



Open Access Full Text Article

RESEARCH ARTICLE

Mobile Crisis Resolution Team Implementation Challenges: A Rapid Review

[Les enjeux d'implantation des équipes de résolution de crise à domicile : une revue rapide]

Leïla Rached-d'Astous¹
Laurent Darveau²
Mimosa Luigi¹
Sandrine Bourgeois-Tardif²
Marie-Hélène Goulet^{3,4}
Clara Lessard-Deschênes^{3,4}
Evens Villeneuve^{5,6}
Michel Gilbert^{7,8}
Alain Lesage^{4,9}

¹ McGill University

² Université de Montréal

³ Faculté des sciences infirmières, Université de Montréal

⁴ Centre de recherche de l'Institut universitaire en santé mentale de Montréal

⁵ Département de Psychiatrie, Université Laval

⁶ Centre intégré universitaire de santé et de services sociaux (CIUSSS) de la Capitale Nationale

⁷ Centre national d'excellence en santé mentale

⁸ Direction générale adjointe des services de santé mentale et de la psychiatrie légale, Ministère de la santé et des services sociaux

⁹ Département de psychiatrie, Université de Montréal

Correspondence:

Alain Lesage, Centre de recherche de l'Institut universitaire en santé mentale de Montréal, Pavillon Bédard Unité 226, 7401 Hochelaga, Montréal, QC, H1N 3M5, Canada

Email:

alesage.iusmm@sss.gouv.qc.ca

Article received:

9 November 2020

Abstract: A community-centered approach to mental health care has been favoured over hospital-based psychiatry in Quebec over the last three decades. In England, crisis intervention services in the form of Crisis Resolution Teams (CRTs) were widely implemented in the early 2000s to offer an alternative care to hospitalization to patients with severe mental health disorders in acute crisis. This study explores the implementation and security challenges of such teams in the Canadian context. In this aim, a rapid review was commissioned to a Quebec hospital-based health technology assessment unit in 2017. The search was conducted on three electronic databases (PubMed, CINAHL and EMBASE) using key words related to crisis resolution and home treatment. The most recent systematic reviews, retrospective analysis and surveys were selected and read by two co-authors. Data was extracted as per characteristics of the intervention, providers, organizations, outer context, implementation process and targeted population. Of 216 publications identified in July 2017, eight articles were retained. An update, performed in December 2020, provided nine additional articles and confirmed previous findings. CRTs were associated with lesser rates of hospital admissions and seemed cost-effective as compared to traditional care. Suicide rates were high in CRT patients, but regions that implemented CRTs experienced decrease in suicide rates. Interventions were guided by government guidelines and a fidelity scale was developed by English researchers. Patient population profile was consistent with adults suffering from severe mental illnesses in a state of crisis that would otherwise require hospitalization. Implementation difficulties were suggested by the wide variation in model fidelity by CRTs in England. A vast majority of data comes from the English context. In conclusion, CRTs have proven to be an acceptable alternative to hospitalization for psychiatric patients in acute crisis. Similarities between the Canadian and English mental health care organization suggest that CRTs may complement the services already in place in Canada and strengthen its community-based approach to psychiatric care.

Keywords: Crisis intervention; Home care services; Community mental health services; Acute care.

Résumé : Au cours des trois dernières décennies, le Québec a favorisé une approche de décentralisation des services de soins de santé mentale des centres hospitaliers aux soins en communauté. L'Angleterre a développé des services d'intervention de crise sous la forme d'équipes de résolution de crise à domicile (ERCD) dans les années 2000 pour offrir une alternative à l'hospitalisation pour les patients vivant avec des troubles graves de santé mentale en situation de crise. Cette étude explore les enjeux de mise en œuvre et de sécurité de telles équipes dans un contexte canadien. Dans ce but, l'Unité d'évaluation des technologies et des modes d'intervention en santé mentale (UETMISM) de l'Institut universitaire en santé mentale de Montréal a reçu le mandat de conduire un examen rapide sur les ERCD en 2017. La recherche a été réalisée en anglais dans les bases de données PudMed, CINAHL et EMBASE, en utilisant des mots clés en lien avec la résolution de crise et les soins à domicile. Les plus récentes revues systématiques, analyses rétrospectives et enquêtes ont été sélectionnées et lues par deux coauteurs. Les données ont été extraites selon les caractéristiques des interventions, des prestataires, des organisations, du contexte externe, du processus d'implantation et de la population ciblée. Huit articles ont été retenus parmi 216 publications identifiées en juillet 2017. Une mise à jour de la recension des écrits en décembre

First response:
27 November 2020

Article accepted:
22 March 2021

©2021 Rached-d'Astous et al., publisher and licensee CybelePress.com. This is an Open Access article which permits unrestricted non-commercial use, provided the original work is properly cited.

