CHILDREN'S MENTAL HEALTH RESEARCH

Quarterly

SUMMER 2013 VOL. 7, NO. 3

Addressing acute mental health crises

SUMMER

Quarterly

VOL. 7, NO. 3 2013

Children's Health Policy Centre

ABOUT THE CHILDREN'S HEALTH POLICY CENTRE

As an interdisciplinary research group in the Faculty of Health Sciences at Simon Fraser University, we aim to connect research and policy to improve children's mental health. To learn more about our work, please see www.childhealthpolicy.ca.

ABOUT THE *QUARTERLY*

In the *Quarterly,* we present summaries of the best available research evidence on children's mental health topics, using systematic review methods adapted from the *Cochrane Collaboration* and *Evidence-Based Mental Health*.

The BC Ministry of Children and Family Development funds the *Quarterly.*

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This Issue

NEXT ISSUE

Are psychiatric medications being overused for children?

Psychiatric medications are being increasingly prescribed for children "off label" – for conditions where there is little or no evidence supporting their use. We examine this trend and its impact on child health.

How to Cite the *Quarterly*

We encourage you to share the *Quarterly* with others and we welcome its use as a reference (for example, in preparing educational materials for parents or community groups). Please cite this issue as follows:

Schwartz, C., Waddell, C., Barican, J., Mughal, S., Gray-Grant, D., & Nightingale, L. (2013). Addressing acute mental health crises. *Children's Mental Health Research Quarterly, 7*(3), 1–16. Vancouver, BC: Children's Health Policy Centre, Faculty of Health Sciences, Simon Fraser University.

Crisis intervention: What exists, what's needed

It's called a mental hospital and that kinda makes you feel like if you're there, you must be mental, you must be crazy.

— Fourteen-year-old[1]

We see kids who had clear symptoms of depression or anxiety that lead to them failing school … and feeling like a failure. And if they had been seen six months ago, they wouldn't have gotten so disabled that they needed to be hospitalized. That's just almost an everyday event.

— Mental health practitioner[2]

A depressed girl rifles through her parents' medicine cabinet searching for pills that will end her suffering and her life. A teenaged boy can't stop the voices that are commanding him to stab his father — no matter what he tries. These are just two examples of the different kinds of mental health crises that young people face. While they're not all life-threatening, all do cause serious — and often preventable — distress for children and families.

Urgently seeking support

A mental health crisis can be terrifying for young people and their families. When faced with these crises, many turn to hospital emergency rooms (ERs) for help. Thanks to a recent study, considerably more is now known about the children who use Canadian ERs in these situations. Over the course of one year, an Ontario ER treated and tracked 784 children aged 8 to 17 years who were experiencing acute mental health crises.[3] The presenting concerns varied by age and gender. For younger school-age children, severe behavioural problems generally led them to the ER, whereas for adolescents it was emotional problems that typically brought about the visit.[3] Regarding gender, girls were more likely to present with suicidality and self-inflicted injuries, while boys were more likely to present with psychosis or aggressive behaviours.[3] Strikingly, 60% of these young people were already receiving community-based mental health treatment, including counselling and/or medication.[3]

The vast majority (82%) of children in this Canadian ER study were *not* admitted as inpatients, an approach that's quite typical based on findings from international studies. In fact, researchers in Australia and the United States

Policy-makers and practitioners can play a crucial role in averting at least some crises — by ensuring that mental health problems are identified early and that effective interventions are offered.

While shifting services to make significant new prevention investments is challenging, doing so can reduce the number of children developing mental disorders and experiencing acute crises.

have found that most children assessed in ERs for mental health crises do not receive inpatient care (53% and 84%, respectively).[4, 5] Nevertheless, almost 30% of all days that Canadian 10- to 19-year-olds spend in hospital have been found to be attributable to mental disorders.[6]

ERs as a last resort?

