Welcome

Spring 2007 — Children’s Behavioural Wellbeing

Welcome to our Spring issue of the Children’s Mental Health Research Quarterly, produced by the Children’s Health Policy Centre at Simon Fraser University. The Quarterly provides updates on the best currently available research evidence in children’s mental health. The theme for this issue is children’s behavioural wellbeing. This theme was chosen in consultation with Child and Youth Mental Health (CYMH) staff at BC’s Ministry of Children and Family Development (MCFD).

In our commentary we respond to questions from policy-makers, practitioners and parents about the prevalence, causes and costs of disruptive behaviour problems. We then present findings from the best emerging research on interventions that can help children and families. Next, we highlight a high-quality systematic review that examines the latest evidence on the effectiveness of Multi-Systemic Therapy, a form of therapy frequently used to treat children engaging in serious disruptive behaviours. We also highlight a new study on the Incredible Years parenting program for at-risk families. Finally, a social worker (Barry Fulton) shares his experiences applying research evidence in practice with children in his region.

We hope you find this issue both enjoyable and useful. Please email us with your questions, comments and suggestions for future topics.

Next Issue

Our Summer 2007 Quarterly will focus on children’s emotional wellbeing with an emphasis on preventing and treating anxiety.
Current Articles

IN COMMENTARY
**Disruptive behaviours: The numbers, the causes and the costs of not intervening**

We respond to questions from policy-makers, practitioners and parents about how common disruptive behaviours are. We then detail well-researched child, family and social factors known to influence the development of disruptive behaviours. We also look at the costs of not providing effective programs, given the high prevalence of disruptive behaviours.

IN REVIEW
**Addressing disruptive behaviours**

We systemically review the latest high-quality research evidence on interventions for preventing and treating disruptive behaviours. To highlight the most effective programs, we examine newly-published research findings and recap results from our previous review on conduct disorder, building on some of the themes covered in the Winter issue of the Quarterly.

IN FOCUS
**The latest evidence on Multi-Systemic Therapy (MST)**

We summarize a recent high-quality systematic review examining MST’s effectiveness for treating children with serious behaviour problems. Outcome data for Canadian, American and Norwegian children are presented.

IN PRACTICE
**Applying the research evidence**

Barry Fulton is a Social Worker and Child and Youth Mental Health Manager for transitional services with the Okanagan Region. Using an interdisciplinary perspective, Barry spoke to us about his experiences in applying research evidence to address behaviour concerns with children in practice and within his region.
Mental health — or social and emotional wellbeing — is central for healthy development in all children, and vital for all children to thrive and become healthy adults. Behaviour is an important part of social and emotional wellbeing, although behaviour challenges occur with most children from time to time. Disruptive behaviours can vary dramatically in severity. Some challenging behaviour may be typical to a developmental stage, such as when a three-year-old experiences a temper tantrum in a grocery store. However, when behaviours become more serious and persistent and cause significant impairment in children’s functioning, there may be a clinically significant mental health problem such as conduct disorder (CD).

A child may be diagnosed with CD if he or she engages in repetitive and persistent violation of social rules including: aggression causing harm to people, animals or property; significant theft; or serious rule violations such as truancy or running away. Such serious and persistent disruptive behaviour problems usually suggest there are underlying causal factors that need to be addressed to help children to experience less distress and to function better at home, at school and in the community.

We have received many questions from policy-makers, practitioners and parents about disruptive behaviours in children. Here we respond to some of these questions.

**How common are clinically significant disruptive behaviours?**

Disruptive behaviours are common. Among children aged 4 to 17 years, an estimated 4.2% (or approximately 4 in 100 children) have severe behaviour concerns warranting a clinical diagnosis of CD. This means that at any given time an estimated 29,000 children in BC are affected, making CD the third most common mental disorder among children. If milder behaviour problems are considered, many more than 29,000 children are likely affected. Conduct-related problems are the most common reason for children to be referred to mental health services in school and community settings. Also, many other mental health problems (including anxiety, learning disorders, depression and psychosis) often first present as disruptive behaviour.

