Child and Youth Mental Health: Population Health and Clinical Service Considerations

A Research Report Prepared for the
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Executive Summary

Overview

This report summarizes the initial findings of an ongoing research project being conducted by the Mental Health Evaluation and Community Consultation Unit at the University of British Columbia at the request of British Columbia's Ministry of Children and Family Development. This project comprises one component of a comprehensive child and youth mental health planning process being undertaken by the Ministry of Children and Family Development. The overall goal is to improve mental health outcomes for children and youth. Here, research evidence is summarized on key population health and clinical service considerations. In a companion report, research evidence is summarized on effective interventions for specific mental disorders. Both reports employ systematic review methodology.

"Mental health" may be broadly defined to include all aspects of human development and wellbeing affecting emotions, learning and behaviour. In healthy communities, it is everyone's responsibility – and in everyone's best interests – to ensure that all children and youth thrive as much as possible. Despite best efforts, however, some children and youth experience emotional and behavioural disturbances that interfere with their development and functioning. All disturbances fall on a continuum ranging from mild to severe. When these disturbances are severe enough to cause symptoms, distress, and impaired functioning, they may be referred to as "mental disorders."

There is a large burden of suffering associated with child and youth mental disorders. When present, these disorders permeate every aspect of development and functioning, including family and peer relationships, school performance, and eventual adult productivity and functioning. At any given time, approximately 20% of children and youth (or 200,000 in British Columbia) experience mental disorders causing significant distress and impairing their functioning at home, at school, with peers, or in the community. No other group of disorders has such a profound effect on the development and wellbeing of children and youth, and on their families and communities.

While the numbers are large, not all affected children and youth need specialized clinical services. Furthermore, clinical services alone cannot significantly reduce the burden of suffering. Instead, a rational mix of universal, targeted, and clinical interventions is required in order to reduce the burden of suffering. Universal programs are needed to build the capacity of communities to promote optimal health and development for all children and youth. Targeted programs are needed to reduce risk for specific populations. Finally, specialized clinical services are needed for children and youth most seriously affected.

Population health considerations

- Health and development for all children and youth are strongly influenced by a range of factors (such as income, social supports, environment, and biological predisposition) that can have a lifelong impact on wellbeing. Any systematic strategy to improve mental health outcomes must include a mix of interventions designed to enhance the capacity of all communities to care for children and youth, as well as to reduce risks and ensure that adequate clinical services are in place.

- At any given time, approximately one in five children and youth (or 200,000 in British Columbia) suffer from mental disorders serious enough to cause significant distress and impair their development and functioning at home, at school, with peers, or in the community. If mental disorders are not prevented, or detected early and treated effectively, there are serious long-term costs and consequences for the children and youth affected, as well as for their families and communities. The majority of children and youth with mental disorders (and their families) do not receive effective interventions currently.

- Intervening as early as possible "upstream" minimizes "downstream" suffering and costs. While more research is needed on prevention, several approaches show promise, particularly if prevention programs are started early and carried out in multiple domains in the lives of children and youth – at home, at school, with peers, and in the community.

Clinical service considerations

- The research evidence on effectiveness is limited for many traditional clinical service models including community-based clinical care, residential treatment, hospital treatment, and crisis services. Overall, there is evidence to support using community-based clinical services for most children and youth with mental disorders, but not to support using more expensive and intrusive approaches such as residential care. Despite limited evidence to support using hospital and crisis services, these are generally recognized as integral components in most systems of care, although use of these can be minimized when a well-coordinated community -based continuum of care is in place.

- Several newer service models show promise in terms of reaching more children and youth in settings closer to their own homes, schools, and communities. These include home-based services, therapeutic foster care, case management, school-based services, shared (primary health) care, and outreach and distance service models. However, most of these newer models have yet to be fully evaluated.

- Outcome monitoring is a key overarching issue if services are to be evaluated and reconfigured as needs change, and if there is to be system-wide accountability for outcomes.

Meeting the challenges

Based on this summary of the research evidence, the following four key challenges need to be addressed to improve child and youth mental health outcomes in British Columbia, as in many jurisdictions. First, the unmet needs are of sufficient magnitude that clinical services alone cannot suffice. Rather, a mix is required of universal programs to build community capacity, targeted programs to reduce risk, and clinical programs to provide treatment and support. Second, evidence-based approaches need to be encouraged more and reinforced at all levels (and in all sectors) to increase access to effective programs and services, and to increase cost-effectiveness throughout the system. Third, all key related services and programs need to be significantly better coordinated, including public health and primary care, early child development, child protection, addictions, youth justice, adult mental health, hospitals, and crisis and residential services. There needs to be a continuum of care with more emphasis on prevention and early intervention throughout the system. Finally, comprehensive outcome monitoring is needed to enable better ongoing evaluation and management of all related services and programs, and to ensure public accountability for how well the system is meeting the needs of children and youth.

1 Introduction

1.1. Overview

This report summarizes the initial findings of an ongoing research project being conducted by the Mental Health Evaluation and Community Consultation Unit (MHECCU) at the University of British Columbia (UBC) at the request of British Columbia's (BC's) Ministry of Children and Family Development (MCFD). This project comprises one component of a comprehensive child and youth mental health planning process being undertaken by MCFD. The overall goal is to improve mental health outcomes for children and youth in BC.

"Mental health" may be broadly defined to include all aspects of human development and wellbeing affecting emotions, learning and behaviour. In healthy communities, it is everyone's responsibility – and in everyone's best interests – to ensure that all children and youth thrive. Despite best efforts, however, for a variety of social and biological reasons, some children and youth experience emotional and behavioural disturbances that interfere with their development and functioning. All disturbances fall on a continuum ranging from mild to severe. When these disturbances are severe enough to cause symptoms, distress, and impaired functioning, they may be referred to as "mental disorders."

There is a large burden of suffering associated with child and youth mental disorders. When present, these disorders permeate every aspect of development and functioning, including family and peer relationships, school performance, and eventual adult productivity and functioning (National Institute of Mental Health [NIMH], 2001; United States Department of Health and Human Services [US DHHS], 1999). At any given time, approximately 20% of children and youth (or 200,000 in British Columbia) experience mental disorders causing significant distress and impairing their functioning at home, at school, with peers, or in the community (Angold & Costello, 1995; Costello et al., 1996; Offord, Boyle, Fleming, Munroe Blum, & Rae Grant, 1989; Roberts, Attkisson, & Rosenblatt, 1998). Of these, approximately 5% (or 50,000 in British Columbia) suffer extreme impairment (US DHHS, 1999). No other group of disorders has such a profound effect on the development and wellbeing of children and youth, and on their families and communities.

While the numbers are large, not all affected children and youth need specialized clinical services. Furthermore, clinical services alone cannot significantly reduce the burden of suffering. Instead, a rational mix of universal, targeted, and clinical interventions is required in order to reduce the burden of suffering (Offord, Kraemer, Kazdin, Jensen, & Harrington, 1998). Universal programs are needed to build the capacity of communities to promote optimal health and development for all children and youth. Targeted programs are needed to reduce risk for specific populations. Finally, specialized clinical services are needed for children and youth most seriously affected.