There are several compelling reasons for trying to treat as many young people as possible in their communities, rather than in ERs. Many ER staff lack the expertise to effectively manage childhood mental health emergencies.[10] Time constraints compound this challenge. As well, the decided focus on physical health in most ERs can hinder careful mental health evaluations for young people in crisis.[9] For example, it can be tempting to dismiss an adolescent's severe intoxication as "typical teen behaviour," while an elderly stroke patient is being wheeled in.[9] ER visits in and of themselves can be stressful for children and families — exposing them to upsetting sights and sounds, which can add to existing distress.[11] ERs and hospitals are also costly, and inpatient care can exhaust a disproportionate share of scarce children's mental health dollars.[12, 13] Finally, children receiving hospital-based services for mental health issues can face considerable stigmatization.[14]

Providing care in communities

As a result, many jurisdictions are using or developing community-based alternatives for children experiencing acute mental health crises.[15] When they're successful, these interventions can minimize the distress and disruption for children, while also containing costs.[13] In the review article that follows, we examine two promising community-based interventions for young people in crisis.

Even if practitioners work in communities without outpatient services for children in crisis, they can still take steps to support these children. These may include developing crisis plans and providing support beyond traditional office hours.[11] In fact, the lack of after-hours services has been identified as a major barrier in providing mental health care to Canadian children and youth.[16]

What do you mean, she's coming home with me?

Tears streamed down Catherine's face. She felt desperate after finding her daughter, Sophia, drunk with a bottle of pills in her hand. Despite Sophia's protests, Catherine bundled her into the car and raced to the hospital. Catherine was certain that Sophia was finally going to get the help she needed — whether she wanted it or not. This time would be different. This time Sophia couldn't just refuse — like she did when Catherine made an appointment for her to see her physician and her school counsellor about her ever-worsening mood. But after waiting for several hours in the ER, Sophia spoke to an attending physician for only 15 minutes. When she then walked into the waiting room and said, "Let's get outta here," Catherine was overcome. She couldn't believe the doctor was sending Sophia home.

While Sophia and Catherine are fictitious, their story is all too real for many families — who are surprised when a trip to the ER doesn't result in an inpatient stay. Inpatient treatment often depends on criteria set out in British Columbia's Mental Health Act.[7] This act enables young people to be involuntarily admitted to hospital only under certain strict conditions. Namely, a physician must find that a young person has a mental disorder *and* needs to be hospitalized for psychiatric treatment to prevent mental or physical decline, or to protect the individual or other people. If admitted involuntarily, a young person can be kept in a hospital for up to 48 hours based on one physician's assessment. Longer involuntary stays require assessment by a second physician.

When a young person doesn't meet criteria for an involuntary admission — and doesn't consent to a voluntary one — hospital staff can still provide much-needed support. However, research suggests these opportunities are often lost. For example, one study found that only 12% of families were provided with basic safety information following a suicide attempt by their child.[8] Another found that approximately half the individuals discharged from psychiatric emergency facilities did not receive after-care, an identified risk for repeated ER visits.[9]

While it's challenging for staff to provide support in a busy ER, this is nevertheless essential for young people and their families. For example, briefly discussing with parents the importance of storing medications and firearms safely, or talking with youth about the disinhibiting effects of drugs and alcohol, can avert much future suffering.[9] Similarly, hospital staff can provide critical help by arranging for rapid after-care before a young person is discharged from the ER.[5] To support such practices, ER staff may need additional education and support.[9] But for children and youth, these types of ER investments could mean that being sent home doesn't preclude receiving assistance.

Both practitioners and policy-makers can also help shape mental health services so that children needing acute care have timely access to interventions that match their level of need.[15] This means offering a range of treatment options, from least restrictive community-based services to more restrictive traditional inpatient units.[17]

Crafting policies to prevent crises

Perhaps more importantly, numerous crises are preventable. Given that many young people reach a state of crisis because of untreated mental disorders, policy-makers and practitioners can play a crucial role in averting at least some crises — by ensuring that mental health problems are identified early and that effective interventions are offered.[10, 11, 18] (Effective interventions for many childhood mental disorders are featured in past issues of the *Quarterly* — including anxiety, posttraumatic stress, attention-deficit/hyperactivity, substance use, conduct, depressive, bipolar and psychotic disorders.)