2020 a permis d'identifier neuf autres articles venant confirmer les résultats des précédentes études. Les ERCD ont montré des taux plus bas d'hospitalisation et ont semblé rentables lorsque comparés au traitement habituel. Les taux de suicide étaient élevés chez les patients suivis par les ERCD, mais les régions ayant implanté des ERCD ont vu une diminution des taux de suicide. La population de patient des ERCD reflétait le modèle d'adulte vivant avec des troubles graves de santé mentale en état de crise qui aurait autrement nécessité une admission en centre hospitalier. Une grande variation de fonctionnement avec un modèle de fidélité des ERCD en Angleterre suggère des défis d'implantation importants de ces équipes. Une grande majorité des données provient du contexte britannique. En conclusion, les ERCD ont montré être une alternative acceptable à l'hospitalisation pour les patients psychiatriques en situation de crise. Des similitudes entre l'organisation des systèmes de santé canadien et britannique suggèrent que les ERCD pourraient compléter les services déjà en place au Canada et renforcer l'approche communautaire des soins en santé mentale.

Mots clés : Intervention de crise; Services de soins à domicile; Services de santé mentale communautaire; Soins aigües.

Context

Through its *Plan d'action en santé mentale* (PASM, *Mental health Action Plan*) of 1998, 2005 and 2015 [1-3], the Ministry of Health and Social Services (MSSS) in Quebec operated a shift towards community-based mental health services, with the implementation of new services such as the Assertive Community Treatment (ACT) teams and Intensive Case Management (ICM), which are supported by the National Centre of Excellence in Mental Health (NCEMH) [3]. Other measures include psychiatric outpatient services and community mental health teams that were deployed in Quebec in the 1960s, when psychiatric hospitals were downsized and department of psychiatry were developed in general hospitals, offering hospitalization and outpatient services [4, 5].

Crisis intervention services were also deemed essential to a shift towards health care in the community. They offer access to three specific services: (1) short-term crisis intervention, (2) 24/7 psychosocial telephone consultation (info-social), and (3) 24/7 crisis intervention in the community. They operate in complementarity with crisis centers and hospital emergency departments [3].

Also acting towards community-based mental health care, the Government of England developed in the early 2000s a national policy supporting the

implementation of Crisis Resolution Teams (CRTs) [6]. These multidisciplinary teams aim to offer an alternative to hospitalization by providing short-term and intensive support to adults with severe mental health disorders in acute crisis [7]. The CRTs aim to operate in the least restrictive environment possible and by causing minimal disruption in the patient's lives. These teams must also function as gatekeepers in evaluating patients in crisis, assessing their needs and referring them to appropriate services.

Guided by best practices, the *Consensus Statement on Improving Mental Health Transitions* published in 2014 by the Institute of Health Economics for the government of Alberta recommended that these teams be deployed in Canada in complementarity with the community mental health (Non-Intensive Basic Support - NIBS), ICM and ACT teams already in place [8].

Research question

The *Unité d'évaluation des technologies et des modes d'intervention en santé mentale* (UETMISM) was mandated by the East of Montreal Integrated University Health and Social Services Center (*Centre intégré universitaire de santé et services sociaux (CIUSSS) de l'Est-de-l'île-de-Montréal*) in collaboration with the CIUSSS of the Capitale-Nationale and the National Centre of Excellence in Mental Health (NCEMH) in Quebec, overviewed by the Ministry of

Health and Social Services in Quebec, to conduct a rapid review of existing scientific and grey literature on mobile crisis resolution teams and answer the following question:

Considering England’s scientific evidence describing the effects of mobile crisis resolution teams on patients, emergency rooms and psychiatric units, what are the implementation and security challenges raised by the literature that are relevant to Quebec’s context?

The official hospital-based health technology assessment report was finally approved in 2019 [9]. The present paper reports the results of this rapid review, as it may be of interest to Canadian psychiatric services planners and clinicians that may want to implement CRTs.

Methods

The current report followed the rapid review model, as it allowed for simplified knowledge synthesis in a timely manner [10]. The literature search for this rapid review (Figure 1) was conducted on July 26th, 2017, using three databases (PubMed, CINAHL and EMBASE) and selecting publications in French and English without restriction on date of publication, following these entries:

1. "crisis resolution"[TIAB] AND ("home treatment"[TIAB] OR team[TIAB] OR teams[TIAB]);
2. ("crisis resolution" and ("home treatment" or team*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word];
3. ("crisis resolution" and ("home treatment" or team*)).