As part of the ongoing project being conducted at MHECCU, recent research evidence is summarized here on population health (including the determinants of health, prevalence of disorders, and prevention) and clinical service considerations (including assessments of different services delivery models and outcome monitoring issues). In a companion report (Waddell, Hua, & Shepherd, 2002), recent research evidence is summarized on effective interventions for five key child and youth mental disorders: attention-deficit/hyperactivity disorder, conduct disorder, depression, obsessive-compulsive disorder, and schizophrenia. These disorders were chosen based on either prevalence or severity. Research is summarized in this companion report in the form of draft interdisciplinary practice parameters that will be widely circulated for review over the next year. The following additional disorders, problems, and risk situations will be reviewed and summarized in the future: other mood disorders, other anxiety disorders, substance abuse, eating disorders, neurodevelopmental disorders, emotional and behavioural problems, child maltreatment, and parenting problems. As well, in future work, special attention will be paid to the challenge of comorbidity, where children and youth have multiple disorders.

In this report, the term "child" is used to refer to infants and preschool and preadolescent children aged approximately zero to 11 years. The terms "youth" and "adolescent" are used interchangeably to refer to those aged approximately 12 to 19 years. These terms are used for simplicity, recognizing that each age and developmental stage, from infancy through to adulthood, has its own unique and important attributes. "Mental health" is broadly defined to include wellbeing and optimal human development in the emotional, behavioural, social and cognitive domains. "Mental disorder" is defined as any emotional, behavioural, or brain-related condition that causes moderate or severe impairment in functioning as defined in standardized diagnostic protocols such as the American Psychiatric Association's (APA's) Diagnostic and Statistical Manual (DSM) (APA, 2000). The term "mental health problem" is used to describe any emotional or behavioural condition that may cause significant distress and impaired functioning, but not to a degree that meets diagnostic criteria for a mental disorder.

1.2. Conceptual Approach

At the highest level, the intended policy outcomes of child and youth mental health programs and services are optimal development and wellbeing for all children and youth, a reduction in the impairments associated with mental disorders, and the effective and efficient use of public funds towards these ends. Recent examinations of the state of child and youth mental health (NIMH, 2001) have concluded that, despite progress in our understanding of effective prevention and treatment interventions, the burden of suffering associated with child and youth mental disorders is not decreasing. Increased research and policy efforts are needed at every level to improve this situation.

Child and youth mental disorders, when present, permeate every aspect of development and functioning, including family relationships, school functioning, peer relationships, and eventual adult productivity and functioning in the community (NIMH, 2001; US DHHS, 1999). Effects are worse when disorders occur early in the course of development. Many disorders continue to have manifestations through to adulthood. The costs associated with child and youth mental disorders are high for affected individuals. Costs also accrue for families, schools, and communities, particularly if disorders are not prevented or addressed early such that additional social, educational, child protection, justice, or acute health care services are needed. Finally, the costs of lost human potential and productivity associated with mental disorders has a negative impact on all members of society (NIMH, 2001; US DHHS, 1999).

In most North American and European populations, the burden of suffering associated with child and youth mental health problems is large – approximately 20% of children and youth experience mental disorders sufficient to cause impairment in functioning at any given point in time (Angold & Costello, 1995; Costello et al., 1996; Offord et al., 1989; Roberts et al., 1998). The prevalence of these problems far outpaces clinical treatment capacity in most jurisdictions, with the result that there is substantial unmet need for services. The Ontario Child Health Study (Offord et al., 1989) determined that only one in six children and adolescents with mental disorders received some form of specialized clinical services. The US Surgeon General's report on mental health estimated more recently that 70% of children and youth with mental disorders were not being adequately treated (US DHHS, 1999). The NIMH in the US recently identified possible reasons for this continuing unmet need, including lack of clinical capacity, stigma associated with mental disorders, uneven access to treatment for minority populations, and the continued funding of treatments and services that are not supported by research evidence (NIMH, 2001).

Clearly, clinical services alone cannot achieve a marked reduction in the burden of suffering associated with mental disorders in children and youth. In recognition of this, many researchers and advocates have called for greater attention to (and investment in) population health strategies in order to better meet the needs of greater numbers of children and youth (Hertzman, 1998; McCain & Mustard, 1999; Offord et al., 1998). Costello and Angold (2000) cited growing evidence that many child and youth mental disorders represent conditions that continue into adolescence and adulthood – a further impetus to shift resources to population health approaches that encompass both prevention and early intervention in order to reduce the burden of suffering.

Historically, population health models have been seen as entirely distinct from clinical service models (Predy, Rasmussen, Langer, Edwards, & Jones, 2002). Population health strategies focus on the whole population, or specific groups within the population, to promote health and prevent the development of disorders through the modification of individual or environmental factors. Population health approaches are particularly applicable to children and youth given the interdependencies between developing young people and their environments (McCain & Mustard, 1999). In comparison, clinical strategies focus on the individual through the provision of diagnostic and treatment services, usually for established disorders. Recently, consensus has emerged that the two models are interrelated in terms of achieving intended health outcomes. The so-called "collaborative imperative" (New York Academy of Medicine, 1998) has recognized the complementary nature of population health and clinical approaches, and the necessity of combining both approaches in order to improve outcomes for children and youth.

Offord and colleagues (1998) addressed the need to combine population health and clinical approaches with more specific suggestions regarding child and youth mental health programs and services. They argued that lowering the burden of suffering can only be achieved with a rational mix of universal programs designed to build community capacity to ensure that all children and youth thrive, targeted interventions to reduce risks for some populations, and clinical interventions directed towards those who have severe disorders. Fundamental policy choices are required to determine what proportion of resources and efforts should be devoted to each component of this mix of interventions. Ensuring the right mix requires an understanding of which interventions are supported by the best currently available research evidence, and which are not. In times of fiscal restraint, it is particularly crucial to ensure that efforts and resources are invested in the most effective interventions, as well as in the most effective mix of interventions. This report summarizes the recent research evidence on both population health and clinical service considerations in order to guide child and youth mental health planning in BC towards an optimal mix of interventions and improved outcomes.

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2 Methodology

2.1. Overview

A standardized approach was used to find and select high quality research literature for review. Research literature from a variety of related disciplines was searched using relevant databases including Medline, PsycINFO, and the Cochrane Database of Systematic Reviews. Key topics and search terms related to both population health and clinical service considerations were identified and applied. "Grey" literature such as practice guidelines, consensus statements, dissertations and conference proceedings was also identified. Both quantitative and qualitative literature was considered.

All literature was evaluated by the research team regarding appropriateness for inclusion for more detailed review using the following criteria. Quantitative literature was evaluated using generally accepted clinical epidemiological criteria (Sackett, Haynes, Guyatt, & Tugwell, 1991), with emphasis placed on systematic reviews or well-designed studies (Bandolier, 2002). Qualitative literature was evaluated using generally accepted social sciences criteria for appraising qualitative research (Denzin & Lincoln, 2000; Giacomini & Cook, 2000). Preference was given to the most methodologically rigorous literature where it was available. Table 1 summarizes additional criteria, adapted from the interdisciplinary journal, *Evidence-Based Mental Health* (EBMH) (2002), that were used to further select and prioritize literature to be reviewed.

There are some limitations that need to be acknowledged regarding the use of research evidence to guide practice and policy making in general. Much research evidence in child and youth mental health has been conducted in idealized settings whereby *efficacy* (can this intervention work?) is established. However, for many problems, research evidence is still lacking on *effectiveness* (does this intervention work in usual settings?) and *efficiency* (is this intervention worth doing?) (National Institute of Mental Health, 2001). Many promising interventions have yet to be rigorously evaluated, but this does not necessarily mean that they should not be used. Practitioners and policy makers, as well as families and community members are encouraged to always interpret the research evidence in their own settings. The approach used in this report for evaluating research evidence can serve as a guide for evaluating new interventions in general. Finally, the information summarized here will be updated and modified as the project continues over the next year and beyond. The overall aim is to create a dynamic and sustainable model for making the best available research evidence on child and youth mental health widely available on an ongoing basis.