Policy-makers and practitioners can also help to prevent crises by making changes to children's mental health services — which typically focus more on treatment than prevention. While shifting services to make significant new prevention investments is challenging, doing so can reduce the number of children developing mental disorders and experiencing acute crises.[18, 19] To make such changes, however, many jurisdictions will also need to increase their overall public investments in children's mental health — to ensure that all children receive appropriate programs and services and timely supports.[19]

Even with a comprehensive public health strategy in place, there will always be a need for services for children and youth facing acute mental health crises.[15] Some young people will continue to need treatment for mental health emergencies even within a well-resourced system that includes disorder prevention.[17] The challenge facing policy-makers and practitioners is to find an optimal balance within a comprehensive public health strategy so fewer children need crisis care.

Winning the RACE for better care

Trying to help a child in crisis can be overwhelming for any practitioner — even those with specialized training in child and youth mental health. The task can be all the more daunting for family physicians, who often receive limited training in this area. However, many family physicians now have better access to information and support to help them care for young people with mental health problems. In BC, for example, an innovative new program — Rapid Access to Consultative Expertise (RACE) — is providing family physicians with quick and easy access to psychiatric consultations. Typically within ten minutes of phoning the service, family physicians receive practical guidance about assessment and treatment plans. Additional information about the RACE program, including contact numbers and hours of operation, is available online.

There's no place like home

For both *HBCI/HBCI+* and *MST*, there was solid evidence that crises were dealt with by the time the interventions ended.

Most young people would rather be cared for at home than in hospital. But can children and youth in mental health crisis safely remain in their communities and still receive effective care? We looked to the research to find an answer to this important question. After conducting a comprehensive search, we found one systematic review that assessed the effectiveness of alternatives to inpatient mental health care for children.[14] (Our methods for finding and selecting this review are detailed in the Appendix.)

The authors of this systematic review analyzed seven randomized controlled trials (RCTs) evaluating six different interventions. We present findings from two of these RCTs — one on *Home-Based Crisis Intervention* (*HBCI*)[20, 21] and one on *Multisystemic Therapy* (*MST*).[12, 13, 22–24] We excluded the other RCTs for several reasons: either they did not focus exclusively on youth in acute mental health crises; they evaluated older interventions (delivered in the 1980s or earlier and therefore unlikely to reflect current practices); or they had significant methodological problems. After conducting searches for additional publications on these two interventions (e.g., both follow-up studies and new evaluations), we found one more follow-up publication on the original *MST* trial.[24] Finally, we extracted and summarized data from the original RCTs, both of which were conducted in the United States.

Proceeding with caution

Because the young people participating in both RCTs were in crisis — typically severe enough to warrant hospitalization — researchers were particularly cautious in designing these evaluations.[21, 23] In particular, both interventions were compared to other active treatments rather than no-treatment controls. In the *HBCI* trial, young people were randomly assigned to one of three different community-based treatments: regular *HBCI*, enhanced *HBCI* (or *HBCI+*) or *crisis case management.* In comparison, in the *MST* trial, young people received either *MST* or hospital-based inpatient treatment.

Beyond being in acute crisis, the young people in these studies faced other serious long-term adversities. Many had multiple mental health problems, such as behaviour, mood, anxiety, psychotic and substance use disorders.[21, 23] They also faced severe socio-economic disadvantage — with *HBCI/HBCI+* families living in some of the poorest and most violent neighbourhoods in the US, and with 70% of *MST* families receiving some form of social assistance.[21, 22]

Both evaluations showed some evidence of enduring gains for children and youth associated with these programs.

Similar goals, similar interventions

HBCI/HBCI+ and *MST* shared a similar goal. Both attempted to avert hospitalization for young people in crisis by providing intensive community-based treatments. As the authors of these studies noted, this is a particularly worthwhile goal given that hospitalization can be highly intrusive and disruptive for young people (as well as costly from a policy perspective).[13, 20, 23]

HBCI/HBCI+ and *MST* also had similar service models.[21, 22] Each was short-term, with *HBCI/HBCI+* lasting 4 to 6 weeks and *MST* lasting 16 weeks. These interventions were also very intensive: families had 24-hour access to practitioners, and practitioners had caseloads of only two or three families. Practitioners generally saw children and youth in familiar and non-intrusive settings, such as their homes and schools. Hospitalization was still made available when necessary in both studies.[21, 23]

