' function within this service continuum would be emergency home-based crisis resolution, and, to this end, they would offer clients a range of services including:

- delivery and administration of medications;
- practical help with daily living activities;
- family/carer support;
- a range of interpersonal therapies, including problem solving, stress management, and brief supportive counseling;
- planning for relapse prevention and crisis management; and
- gatekeeping and referral to other services [(5): pp. 11-20].

A survey of 243 CRHT teams conducted in 2005-2006 provides some insight into how the service operates in practice. Onyett et al. (2008) found that “the number of staff working in CRHT teams was at around 88% of the recommended staffing capacity” [(6): p. 375]. All teams included community mental health nurses as members and most also included support workers, but less than half included the kinds of specialist providers – social workers, psychiatrists, occupational therapists, and psychologists – recommended in the Department of Health’s *Policy Implementation Guide*. The mean caseload was twenty service users, which represents the lower end of the recommended range. All teams accepted individuals diagnosed with psychosis or affective disorder, 84% of teams accepted those with a diagnosis of personality disorder, and 42% accepted those with a diagnosis of substance misuse. The most commonly provided interventions beyond assessment were risk management, monitoring of mental state, assistance with self-help strategies, delivering psychosocial interventions, and administering medication. Just over half of CRHT teams were actually able to offer 24-hour, seven-day-a-week home visiting services. The majority described themselves as urban (only 9.6% identified as rural) and the urban teams generally operated with greater fidelity to official recommendations, leading Onyett et al (2008) to speculate as to whether CRHT offers “an essentially urban solution” (p377).

The CRHT model has now been implemented in a number of Western countries, including Norway. Using the UK experience as a template, the national health authorities in Norway decided in 2005 to implement the model in its network of 76 community mental health centres. As of 2010, fifty-one of these centres had established a CRHT team; thirty of these only operated during office hours and only one had 24/7 availability [(7): p. 2].

### Research on CRHT

We identified seventeen articles on CRHT, including four systematic reviews and twelve primary studies.<sup>1</sup> The outcome measure used most frequently in these articles was

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<sup>1</sup> Two of the reviews – Onyett et al. (2008) and Middleton et al. (2008) – included analysis of the same study.

hospitalizations but other system-level outcomes were used as well; these included length of stay, inpatient costs, and maintenance of community residence.<sup>2</sup> Patient-level outcomes used to measure CRHT’s effectiveness included: patient functioning, patient satisfaction, and family/caregiver burden. Some studies also provided measures of provider satisfaction.

Overall, there appears to be little clear evidence that implementation of CRHT programs in the United Kingdom has reduced hospital admissions or length of hospital stay. A Cochrane meta-analysis of RCTs by Murphy et al. (2012) found that “the data relating to readmission, length of stay, general functioning and mental state remain inconclusive” (p. 27). Likewise, a systematic review by Toot et al. (2011) on CRHT for older people with mental health problems found that “[t]here is very little robust evidence... indicating that crisis resolution/home treatment services for older people with mental health problems reduce the number of admissions to hospital” (p.1229). Moreover, the reviewers note, “[f]or all other outcomes, including maintenance of community residence and length of hospital stay, the evidence is very weak” (p. 1229). There were four primary studies that compared CRHT with existing services using non-randomized designs; one detected a significant reduction in inpatient admissions of elderly clients,(8) but the other three observed no overall differences in the number of admissions.(9-11) On the other hand, an RCT by McCrone et al. (2009) found that CRHT reduced inpatient costs, provided that implementation of the service was accompanied by bed closures.(12) On the whole, however, we found little evidence to suggest that CRHT has functioned as an alternative to inpatient care, as was envisioned in the U.K. Department of Health’s 2001 policy implementation guide.

Research into CRHT’s effect on patient satisfaction and family/caregiver burden seems to have generated more consistently positive findings. According to Murphy et al. (2012),

*“if a person with serious mental illness is experiencing a crisis, a well-organised team using a crisis intervention ethos within their care may provide support and treatment that is more acceptable to both sufferers and their families and less burdensome for the families than if the person was admitted to standard hospital care. Perhaps, as a result, the ill person would be more likely to stay in care.”* (p. 27)

We encountered a number of articles that tried to pinpoint aspects and features of CRHT interventions that were associated with successful outcomes. In most of these articles, intervention was deemed successful if it generated high levels of patient and provider satisfaction, though a few assessed more objective outcomes like patient functioning. The systematic review by Winness et al. (2010) identified three main sources of user satisfaction with CRHT: “(a) the accessibility and availability of help and support in the home context, (b) being understood as ‘normal’ human beings through respectful listening, and (c) dealing

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<sup>2</sup> Maintenance of community residence could also be considered a patient-level outcome, but we have included it here because it is an important indicator of the level of demand on health services.



with crises in everyday life contexts”[(13): p. 85]. Qualitative studies by Middleton et al. (2011) and Morton (2010) further emphasized the importance of the therapeutic relationship to successful CRHT outcomes. (14,15) These authors suggest that the success of the intervention hinges on practitioners’ abilities to forge an emotional connection with service users and “provide [them] with a sense of feeling safe, accepted and understood” [(14): p. 147]. There was one particularly intriguing finding that emerged from two separate studies, conducted in completely different settings (England and Norway). Both Sadiq et al. (2009) and Hasselberg et al. (2011) found that outcomes for patients with depressive symptoms were generally better than outcomes for patients with psychotic symptoms, which suggests that depression is more amenable to treatment by CRHT teams. This was, however, a fairly isolated finding.