The PubMed search yielded 77 references, the EMBASE research 79 references and the CINAHL research 60 references. We included the most recent systematic reviews (total of 4) concerning

the themes that had been judged relevant with regards to the implementation challenges throughout the preparation of the data extraction grid [11-14]. When no systematic reviews concerning the relevant themes were found, other types of articles were included (i.e., a survey, a retrospective analysis study, an editorial and an evaluation study) [15-18]. The data from the eight articles were formally extracted by two co-authors independently. Information sought during data extraction included characteristics of (1) the interventions, (2) the providers, (3) the organizations, (4) the outer context, (5) the implementation process and (6) the targeted population. The extraction themes were drawn from Briand’s and Menear’s review of implementation challenges of psychosocial interventions for people with severe mental health illness [19].

We also included data from the existing grey literature, published in Quebec and in England, as quoted in papers we selected, without further formal research methodology.

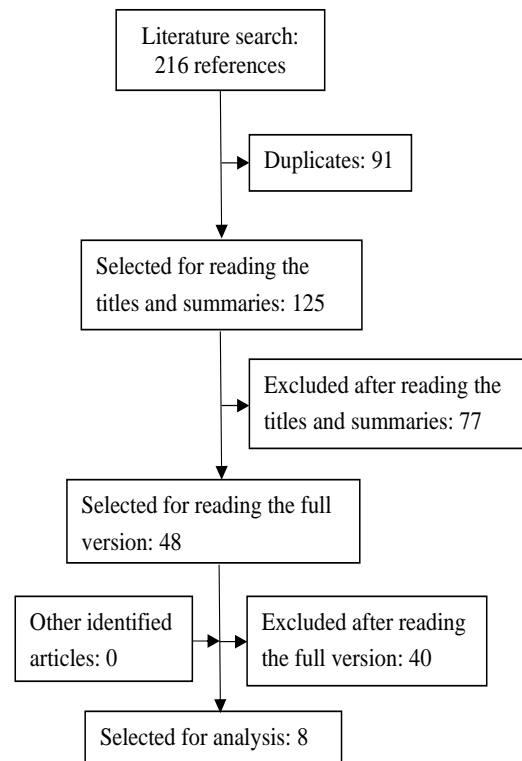


Figure 1. Literature search results in July 2017

Results

Effects of the intervention

A Cochrane review by Murphy and colleagues on the effects of crisis intervention models includes eight randomized controlled trials (RCT) comparing at home crisis intervention models to standard care for people with severe mental illnesses [12]. A single one of these studies, led by Johnson in 2005, was conducted in England and focused on a CRT-type intervention as defined in the literature. The remaining seven studies examined longer term home interventions with the ability to intervene in a crisis situation.

As per Murphy and colleagues [12], Johnson's RCT showed that the experimental group was less likely than the control group to be admitted to a hospital or a crisis center in the eight weeks following the crisis [12, 20]. The Johnson's study specifically showed that the CRT group had significantly fewer days in acute care postcrisis ($n = 260$, mean difference (MD) -10.30 , 95% CI -14.77 to -5.83); and significantly fewer number of participants readmitted ($n = 260$, RR, 0.53, 95% CI 0.41 to 0.68) [12, 20]. The experimental group was slightly more satisfied by their care, though the authors found these results equivocal.

Despite the risk of bias in the included studies, the diversity between the interventions' characteristics and the limited number of RCT, Murphy's review concluded that the CRTs may provide a more acceptable alternative to standard hospital care for people in crisis who suffer from severe mental illnesses and their families. However, they recommend that other evaluative studies be conducted on the subject before a larger implementation of this approach is undertaken [12].

Cost-benefit analyses

As per a rapid synthesis by the National Institute for Health Research in England [14], two economic analyses concluded that CRTs were a cost-effective alternative when

compared to standard care. CRTs could save an average of £2000 per patient after six months, including the costs associated with hospitalizations [14].

Core characteristics

Considering that the initial model for CRTs established in England in the early 2000s was based mainly on an expert consensus [7], a recent systematic review by Wheeler and colleagues set out to better define the characteristics of effective CRTs [11]. This review included 49 quantitative and qualitative studies as well as 20 government/expert reports. The authors reported evidence supporting the effectiveness of some CRTs in reducing admissions and increasing user satisfaction but were unable to identify what differentiates the most effective teams from the less effective ones. However, this article shares several results from studies that are relevant to our research question.

As per Wheeler and colleagues, a pre-post comparative study found that the presence of a psychiatrist in the team was associated with a 40% reduction in the number of hospital admissions [11]. Another study from Wheeler and colleagues review found that longer hours of service could also help prevent hospital admissions [11].

Few studies explored the actual content of care offered by CRTs and the effect of specific interventions on outcomes. Lloyd-Evans developed a CRT fidelity scale as part of the Crisis team Optimization and Relapse prevention (CORE) research program to assess adherence of CRTs to a model of best practice, based on best evidence available from quantitative and qualitative studies, and CRT stakeholders (users, professionals, managers, etc.) [17].