TABLE 1. Criteria for Evaluating Research Evidence (Adapted from EBMH, 2002)

Basic criteria: • Original or review articles in English and about humans • About topics that are important to clinicians, managers and policy makers in the broad field of child and youth mental health
Studies of treatment/management: • Random allocation of participants to comparison groups • Follow up (end point assessment) of at least 80% of those entering the investigation • Outcome measures of known or probable clinical importance
Studies of diagnosis: • Diagnostic "gold" standard used as the basis for all comparisons, involving assessment by a clinically qualified interviewer according to standardized criteria such as the DSM (APA, 2000)
Studies of prognosis: • Inception cohort (first onset, or assembled at a uniform point in the development of a problem or at point of change in service) of individuals, all initially free of the outcome of interest • Follow up of at least 80% of participants until the occurrence of a major study end point or to the end of the study
Studies of quality improvement: • Random allocation of participants (or units) to comparison groups • Follow up of at least 80% of participants • Outcome measure of known or probable clinical importance
Studies of the economics of health care programs/interventions: • Economic question addressed must be based on comparison of alternative diagnostic or therapeutic services or quality • Activities must be compared on the basis of the outcomes produced (effectiveness) and resources consumed (costs) • Evidence of effectiveness must come from studies of real participants which meet the above-noted criteria for assessing literature on diagnosis, treatment, or quality improvement • Results should be presented in terms of the additional costs and outcomes for one intervention compared to another
Review articles: • Clear statement of topic • Identifiable description of the methods indicating the sources • Explicit statement of criteria used for selecting articles for detailed review • Review must include at least one article that meets above-noted criteria for treatment, diagnosis, prognosis, causation, quality improvement, or the economics of health care programs/interventions
Qualitative studies: • Content must relate to how people feel, experience or understand situations that relate to mental health or health care • Data collection methods must be appropriate for qualitative studies (such as semi-structured interviews, participant observation in natural settings, focus groups, or reviews of documents or text) • Data analyses must be appropriate for qualitative studies: the primary analytical mode is inductive rather than deductive; and units of analysis are ideas, phrases, incidents or stories that are ultimately classified into categories or themes

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3 Population Health Considerations

3.1. Overview

Given the large burden of suffering associated with child and youth mental disorders, it is imperative to focus on promoting health and preventing disorders in the population in order to improve outcomes for all children and youth. Key population health issues include the determinants of health, the prevalence of mental disorders, service utilization, and prevention. These issues are reviewed in order to inform strategies aimed at building the capacity of communities to care for all children and youth, and reducing risks for some populations.

3.2. Determinants of Health

It is now generally accepted by researchers (and many others) that health and optimal development in the population are determined by a variety of factors, many of which lie outside traditional health and social service systems (Evans, Barer, & Marmor, 1994; Health Canada, 2002; Keating & Hertzman, 1999). Factors such as income, social status, education, employment, social and physical environments, early child development, personal health practices, and biology all influence health and development to a degree that may supercede health services as a determinant of health (Evans et al., 1994; Health Canada, 2002; Keating & Hertzman, 1999). Health in this context may be viewed as the capacity to function optimally in a variety of domains – as a resource for living – and not merely the absence of illness (Raphael, 2000).

The imperative for a population health perspective with regard to child and youth mental health and development is clear. Compelling data and arguments have established the lifelong impact of early experiences on health and wellbeing, and the ability of social initiatives to modify early experiences, with the potential to improve long-term outcomes (Hertzman, 1998; Hertzman & Wiens, 1996; Keating & Hertzman, 1999; McCain & Mustard, 1999). Similar arguments have been made to strengthen public health strategies in order to both identify and address factors that put certain populations at risk for mental disorders (Jenkins, 2001).

Children and youth are strongly influenced by (risk and protective) factors in their environments throughout their development due to their reliance on others to meet their needs. Consequently, any systematic approach to improving mental health and developmental outcomes must include a broad array of domains and sectors that influence the development and wellbeing of all children and youth, including families, schools, and communities. Emphasis should be placed on intervening early ("upstream") in order to minimize later ("downstream") suffering and costs (Evans et al., 1994; Health Canada, 2002; Keating & Hertzman, 1999).

In healthy communities, where the goal is to optimize mental health and development for all children and youth, all members of society have an interest in enhancing the capacity of communities to care for children and youth. The goal is for all children and youth to thrive and ultimately become contributing members of society. In this context, policy makers are being encouraged to view mental health as an essential arena for enhancing the social and economic capacities of regions and countries (Jenkins, 2001).

Adopting a population health perspective requires that data on related health and developmental outcomes for children and youth are gathered and monitored on an ongoing basis. Data on many factors related to the determinants of health are not yet monitored in a systematic way for children and youth in most communities in Canada. However, data are available on some key demographic variables, such as poverty. Poverty may be defined using "low-income" thresholds. According to Statistics Canada (2002) definitions, families fall below the low-income threshold if they spend approximately half of their income on basic necessities such as food, shelter, and clothing. The Canadian Institute of Child Health (CICH) has collected recent statistics on the proportion of children and youth in families living in poverty. Of all Canadian children and youth under age 18 years, approximately 1.5 million (21%) were living in poverty in 1996, with rates for children under seven years of age being somewhat higher at 25% (CICH, 2000). Rates in BC were comparable to national rates.

In addition to basic demographic statistics, recent comprehensive studies such as the National Longitudinal Survey of Children and Youth (NLSCY), sponsored by Human Resources Development Canada (HRDC), have begun to investigate the influence of various social, cultural, and economic factors on children and youth (HRDC, 2002). Additional information on social factors comes from epidemiological studies, such as the Great Smoky Mountains Study in the US, which found that poverty and mental disorders were associated (Costello, Farmer, Angold, Burns, & Erkanli, 1997). As well, some communities in Canada have started to use devices such as "report cards" and "community mapping" to monitor a variety of indices of wellbeing including income, housing, school readiness, and other community factors (Canadian Centre for Studies of Children at Risk, 1999; Human Early Learning Partnership, 2002). However, further work is needed regarding the systematic monitoring of key factors related to the determinants of health (including mental health) for children and youth.

3.3. Prevalence of Child and Youth Mental Disorders

Understanding the prevalence of mental disorders in children and youth is essential for planning mental health and related programs and services for all children and youth. The best sources of data in this regard are epidemiological studies conducted in community settings, involving standardized assessment protocols, multiple informants, and some assessment of the level of impairment in functioning (Angold & Costello, 1995; Brandenburg, Friedman, & Silver, 1990; Roberts, Attkisson, & Rosenblatt, 1998).

Several recent studies and reviews have examined prevalence rates of child and youth mental disorders in populations relevant to BC (Angold & Costello, 1995; Brandenburg, Friedman, & Silver, 1990; Breton et al., 1999; Costello, 1989; Costello et al., 1996; Fombonne, Simmons, Ford, Meltzer, & Goodman, 2001; Heyman et al., 2001; Kandel et al., 1999; Offord et al., 1987; Roberts et al., 1998). In this literature, results were generally reported for children and youth aged four to 16 years with moderate or severe mental disorders. There was general agreement that at any given point in time, approximately

20% of children and adolescents in the community may have moderate or severe mental disorders sufficient to impair functioning. Table 2 shows disorder-specific prevalence rates compiled from these studies and reviews, with estimated number of children and youth in BC who may be affected. Design features of epidemiological studies may yield different results (for instance, depending on the choice of assessment instrument or informant). Consequently, rates as summarized in Table 2 represent estimates only. It is important to note that while most studies assessed moderate to severe mental disorders, implying some degree of impairment in functioning by definition (American Psychiatric Association, 2000), most did not specifically assess levels of impairment, or whether treatment was needed.