Given the large numbers of children experiencing clinically significant behaviour problems, it is not surprising that parents, foster parents, teachers and practitioners frequently identify a need for intervention. Perhaps most importantly, children with severe behaviour problems need to receive early interventions because without these their problems frequently persist, leading to distress and impairment throughout adulthood.
### What causes disruptive behaviours?

Disruptive behaviours are likely caused by a web of interacting factors affecting children, families and the broader community environment. Known determinants are highlighted in the table below. These factors are interrelated and the relative importance of each can vary during different developmental periods. Notably, most important risk factors involve variables beyond the level of the individual child. For example, when children experience inconsistent nurturing or are exposed to harsh discipline, they are much more likely to exhibit their distress through behaviour problems.

#### Determinants of Disruptive Behaviours

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Child Factors</th>
<th>Family Factors</th>
<th>Social Factors</th>
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</thead>
<tbody>
<tr>
<td>Irritable or difficult temperament</td>
<td>Low parental engagement and monitoring</td>
<td>Peer rejection</td>
<td></td>
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<tr>
<td>Impulsivity and attention problems</td>
<td>Parental hostility</td>
<td>Negative experiences leading to negative thought patterns</td>
<td></td>
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<tr>
<td>Early physical fighting</td>
<td>Harsh discipline</td>
<td>Isolation with deviant peers</td>
<td></td>
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<tr>
<td>Learning difficulties</td>
<td>Young maternal age</td>
<td>Absence of healthy school and community programs</td>
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<tr>
<td></td>
<td>Maternal smoking</td>
<td>Absence of healthy and consistent long-term adult support</td>
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<table>
<thead>
<tr>
<th>Protective Factors</th>
<th>Child Factors</th>
<th>Family Factors</th>
<th>Social Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good learning abilities</td>
<td>Good social skills</td>
<td>Positive beliefs about the larger world and one’s role in it</td>
<td></td>
</tr>
<tr>
<td>Easy temperament</td>
<td>Few siblings</td>
<td>Long-term support from at least one consistent care-giving adult</td>
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<tr>
<td></td>
<td>Sense of skill or competency</td>
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To be most effective, interventions need to reduce risk factors and enhance protective factors — in other words, to address the underlying causes of children’s behaviour problems and to create environments enabling children to thrive.

### What are the costs associated with disruptive behaviours?

Severe problems like CD are associated with distress for children and with significant costs for society. When children’s behaviour problems are not addressed early, there are significant costs associated with providing many necessary services including: mental health; child protection; special education; and youth justice. Because of the multiple sectors involved, preventing just one case of CD can save an estimated $1.7 million in cumulative lifetime costs. Most importantly, children cannot go on to meet their full potential when behaviour problems interfere with their development and functioning.

In addition to helping more children thrive, public investments are likely enhanced if resources are deployed “upstream” by addressing the underlying causes and preventing problems before they arise, rather than waiting until problems are entrenched. Fortunately, many of the situations leading to children developing serious behaviour problems are preventable, as we outline in the next article.
MCFD staff can access original articles cited in *The Quarterly* from the [Health and Human Services Library](#).

**References:**

IN REVIEW
Addressing disruptive behaviours

Given the high costs associated with severe disruptive behaviours, addressing these concerns needs to be a priority. In our 2004 report, *Preventing and Treating Conduct Disorder in Children and Youth*, we identified 19 prevention programs demonstrating significant reductions in disruptive behaviours. The most effective programs were *Fast Track*, *Perry Preschool*, *John Hopkins* and *Nurse Home Visitation*.

These successful programs all focused on either parent training or child skills training involving communication, problem solving, impulse control and behaviour management. All programs targeted high-risk children and families. In addition to being effective, the *Perry Preschool* and *Nurse Home Visitation* programs produced net cost-savings. In the same report, we reviewed seven articles on five psychosocial treatments including family- and community-based programs. All programs, including the *Incredible Years*, *Behavioural Parent Training*, *Parent Training*, *Multidimensional Treatment Foster Care* and *Multi-Systemic Therapy (MST)*, demonstrated significant reductions in symptoms of CD. (We also summarize results from a recently published review of MST, highlighted in the next article.)