According to this fidelity scale, the ideal team must offer a continuous service (24 hours, seven days per week), respond quickly to new referrals, assess patients within 4 hours and provide an immediate mobile response in emergency situations. The team must accept all referrals, including those from primary care services, users and

families. All patients that would require hospitalization without the team's involvement must be accepted [17].

The team must act as a gatekeeper by assessing all patients before they are admitted on hospital wards and assume an active role in shortening the length of hospital stay by offering intensive care at discharge. The treatment is short-termed, less than six weeks, and intensive. Indeed, patients received more than two visits per day if necessary and at least 50% of users were seen twice a day for three consecutive days and seven times during the first week. Contacts were made with community services as soon as the crisis has been resolved [17]. The intervention must be exhaustive and must include medication prescription and delivery services, psychological interventions, psychosocial support, physical health care and collaboration with the family [17].

Characteristics of the targeted population

According to the initial implementation guide [7], the targeted clientele consisted of adults suffering from severe mental illnesses, such as schizophrenia, bipolar disorder and major depression, in a state of crisis that would otherwise require hospitalization. The following situations were usually excluded: mild anxiety disorders, primary diagnosis of substance abuse disorders, personality disorders with no significant comorbidities, recent self-harm history without a diagnosis of psychosis or severe depression, organic disorders, learning disabilities and crisis due to relational issues. The revised version of the implementation guide recommends not to consider personality disorder as an exclusion criterion [21], and Lloyd Evan's fidelity scale proposes to include personality disorder in the accepted diagnoses [17].

A recent systematic review looked at the effectiveness of CRTs for individuals that are 65 years old or older and suffer from a mental illness, including neurocognitive disorders [13]. The study found insufficient evidence to support the efficacy of the

services for older patients but concluded that this does not mean they are ineffective.

Finally, team characteristics may influence patient population profile. Wheeler and colleagues systematic review reported that a study by Harrison found that the proportion of severely mentally ill patients decreased once teams started accepting referrals from primary care services [11]. Lloyd-Evan's survey underlined that a study by Hasselberg found that teams with longer opening hours accepted more severely ill patients, while patients who were self-referred were as severely ill as those referred by health care professionals [18].

Security

A series of studies by the National Confidential Inquiry into Suicide and Homicide in England reported that a third of the suicides that occurred under the CRT care took place within the first three months following hospitalization, and 40% of these deaths happened within two weeks of discharge [15].

As per Murphy and colleagues review, RCTs did not show significant difference between the CRT-intervention groups and the control groups regarding rates of suicide or suicide attempt [12]. However, the small sample size and small number of critical events calls for careful interpretation.

It is possible that CRTs do not present an appropriate treatment for a subgroup of patients at higher risk of suicide. As per Hunt and colleagues, 44% of the patients who died by suicide while receiving the care of a CRT lived alone, and 49% had recently experienced adverse life events [15]. However, these characteristics seem to be risk factors for suicide independently from the type of care they receive. Indeed, 48% of those who ended their life in the community without being followed by a CRT and 42% of those who did so as inpatients lived alone. Similarly, 42% of the people who died by suicide in inpatient population and 41% of those in the community had recently faced adverse life events [15].

Therefore, suicide risk might be transferred from the hospital setting to the mobile teams when patients are discharged early. At the system level, While and colleagues found that out of the nine recommendations made to prevent suicide by the National Confidential Inquiry into Suicide and Homicide in England, the implementation of 24h crisis teams was the one with the most significant positive impact in reducing the suicide rate from 11.44/10,000 to 9.32/10,000 ($p < 0.0001$) in patients who had contact with mental health services [22]. The areas that did not implement the recommendations did not see a significant change in their suicide rate.

Implementation process

The CRT experiment in England confirms that it is possible to establish several hundreds of teams (335) in a majority of regions (89%) in the five years following a national implementation policy [21]. A national survey was conducted in 2011-2012 in England by Lloyd Evans and his team to look at policy mandate effect on implementation of the CRT service model [18]. Their survey, to which 88% of CRTs participated ($n=192$), underlines the implementation challenges met by the teams. The authors reported a wide variation in the way CRTs are organized and the services they offer. They also noted that CRTs are providing a less comprehensive service than prescribed by the model. Almost none of the teams followed all governmental recommendations.

Transferability

The CRT model has mainly been studied in the context of the United Kingdom. However, as noted by Wheeler and Murphy, publications from other countries suggest that this type of intervention can also be effective in different health care systems, including Norway, Australia and the United States [11, 12].

Lloyd-Evans compared his survey results to a similar Norwegian survey conducted amongst CRT-type teams by Hasselberg and colleagues in 2011 [18]. The authors pointed out that the Norwegian teams also

struggle to follow initial recommendations, namely providing rapid access, offering 24-hour service and assuming a gate-keeping role.