Helping youth by helping parents

Parents were fundamental to both interventions. They directly participated in therapy with their children — cognitive-behavioural therapy (CBT) in the case of *HBCI/HBCI+* and family therapy for *MST*.[21, 22] Parents also received a variety of supports. With both regular and enhanced *HBCI*, parents were provided with practical assistance such as transportation as well as help obtaining basic necessities such as food, clothing and housing. Some funding was also given to assist families in meeting their children's recreation and education needs. *HCBI+* differed from regular *HBCI* by also providing parents with in-home and out-of-home respite care, advocacy and a support group. In comparison, parents in the *MST* intervention received a comprehensive crisis intervention plan, training to improve their caregiving, and encouragement to develop a support network of families and friends.

Young people were also actively involved in both interventions. Beyond participating in therapy with their parents, they also received therapy on their own. With both regular and enhanced *HBCI*, this took the form of in-home psychiatric assessments and treatments on an as-needed basis. With *MST*, young people received research-supported treatments based on their specific needs, such as CBT for depression or stimulant medication for attention-deficit/hyperactivity disorder.

Young people assigned to the comparison conditions also received treatment in both these RCTs. For *HBCI/HBCI+*, comparison families received community case management, which included working with a crisis case manager who assessed their needs and strengths, coordinated services, and provided necessary referrals.[20] For *MST*, young people in the comparison group received inpatient care in a psychiatric unit, lasting six days on average.[12] While hospitalized, these

By the end of the 16 weeks of treatment, costs per child were approximately $1,600 less for MST children than for comparison children.

young people were stabilized and provided with psychiatric evaluations along with after-care plans. This was followed by treatment-as-usual in the community.[23] Table 1 provides further information about *HBCI/HBCI+* and *MST* and the young people who participated in these RCTs.

Table 1: Study Features

Child/Youth Characteristics	Intensive Community Treatment Intervention Characteristics*	Comparison Conditions
5- to 18-year-olds experiencing severe mental health crises (53% male)	***Home-Based Crisis Intervention (HBCI)*** • Families received cognitive-behavioural therapy; parents received practical supports; children received psychiatric care • Services delivered over 4–6 weeks by child psychiatrists + counsellors[20, 21]	Crisis case management**
	Enhanced HBCI (HBCI+) • As above + parents received respite care, advocacy + a support group led by trained providers + family advocates[20, 21]	
10- to 17-year-olds with psychosis or risk of harming self/others (65% male)	***Multisystemic Therapy (MST)*** • Families received family therapy + crisis resolution plan; parents received parent training; children received psychiatric care + individualized treatment • Services delivered over 16 weeks by child psychiatrists, crisis caseworkers, psychiatric residents + therapists[12, 14, 22, 23]	Inpatient treatment †

* Total number of children/youth at randomization: 279 for *HBCI/HBCI+*; 156 for *MST*.
** Included assessing families' needs + strengths and coordinating services + referrals.
† Included acute stabilization, psychiatric evaluation + after-care planning.

Are crises over when interventions end?

Young people receiving *HBCI/HBCI+* had significantly better outcomes than comparison young people when the interventions ended. Both regular and enhanced *HBCI* led to children and youth experiencing fewer problems generally, and fewer emotional problems specifically.[21] Families receiving both regular and enhanced *HBCI* also reported higher levels of closeness among family members.[21] Only one outcome differed for the two forms of *HBCI* — families receiving *HBCI+* (but not regular *HBCI*) reported receiving more informal social support than comparison families.[21]

MST also resulted in many gains for young people. In particular, over the 16 weeks that *MST* was delivered, children and youth receiving it spent an average of 2.4 days in hospital, contrasted with 8.8 days for comparison children and youth. Notably, these reduced hospital stays did *not* lead to increased out-of-home placements. Instead, *MST* children and youth spent significantly *fewer* days in out-of-home placements such as foster care, residential treatment or custody (508 days versus 996 days).[12] *MST* children also had significantly fewer conduct problems and fewer school absences than comparison children.

These two studies provide evidence that many young people can be safely and effectively treated in their communities when they experience mental health crises.