Hasselberg et al. (2011) also found that length of treatment was a significant predictor of favorable crisis outcomes: “Although the interventions of the CRTs [Crisis Resolution Teams] are meant to be brief, this finding indicates that these teams should provide intensive treatments for patients who experience acute mental health crises rather than referring them to other parts of the mental health system or for rapid discharge” (pp. 8-9). These authors also found that the better-staffed teams provided the longest treatment episodes and had the best outcomes. Nelson et al. (2009) found that CRHT appears to offer a satisfying work environment, owing largely to “the sense of autonomy staff report... and the support resulting from working in a cohesive team” [(16): (p. 548)]. However, Freeman et al. (2011) found that regular training and supervision are necessary to enhance the motivating factors of working in CRHT, moderate stressors, and enhance individual skills and team cohesion.

In sum, we found little evidence to suggest that CRHT has a profound impact on system-level outcomes, but it does have the potential to open channels of communication and increase trust between service providers and their patients. The essential question, however, is whether CRHT constitutes an effective way to manage severe mental health crises, and the evidence we found does not provide a clear answer to that question.

## The Crisis Intervention Team (CIT) Model

### Description of the Model

Unlike CRHT, the Memphis CIT model, as it is known, was developed in the United States, a country without single-payer universal healthcare. With the exception of the elderly and the poor, patients in the United States are generally required to bear a higher proportion of costs for their health services than are patients in other developed countries. Perhaps not coincidentally, the CIT model assigns primary responsibility for crisis intervention to police

forces. CIT may therefore constitute a viable option in jurisdictions with no universal healthcare system, or in which the existing system is under financial strain or is experiencing a shortage of specialized health professionals.

The CIT model was developed by the Memphis Police Department in the late 1980s in the wake of a fatal police shooting. CITs are designed explicitly to prevent violent escalation during mental health crisis calls and to divert individuals with mental illness away from the criminal justice system. However, they share with CRHT teams the same basic gatekeeping function – they are intended to serve as a first point of contact with the healthcare system, and they play a vital role in determining whether or not individuals in crisis receive the appropriate mental health services. The centerpiece of the model is 40 hours of specialized training for a self-selected group of officers, but it also involves changes in police department procedures as well as ongoing collaboration with mental health providers. Call dispatchers are trained to identify mental health crisis calls and assign them to CIT officers, who will assess the situation to determine whether referral to services or transport for mental health evaluation is appropriate. The CIT model therefore requires that health providers designate a central psychiatric emergency drop-off site with a no-refusal policy, allowing the officer to transport an individual for emergency evaluation and treatment in a timely manner. It follows that CIT can work only in the context of close collaboration between law enforcement and mental health service providers. Around-the-clock CIT coverage in a given jurisdiction requires that at least 15-20% of an agency's patrol officers be trained and identified by dispatch as available CIT officers, though small jurisdictions would likely not have full coverage unless a majority of patrol officers were trained [(17): 287-8].

Current estimates suggest that there are over 1000 CIT programs being implemented worldwide, (18) including more than 400 currently operating in the United States alone. (19) Thompson & Borum (2006) have suggested some possible reasons for the widespread adoption of the police-based CIT model, including low program costs, minimal need for additional human resources, and improved on-scene management and stabilization (p. 6).

### Research on CIT

We identified twenty research articles on CIT, including one systematic review and eighteen primary studies.<sup>3</sup> The outcome measures used in this body of research can be separated into two categories: process outcomes and provider outcomes. Process outcomes were used to determine whether or not CIT programs were successfully diverting people in crisis away from the criminal justice system and toward the appropriate mental health service. These outcomes included arrest rates, referrals to mental health services, and the use of force. In contrast, provider outcomes reflect police officers' subjective assessments of their

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<sup>3</sup> Two of the twenty articles – Watson (2010) & Watson (2011) – discussed the same study.

own knowledge and attitudes concerning mental illness, competence in handling mental health crisis calls, preference for non-physical actions in an escalating crisis, and satisfaction with the CIT program. A few of the articles also measured rates of citizen and officer injury, but none of the remaining articles under review measured patient-level outcomes. In general, one of the more significant challenges facing researchers in this area is defining program success. For example, decreased hospitalizations would be a poor indicator of success, since the activities of CIT teams should, in theory, lead to better identification of mental health crisis situations and, therefore, increased hospitalizations (see our consultant's comments in Appendix A).

In terms of police process, the literature we uncovered does not indicate that implementation of CIT effects wholesale changes in the way police officers respond to and resolve mental health crisis calls. Compton et al. (2008) systematically reviewed twelve CIT studies conducted in various mid-size cities in the American South and Midwest regions, and concluded that CIT "in comparison to other pre- and post-diversion programs, may have a lower arrest rate and lower associated criminal justice costs" [(20): p. 52]. However, our own literature searches turned up three primary studies that compared the number of arrests made by CIT-trained officers with arrests made by non-CIT-trained officers, and these studies observed no significant difference between the two groups. (21-23) The findings concerning use of force were similarly ambiguous. There were four studies that compared CIT-trained officers with non-CIT-trained officers in terms of their use of force; one detected a significant difference (24) and three did not. (21,22,25) And even in the lone study that observed an association between CIT implementation and use of force, the authors note that "in a situation involving a physically resistant subject, all officers may find force necessary to control the situation and maintain safety of all involved" (p. 71). The general suggestion from the literature was that the nature of the call and the subject's potential for violence largely dictated the officers' response and the level of force they employed, whether or not they had received CIT training. If there was a significant threat of violent escalation, the officers' commitment to ensuring public safety overrode all other concerns.