Overall, the research evidence was clear that most children with CD can be helped by early interventions to aid at-risk families. Given the growing body of research on CD, here we update our previous report by examining newly-published high-quality evidence on preventing and treating CD.

**How we reviewed the research**

Our research team conducted a systematic review of the recent research on effective prevention and treatment programs for serious disruptive behaviours. We searched for randomized-controlled trials (RCTs) published since our previous report on interventions for preventing and treating CD in children aged 0 to 18 years. To be considered effective, interventions had to show significant reductions in at least one diagnostic measure or two symptom measures at follow-up. (For more information on our methods, see our first issue of the Quarterly.) We searched the databases Medline, PsycINFO, CINAHL and CENTRAL.

**What we learned**

Of the 80 articles initially identified and assessed, four articles describing three RCTs met our inclusion criteria. All were on prevention. No RCTs addressing treatment met criteria. The accepted RCTs investigated three prevention programs: *Early Impact*; *Early Risers Skills for Success*;* and *SAFEChildren*. The table below details intervention and participant characteristics along with outcomes for these programs.
## Newly Evaluated Conduct Disorder Prevention Programs

<table>
<thead>
<tr>
<th>Program (Country)</th>
<th>Child Ages &amp; Gender</th>
<th>Intervention Content, Provider &amp; Location</th>
<th>Type &amp; Duration</th>
<th>Findings for Conduct Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Early Impact Program</strong> (Australia)</td>
<td>4-5 yrs</td>
<td>Child SST delivered by teachers &amp; behavioral consultants in schools &amp; group PT delivered by clinicians in school &amp; homes</td>
<td>Universal</td>
<td>No significant symptom or diagnostic reductions at 6-mo follow-up</td>
</tr>
<tr>
<td></td>
<td>56% male</td>
<td></td>
<td>SST: 10 wks intensive (+ 6 mos extended phase)</td>
<td></td>
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<tr>
<td></td>
<td>44% female</td>
<td></td>
<td>PT: 3 2-hr sessions</td>
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<td></td>
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<tr>
<td><strong>Early Risers &quot;Skills for Success&quot; Program</strong> (USA)</td>
<td>5-6 yrs</td>
<td>Group child SST, homework assistance, in-school mentoring, creative arts &amp; recreational programming delivered by family advocates &amp; school staff in neighborhood centres &amp; schools (Core)*</td>
<td>Targeted</td>
<td>No significant symptom reductions at 12-mo follow-up for total targeted sample</td>
</tr>
<tr>
<td></td>
<td>57% male</td>
<td>Child-focused support including brief health &amp; human services interventions delivered by family advocates in homes (Flex)</td>
<td>inner-city, aggressive children</td>
<td>Significant symptom reductions at 12-mo follow-up for subsample of highest risk children</td>
</tr>
<tr>
<td></td>
<td>43% female</td>
<td></td>
<td>Core: 86 hrs (average; with 236 hrs max.) over 24 mos</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flex: 9.6 hrs (average) over 18 mos</td>
<td></td>
</tr>
<tr>
<td><strong>SAFEChildren</strong> (USA)</td>
<td>6 yrs</td>
<td>Child academic tutoring &amp; group PT delivered by unspecified individuals in schools</td>
<td>Targeted</td>
<td>No significant symptom reductions at 6-mo follow-up for total targeted sample</td>
</tr>
<tr>
<td></td>
<td>51% male</td>
<td>inner-city children</td>
<td></td>
<td>Significant symptom reductions at 6-mo follow-up for subsample of highest risk children</td>
</tr>
<tr>
<td></td>
<td>49% female</td>
<td>Tutoring: 2 30-min sessions over 22 wks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PT: 22 wks</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SST = Social skills training  PT = Parenting training  CD = Conduct disorder

*4 groups: ¼ received core; ¼ received core + flex; ¼ no intervention control; ¼ normative sample control