As with *HBCI/HBCI+* families, *MST* families reported significantly higher levels of closeness among family members.[23] Beyond this, *MST* families described significantly more satisfaction with the care they received compared with those assigned to standard inpatient treatment.[23] One outcome, however, did favour comparison children: they reported significantly higher self-esteem.[23] (The researchers speculated that this finding might reflect the emphasis that more traditional mental health services place on the individual, relative to *MST*'s emphasis on the family and social contexts.) Overall, for both *HBCI/HBCI+* and *MST*, there was therefore solid evidence that crises were dealt with by the time the interventions ended. Table 2 provides more details about the outcomes for both interventions.

Table 2: Intensive Community Treatment Intervention Outcomes

Intervention	Significant Findings*		
	Post-Test	**6-Month Follow-Up**	**12-Month Follow-Up**
Home-Based Crisis Intervention (HBCI) [21]	↓ Overall problems ↓ Emotional problems ↑ Family closeness	None	Not assessed
Enhanced HBCI (HBCI+) [21]	↓ Overall problems ↓ Emotional problems ↑ Family closeness ↑ Access to informal supports	↑ Family adaptability**	Not assessed
Multisystemic Therapy (MST) [12, 22, 23, 24]	↓ Hospital days ↓ Out-of-home placements ↓ Behaviour problems ↓ School absences ↑ Family closeness ↑ Treatment satisfaction	Not reported	↓ Suicide attempts

* Favouring intensive community treatments over comparison conditions.
** *HBCI+* outperformed regular *HBCI* (although not the comparison condition, i.e., *crisis case management*).

But do gains last?

Outcomes for young people and their families continued to be tracked after the interventions ended. At final (six-month) follow-up in the *HBCI* trial, *HBCI+* families showed significantly greater "adaptability" (defined by features such as leadership and discipline) compared to those receiving regular *HBCI* (but not relative to comparison families).[21] Meanwhile, at final (12-month) follow-up in the *MST* trial, there were significantly greater reductions in the percentage of *MST* youth making a suicide attempt compared with controls.[24] So both evaluations showed some evidence of enduring gains for children and youth associated with these programs.

Containing costs

Beyond examining clinical outcomes, *MST* researchers also examined costs. By the end of the 16 weeks of treatment, costs per child (including inpatient, outpatient and pharmacy services) were approximately $1,600 *less* for *MST* children than for comparison children (calculated using 1999 US dollars) — a difference that was statistically significant.[13]

What about help after the crisis is over?

These two studies provide evidence that many young people can be safely and effectively treated in their communities when they experience mental health crises. These studies also show that beyond helping young people and their families to overcome crises, both *HBCI/HBCI+* and *MST* can produce *better* short-term outcomes than either hospitalization or less intensive community treatments. *MST* also achieved one particularly critical long-term benefit compared with hospitalization — a greater reduction in the percentage of youth attempting suicide.

Still, the advantages that *HBCI/HBCI+* and *MST* showed over more typical strategies faded once the interventions ended. Given the numerous severe adversities that young people in these studies were facing — including multiple mental disorders, acute crises and socio-economic disadvantage — perhaps expecting enduring benefits from any short-term intervention is unrealistic. While community-based interventions such as *HBCI/HBCI+* and *MST* can clearly help disadvantaged children and youth in crisis, most of these young people also need intensive *ongoing* treatment and support. As well, prior to beginning any treatment with a young person in crisis, a practitioner needs to undertake a comprehensive assessment of their mental health needs.

The need for Canadian replication studies

Even after researchers complete rigorous evaluations showing that an intervention has benefits, the work doesn't end. This is because replication studies are needed to ensure that the preliminary results hold true across different settings. Replication studies of *MST* for young people experiencing mental health crises have only just begun. Unfortunately, one such study in Hawaii could not be completed — due to difficulties finding participants and challenges with practitioners adhering to the treatment model.[25] Another replication study is underway in Philadelphia, but results are not yet available.[24] Meanwhile, we were not able to identify any replication studies for *HBCI/HBCI+*.