On the other hand, CIT does appear to have a discernible impact on the likelihood that police officers will refer a person in crisis to the appropriate mental health service. The systematic review by Compton et al. (2008) found "preliminary support for the notion that the CIT model may be an effective component in connecting individuals with mental illnesses who come to the attention of police officers with appropriate psychiatric services" (p. 52). There were also two primary studies – both conducted in densely-populated areas in the U.S. – that compared outcomes from calls handled by CIT-trained officers with those handled by non-CIT-trained officers, and both found that the former group directed a great proportion of persons with mental illness to mental health services than did their non-CIT-certified peers. (21,23) This finding was further corroborated by a number of studies that

did not use a comparative design. A study of data from calls involving CIT-certified officers in a mixed rural-urban county in the southern U.S. found that “voluntary commitments increased as the CIT program expanded within the county, while simultaneously, involuntary commitments decreased with the exception of one year” [(26): p. 396]. Two other analyses of CIT officers’ reports – one from Akron, Ohio and one from Las Vegas, Nevada – also provided preliminary support for the assertion that CIT-trained officers are more likely to consider treatment options over other potential outcomes.(27,28) In sum, the research we uncovered does seem to indicate that CIT initiatives in the United States have been successful in encouraging and enabling police officers to function as a first point of contact with the health system for persons in crisis.

And though proponents emphasize that training is only one component of the model, research on provider-level outcomes of CIT – such as self-efficacy, knowledge of mental illness, attitudes towards persons with mental illness, provider satisfaction, and perceived effectiveness of physical and non-physical actions – suggests that such training has been effective in improving officers’ knowledge of mental illness and changing their perceptions of crisis situations. According to Compton et al. (2008), “Early research indicates that the training component of the CIT model may have a positive effect on officers’ attitudes, beliefs, and knowledge relevant to interactions with... individuals [in crisis], and CIT-trained officers have reported feeling better prepared in handling calls involving individuals with mental illnesses” (p. 52). The systematic review by Compton et al. was published in 2008, but our own review of literature published since that date comes to the same conclusion: almost all of the research we uncovered on provider outcomes reported positive effects of CIT training. The comparative studies we reviewed found that:

- CIT officers appear to recognize mental illness differently than do non-CIT officers;(22)
- officers report increased self-efficacy in handling mental health crisis calls after participating in CIT training;(29,30)
- CIT training reduces officers’ desire for social distance from persons with mental illness;(29) and
- CIT-trained officers perceive nonphysical actions as more effective – and physical force as less effective – when responding to mental health crisis calls, as compared with non-CIT-trained officers.(31)

Notwithstanding the apparent effectiveness of CIT training in improving provider-level outcomes, one of the most emphatic points of agreement in this research concerns the importance of other model components. As Compton et al. (2008) write:

*“For localities focusing almost solely on the officer-training aspect of CIT (which has been the focus of most of the limited CIT research to date), patient- and systems-level benefits*

*may be difficult to demonstrate unless training is complemented by the system reforms of the Memphis model, such as dispatcher involvement and the availability of a single point of drop-off and adequacy of treatment services in the community. Without accessible non-jail options, pre-booking jail diversion models such as CIT will not realize their potential to yield positive results.” (p. 53)*

Watson et al. (2011) go so far as to suggest that the real driving force for the effectiveness of CIT is the availability of reliable mental health resources, which are needed in order to “activate the training and support offered to police officers (p. 292). Likewise, Stewart (2009) argues that strengthened linkages between criminal justice and mental health agencies constitute one of the most important benefits of successful CIT programs.

The ethnographic case study by Forchuk et al. (2010) – one of only three studies in this review that were conducted in Canada – merits special consideration here. (32) These authors compared three different models of crisis service in Southern Ontario, one of which was CIT. Most importantly for our purposes, the three sites chosen for the study included one rural area (population 112,100) and one mixed urban and rural area (population 109,600). For these reasons, it appears that the setting of the study by Forchuk et al. approximates the Western Health region more closely than any of the other studies we encountered. These authors agree that crisis programs can function effectively only if there is ready access to psychiatric beds, no matter where these programs are offered. Their analysis of crisis intervention in rural areas is worth quoting in full:

*“The organization and delivery of services must take into account the context of the community in which the services are offered. For example, lack of public transportation in rural communities means that clients often cannot readily access crisis services. Thus, outreach programs that are not dependent upon clients having or finding transportation are particularly important for these communities. The crisis model for rural settings must include a mobile component if universal access is a goal.” (p. 83)*

The need for mobile crisis services and generalists *in rural communities* suggests that police crisis teams supported by mental health staff may be a more appropriate approach for this setting [emphasis ours]. In contrast, the larger volume of service options and the ability to specialize suggest that a mental health team supplemented by police officers would be more appropriate in larger urban centres (p. 84).

## Other Models of Mobile Crisis Intervention

Finally, we identified two other Canadian studies on mobile crisis intervention models that were not explicitly identified as either CIT or CRHT. Kisely et al. (2010) conducted a

controlled before-and-after comparison of a mobile crisis service in Nova Scotia's Capital Health District.(33) This program provided a 24-hour telephone service supported by teams of mental health professionals and police partners. In the event of a more severe or acute crisis, plainclothes officers accompanied clinicians on site. Although the researchers were unable to measure the effect on hospital admissions, the study showed several positive findings. In the intervention area, there were reductions in time spent on the scene by police officers and reductions in call-to-door times in comparison with control areas (despite increased use by patients, families and service partners). Overall, the researchers concluded that "partnerships between the police department and mental health system can improve collaboration, efficiency, and the treatment of people with mental illness" (p. 667).