All the programs had a child-focused component. *Early Impact* and *Early Risers* both included social skills training which focused on teaching children about positive interactions including communication, friendship formation, social problem-solving and self-control. *Early Impact* also included creative arts and recreation programming with a highly structured behaviour-modification program implemented across all program activities. In contrast, the child intervention component of *SAFEChildren* involved academic tutoring focused on phonic-based reading.
Highlight

The Incredible Years: Helping parents create healthy environments for children

Webster-Stratton’s Incredible Years is a well-evaluated parenting program designed to prevent and treat conduct disorder in children. It promotes positive parenting by teaching parents: to provide praise and incentives; to build healthy parent-child relationships; and to apply appropriate behaviour management strategies including limit setting and non-aversive consequences. For the first time, an evaluation of the Incredible Years prevention program was conducted in a community (“real world”) setting.

In their just-published article*, Hutchings and colleagues reported on an RCT of this program used with 153 parents of three and four year old children, 60% of who were boys. The families were from socially disadvantaged communities in Wales, with children identified as being at risk for developing CD. Parents participated in 12 weekly sessions led by two practitioners using collaborative teaching approaches including: role play; modeling; discussion; skills practice; and analyses of taped family interactions.

To encourage attendance, parents were provided with transportation and meals. All children of participating parents showed significantly reduced antisocial and hyperactive behaviours as well as increased self-control compared to the control group. As well, parents who participated in the program showed more positive parenting behaviours than those in the control group.

The authors concluded that the Incredible Years basic parenting program used in a “real world” setting reduced key risk factors for developing CD. The study showed the program is also cost effective and a “good value for money for public spending.” Benefits to parents’ mental health and the behaviour of siblings were also found. The intervention was most cost effective for children who had the greatest risk of developing CD.

* The article was published in March 2007 after our own systematic review was completed.

MCFD staff can access original articles cited in the Quarterly from the Health and Human Services Library.

References:

All programs also had a parental component. Both Early Impact and SAFEChildren used parent training which primarily involved teaching effective child management techniques including encouraging parental consistency, reinforcing appropriate behaviour and managing anger. SAFEChildren also focused on increasing parental support, engaging with schools and managing neighbourhood problems such as violence. In contrast, Early Risers used a family empowerment model which included appraising, planning and intervening with family problems.

The Early Impact program initially produced significant reductions in CD symptoms at school; however, these gains were not maintained at six-month follow-up. As well, the Early Impact program was ineffective in reducing CD symptoms in the home. The general effects of SAFEChildren were limited to academic skills and parental involvement with the school rather than symptoms of CD. Among the 20% of “high-risk children” and the 23% of children from “high-risk families,” program participation significantly reduced aggressive behaviours at six-month follow-up.
Similarly, among "severely aggressive children" with high levels of participation in the Early Risers program, there were significant reductions in teacher-rated disruptive behaviours at 12-month follow-up. Overall, however, Early Risers participants did not show significant reductions in disruptive behaviours. Although none of the programs were effective in reducing CD symptoms across all groups of children, the Early Risers and SAFEChildren programs produced the most solid long-term gains for high-risk children.

**What we recommend**

To most effectively and efficiently address disruptive behaviours, there needs to be a strong focus on prevention. Many of the known causes of children’s behaviour problems, such as parenting difficulties, can be addressed through prevention programs. There are common elements in the most effective prevention programs. They start early rather than waiting until problems are entrenched. They target high-risk families and attempt to intervene at family and community levels rather than just with the individual child. Their program contents focus on parent training and early child education including social skills training.

As well as effectively preventing significant behaviour problems, interventions such as the Incredible Years are also cost-effective in "real world” community settings. Based on the strong research findings from this and our previous reviews, we recommend using prevention programs modeled after the characteristics of the most promising programs, namely Fast Track, Perry Preschool, John Hopkins, Nurse Home Visitation and the Incredible Years.

Treatment for clinically significant disruptive behaviours is nevertheless vitally important when prevention has not been possible. For children with CD, treatment should be modeled after the most promising programs including: The Incredible Years; Behavioural Parent Training; Parent Training; and Multidimensional Treatment Foster Care. (MST is discussed in our next article.) These interventions address behaviour concerns within the broader social contexts where they occur and focus on reducing factors that play a role in the development and continuation of behaviour problems such as parenting difficulties. Overall, by making early investments in effective prevention and treatment interventions, the benefits to children, families and society can be maximized.