Discussion

According to this rapid review, CRTs may offer a better treatment alternative to hospitalization for some patients in crisis suffering from severe mental illnesses, both in terms of efficiency and cost-benefit, as well as patient satisfaction. The body of literature remains somewhat limited and more than 90% of the evidence comes from England. The efficacy of CRTs has scarcely been studied in other countries until recently.

CRTs offer care to a population at risk of suicide. As noted by Hunt and colleagues, suicide rates seem higher in the patient population under CRT care than in psychiatric inpatient population [15]. This difference may partly be attributable to a transfer of risk in the community. It is well documented in the medical literature that patients are more at risk of suicide in the few months following discharge from hospital, independently from CRT involvement [23, 24].

Like any critical care service, CRTs offer care to a precarious population and necessarily see an elevated rate of death, as one would in medical intensive care unit populations. This underlines the importance of monitoring closely suicide risk amongst the CRT population. Nevertheless, implementation of CRTs remains a key intervention in suicide prevention strategies in the community by allowing for rapid and intensive patient care in vulnerable population, as is supported by system level findings that regions in England implementing CRTs experienced a decrease in suicide rates [22].

To update this rapid review completed in mid-2017 at the request of the regional and provincial mental health directorship, the same search strategy was applied to retrieve articles up to mid-December 2020. A selection of the articles was made and included recent studies by the main

research group in England led by Lloyd-Evans as well as studies from other countries updating or challenging the effectiveness, efficiency, security, acceptability and implementation strategies for CRTs reported in the original rapid review. No randomized trials on the efficacy were found, but a protocol for a randomized trial was submitted in the Netherlands [25]. Interest in CRTs in other countries including France and Denmark was shown by efficacy studies using pre-post or register-based design and these studies confirmed the efficacy of CRTs in terms of reduction of admissions and suicide attempts [26, 27]. No economic analysis has since been reported. Security issues were not raised in a large UK register-based study [28], but are addressed by UK continuous quality improvement authorities, recognizing and marking up the expert decision-making issues in gatekeeping [29]. Acceptability by patients and relatives was further explored, and the importance of home visits, staff continuity emotional and practical support was stressed [30]. Implementation issues were again underlined in a second England survey of CRTs, using the fidelity scale developed by the Lloyd-Evans's research group [31]. Despite a national mandate to implement the CRT model, there are wide variations in CRT implementation in England and no team achieved overall high fidelity. This suggests that a mandatory national policy is not in itself sufficient to achieve good quality implementation of a service model [32]. Following the development of the CORE CRT fidelity scale, Lloyd Evans and colleagues launched a non-masked, cluster-randomized trial to evaluate a one-year program aiming at improving CRTs' model fidelity [33]. They found that fidelity scale scores improved significantly for the teams in the intervention group. The study showed significant decrease in acute care admission at 1 year of follow-up (n=220, OR 0.66, 95% CI 0.43 to 0.99, p=0.04), in the intervention group than in the control group, but no difference was shown for patient satisfaction which was the primary

outcome of the study [33].

Briand and Menear studied critical implementation issues for evidence-based psychosocial interventions [19]. They emphasize that numerous authors consider regular evaluation of practice fidelity as critical for implementation success and improved outcomes for service users. Assistance centers at the state or provincial level often play a role in the execution of psychosocial initiatives [34]. Fidelity to a complex psychosocial intervention model like CRTs and results can be improved by technical assistance centers providing a facilitator, often an experienced CRT clinical leader, online resources and quality reviews as tested successfully in the CORE project [35]. The CORE CRT study suggested that a one-year program improvement intervention with CRTs aiming at improving their model fidelity is insufficient to achieve all intended service improvements, and that a longer-term, continuous intervention led by a national technical assistance center for complex psychosocial intervention might be needed.

To appreciate the transferability of a CRT-type of intervention to other health care systems, it is crucial to compare the organization of mental health care in England to that of other contexts. The community services in England are primarily organized around Community Mental Health Teams (CMHT) for non-acute care for patients with severe and persistent illnesses and CRTs for crisis situations [6]. The CMHT have the capacity to offer home care interventions at an intensity similar to the ICM or the ACT programs in Canada [36, 37]. CRT-type intervention might thus complement services in Canada by offering higher intensity care than the one offered by community mental health teams, ICM or ACT programs. They might offer a secure bridge between inpatient units and ICM or ACT programs, where delays for care may be long.

A complete array of these various community teams and their standards are proposed in Table 1. The descriptions for the NIBS, ACT and ICM are the ones that

currently appear in Quebec's 2015-2020 Mental Health Plan or in the IHE/government of Alberta 2014 consensus conference. The CRT description and standards were drawn from England government publications and Quebec City's seven-year experience with CRTs reported in the original rapid review [9, 38].