A study by Krupa et al. (2010) evaluated changes made to a community-based crisis service in a small city in Southern Ontario.(34) The enhanced model combined existing crisis services with transitional case management, an intervention designed to address the needs of individuals returning to the community following a mental health inpatient hospitalization. Service adaptations aimed to provide a more timely response, increased mobile capacity, and follow up services. These researchers reported "greater service capacity, greater access to mobile crisis services, improvements in accessibility to crisis services across the broader community population, and crisis services that were briefer and more consistent with the theory of crisis as a time-limited experience" (p. 134) following service adaptation. The addition of a transitional case management component to the existing model appeared to improve service capacity without compromising short-term crisis services.

## Potentially Relevant Contextual Issues

Throughout the course of this project, we have tried to identify contextual factors unique to the Western region of Newfoundland and Labrador that may influence the relevance and applicability of the research-based evidence. This section of the report addresses those factors in brief.

### Geography and Population

Perhaps the most salient contextual issue confronting the Western Regional Health Authority is the distribution of its population over vast distances. Western Health serves some 79,460 residents spread over a geographic region that extends from Port aux Basques southeast to Francois, northwest to Bartlett's Harbour, and on the eastern boundary north to Jackson's Arm. There are even some communities – such as Ramea – that are inaccessible by road. Traversing these distances in a timely fashion is likely the single biggest challenge Western Health would face in attempting to implement a mobile crisis service. At present, most of the region's specialist mental health providers are concentrated

in Corner Brook, at a considerable distance from the more remote areas. The region's police forces may well be better equipped to provide service coverage to remote areas than is the health authority itself. That being the case, the conclusion drawn by Forchuk et al. (2010) seems pertinent: "The need for mobile crisis services and generalists in rural communities suggests that police crisis teams supported by mental health staff may be a more appropriate approach for this setting" (p.84). It is worth noting that most mobile crisis intervention services across Canada are delivered by police officers working in concert with mental health workers; prominent examples include the COAST program in Hamilton and Car 87 in Vancouver (see Appendix A).

However, even a police-based initiative like CIT would be difficult to implement given the geographic scale of Western Health's jurisdiction. At present, there are number of communities in the region – such as Ramea and Bonne Bay – that do not have an active police presence. Furthermore, the research we have reviewed states unequivocally that CIT works only if officers have access to a central psychiatric emergency drop-off site with a no-refusal policy. The absence of, or inaccessibility to, a drop-off site could result in officers being forced to remain with people requiring involuntary commitment, thus making such officers unavailable for other incoming calls. This situation would be especially serious in rural areas, where only two or three officers would be on patrol for each shift. If Western Health were to try to implement CIT, it would face the question of where to locate, and how to staff, such an emergency facility and whether one such centre would be enough to service the entire region.

### Human Resources

Corner Brook is home to the Western Memorial Regional Hospital, a 192-bed facility that provides secondary services, including psychiatric services. As such, the Corner Brook area can draw upon a wider range of specialist human resources than can more outlying rural areas of the Western Region, and is likely the only location that could conceivably support a CRHT team. It should be noted that Corner Brook already has a functioning Assertive Community Treatment (ACT) team, comprising the following personnel:

- 1 addictions counselor
- 2 community mental health nurses
- 1 occupational therapist
- 1 administrative support
- 1 peer support specialist
- 1 mental health worker
- 1 social worker
- 1 manager

It is at least conceivable that Western Health could assemble a CRHT team in the Corner Brook area, perhaps involving some of the members of the existing ACT team – provided, of course, that they receive the appropriate training. In fact, the closest equivalent to CRHT in Canada is a service model that combines an ACT team with a crisis line. There is no particular name for this model, but it is commonly practiced and offered in a variety of jurisdictions (see Appendix A).

On the other hand, it is difficult to imagine how rural areas within the region would be able to support a CRHT team, given the difficulties involved in recruiting specialist health providers in these areas, and the low volume of service calls such a team would likely be required to handle. And should Western Health decide to implement some kind of CIT-style service to cover rural areas, it would still have to ensure that there were adequate health human resources to staff the emergency drop-off site(s).

### Existing Services and Partnerships

One of the most distinctive features of the public service landscape in the Western region is that it is policed by two separate organizations: the Royal Newfoundland Constabulary (RNC), which operates in Corner Brook, and the Royal Canadian Mounted Police (RCMP), which serves all other areas within the region. One of the logistical issues that would need to be ironed out should Western Health opt to experiment with CIT is coordinating the responses of the two police organizations. Fortunately, there is already a history of partnership between the health authority, the RNC, and the RCMP, as embodied in the Western Health/RNC/RCMP Mental Health Joint Committee. The Committee's mandate is to facilitate a strong partnership amongst members by discussing mutual concerns and increasing the quality of service for individuals living with mental health issues. This Committee would be a logical starting point for any CIT planning initiatives. It could draw upon the experience of other police organizations with similar programming, such as the RNC's St. John's detachment. Furthermore, there is some precedent for mobile crisis intervention initiatives that involve a variety of police services. On Vancouver Island, there are a number of small police agencies that jointly operate a mobile response initiative (see Appendix A).