Because there is only one high-quality RCT demonstrating short-term effectiveness for both *MST* and *HBCI/HBCI+* for young people in acute crisis, further evaluations are recommended before these two interventions are widely disseminated, particularly in Canada. Nevertheless, Canadian children and families in crisis still need acute interventions. Beyond offering usual services, one way to proceed is to develop new community services based on the core elements of *HBCI/HBCI+* and *MST*, then carefully evaluate outcomes.

Evidence-based practice: From research to real life

What does the research on implementing evidence-based practice tell us about the "real world" experience of practitioners working in BC?

Rob Lees
Chilliwack, BC

The goal of evidence-based practice (EBP) is to ensure that we maximize benefits for children by choosing the most effective interventions possible — based on high-quality research evidence. As a result, EBP has been widely endorsed in BC and elsewhere. But what may be surprising is that EBP has not actually been widely adopted by practitioners.[26] Why is this? Many factors are at play, including individual practitioners and the systems they work within.

While we did not undercover any information on this issue specific to BC practitioners, we did find data suggesting that practitioners are more likely to accept practices stemming from EBP when they are viewed as being

- advantageous (e.g., less costly or easier to use than existing practices)
- relevant (e.g., addressing the child's presenting concern)
- compatible with their values and experiences
- easy to understand and implement[27]

But practitioners' attitudes and experiences aren't the only issues at play. Organizational policies, including supervisors' attitudes, also affect the uptake of EBP. For example, environments that encourage practitioners to continually evaluate, refine and improve the services they deliver can in turn promote EBP.[28] Organizations can further encourage EBP by providing practitioners with education and support, including providing time to integrate learning into practice.[28] Research specifically examining efforts to implement EBP in BC would be useful to suggest additional locally applicable strategies.

Researchers also have a role in encouraging EBP. Practitioners are more likely to view EBP favourably when research studies reflect the diversity and the real-world conditions seen in a typical practice.[28, 29] Given that many researchers are now recruiting children who have complex mental health concerns and who represent the cultural and socio-economic diversity typically seen in communities, practitioners' support for EBP may also increase.[28]

Strikingly, the time lag between research studies showing that a treatment is effective and the treatment becoming commonly used can reach 15 to 20 *years*.[30] Policy-makers, practitioners and researchers all clearly have a role in ensuring that children don't have to wait so long to receive effective new treatments.

The time lag between research studies showing that a treatment is effective and the treatment becoming commonly used can reach 15 to 20 *years*.

Making a difference for children

An important first step in using research evidence to improve children's lives involves making this evidence accessible. With the *Quarterly*, we do this by culling evidence from the large volumes of existing research, then synthesizing the *best* of this evidence in user-friendly formats. Our intent is to inform policy-makers and practitioners as well as parents — so that children can receive the best possible programs and services.

Contact Us

We hope you enjoy this issue.
We welcome your letters and suggestions for future topics. Please email them to chpc_quarterly@sfu.ca
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Research methods

To identify the best systematic reviews on the topic of alternatives to inpatient mental health care for children in acute crises, we adapted methods from the *Cochrane Collaboration*[31] and *Evidence-Based Mental Health*.[32] We first searched the following databases:

- Campbell Collaboration Library
- Cochrane Database of Systematic Reviews
- CINAHL
- Medline
- PsycINFO

We limited our search to systematic reviews published between 2008 and 2013 to identify the most recent relevant publications on the topic. Using this approach, we identified only one systematic review that covered a range of different interventions. Two different team members then assessed this review, which was accepted based on meeting all of the inclusion criteria detailed in the table below.

Table 3: Inclusion Criteria

Basic Criteria
• Peer-reviewed articles published in English about children aged 0 to 18 years • Articles relevant to alternatives to inpatient mental health care for children in acute crises
Systematic Reviews
• Methods clearly described, including database sources and inclusion criteria • Original study designs limited to randomized controlled trials (RCTs) • Magnitude of effects reported • Contained at least two RCTs meeting criteria listed below
Original Studies within the Systematic Reviews
• Follow-up of three months or more • Outcome measures assessed using two or more informant sources • Levels of statistical significance reported for primary outcomes

For more information on our research methods, please contact

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BC government staff can access original articles from BC's Health and Human Services Library.

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