In Canada, psychiatric emergency departments act as gatekeepers in accepting patients that are referring

themselves, or that were referred by a family member (via an order for a psychiatric assessment, for instance), a health care worker, a family physician, community organization like shelters or the police. CRTs acting as gatekeepers could accept referrals from these sources and conduct psychiatric assessments in the community as well as initiate follow-up at home, thus avoiding an emergency department visit and inpatient admission.

Table 1. Teams' characteristics of specialized mental health services in CIUSSS/CISSS of Quebec

Teams	Intensity of care	Duration	Reference model	Number of patients per 100,000 inhabitants	Area of care	Number of employees per team	Presence of psychiatrist in the team
ACT	High	3-5 years	PACT	70 [3]	Home care	10-12	Yes
ICM	Moderate	2 years	Intensive Case Management	250 [3]	Home care	10-12	Yes
NIBS	Low	Multiple years	Community Mental Health Team (England); Community Mental Health Centers (USA) [39]; Centro di salute mentale (Italy) [40]	1200 [3]	Outpatient care	10-12	Yes
CRT	High	3-6 weeks	CRT (England)	15-20 [7]	Crisis management	10-12	Yes

Notes: ACT=Assertive Community Treatment; ICM=Intensive Case Management; NIBS=Non-intensive basic support; CRT=Crisis Resolution Teams; PACT=Program of Assertive Community Treatment.

Concluding remarks

Community-based mental health care, including crisis intervention services, has been promoted by the last three mental health action plans in Quebec and by the Consensus Statement published by the Institute of Health Economics for the government of Alberta [1-3, 8]. In England, CRTs were implemented in the early 2000s to offer care in the community to adults with severe mental disorders in acute crisis, as an alternative to hospitalization. A few hundred teams were successfully deployed in most regions of England, but a vast majority of teams struggled to follow the model of care. These implementation difficulties may explain the mitigated evidence of CRT impact regarding patient

satisfaction as well as rates and lengths of hospital stays. Previous implementation research of complex psychosocial interventions like CRT, ACT, ICM and CMHT, as well as the CORE CRT improvement pragmatic randomized trial, point towards the need for technical assistance centers to continuously support the implementation and quality of various mental health programs [34]. The support from these centers, like the NCEMH in Quebec, could help to solve the implementation challenges of CRTs and have been recommended by a consensus conference conducted by a Canadian HTA agency [8]. The CRTs thus remain a well-defined and promising model that would complement the community-based crisis intervention services already in place in Canada. In echo

to this, various university-based integrated regional health and social services centers in Quebec recently started implementing intensive home treatment for people in crisis with severe mental illness [9].

Acknowledgements

Authors would like to acknowledge the help of Ionela Gheorghiu, Nomita Nguyen and Marie Désilets.

Funding

Mimosa Luigi and Sandrine Bourgeois-Tardif received student summer research fellowship funding from the PRogramme d'Excellence en Médecine pour l'Initiation En Recherche (PREMIER) of the Faculté de médecine of the Université de Montréal. No other funding supported this rapid review.

Conflicts of interest

The authors declare that they have no competing interests.

References

- [1] Ministère de la Santé et des Services sociaux. Plan d'action pour la transformation des services de santé mentale. Gouvernement du Québec: Québec; 1998. p. 41.
- [2] Ministère de la Santé et des Services sociaux. Plan d'action en santé mentale 2005-2010 - La force des liens. La Direction des communications du ministère de la Santé et des Services sociaux: Québec; 2005. p. 97.
- [3] Ministère de la Santé et des Services sociaux. Plan d'action en santé mentale 2015-2020 – Faire ensemble et autrement. La Direction des communications du ministère de la Santé et des Services sociaux: Québec; 2015. p. 87.
- [4] Lesage A. Le rôle des hôpitaux psychiatriques. Santé mentale au Québec 1997;22.
- [5] Lesage A. Chapter 15: Canada. In: Thornicroft G, Tansella M (Eds), The Mental Health Matrix - A Manual to Improve Services. Cambridge University Press: Cambridge; 2006. p. 201-215.
- [6] Department of Health. The NHS Plan: A plan for investment. A plan for reform. Crown Copyright: Norwich; 2000. p. 144.
- [7] Department of Health. The Mental Health Policy Implementation Guide. London; 2003. p. 1-120.
- [8] Institute of Health Economics. Consensus Statement On Improving Mental Health Transitions. Edmonton; 2014. p. 24.
- [9] Darveau L, Luigi M, Bourgeois-Tardif S, Lesage A. Enjeux d'implantation des équipes mobiles d'intervention de crise. Unité d'évaluation des technologies et des modes d'intervention en santé mentale - CIUSSS de l'Est-de-l'île de Montréal: Montreal; 2019. ISBN 978-2-550-83840-1 (PDF).
- [10] Khangura S, Konnyo K, Cushman R, Grimshaw J, Moher D. Evidence summaries: the evolution of a rapid review approach. Systematic Reviews 2012;1:9.