## Bibliography

- (1) Murphy S, Irving CB, Adams CE, Driver R. Crisis intervention for people with severe mental illnesses. *Cochrane Database Syst.Rev.* 2012 May 16;5:CD001087.
- (2) Sjolie H, Karlsson B, Kim HS. Crisis resolution and home treatment: structure, process, and outcome - a literature review. *J.Psychiatr.Ment.Health Nurs.* 2010 Dec;17(10):881-892.
- (3) Toot S, Devine M, Orrell M. The effectiveness of crisis resolution/home treatment teams for older people with mental health problems: a systematic review and scoping exercise. *Int.J.Geriatr.Psychiatry* 2011 Dec;26(12):1221-1230.
- (4) Freeman J, Vidgen A, Davies-Edwards E. Staff experiences of working in crisis resolution and home treatment. *Mental Health Review Journal* 2011;16(2):76-87.
- (5) Department of Health (U.K.) editor. *Mental Health Policy Implementation Guide*. London: Department of Health (U.K.); 2001.
- (6) Onyett S, Linde K, Glover G, Floyd S, Bradley S, Middleton H. Implementation of crisis resolution/home treatment teams in England: National Survey 2005-2006. *Psychiatric Bulletin* 2008 10;32(10):374-377.
- (7) Hasselberg N, Grawe RW, Johnson S, Ruud T. Treatment and outcomes of crisis resolution teams: a prospective multicentre study. *BMC Psychiatry* 2011 Nov 22;11:183.
- (8) Sadiq K, Chapman A, Mahadun P. Benchmarking impact on elderly admissions following CRHTT intervention. *CLIN GOVERNANCE INT J* 2009 06;14(2):113-119.
- (9) Furminger E, Webber M. The effect of crisis resolution and home treatment on assessments under the 1983 Mental Health Act: an increased workload for approved social workers? *The British Journal of Social Work* 2009 01/01; 2009;39(5):901-917.
- (10) Jacobs R, Barrenho E. Impact of crisis resolution and home treatment teams on psychiatric admissions in England. *Br.J.Psychiatry* 2011 Jul;199(1):71-76.
- (11) Tyrer P, Gordon F, Nourmand S, Lawrence M, Curran C, Southgate D, et al. Controlled comparison of two crisis resolution and home treatment teams. *The Psychiatrist* 2010 02;34(2):50-54.
- (12) McCrone P, Johnson S, Nolan F, Pilling S, Sandor A, Houlst J, et al. Economic evaluation of a crisis resolution service: A randomised controlled trial. *Epidemiol.Psichiatr.Soc.* 2009 01;18(1):54-58.
- (13) Winness MG, Borg M, Kim HS. Service users' experiences with help and support from crisis resolution teams. A literature review. *J.Ment.Health.* 2010 Feb;19(1):75-87.

- (14) Middleton H, Shaw R, Collier R, Purser A, Ferguson B. The dodo bird verdict and the elephant in the room: A service user-led investigation of crisis resolution and home treatment. *Health Sociology Review* 2011 06;20(2):147-156.
- (15) Morton J. Emotion in crisis: Primary and secondary mental health contexts. *Journal of Social Work Practice* 2010 12;24(4):461-474.
- (16) Nelson T, Johnson S, Bebbington P. Satisfaction and burnout among staff of crisis resolution, assertive outreach and community mental health teams: A multicentre cross sectional survey. *Soc.Psychiatry Psychiatr.Epidemiol.* 2009 07;44(7):541-549.
- (17) Watson AC, Ottati VC, Draine J, Morabito M. CIT in context: the impact of mental health resource availability and district saturation on call dispositions. *Int.J.Law Psychiatry* 2011 Jul-Aug;34(4):287-294.
- (18) Compton MT, Broussard B, Munitz M, Oliva JR, Watson AC. *The Crisis Intervention Team (CIT) Model of Collaboration between Law Enforcement and Mental Health*. Hauppauge, NY: Nova Science Publishers, Inc.; 2011.
- (19) Oliva JR, Compton MT. A statewide Crisis Intervention Team (CIT) initiative: evolution of the Georgia CIT program. *J.Am.Acad.Psychiatry Law* 2008;36(1):38-46.
- (20) Compton MT, Bahora M, Watson AC, Oliva JR. A comprehensive review of extant research on Crisis Intervention Team (CIT) programs. *J.Am.Acad.Psychiatry Law* 2008;36(1):47-55.
- (21) Acker JAT. *The effect of crisis intervention team training on the outcomes of mental health crises calls for law enforcement*. US: ProQuest Information & Learning; 2010.
- (22) Stewart C. *Police intervention in mental health crisis: A case study of the Bloomington Crisis Intervention Team (CIT) program*. US: ProQuest Information & Learning; 2009.
- (23) Watson AC, Ottati VC, Morabito M, Draine J, Kerr AN, Angell B. Outcomes of police contacts with persons with mental illness: the impact of CIT. *Adm.Policy Ment.Health* 2010 Jul;37(4):302-317.
- (24) Morabito MS, Kerr AN, Watson A, Draine J, Ottati V, Angell B. Crisis intervention teams and people with mental illness: Exploring the factors that influence the use of force. *Crime & Delinquency* 2012 01;58(1):57-77.
- (25) Compton MT, Demir B, Oliva JR, Boyce T. Crisis intervention team training and special weapons and tactics callouts in an urban police department. *Psychiatr.Serv.* 2009 Jun;60(6):831-833.
- (26) Lord VB, Bjerregaard B, Blevins KR, Whisman H. Factors influencing the responses of crisis intervention team-certified law enforcement officers. *Police Quarterly* 2011 12;14(4):388-406.

(27) Ritter C, Teller JL, Marcussen K, Munetz MR, Teasdale B. Crisis intervention team officer dispatch, assessment, and disposition: Interactions with individuals with severe mental illness. *Int.J.Law Psychiatry* 2011 Jan-Feb;34(1):30-38.