TABLE 2. Prevalence Rates for Mental Disorders and Approximate Number of Children and Adolescents Who May Be Affected in BC

Disorder	*Estimated Prevalence (%)*	*Approximate Number in BC* [1]
Any anxiety disorder	6 – 8	70,000
Attention-deficit/hyperactivity disorder	2 – 10	60,000
Conduct disorder	2 – 6	40,000
Substance abuse	0.1 – 6	30,000
Any depressive disorder	1 – 4	25,000
Obsessive-compulsive disorder	0.2	2,000
Autism	0.2	2,000
Schizophrenia	0.1	1,000
Bipolar disorder	0.1	1,000
Any eating disorder	0.1	1,000
Tourette's disorder	0.1	1,000
One or more disorder(s)	14 – 27	200,000

[1] *Approximate number of children and youth in BC who may be affected were derived using 2002 BC population estimates of 1 million children and youth aged 0 – 19 years (BC Stats, 2001)*

Another significant issue in the epidemiology of child and youth mental disorders is comorbidity, which refers to two or more disorders occurring together. The burden of suffering related to mental disorders may be underestimated if individual disorder-specific prevalence rates are considered in isolation from the issue of comorbidity. In the Ontario Child Health Survey, for example, over two-thirds (68%) of children and adolescents had two or more concurrent disorders (Offord, Boyle, Fleming, Monroe Blum, & Rae Grant, 1989). In a recent study of adolescents with substance use disorders, as many three-quarters (76%) had concurrent anxiety, mood, or behaviour disorders (Kandel et al., 1999).

3.4. Service Utilization

Service utilization refers to numbers of children and youth seen by providers in various mental health and related programs and services. When matched with prevalence rates, service utilization data give an estimate of the treated prevalence of child and youth mental disorders and the degree of unmet needs for service, or of mismatches between needs and services. Several recent epidemiological studies examined service utilization as part of their overall investigations. In Canada, Offord and colleagues (1987, 1989) noted that fewer than one in five children and youth with mental disorders received any

form of specialized clinical services. They noted, however, that over 50% of these children and youth received primary health care from physicians (family doctors or pediatricians), while 15 % received special education services from schools. Given that almost all children and youth receive some form of primary care and attend school, these authors recommended that mental health service systems for children and youth must include primary care and schools. These findings have been repeated in recent American studies showing that the majority of children and youth with mental disorders do not receive the services they need (Costello et al., 1996, 1997; National Institute of Mental Health [NIMH], 2001; United States Department of Health and Human Services [US DHHS], 1999).

Since child and youth mental health involves a number of sectors, ideally, data need to be available on utilization and costs associated with all related programs and services. These include: public health and primary care, early child development and school programs, community-based and specialized clinics, child protection programs, youth justice programs, hospital care, residential care, and crisis services. Limited data is available on utilization and costs in most jurisdictions (including BC), and in general, comprehensive systems are lacking for monitoring services, costs, and outcomes across the multiple sectors involved in child and youth mental health (NIMH, 2001).

3.5. Prevention of Mental Disorders

Some children and youth, despite everyone's best efforts, will still be at risk for developing mental disorders. In situations of risk, the goal is to prevent problems before they occur, if possible, or to intervene as early as possible to minimize suffering and costs. Regarding the prevention of mental disorders, efforts have been impeded due to an insufficient understanding of the underlying causes of many disorders. However, progress has been made in identifying risk and protective factors that may play a role in the onset of mental health problems in children and youth.

Risk factors are those characteristics of individuals or their environments (including families and communities) that, if present, increase the likelihood that a problem or disorder will develop (Mrazek & Haggerty, 1994). Risk factors may involve intrinsic individual characteristics (such as difficult temperament, learning disabilities, or genetic predisposition to mental disorders), or environmental characteristics (such as lack of appropriate parenting, poverty, or poor housing) (Holmes, Slaughter, & Kashani, 2001). Among children and youth, risk factors tend to cluster and the same preceding factors may relate to several different problems or disorders (Patton, 1999). Research on risk factors has illustrated the need to move away from linear "cause and effect" models where single factors are linked to single outcomes, to adopt ecological-developmental models where multiple dynamic factors are viewed as interacting over time (Breton, 1999; Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001; Rutter, 1997).

Protective factors, which may reside at individual, family or community levels, are believed to mitigate the impact of risk factors in the development of mental disorders through fostering resilience. Resilience, defined as the ability to withstand adversity, is thought to occur as a result of certain protective factors being present (Dyer & McGuinness, 1996). In long-term studies of children and youth at risk, several protective factors have been associated with resilience. These include long-term supports from at least one consistent care-giving adult, good learning abilities, good social skills, easy temperament, few siblings, sense of skill or competency, and positive beliefs about the larger world (Werner & Smith, 1992). As well, children and youth do better in communities where neighbourhoods and schools are functioning

well (Schorr, 1997). Like risk factors, protective factors also have a non-specific relationship with several different health outcomes.

Most prevention initiatives aim to reduce risk and/or increase protective factors, thereby enhancing development and preventing or reducing the impact of mental disorders. To be most effective, preventive interventions need to focus on factors that are believed to be causal (as opposed to merely correlational), and on factors that can be altered (Kraemer et al., 1997). Preventive interventions may also be characterized in terms of universal, targeted, and clinical strategies (Mrazek & Haggerty, 1994). Universal preventive interventions are directed toward the entire population (formerly termed primary prevention), while targeted preventive interventions are directed towards children and youth identified as being at high risk (formerly termed secondary prevention) (Thornicroft & Tansella, 1999). Clinical preventive interventions are usually confined to intervening early in the course of a disorder in order to minimize suffering and disability (formerly termed tertiary prevention) (Thornicroft & Tansella, 1999).

Trade-offs exist among the different types of prevention activities, making decisions about the optimal mix of interventions challenging. Offord, Kraemer, Kazdin, Jensen, and Harrington (1998) outlined some of the issues that need to be considered, summarized as follows. Universal programs avoid labeling and stigmatizing children and youth, but they may also be unnecessarily expensive and may provide help to many children, youth and families who are not at risk. Targeted programs can be more efficient, but they depend on being able to accurately identify children and youth at risk – which is difficult – and they may expose identified children and youth to labeling and stigma. Clinical programs, meanwhile, are the most expensive and restrictive, often involving labeling and stigma, and can usually only reach limited numbers in the population.

Research evidence evaluating the effectiveness of various preventive approaches is limited to date. Two recent reviews summarized what is known about the impact of preventive interventions on mental health outcomes in children and youth. Greenberg, Domitrovich and Bumbarger (2001) reviewed a number of prevention programs that found improvements in specific mental health symptoms, or reductions in risk factors, among children aged five to 18 years. Universal preventive interventions as well as interventions targeting both externalizing and internalizing behaviours were examined. The authors concluded that while more research is needed, a growing number of prevention approaches have shown promise. They noted that to be successful, interventions likely needed to start early, continue long-term, and include multiple domains such as families, schools and communities. They also noted that prevention programs needed to be better integrated with clinical treatment systems.