- [11] Wheeler C, Lloyd-Evans B, Churchard A, Fitzgerald C, Fullarton K, Mosse L, Paterson B, Zugaro CG, Johnson S. Implementation of the Crisis Resolution Team model in adult mental health settings: a systematic review. BMC Psychiatry 2015;15.
- [12] Murphy SM, Irving CB, Adams CE, Waqar M. Crisis intervention for people with severe mental illnesses. Cochrane Database Syst Rev 2015;CD001087.
- [13] 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;26:1221-1230.
- [14] Paton F, Wright K, Ayre N, Dare C, Johnson S, Lloyd-Evans B, Simpson A, Webber M, Meader N. Improving outcomes for people in mental health crisis: a rapid synthesis of the evidence for available models of care. Health Technol Assess 2016;20:1-162.
- [15] Hunt IM, Rahman MS, While D, Windfuhr K, Shaw J, Appleby L, Kapur N. Safety of patients under the care of crisis resolution home treatment services in England: a retrospective analysis of suicide trends from 2003 to 2011. The Lancet Psychiatry 2014;1:135-141.
- [16] Hunt IM, Appleby L, Kapur N. Suicide under crisis resolution home treatment - a key setting for patient safety. BJPsych Bull 2016;40:172-174.
- [17] Lloyd-Evans B, Bond GR, Ruud T, Ivanecka A, Gray R, Osborn D, Nolan F, Henderson C, Mason O, Goater N, Kelly K, Ambler G, Morant N, Onyett S, Lamb D, Fahmy S, Brown E, Paterson B, Sweeney A, Hindle D, Fullarton K, Frerichs J, Johnson S. Development of a measure of model fidelity for mental health Crisis Resolution Teams. BMC Psychiatry 2016;16:427.
- [18] Lloyd-Evans B, Paterson B, Onyett S, Brown E, Istead H, Gray R, Henderson C, Johnson S. National implementation of a mental health service model: A survey of Crisis Resolution Teams in England. Int J Ment Health Nurs 2018;27:214-226.
- [19] Menear M, Briand C. Implementing a Continuum of Evidence-Based Psychosocial Interventions for People With Severe Mental Illness: Part 2— Review of Critical Implementation Issues. The Canadian Journal of Psychiatry 2014;59:187-195.
- [20] Johnson S, Nolan F, Pilling S, Sandor A, Hout J, McKenzie N, White IR, Thompson M, Bebbington P. Randomised Controlled Trial Of Acute Mental Health Care By A Crisis Resolution Team: The North Islington Crisis Study. BMJ: British Medical Journal 2005;331:599-602.
- [21] National Audit Office. Helping people through mental health crisis: The role of Crisis Resolution and Home Treatment services. The Stationary Office: Norwich; 2007. p. 41.
- [22] While D, Bickley H, Roscoe A, Windfuhr K, Rahman S, Shaw J, Appleby L, Kapur N. Implementation of mental health service recommendations in England and Wales and suicide rates, 1997–2006: a cross-sectional and before-and-after observational study. The Lancet 2012;379:1005-1012.