(28) Skeem J, Bibeau L. How does violence potential relate to crisis intervention team responses to emergencies? *Psychiatr.Serv.* 2008 Feb;59(2):201-204.

(29) Bahora M, Hanafi S, Chien VH, Compton MT. Preliminary evidence of effects of crisis intervention team training on self-efficacy and social distance. *Adm.Policy Ment.Health* 2008 May;35(3):159-167.

(30) King SM. The impact of crisis intervention team training on law enforcement officers: An evaluation of self-efficacy and attitudes toward people with mental illness. US: ProQuest Information & Learning; 2011.

(31) Compton MT, Demir Neubert BN, Broussard B, McGriff JA, Morgan R, Oliva JR. Use of force preferences and perceived effectiveness of actions among Crisis Intervention Team (CIT) police officers and non-CIT officers in an escalating psychiatric crisis involving a subject with schizophrenia. *Schizophr.Bull.* 2011 Jul;37(4):737-745.

(32) Forchuk C, Jensen E, Martin M, Csiernik R, Atyeo H. Psychiatric Crisis Services in Three Communities. *CAN J COMMUNITY MENT HEALTH* 2010 09/02;29(2 (Supplement 5)):73-86.

(33) Kisely S, Campbell LA, Peddle S, Hare S, Pyche M, Spicer D, et al. A controlled before-and-after evaluation of a mobile crisis partnership between mental health and police services in Nova Scotia. *Can.J.Psychiatry* 2010 Oct;55(10):662-668.

(34) Krupa T, Stuart H, Mathany A, Smart J, Chen SP. An Evaluation of a Community-Based, Integrated Crisis-Case Management Service. *CAN J COMMUNITY MENT HEALTH* 2010 09/02;29:125-137.

## Appendix A

### Consultant's Comments

#### ***What models of mobile crisis intervention have proven effective in managing potentially violent mental health crises occurring outside the hospital setting?***

The summary document completed in regard to the above question accurately captures not only the conclusions that are readily available in published literature, but perhaps more importantly, the significant gaps that are evident in this literature.

As these authors have discovered, there is in general very little in the published peer-reviewed literature that describes mental health crisis response teams. The little literature that is available is by necessity only quasi experimental in design. In Canada, the predominant mobile response is in fact a joint mobile response, which is exemplified by programs such as the COAST Program in Hamilton, and the similar Car 87 program in Vancouver. There are a number of variations of this type of program throughout Canada; in each case, the primary response is in the hands of the police agency, but with a mental health worker dispatched either subsequently or conjointly, depending on the nature of the program. A variation of the joint mobile response model has been developed in a more rural area of Eastern Ontario and involves a primary telephone assessment and contact, which may be necessary at given distances. The review authors are correct (as far as I am aware) that there is only one published study that addresses outcomes for this type of model—at least in the Canadian context. In retrospect, it is unfortunate that the current review did not extend back in time more than five years. It appears that the review and synthesis articles which have occurred in the last five years have been confined to reviews of the two predominant models that are reviewed in this document. There is however some previous peer-reviewed research which relates more directly to joint mobile response teams and other community development options. (See for example the work of Randy Borum and his colleagues, published in the late 1990s.)

As the authors note, the Crisis Intervention Model or CIT model as it is commonly called, is essentially the only model that has any systematic evaluation and review. As this report indicates, reviews are somewhat mixed. One of the most significant challenges facing researchers in this area is to decide on an appropriate definition for "success." What exactly is the desired outcome for a crisis intervention team? It is unlikely to be decreased hospitalizations, since the development of the CIT team inevitably would lead to better identification of mental health crisis situations, and therefore increased volume overall. For the same reasons, a successful outcome is unlikely "better" utilization of police service time. The "softer" outcome variables of client and family satisfaction may indeed be the most

appropriate variable, yet this type of outcome data is generally not acceptable to funding sources. Also as noted by the authors, outcome studies of the CIT model do confuse studies in which CIT training alone was provided to police officers with programs in which the entire CIT model was implemented.

In Canada, the closest equivalent to the Crisis Resolution and Home Treatment model is the common linking of an assertive community treatment (ACT) team with a crisis line. Curiously, there is no particular name for this model in Canada although it is commonly practiced and offered in a variety of jurisdictions. Once again however there is virtually no peer-reviewed data-based outcome research available.

On page 14, the authors note "potentially relevant contextual issues." These issues are probably the most significant determinants to be taken into account in deciding on appropriate crisis response model. As noted above, it is critical to define the desired outcome of a mental health crisis response initiative in order to determine the appropriate model to be employed. It is equally important to identify and select a model that is feasible and economically viable in a given environment. For example, as noted, the predominant mental health crisis response modeling in Canada at present is the joint mobile crisis response model. However, such a model requires a dedicated staff of both police officers and mental health professionals. Clearly, such a program is inappropriate in a geographical area in which a crisis may occur only several times in a given year. Similarly, it is worth bearing in mind that the initial impetus for the development of the CIT model was to decrease the number of incidents in which injury or death of either a person with a mental illness or a police officer occurs. In a jurisdiction in which such an event has never or almost never occurs, such a focus may be inappropriate.

While it is evident that the direction which drove this particular review specified a preference for face-to-face models of crisis intervention (as opposed to methods which involve telephone contact or video links), it may well be that the most appropriate models are not face-to-face models. At least, it may be that face-to-face models are impractical and uneconomical.

A few final comments....