In the second review paper, Offord and Bennett (2002) summarized current research evidence about the prevention of conduct, anxiety and depressive disorders in children and youth, as well as the prevention of broader problems such as child abuse. They also concluded that to be effective, preventive programs needed to start early, continue long-term, and include multiple domains, particularly for problems like conduct disorder. They noted that school and clinic-based psychoeducational programs could be effective at reducing problems like anxiety and depression. Regarding the prevention of child abuse, they noted that intensive home visitation programs with families at risk showed promise for reducing abuse rates and increasing child, youth and family functioning.

Evaluating multi-faceted community-based prevention programs can be a complex process. Nutbeam (1999) commented that since randomized controlled trials (the "gold" standard for clinical research) are frequently too restrictive to be feasible in community settings, a wide spectrum of evaluation

methods and measures must be used to establish evidence of effectiveness. Boyle and Willms (2002) noted the same concern, and stressed the need for research evidence to better inform policy development and program funding on an ongoing basis so that resources could be invested in the most effective approaches, particularly given the expense of large-scale programs.

Research on effective preventive interventions for child and youth mental health is in its early stages, and good evidence is lacking for many important problems. In addition, several authors (Greenberg et al., 2001; NIMH, 2001, Offord & Bennett, 2002) have noted that most studies have examined *efficacy* (can this program work under ideal conditions?), rather than *effectiveness* (are results maintained when programs move from research or demonstration sites to community settings?), or *efficiency* (are programs cost effective when done in community settings?). However, given the importance of reducing the burden of suffering associated with mental disorders as early as possible for children and youth, ongoing research and policy efforts in prevention remain a high priority.

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4 Clinical Service Considerations

4.1. Overview

Population health considerations define the larger context for child and youth mental health. While the large burden of suffering means clinical strategies alone cannot meet the needs, clinical programs are an essential part of the service continuum. As such, it is critical that these programs are based on the best currently available research evidence regarding both service system design and effective interventions for specific mental disorders. Here, research evidence is summarized on effective service system approaches for child and youth mental health. Research evidence on effective interventions for specific mental disorders is summarized in a companion report in the form of draft interdisciplinary practice parameters (Waddell, Hua, & Shepherd, 2002). Overall, for many service delivery approaches, rigorous research evidence has either been lacking or extremely variable in nature, making it difficult to draw definitive conclusions. More research is needed. Consequently, the following section summarizes findings mainly in qualitative terms, reflecting the relatively limited nature of the data available.

4.2. Challenges Identified in the Research Literature

A number of central challenges concerning the delivery and management of clinical services were noted in the research literature concerning child and youth mental health. While much of the research has been conducted in the US, most of the issues identified were relevant in Canada. One overarching identified challenge involved the fact that in most jurisdictions in North America, specific populations have differing cultural contexts and needs (Hernandez & Isaacs, 1998). First Nations populations figure prominently in this regard throughout Canada (Mussell, 2002). Cultural competence regarding First Nations and other "minority" groups must be a requirement for all practitioners and all services in child and youth mental health (Hernandez & Isaacs, 1998). The following additional key challenges have been identified.

Reducing Unmet Need

One critical concern involves any system's ability to identify and assess mental disorders in children and youth. Without appropriate identification and assessment, steps cannot be taken to improve access to appropriate services. The unfortunate consequence of under-detection is that disorders among children and youth are left untreated and may in some cases progress to more serious problems. Untreated ADHD, for instance, is associated with later development of depressive symptoms and substance abuse (Barkley, 1998). Untreated conduct disorder often progresses to involve much more entrenched antisocial behaviour patterns (Rutter, 1997). Primary care settings and schools were noted in the US Surgeon General's report as the major settings for identification of mental health problems and disorders among children and youth (United States Department of Health and Human Services [US DHHS], 1999).

In primary care settings, most research has focused on physicians as care providers. One review of studies in primary care (Richardson, Keller, Selby-Harrington, & Parrish, 1996) found wide disparities in case-identification rates by physicians and overall evidence of under-detection. The authors of this study concluded that mental health problems were most likely to be missed when symptoms were less severe or were unaccompanied by physical illness. In the case of ADHD, Sloan, Jensen, and Kettle (1999) suggested that the processes followed by physicians in identifying and diagnosing this common disorder have been questionable. There appeared to be little reliance on established diagnostic methods such as standardized questionnaires, tests or structured interviews.

In school settings, the number of children and youth with mental disorders is high, based on generally accepted overall prevalence rates of 20%. For example, applying these rates to a school of 1000 students would indicate that as many as 200 might be affected. However, the majority of these children and youth do not receive mental health services (Doll, 1996). It is suspected that without school-based services specifically targeting mental health, a large number of disorders remain undetected until more acute manifestations of the disorder occur (Armbruster & Lichtman, 1999). However, case-detection rates in schools are contingent upon available resources, which are not optimal in many jurisdictions. Sloan and colleagues (1999) speculated that restricted resources for evaluation and special educational services might limit schools' capacity to detect, refer, and manage children and youth with mental disorders.

Finally, better identification of children and youth with mental disorders is a necessity if early interventions are to be implemented. Early intervention can greatly reduce the long-term suffering, sequelae and costs associated with many disorders (Mrazek & Haggerty, 1994). If mental disorders are not successfully treated early in the lifespan, longstanding impairments in social and vocational functioning, as well as diminished productivity and satisfaction later in life, can result (Mrazek & Haggerty, 1994).

Optimizing Evidence-based Approaches

Several authors concerned with child and youth mental health service issues have argued that there is an urgent need for resources to be realigned to better support clinical interventions where there is empirical evidence for effectiveness (National Institute of Mental Health [NIMH], 2001). Within typical child and youth mental health service systems, an array of treatments and delivery approaches exist. Unfortunately, many of the approaches and interventions currently funded and delivered are not well supported by research evidence (Burns, Hoagwood, & Mrazek, 1999; Shirk, Talmi, & Olds, 2000).

Burns and colleagues (1999) further contended that significant resources in many jurisdictions are devoted to interventions that are not only relatively poorly supported by the research evidence, but are also resource-intensive. For example, residential and hospital treatment are relatively poorly supported by the research evidence, but consume approximately two-thirds of child and youth mental health budgets in many jurisdictions (Burns et al., 1999). In contrast, there is relatively good evidence for the effectiveness of many types of community-based psychotherapy, a much less expensive form of intervention (Kutash & Rivera, 1996; Burns et al., 1999). Applying research evidence in this context may mean a dramatic shift in service configuration in order to invest in more effective strategies. In Britain, Knapp (1997) also noted the need for cost-effectiveness studies to inform decisions about the allocation of scarce resources to different treatments and interventions. It appears that in many jurisdictions, it is a significant public

policy problem that scarce mental health resources continue to go to treatments and services that are not well supported by research evidence (NIMH, 2001).

Improving Coordination of Services and Programs

Another serious challenge in many jurisdictions is the fragmentation of services and programs serving children, youth and families. The NIMH (2001) concluded that the systems responsible for providing mental health supports and services were fragmented and relied on delivery models that did not adequately match child, youth and family needs. The same finding applies in Canada (Waddell, Lomas, Offord, & Giacomini, 2001). Children and youth with serious emotional and behavioural disturbances often require an array of services, including from sectors traditionally viewed as being outside of mental health such as public health, early child development, primary care, education, social services, youth justice, and child protection. An emphasis on integrated care through the establishment of coordinated inter-agency systems is urgently required.