- [23] Chung DT, Ryan CJ, Hadzi-Pavlovic D, Singh SP, Stanton C, Large MM. Suicide Rates After Discharge From Psychiatric Facilities. *JAMA Psychiatry* 2017;74(7):694-702.
- [24] Hunt IM, Kapur N, Webb R, Robinson J, Burns J, Shaw J, Appleby L. Suicide in recently discharged psychiatric patients: a case-control study. *Psychol Med* 2009;39:443-449.
- [25] Cornelis J, Barakat A, Dekker J, Schut T, Berk S, Nusselder H, Ruhl N, Zoeteman J, Van R, Beekman A, Blankers M. Intensive home treatment for patients in acute psychiatric crisis situations: a multicentre randomized controlled trial. *BMC Psychiatry* 2018;18:55.
- [26] Blæhr EE, Madsen JV, Christiansen NLS, Ankersen PV. The influence of crisis resolution treatment on employment: a retrospective register-based comparative study. *Nordic journal of psychiatry* 2017;71:581-588.
- [27] Cervello S, Pulcini M, Massoubre C, Trombert-Paviot B, Fakra E. Do Home-Based Psychiatric Services for Patients in Medico-Social Institutions Reduce Hospitalizations? Pre-Post Evaluation of a French Psychiatric Mobile Team. *Psychiatric Quarterly* 2019;90:89-100.
- [28] Werbeloff N, Chang CK, Broadbent M, Hayes JF, Stewart R, Osborn DPJ. Admission to acute mental health services after contact with crisis resolution and home treatment teams: an investigation in two large mental health-care providers. *The lancet. Psychiatry* 2017;4:49-56.
- [29] Lombardo C, Santos M, Van Bortel T, Croos R, Arensman E, Kar Ray M. Decision-making in crisis resolution and home treatment teams: The AWARE framework. *BJPsych Bull* 2019;43(2):61-66.
- [30] Morant N, Lloyd-Evans B, Lamb D, Fullarton K, Brown E, Paterson B, Istead H, Kelly K, Hindle D, Fahmy S, Henderson C, Mason O, Johnson S. Crisis resolution and home treatment: stakeholders' views on critical ingredients and implementation in England. *BMC Psychiatry* 2017;17:254.
- [31] Lloyd-Evans B, Lamb D, Barnby J, Eskinazi M, Turner A, Johnson S. Mental health crisis resolution teams and crisis care systems in England: a national survey. *BJPsych Bull* 2018;42:146-151.
- [32] Lamb D, Lloyd-Evans B, Fullarton K, Kelly K, Goater N, Mason O, Gray R, Osborn D, Nolan F, Pilling S, Sullivan SA, Henderson C, Milton A, Burgess E, Churchard A, Davidson M, Frerichs J, Hindle D, Paterson B, Brown E, Piotrowski J, Wheeler C, Johnson S. Crisis resolution and home treatment in the UK: A survey of model fidelity using a novel review methodology. *Int J Ment Health Nurs* 2020;29:187-201.
- [33] Lloyd-Evans B, Osborn D, Marston L, Lamb D, Ambler G, Hunter R, Mason O, Sullivan S, Henderson C, Onyett S, Johnston E, Morant N, Nolan F, Kelly K, Christoforou M, Fullarton K, Forsyth R, Davidson M, Piotrowski J, Mundy E, Bond G, Johnson S. The CORE service improvement programme for mental health crisis resolution teams: results from a cluster-randomised trial. *The British Journal of Psychiatry* 2019:1-9.
- [34] Menear M, Briand C. Implementing a Continuum of Evidence-Based Psychosocial Interventions for People With Severe Mental Illness: Part 1— Review of Major Initiatives and Implementation Strategies. *The Canadian Journal of Psychiatry* 2014;59:178-186.
- [35] Lloyd-Evans B, Osborn D, Marston L, Lamb D, Ambler G, Hunter R, Mason O, Sullivan S, Henderson C, Onyett S, Johnston E, Morant N, Nolan F, Kelly K, Christoforou M, Fullarton K, Forsyth R, Davidson M, Piotrowski J, Mundy E, Bond G, Johnson S. The CORE service improvement programme for mental health crisis resolution teams: results from a cluster-randomised trial. *Br J Psychiatry* 2020;216:314-322.
- [36] Killaspy H. Assertive community treatment in psychiatry. *BMJ* 2007;335:311-312.
- [37] Kent A, Burns T. Assertive community treatment in UK practice. *Advances in Psychiatric Treatment* 2005;11:388-397.
- [38] Boisvert A, Bouffard A-P, Paquet K. Le traitement intensif bref à domicile. *Santé mentale* 2016;68-72.
- [39] Kane JM, Robinson DG, Schooler NR, Mueser KT, Penn DL, Rosenheck RA, Addington J, Brunette MF, Correll CU, Estroff SE, Marcy P, Robinson J, Meyer-Kalos PS, Gottlieb JD, Glynn SM, Lynde DW, Pipes R, Kurian BT, Miller AL, Azrin ST, Goldstein AB, Severe JB, Lin H, Sint KJ, John M, Heinsen RK. Comprehensive Versus Usual Community Care for First-Episode Psychosis: 2-Year Outcomes From the NIMH RAISE Early Treatment Program. *Am J Psychiatry* 2016;173:362-372.
- [40] Ruggeri M, Bonetto C, Lasalvia A, Fioritti A, de Girolamo G, Santonastaso P, Pileggi F, Neri G, Ghigi D, Giubilini F, Miceli M, Scarone S, Cocchi A, Torresani S, Faravelli C, Cremonese C, Scocco P, Leuci E, Mazzi F, Pratelli M, Bellini F, Tosato S, De Santi K, Bissoli S, Poli S, Ira E, Zoppei S, Rucci P, Bislinghi L, Patelli G, Cristofalo D, Meneghelli A, GET UP Group. Feasibility and Effectiveness of a Multi-Element Psychosocial Intervention for First-Episode Psychosis: Results From the Cluster-Randomized Controlled GET UP PIANO Trial in a Catchment Area of 10 Million Inhabitants. *Schizophr Bull* 2015;41(5):1192-1203.