On page 16, the authors comment upon the necessity of a joint initiative which would include both the Royal Newfoundland Constabulary and the Royal Canadian Mounted Police. There is precedent for such joint initiatives which involve a variety of police services. On Vancouver Island, and the rural areas surrounding the city Victoria, but there are a number of small police services which share a short joint mobile response initiative. Similarly, in Eastern Ontario where a number of small police services exist, there is significant overlap between and mental health jurisdictions, requiring joint protocols and memoranda of understanding.

On page 4, the authors offer a definition of "crisis intervention." Curiously, the vast majority of work done by so-called crisis intervention teams typically does not involve "crises" of the magnitude that might be inferred by the use of this word. "Acute psychological distress" can take a variety of forms and in many cases, crisis intervention teams respond to events that might more accurately be described as the culmination of progressive and chronic psychological distress, as well as more acute and unexpected events.

### Conclusions

There is indeed little in the way of published peer-reviewed literature which bears to the efficacy of crisis response initiatives for mental health crises. The authors have indeed captured the essence of this literature, limited as it may be. In particular, the conclusions and recommendations on page 14 to 16 do appear to fairly represent reasonable directions at the Western Regional Health Authority might pursue in its quest to develop appropriate intervention service models for its unique geographical area.

Dorothy Cotton, Ph.D., C. Psych.

### About the Consultant

*Dr. Dorothy Cotton is a registered psychologist who holds degrees from McGill, Purdue and Queen's University. Her areas of practice include clinical and correctional/forensic psychology. Dr. Cotton worked for 25 years at a provincial psychiatric hospital, both in direct services roles and also as Chief Psychologist and Administrative Director of Forensic Services. Her work also includes the practice of forensic psychology in the correctional system as well as a private practice limited to police psychology issues. Dr. Cotton holds a diplomate in Police Psychology from the Society for Police and Criminal Psychology. She is to date Canada's only diplomate in this field. She is an Associate Member of the Canadian Association of Chiefs of Police (CACP) and has worked extensively with CACP on police/mental health systems liaison issues. She consults regularly, both formally and informally, with police services across the country about issues related to development of mental health liaisons programs and committees, and design of mental health training and education programs.*

## Appendix B

### Primary Research Included in the Review

Acker JAT. The effect of crisis intervention team training on the outcomes of mental health crises calls for law enforcement. US: ProQuest Information & Learning; 2010.

Bahora M, Hanafi S, Chien VH, Compton MT. Preliminary evidence of effects of crisis intervention team training on self-efficacy and social distance. *Adm.Policy Ment.Health* 2008 May;35(3):159-167.

Compton MT, Chien VH. Factors related to knowledge retention after crisis intervention team training for police officers. *Psychiatr.Serv.* 2008 Sep;59(9):1049-1051.

Compton MT, Demir B, Oliva JR, Boyce T. Crisis intervention team training and special weapons and tactics callouts in an urban police department. *Psychiatr.Serv.* 2009 Jun;60(6):831-833.

Compton MT, Demir Neubert BN, Broussard B, McGriff JA, Morgan R, Oliva JR. Use of force preferences and perceived effectiveness of actions among Crisis Intervention Team (CIT) police officers and non-CIT officers in an escalating psychiatric crisis involving a subject with schizophrenia. *Schizophr.Bull.* 2011 Jul;37(4):737-745.

El-Mallakh RS, Spratt D, Butler C, Strauss G. Evaluation of consequences of implementation of police crisis intervention team in Louisville. *J.Ky.Med.Assoc.* 2008 Sep;106(9):435-437.

Forchuk C, Jensen E, Martin M, Csiernik R, Atyeo H. Psychiatric Crisis Services in Three Communities. *CAN J COMMUNITY MENT HEALTH* 2010 09/02;29(2 (Supplement 5)):73-86.

Franz S, Borum R. Crisis intervention teams may prevent arrests of people with mental illnesses. *Police Practice & Research: An International Journal* 2011 06;12(3):265-272.

Freeman J, Vidgen A, Davies-Edwards E. Staff experiences of working in crisis resolution and home treatment. *Mental Health Review Journal* 2011;16(2):76-87.

Furminger E, Webber M. The effect of crisis resolution and home treatment on assessments under the 1983 Mental Health Act: an increased workload for approved social workers? *The British Journal of Social Work* 2009 01/01; 2009;39(5):901-917.

Hanafi S, Bahora M, Demir BN, Compton MT. Incorporating Crisis Intervention Team (CIT) knowledge and skills into the daily work of police officers: a focus group study. *Community Ment.Health J.* 2008 Dec;44(6):427-432.

Hasselberg N, Grawe RW, Johnson S, Ruud T. Treatment and outcomes of crisis resolution teams: a prospective multicentre study. *BMC Psychiatry* 2011 Nov 22;11:183.

Jacobs R, Barrenho E. Impact of crisis resolution and home treatment teams on psychiatric admissions in England. *Br.J.Psychiatry* 2011 Jul;199(1):71-76.

Kalinich AO. Crisis Intervention Team (CIT): Perspectives from mental health professionals. US: ProQuest Information & Learning; 2010.

Keller M. A comparative evaluation: Community-based, mental health crisis intervention treatment models and outcomes. US: ProQuest Information & Learning; 2008.

King SM. The impact of crisis intervention team training on law enforcement officers: An evaluation of self-efficacy and attitudes toward people with mental illness. US: ProQuest Information & Learning; 2011.

Kingsford R, Webber M. Social deprivation and the outcomes of crisis resolution and home treatment for people with mental health problems: a historical cohort study. *Health.Soc.Care.Community* 2010 Sep;18(5):456-464.