In the US, subsequent to the introduction of Child and Adolescent Service System Project (Stroul & Friedman, 1986), a number of local initiatives were funded to create and improve systems of care. "System of care" has been defined as a comprehensive spectrum of mental health and other services and supports organized into a coordinated network to meet the diverse and changing needs of children and youth (US DHHS, 1999). The US Surgeon General's report provided a good synthesis of the available research on systems to counteract fragmentation (US DHHS, 1999). Preliminary evidence of effectiveness was based on uncontrolled studies, but it appeared that enhanced systems of care could achieve system improvements, and some positive individual outcomes (such as reduced behaviour problems and increased satisfaction with services). The report concluded, however, that neither of the two large-scale projects (Fort Bragg and Stark Country) found any differences in clinical outcomes related to differently organized care systems. Consequently, while fragmentation of care is an important issue in child and youth mental health services delivery, further research is needed.

It is also noteworthy that system concerns have differed for rural and urban settings. Sheldon-Keller, Koch, Watts, and Leaf (1996) noted that "system of care is a convenient omnibus term that can disguise the vastly different service needs, service capabilities, cultural and socio-economic characteristics that must be addressed" (p.484). They argued that developing appropriate systems of care must be a local responsibility. However, in most rural areas, under-servicing is a basic problem that precedes service coordination.

Family involvement provides one bulwark against fragmentation in programs and services. Despite acknowledgement that meaningful partnerships between providers and families are essential in this regard, Mohr (2000) determined that there was a considerable gap between standards for family involvement and actual practices. Full family involvement in the care planning process represents a critical component of mental health services (Kutash & Rivera, 1996).

4.3. Effectiveness of Traditional Clinical Service Models

A wide variety of program and service approaches have been used in child and youth mental health. Traditional service components found in most child and youth mental health settings are reviewed below. These include community-based clinical services, partial hospitalization/day treatment,

residential treatment, hospital treatment, and crisis services. This summary of the research is based primarily on findings presented in several recent comprehensive reviews (Burns et al., 1999; Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001; Kutash & Rivera, 1996; NIMH, 2001; New Zealand Health Technology Assessment [NZHTA], 1998; Stroul, 1996; US DHHS, 1999). Unless otherwise cited, information summarized below comes from these review sources.

Community-Based Clinical Services

Community-based (or outpatient) clinical services typically comprise a range of therapeutic approaches for a number of diverse disorders in a variety of settings. Children and youth are typically seen in their local community setting, where services are provided by multidisciplinary clinical teams or by individual practitioners working with families. Most recent comprehensive reviews have suggested that treatment in community clinical settings has been associated with positive outcomes. Recent evidence emerging from the Fort Bragg demonstration project (Foster, 2000) has also indicated that higher frequency of clinical contact was associated with improved functioning in children and youth. However, treatment in community clinical settings was less effective than treatment provided in controlled research settings. Unfortunately, few practice-based studies have been conducted under "real world" conditions. While additional research is needed to determine which approaches work best for specific disorders, at this stage, the evidence suggests that most disorders are best treated in community-based settings (Waddell et al., 2002). Community-based treatment also minimizes disruption for children and youth and is less costly than more restrictive forms of service. Moreover, a continuum of coordinated community-based services can preclude the need for more costly and restrictive care.

Partial Hospitalization/Day Treatment

Partial hospitalization or day treatment refers to programs based in hospitals involving structured treatment provided for several hours a day, but not involving overnight hospital care. These programs offer a structured but less restrictive environment than inpatient care, and one that allows children and youth to return home at night, maintaining family and peer connections. Partial hospitalization may be used to manage the transition between discharge from an acute hospital or residential treatment setting and returning home. There are very few controlled studies of day treatment and as a result only tentative conclusions can be drawn. However, uncontrolled studies have shown generally positive benefits in terms of reduced problem symptoms and behaviours, and reduced costs compared to more restrictive approaches. Family involvement has been noted to be critical to the success of day treatment. Treatment benefits, however, have not tended to generalize to other settings such as schools, and day treatment appears to be most effective for children and youth with less serious disorders. In general, definitive conclusions regarding the effectiveness of day treatment programs cannot be drawn from the present research evidence.

Residential Treatment

Residential treatment involves group settings where intensive treatment is provided and where children and youth reside over extended periods of time. Approaches vary considerably regarding the treatment models used and the types of mental disorders treated, making it difficult to compare programs. In the US, it is estimated that while only eight percent of treated children and adolescents use residential treatment, this component of care accounts for approximately 25% of all expenditures on child and youth

mental health care. Early research has shown that children and youth in residential treatment exhibit gains in clinical status and academic performance over the course of treatment. However, evidence has been mixed as to whether these gains are sustained. There are few controlled studies comparing residential treatment to other forms of care. Overall, the evidence is considered insufficient to warrant supporting residential treatment over non-residential service options. Some authors (Hoagwood et al., 2001) have gone so far as to describe residential treatment as widely used, but empirically unjustified. More research is required to ascertain which children and youth would uniquely benefit from residential treatment, and in conjunction with which configuration of other services and supports. Residential treatment also has associated non-monetary costs for children and youth, such as isolation from family and peers if treatment is not available locally.

Hospital Treatment

Inpatient hospital care, typically provided in specialized hospitals or in specialized wards in general hospitals, is highly costly and restrictive, consuming as much as approximately 50% of all expenditures on child and youth mental health in many jurisdictions. Given the nature of this form of care, the research base has largely consisted of uncontrolled and descriptive studies. These have generally reported positive results. However, three controlled studies concluded that the benefits of inpatient care were not superior to community-based care. Despite relatively weak support in the research evidence, inpatient hospital treatment is considered an integral part of most child and youth mental health care systems, particularly for crisis management and stabilization of more serious problems such as psychosis and suicidality. Considerably more research is required given the resource intensity of this service component. As with residential treatment, hospitalization also has associated non-monetary costs for children and youth, such as isolation from family and peers if hospital services are not available locally.

Crisis Services

Crisis services take a variety of forms in residential and non-residential settings. Generally, crisis services have been defined as those that are available 24 hours a day, seven days a week, and that offer short-term interventions including assessment, stabilization, and referral for follow-up services. The evidence base for crisis services has consisted exclusively of uncontrolled studies. While there is some preliminary indication that crisis services may prevent hospital admissions and out-of-home placements, findings have been generally inconclusive. Future research needs to examine the effectiveness of different types of crisis services, cost-effectiveness, and how these services may be best deployed in coordination with other related services and programs.

4.4. Effectiveness of Newer Service Models

Newer service models for child and youth mental health are reviewed below. These models have generally been developed in order to improve the integration of services and supports for children, youth and families in home and community environments, particularly where coordination is required among multiple agencies and services. These newer models include home-based services, therapeutic foster care, case management, school-based services, shared care, and outreach and distance models of service delivery. As with the summary of the research on traditional clinical approaches, this summary is based primarily on findings presented in several recent comprehensive reviews (Burns et al., 1999; Hoagwood et

al., 2001; Kutash & Rivera, 1996; NIMH, 2001; NZHTA, 1998; Stroul, 1996; US DHHS, 1999). Unless otherwise cited, information summarized below comes from these review sources.

Home-based Services

Home-based services are those that provide care to children and youth in their home settings. The goals of home-based services usually include family preservation, prevention of out-of-home placement, increased skill levels and family functioning, and reduced risks for children and youth regarding issues such as abuse and neglect (Stroul, 1988). These services may be provided and funded through a variety of different sectors. There is some evidence that children and youth benefit from reduced rates of abuse and neglect as well as increased parental functioning (Olds, O'Brian, Racine, Glazner, & Kitzman, 1998), although the magnitude of the treatment effect has been modest in most studies. Fraser, Nelson, and Rivard (1997) identified a series of factors believed to be responsible for the beneficial outcomes achieved with home-based services. These included: involvement of family members in developing service plans; availability of back-up services (at all hours); skill-building based on the individual needs of family members; co-ordinated collateral community services; and assistance with basic needs such as food and shelter. While more research is needed on the cost-effectiveness of these services, home-based programs are less intrusive for children and youth and appear promising as a way to avoid greater "downstream" costs associated with out-of-home placements.