MCFD staff can access original articles cited in The Quarterly from the Health and Human Services Library.

**References:**

IN FOCUS

The latest evidence on Multi-Systemic Therapy (MST)

What is MST?

*MST* is a family-based treatment for children with significant behaviour, emotional and social problems. It is designed to address known determinants of children’s behaviour problems at the individual, family and community levels. Master- and doctoral-level therapists, with small caseloads, are available to program participants 24 hours a day during treatment which typically lasts four to six months. *MST* is a home-based intervention intended to facilitate access to services and to promote using new skills in children’s natural environments.

Treatment is individualized to the specific needs of children and families. *MST* begins with family members identifying goals. Interventions are then designed collaboratively with input from the *MST* therapist and family members. Therapeutic modalities are adapted and integrated from treatments with empirical support including strategic family therapy, structural family therapy, behavioural parent training and cognitive-behavioural therapy. Parents are assisted in developing increased family structure and in using natural reinforcers to improve behaviour. Children are encouraged to decrease involvement with delinquent peers and to increase association with prosocial peers. Family empowerment is emphasized and the use of natural child, family and community resources is encouraged.

Examining the studies

Littell, Popa and Forsythe recently published a systematic review of licensed MST programs. Applying rigorous (Cochrane) methodological standards, the authors accepted eight studies in their review, all RCTs. Participants included children between the ages of 10 and 17 with all but one study focusing on children engaging in disruptive behaviours. Characteristics of participants and interventions are described in the table below. All participants were high-risk.

> It will be crucial to carefully evaluate any new implementations of MST in Canadian settings.
Characteristics of Study Participants & MST Interventions

<table>
<thead>
<tr>
<th>Study</th>
<th>Targeted Sample (Country)</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>MST duration</th>
<th>Comparison Group (direct contact hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borduin 1990</td>
<td>Juvenile sex offenders (US)</td>
<td>100% male 0% female</td>
<td>38% AA 62% C</td>
<td>37 hours</td>
<td>Individual therapy (48)</td>
</tr>
<tr>
<td>Borduin 1995</td>
<td>Juvenile offenders (US)</td>
<td>68% male 32% female</td>
<td>30% AA 70% C</td>
<td>23 hours</td>
<td>Individual therapy (28)</td>
</tr>
<tr>
<td>Henggeler 1992</td>
<td>Juvenile offenders (US)</td>
<td>77% male 23% female</td>
<td>56% AA 42% C</td>
<td>33 hours</td>
<td>Usual probation services (--)</td>
</tr>
<tr>
<td>Henggeler 1997</td>
<td>Juvenile offenders (US)</td>
<td>82% male 18% female</td>
<td>81% AA 19% C</td>
<td>117-123 days</td>
<td>Usual probation services (--)</td>
</tr>
<tr>
<td>Henggeler 1999a</td>
<td>Substance abusing juvenile offenders (US)</td>
<td>79% male 21% female</td>
<td>50% AA 47% C</td>
<td>40 hours</td>
<td>Usual probation services† (--)</td>
</tr>
<tr>
<td>Henggeler 1999b</td>
<td>Children experiencing psychiatric emergencies (US)</td>
<td>65% male 35% female</td>
<td>65% AA</td>
<td>92 hours</td>
<td>Psychiatric hospitalization (--)</td>
</tr>
<tr>
<td>Leschied 2002</td>
<td>Juvenile offenders (Canada)</td>
<td>74% male 26% female</td>
<td>13% Aboriginal</td>
<td>34 sessions</td>
<td>Usual probation services (--)</td>
</tr>
<tr>
<td>Ogden 2004</td>
<td>Children with behaviour problems† (Norway)</td>
<td>65% male 35% female</td>
<td>--</td>
<td>--</td>
<td>Usual child welfare services (--)</td>
</tr>
</tbody>
</table>