Kisely S, Campbell LA, Peddle S, Hare S, Pyche M, Spicer D, et al. A controlled before-and-after evaluation of a mobile crisis partnership between mental health and police services in Nova Scotia. *Can.J.Psychiatry* 2010 Oct;55(10):662-668.

Krupa T, Stuart H, Mathany A, Smart J, Chen SP. An Evaluation of a Community-Based, Integrated Crisis-Case Management Service. *CAN J COMMUNITY MENT HEALTH* 2010 09/02;29:125-137.

Lord VB, Bjerregaard B, Blevins KR, Whisman H. Factors influencing the responses of crisis intervention team—certified law enforcement officers. *Police Quarterly* 2011 12;14(4):388-406.

McCrone P, Johnson S, Nolan F, Pilling S, Sandor A, Hault J, et al. Economic evaluation of a crisis resolution service: A randomised controlled trial. *Epidemiol.Psichiatr.Soc.* 2009 01;18(1):54-58.

McGuire AB, Bond GR. Critical elements of the crisis intervention team model of jail diversion: An expert survey. *Behav.Sci.Law* 2011 01;29(1):81-94.

Middleton H, Glover G, Onyett S, Linde K. Crisis resolution/home treatment teams, gate-keeping and the role of the consultant psychiatrist. *Psychiatric Bulletin* 2008 10;32(10):378-379.

Middleton H, Shaw R, Collier R, Purser A, Ferguson B. The dodo bird verdict and the elephant in the room: A service user-led investigation of crisis resolution and home treatment. *Health Sociology Review* 2011 06;20(2):147-156.

Morabito MS, Kerr AN, Watson A, Draine J, Ottati V, Angell B. Crisis intervention teams and people with mental illness: Exploring the factors that influence the use of force. *Crime & Delinquency* 2012 01;58(1):57-77.



Morton J. Emotion in crisis: Primary and secondary mental health contexts. *Journal of Social Work Practice* 2010 12;24(4):461-474.

Nelson T, Johnson S, Bebbington P. Satisfaction and burnout among staff of crisis resolution, assertive outreach and community mental health teams: A multicentre cross sectional survey. *Soc.Psychiatry Psychiatr.Epidemiol.* 2009 07;44(7):541-549.

Onyett S, Linde K, Glover G, Floyd S, Bradley S, Middleton H. Implementation of crisis resolution/home treatment teams in England: National Survey 2005-2006. *Psychiatric Bulletin* 2008 10;32(10):374-377.

Ritter C, Teller JL, Marcussen K, Munetz MR, Teasdale B. Crisis intervention team officer dispatch, assessment, and disposition: Interactions with individuals with severe mental illness. *Int.J.Law Psychiatry* 2011 Jan-Feb;34(1):30-38.

Sadiq K, Chapman A, Mahadun P. Benchmarking impact on elderly admissions following CRHTT intervention. *CLIN GOVERNANCE INT J* 2009 06;14(2):113-119.

Skeem J, Bibeau L. How does violence potential relate to crisis intervention team responses to emergencies? *Psychiatr.Serv.* 2008 Feb;59(2):201-204.

Stewart C. Police intervention in mental health crisis: A case study of the Bloomington Crisis Intervention Team (CIT) program. US: ProQuest Information & Learning; 2009.

Tyrer P, Gordon F, Nourmand S, Lawrence M, Curran C, Southgate D, et al. Controlled comparison of two crisis resolution and home treatment teams. *The Psychiatrist* 2010 02;34(2):50-54.

Watson AC, Ottati VC, Morabito M, Draine J, Kerr AN, Angell B. Outcomes of police contacts with persons with mental illness: the impact of CIT. *Adm.Policy Ment.Health* 2010 Jul;37(4):302-317.

Watson AC, Ottati VC, Draine J, Morabito M. CIT in context: the impact of mental health resource availability and district saturation on call dispositions. *Int.J.Law Psychiatry* 2011 Jul-Aug;34(4):287-294.

## Appendix C

### Systematic Reviews Included in the Review

Compton MT, Bahora M, Watson AC, Oliva JR. A comprehensive review of extant research on Crisis Intervention Team (CIT) programs. *J.Am.Acad.Psychiatry Law* 2008;36(1):47-55.

Murphy S, Irving CB, Adams CE, Driver R. Crisis intervention for people with severe mental illnesses. *Cochrane Database Syst.Rev.* 2012 May 16;5:CD001087.

Sjolie H, Karlsson B, Kim HS. Crisis resolution and home treatment: structure, process, and outcome - a literature review. *J.Psychiatr.Ment.Health Nurs.* 2010 Dec;17(10):881-892.

Toot S, Devine M, Orrell M. The effectiveness of crisis resolution/home treatment teams for older people with mental health problems: a systematic review and scoping exercise. *Int.J.Geriatr.Psychiatry* 2011 Dec;26(12):1221-1230.

Winness MG, Borg M, Kim HS. Service users' experiences with help and support from crisis resolution teams. A literature review. *J.Ment.Health.* 2010 Feb;19(1):75-87.

## Appendix D

### Selected Grey Literature

Coleman T, Cotton D editors. Police Interactions with Persons with a Mental Illness: Police Learning in the Environment of Contemporary Policing; 2010.

Cotton D, Coleman T editors. Understanding Mental Illness: A Review and Recommendations for Police Education & Training in Canada; 2010.

Derrick A editor. Report of the Fatality Inquiry into the Death of Howard Hyde; 2010.

Government of Nova Scotia editor. Building Bridges: Improving Care in Custody for People Living with Mental Illness; 2011.

Luther D. Report of Inquiries into the Sudden Deaths of Norman Edward Reid Darryl Brandon Power; 2003.