Family support programs, another form of home-based services, involve the provision of supportive services intended to strengthen the family unit and provide a more positive environment for children and youth. Supports may include counselling, informal or professional services, assistance with daily tasks, and other practical forms of support such as housing, income support, or respite care for children and youth (US DHHS, 1999). There are few solid evaluations of family support programs. The available evidence points to greater satisfaction and insight, in addition to improved coping skills and reduced stress among family members. Future research is required to fully understand the needs of families, to identify effective methods of providing support and encouraging participation, and to determine which approaches work best with which families.

Therapeutic Foster Care

Therapeutic foster care was designed to support and treat children and youth who have been removed from their home settings due to concerns about abuse or neglect. These children and youth, not surprisingly, often have severe emotional and behavioural problems (Rosenfeld et al., 1997). Therapeutic foster care involves providing treatment and support in a private family setting with trained foster parents, usually at a lower cost than other forms of care such as residential treatment. The research base for this form of care is relatively limited. However, Reddy and Pfeiffer (1997) reviewed the literature on long-term outcomes for children and youth in therapeutic foster care and found evidence of behavioural improvements, lower rates of incarceration, more stability in living arrangements, and costs savings in the long-term. Minty (1999) also suggested that long-term outcomes were relatively good, particularly if foster parents were provided with adequate training and ongoing supports.

Case Management

The purpose of case management is to co-ordinate care for children, youth and families in their local home and community settings, ensuring that multiple providers integrate services across different agencies and systems. While many different case management models exist, each model shares the common goal of integrating services and supports so that the needs of children, youth and families are met in a relatively "seamless" manner. Hence, terms like "wrap-around" have been used to describe these services. Many uncontrolled studies have examined case management. However, reviewers of these studies have noted difficulty in assessing the benefits of case management because services and supports resources vary greatly across mental health systems and there is little standardization within case management approaches. Controlled studies are more limited but indicate that these approaches show promise. For instance, an evaluation of New York's Child and Youth Intensive Case Management program (Evans, Huz, McNulty, & Banks, 1996) examined the impact of an expanded "broker" model on three-year outcomes for children and youth. Results indicated significant behavioural improvements, improved functioning in educational and other domains, and fewer hospitalizations. On balance, evidence to date suggests the potential for beneficial effects using case management with children and youth, particularly those with more severe mental disorders (Friesen & Poertner, 1995).

School-based Services

The value of providing mental health services within the school setting is intuitively apparent. Schools offer familiar non-stigmatizing environments to intervene with children and adolescents with mental health problems and in many jurisdictions are recognized as key players in the mental health services system. The Ontario Child Health Study found that a greater proportion of school-age children with mental health disorders had received special education services than had received specialty mental health services (Offord et al., 1987).

Expanded school-based mental health services, available in many states in the US, provide prevention, detection, assessment, early intervention, and treatment (Weist, Nabors, Myers, & Armbruster, 2000). A range of effective interventions including individual and classroom-based programs has been identified. In a comparison of youth clinic cases and inner-city school cases, Armbruster and Lichtman (1999) found equal improvement in clinician ratings after treatment, leading to the suggestion that school-based programs may have the advantage of reaching children and youth who would not otherwise be served. Rates of use of school-based services among adolescents substantiate the claim that school-based programs enhance access to care for mental health and substance abuse problems (Anglin, 1996). In addition, there is some evidence to suggest school-based mental health can be delivered at lower costs than through other community providers (Nabors, Leff, & Mettrick, 2001).

Despite a number of innovative and promising leads, Kutash and Rivera (1996) noted the wide-array of school-based interventions and the few studies with stringent experimental designs, cautioning against conclusive statements about the effectiveness of such programs. A more recent review of school-based mental health services (Mason, 1998) concluded that overall, while the literature has demonstrated that these services improve access to under-served children and adolescents, more research is needed to show their effectiveness in preventing and treating mental health problems.

Shared (Primary Health) Care

The term "shared care" refers to providing mental health supports and services in primary health care settings. Primary health care may be provided by public health agencies, community clinics, or individual practitioners such as physicians and nurses. Specialized mental health services may then be provided in primary care settings by multidisciplinary teams or individual practitioners. In Canada, shared mental health care initiatives designed to support practitioners in primary care settings are considered a highly promising means of improving the capacity and quality of mental health services (Canadian Psychiatric Association [CPA] & College of Family Physicians of Canada [CFPC], 2000). The CPA and the CFPC have noted the importance of primary care as the cornerstone of the health care system, and the central role of primary care practitioners as key providers of mental health care in most communities. One of the early innovative models for integrating mental health services with primary care was implemented in Hamilton, Ontario, where multi-disciplinary mental health teams regularly consult to primary care physicians in community practices (Farrar, Kates, Crustolo, & Nikolaou, 2001). This model has since inspired pilot projects and evaluation studies across the country. In Australia, shared care approaches have been evaluated for the primary care management of children and youth with ADHD in an uncontrolled study. Results indicated that improved specialist support to primary care enabled more successful case management for affected children and youth (Pedlow, 2000).

Outreach and Distance Service Models

Outreach mental health programs were originally designed to provide mental health consultation and support to rural and remote communities. Typically, outreach programs have involved specialist consultants travelling to rural or remote communities to provide service. While such programs are acknowledged as essential to communities with insufficient access to child and youth mental health specialist resources, outreach efforts have not yet been subjected to rigorous outcome studies and there would appear to be little standardization among outreach practices (Ference Weicker & Company, 2001). Recent evaluations have suggested that typical models of outreach could be expanded to include more attention to educating local practitioners, building community capacity, and involving of other disciplines in mental health in order to extend the "value added" by this service (Ference Weicker & Company, 2001).

Other innovative distance models such as telephone and interactive video case conferencing and consultation can also provide rural communities with increased access to mental health services. Distance education for practitioners and other community members can also be provided through the use of interactive video conferencing technology. A recent systematic review examined studies that assessed administrative changes, patient outcomes, or cost-effectiveness of distance health applications in a variety of specialty areas (Roine, Ohinmaa, & Hailey, 2001). The authors found convincing evidence of effectiveness for distance mental health services. Distance mental health services in remote communities also resulted in substantial reductions in transfers to urban centres with concomitant cost-savings. In an evaluation of distance mental health services in Newfoundland, user satisfaction was found to be high among all groups involved (including providers, children, youth and families) (Elford et al., 2001). Nearly all parents preferred distance services to travelling to see a child psychiatrist in another community, and more than half of children and youth receiving the service preferred the "television" doctor to the "real" doctor. A comparison of distance service costs with estimated travel costs did not find cost-savings,

however, in small samples. Most authors agree that distance models have yet to be fully evaluated, but show promise as part of the continuum of services, particularly for rural communities.

4.5. Monitoring Outcomes

Monitoring outcomes, finally, is a key issue underlying most authors' recommendations on establishing effective child and youth mental health service systems. Informed decision-making with respect to program and service delivery must rely not only on findings from research studies, but also on ongoing outcome information from local data systems (Centre for Effective Collaboration and Practice [CECP], 2001). The goal is to monitor mental health outcomes with children and youth over time. Information tracking systems should be well planned in advance so they can serve a variety of functions. Capturing data through one system for several purposes – clinical, administrative and evaluative – avoids duplication of effort and represents best practice with respect to information management (Rouse & Toprac, 1998).