AA = African American | C = Caucasian | -- = not reported
† 22% of children received substance use &/or other mental health services
‡ including emotional disturbance, substance abuse, criminal offences, harm to self/others, domestic violence

MST produced inconclusive results

Mixed results were found in the eight studies examining the effectiveness of MST. In five of the studies (conducted in the US), MST significantly reduced at least one measure of disruptive behaviour including incarceration rates and length, arrests, self-reported delinquency or externalizing behaviours. As well, in two of these studies (Borduin 1995; Henggeler, 1992) statistically significant effects favouring MST were found on all measures of disruptive behaviour. In contrast, in the one Canadian study, conducted in Ontario, there were no significant differences in disruptive behaviour outcomes between the MST and usual services groups. In addition, when the data from all studies were combined, MST was no more effective than usual services for any variables related to disruptive behaviours.

Because of methodological limitations, including limited statistical power (making it difficult to detect significant group differences), the authors could only conclude that MST is not consistently more effective than usual services. MST was still recognized as having several advantages including: comprehensive services; strong theoretical foundation; and no evidence of any harmful effects. The review authors also commented on the possible reasons for MST not being more effective than usual services in Canadian children. The usual Canadian health, social and educational services for children were identified as being relatively more extensive and robust than services in the US. Given these findings, it will be crucial to carefully evaluate any new implementations of MST in Canadian settings.

These studies were published earlier than the specified dates for our update with the In Review article.

MCFD staff can access original articles cited in The Quarterly from the Health and Human Services Library.

Reference
IN PRACTICE

Applying the research evidence

We recently spoke with Barry Fulton of CYMH with MCFD to discuss his experiences using “evidence-informed practices” in providing services to children with disruptive behaviours. Barry is Social Worker and CYMH Manager for Transitional Services within the Okanagan Region.

Barry recounted the changes he has experienced during his 27 years of helping children with behaviour problems. He described the frustration experienced by many practitioners when they used interventions that did not produce expected results, such as “scared straight programs” within some juvenile justice systems where fear of possible negative outcomes is highlighted.

In contrast, Barry noted the shift to using “evidence-informed practices” has produced some very positive results. He described being drawn to these interventions because they gave him the necessary confidence in the effectiveness of his work — especially over the long-term. Many of the empirically-based interventions also make sense on a personal level for Barry as a parent. He described programs that include a parenting component as enabling “parents and children to get closer together.”

Barry added that it is vital to be systematic in addressing behaviour problems if we are to be effective. For example, it has been critical in his work to develop partnerships with those organizations frequently involved in the lives of children with disruptive behaviours including the schools and child protection and youth justice agencies. To ensure a greater chance of success, Barry highlighted the importance of “moving it out of the office and into the community and homes.”

“**It is vital to be systematic in addressing behaviour problems if we are to be effective.**

To see an example of the personal impact of behaviour problems and to help understand the issues of behaviour disorders in youth, see the Knowledge Network documentary, *Struggle for Control: Child and Youth Behaviour Disorders*. The segment *Shane’s Story* shows positive outcomes of creating partnerships within the family home and community in dealing with CD.
Making Research Work for Children

About the Children’s Health Policy Centre

We are an interdisciplinary research group in the Faculty of Health Sciences at Simon Fraser University. Our work focuses on integrating research and policy to improve children’s social and emotional wellbeing, or children’s mental health. We promote a public health strategy for children’s mental health. Our work complements the mission of the Faculty of Health Sciences to integrate research and policy for population and public health locally, nationally and globally.

Public Health Strategy for Children’s Mental Health

Promote Healthy Development for All Children  Prevent Disorders in Children at Risk  Provide Treatment for Children with Disorders

Monitor Outcomes

About The Quarterly

The Children’s Mental Health Research Quarterly is an electronic publication prepared for Child and Youth Mental Health at the British Columbia Ministry of Children and Family Development. It provides regular research updates on the best currently available research evidence in children’s mental health for policy-makers, practitioners, families and community members.

Please visit www.childhealthpolicy.sfu.ca to learn more about our ongoing work integrating research and policy to improve children’s social and emotional wellbeing.