There are two recent examples of comprehensive outcome monitoring systems that show promise for child and youth mental health. The Government of Ontario is currently piloting a new approach to information tracking that has applications for intake, outcome monitoring, continuous quality improvement, and long-term planning in child and youth mental health (Cunningham & Ferguson, 2002). The Ontario system is based on using relatively simple instruments (such as the Brief Child and Family Phone Interview) for collecting data at the community level using independent assessors. Data may then be analyzed and used for service and program evaluation and planning, as well as local research on program effectiveness, and outcome monitoring when linked with established databases (such as the data sets from the Ontario Child Health Survey) (Cunningham & Ferguson, 2002). Taking a broader approach, the System Accountability Project for Children's Mental Health in Florida is a five-year investigation to determine the impact of using measurable outcomes (such as school attendance, juvenile justice recidivism, and out-of-home placements) on the comprehensive planning and delivery of mental health services (Hernandez & Hodges, 1996).

Comprehensive data systems are essential to ensure system-wide accountability and performance monitoring – by generating information that will help assess whether strategic objectives are met and provide a sound basis to realign systems, strategies and resources as needed (Goldner, Tompkins & Cardiff, 2001). In addition to data from child and youth mental health services, comprehensive data systems should also include ongoing information on related program and service activities (such as other health care, education, justice, and child protection). The ability to consistently monitor outcomes across all related program and service sectors is the cornerstone of good planning in child and youth mental health (CECP, 2001).

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5 Discussion and Implications

5.1. Discussion of Findings

An understanding of the research evidence with regard to both population health and clinical approaches is an essential starting point if any system is to reduce the burden of suffering associated with child and youth mental disorders. At a minimum, policy makers at all levels need to be aware of the strength of the research evidence for different models of configuring programs and services. The research evidence strongly supports integrating both population health and clinical approaches in a "rational mix" of universal, targeted, and clinical programs. Incorporating this research evidence may require a departure from the way services and programs have been traditionally conceptualized and delivered.

Significant additional challenges exist in child and youth mental health, as noted throughout the research literature. The single most important challenge involves addressing the high degree of unmet need. A substantial proportion of children and youth with mental disorders do not receive needed interventions. This is particularly true early in the course of the problem, with ensuing "downstream" costs to individual, families and communities. A second challenge involves the need to better incorporate research evidence about effective practices into decision-making at all levels, including clinically. Currently, many effective interventions are not made widely available to children and youth, and many ineffective interventions continue to be used even when these are more expensive and restrictive. Third, in many cases, services, programs, and supports have developed in a fragmented and idiosyncratic manner. There has often been a failure to meaningfully involve children, youth, families, schools, other care providers, and community members in designing approaches that focus on the experiences of children, youth and families. Finally, child and youth mental health outcomes have often not been adequately monitored, precluding opportunities to realign systems and strategies as needed.

Child and youth mental health programs and services may be viewed on a continuum, ranging from health promotion, prevention and early intervention, through to community-based, specialized, and acute care services for those with identified disorders. With respect to specific components that should be emphasized across the continuum, sufficient research evidence has accumulated to suggest some general directions for policy makers. The research evidence supports intervening early to ensure optimal health and development for all children and youth with a broad array of "upstream" population-based (universal or targeted) interventions including public health, primary care, early child development, and school programs. For children and youth who are at risk, or who have identified mental disorders, community-based targeted and clinical services are effective (and can be relatively efficient). Of the more resource-intensive services, there is, at present, limited evidence for day programs, and little evidence to support long-term residential treatment. Despite relatively weak research support for hospital and crisis services, these services are nevertheless generally recognized as integral to most systems. Many newer community-based models such as home-based care, therapeutic foster care, case management, school-based services,

shared care, and outreach and distance care show promise, but are only now being evaluated in terms of long-term benefits to children, youth and families.

Key decisions for policy makers concern both which program and service elements should form part of the continuum, and what proportion of resources should be devoted to each. Any well-planned mental health system will include an array of services and supports that have been shown to be effective, in addition to a series of system strategies that contribute to sound management, such as ongoing outcome monitoring. Decisions with respect to these dimensions may be guided by consideration of three essential aspects of health system performance (Montague, 1997): resources (costs of delivering the service or program); reach (numbers of children and youth reached by the service or program); and results (known effectiveness of the service or program). Resource implications associated with new program and service configurations clearly represent a key consideration, especially in times of fiscal restraint. Fiscal restraint requires that resource allocations be informed by research evidence about effective approaches. Understanding the research evidence can provide the basis on which to make difficult decisions between competing needs and users (Knapp, 1997; Jenkins, 2001).

5.2. Policy Implications

The key challenges identified in the research literature likely apply in most jurisdictions in Canada; BC is not unique in this regard. Factors in BC's specific situation also need to be taken into account in order to address the key challenges in ways that best meet the needs of children and youth in this province. Table 3 suggests some approaches to incorporating the research evidence into a plan to improve child and youth mental health outcomes in BC.

Currently, fiscal constraint is a central consideration in most Canadian jurisdictions regarding planning for publicly funded programs and services, including child and youth mental health. While the fiscal challenges may be daunting, on balance, the research evidence suggests that it is possible to redirect resources from less effective to more effective programs and services such that significant improvements in child and youth mental health outcomes can be realized. The evidence also suggests that investments made in the mental health of children and youth early on can assist any system to avoid much greater costs later.

TABLE 3. Meeting Key Child and Youth Mental Health Challenges in BC

Reducing unmet needs

• Ensure a mix of universal, targeted, clinical programs
• Evaluate and reconfigure the mix on an ongoing basis
• Increase the capacity to provide child and youth mental health consultation to existing programs to maximize benefits and build community capacity regarding:
  • Universal programs: public health and primary care, early child development, and schools
  • Targeted programs: community living, addictions, child protection, youth forensic and justice

Optimizing evidence-based approaches
• Audit practices and expenditures (at both systems and clinical levels); consider reallocating resources that may be going to relatively ineffective services and programs, and carefully manage costlier services and programs • Develop, disseminate and implement interdisciplinary evidence-based practice parameters for key child and youth mental health disorders and risk situations that are associated with a high burden of suffering including: • Attention-deficit/hyperactivity disorder, anxiety disorders, conduct disorder, mood disorders, psychotic disorders, substance abuse, eating disorders, neurodevelopmental disorders, emotional and behavioural problems, child maltreatment, and parenting problems • Develop and implement ongoing training and evaluation plans to encourage evidence-based practices at all levels and in all sectors
Improving coordination of services and programs

• Create a governance structure that has the authority, responsibility, and accountability to ensure ongoing effective coordination of key related services, programs and sectors including:
  • Within MCFD: Early child development, community living, child protection, youth forensic and justice, and all community agency (contracted) services and programs
  • With the Ministry of Health Services: Public health, addictions, adult mental health, primary care, and all hospital services and programs
  • With the Ministry of Education: School programs
  • With community agencies providing mental health programs and services to children and youth

Monitoring outcomes

• Develop, implement and regularly report on a comprehensive province-wide system to monitor long-term child and youth mental health outcomes, including:
  • Province-wide intake data management
  • Ongoing evaluation of provincial, regional and local intervention effectiveness
  • Monitoring key outcomes across all related sectors
  • Linking with health service utilization, education, and other relevant databases, including national child and youth epidemiological data sets

5.3. References

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