



CORE

Public Health Functions for BC

Evidence Review:
Mental Health
Promotion

Population Health and Wellness
BC Ministry of Health

This is a review of evidence and best practice that should be seen as a guide to understanding the scientific and community-based research, rather than as a formula for achieving success. This review does not necessarily represent ministry policy, and may include practices that are not currently implemented throughout the public health system in BC. This is to be expected as the purpose of the Core Public Health Functions process—consistent with the quality improvement approach widely adopted in private and public sector organizations across Canada—is to put in place a performance improvement process to move the public health system in BC towards evidence-based best practice. Health authorities will develop public performance improvement plans with feasible performance targets and will develop and implement performance improvement strategies that move them towards best practice in the program component areas identified in the Model Program Paper. These strategies, while informed by the evidence in this review, will be tailored to local context.

This Evidence Review should be read in conjunction with the accompanying Model Core Program Paper.

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EXECUTIVE SUMMARY

Mental health promotion has been identified as a core public health program in British Columbia. The purpose of this paper is to summarize the available evidence to support the development of a model core program in mental health promotion.

Mental health is more than the absence of mental illness; it is a resource for everyday living. Positive mental health enables people to realize their fullest potential and to cope with life transitions and major life events. Mental health promotion is a process of enabling individuals and communities to take control over their lives and improve their mental health. It seeks to increase self-esteem, coping skills and capacities, and family and community supports, as well as to modify the broader social and economic environments that influence mental health. Mental health promotion benefits the entire population and populations at risk of mental ill-health. It works to improve the mental health of people living with mental illness and to challenge the stigma and discrimination associated with mental illness.

This review paper examines evidence of effectiveness for mental health promotion interventions that target the general population, populations at risk for mental ill-health, and people living with mental illness across the life course. The selection of evidence was informed by concepts of risk and protection, resilience, social and emotional competence, economic participation and human rights protection. The selection of evidence was further guided by the principles and strategies of the Ottawa Charter on Health Promotion. Several population lenses were also applied to the evidence, including gender, diversity and vulnerability.

In terms of organization, the review looks first at interventions that benefit all ages, including nutrition, physical activity, sleep, volunteering, community arts programs, mental health literacy, primary health care brief interventions and early intervention for people with mental disorders. The paper then reviews the evidence for interventions that are specific to each life stage: maternal, infant and toddler, child, adolescent, adult and older adult mental health. The paper concludes with a review of the evidence for structural interventions, including income, food sufficiency, housing, employment and community capacity. In each section, the evidence is summarized in table format, which indicates level of effectiveness, appropriateness for health authorities and implications for implementation by health authorities and other key stakeholders.

There is considerable debate about what constitutes evidence of effectiveness in mental health promotion and which evidence is the strongest. This paper acknowledges that evidence of effectiveness is limited and that the strongest evidence is typically framed as the absence of mental illness, rather than the presence of positive mental health.

The key message for health authorities and their partners is that effective mental health promotion involves multi-level, multi-component and intersectoral policies and programs that (1) create the social environments needed to support positive mental health and (2) enable people to adopt and maintain healthy lifestyles.

1.0 OVERVIEW/ SETTING THE CONTEXT

In 2005, the British Columbia Ministry of Health released a policy framework to support the delivery of effective public health services. The *Framework for Core Functions in Public Health* identifies mental health promotion as one of the 21 core programs that a health authority provides in a renewed and comprehensive public health system.

The process for developing performance improvement plans for each core program involves completion of an evidence review used to inform the development of a model core program paper. These resources are then utilized by the health authority in their performance improvement planning processes.

This evidence review was developed to identify the current state of the evidence based on the research literature and accepted standards that have proven to be effective, especially at the health authority level. In addition, the evidence review identifies best practices and benchmarks where this information is available.

1.1 An Introduction to This Paper

The purpose of this evidence review paper is to establish a common understanding of mental health promotion, and to provide a summary of the best available evidence on interventions to promote and sustain positive mental health across the life course for the general population, populations at risk of mental ill-health and people living with mental illness. Evidence of effectiveness for interventions to prevent and treat mental illness will be addressed in a separate report.

This paper is intended to inform the development of a model core program on mental health promotion for the British Columbia Ministry of Health and health authorities. It will be available as a resource for policy-makers and service providers at the provincial, regional and local level in British Columbia. The evidence review speaks to the responsibilities of key actors in the health system and other public systems to safeguard the mental health and well-being of British Columbians through such means as income support, housing, education, employment, health and social services, sport and recreation, arts and culture, transportation and human rights protection. By summarizing both proven and promising interventions from the research literature, this paper is intended to support health authorities and their partners within and outside the health system in developing evidence-based approaches to mental health promotion in the home, school, workplace and community.

2.0 METHODOLOGY

2.1 Search Strategy

The evidence used in this paper comes primarily from systematic reviews published in English after 1990. The systematic reviews include both randomized controlled trials and well-designed observational studies. In general, the reviews have clear statements of the relevant topics, demonstrate clearly defined mental health promotion outcomes, provide clear descriptions of methods of appraisal and summary and have explicit criteria for the inclusion of interventions.

Several electronic databases and online libraries were searched, including Abstracts in Social Gerontology, CINAHL, Cochrane Health Promotion and Public Health Field, PsycINFO and PubMed. Internet searches were performed using the GOOGLE search engine, and various websites were accessed to identify unpublished literature. An expert committee provided advice, identified additional sources of evidence and reviewed drafts of the paper.

The evidence paper draws mainly on the findings of two major reviews of the best available evidence in mental health promotion:

- *Promoting Mental Health: Concepts, Emerging Evidence, Practice*, by H. Herrman, S. Saxena, & R. Moodie, (eds.) (2005).
- *Evidence-Based Mental Health Promotion Resource*, by H. Keleher, & R. Armstrong (2005).¹

The report by Herrman, Saxena, and Moodie (2005), prepared for the World Health Organization, describes concepts relating to the promotion of mental health, the emerging evidence for effectiveness of interventions from a range of countries and cultures and the implications for public health policy and practice. The evidence of effectiveness is drawn primarily from controlled trials, including quasi-experimental studies and studies using a time-series design. Where relevant, the report uses evidence from observational and qualitative studies, particularly for evidence from low-income countries that usually lack resources for expensive controlled studies. The report clearly recognizes that available evidence of effectiveness is limited in scope, although sufficient to prompt national and international action, and calls for greater global cooperation and alliances to generate new evidence.

The report by Keleher and Armstrong (2005), prepared for the Victorian Health Promotion Foundation (VicHealth), reviews evidence of effectiveness of population-based approaches to mental health promotion. Evidence was selected for its relevance to three determinants of mental health identified in the 2005 VicHealth Framework for the Promotion of Mental Health and Wellbeing: social inclusion, freedom from discrimination and violence and access to economic resources. The evidence is drawn from systematic reviews published in English after 1998 that contain or review primary research, focus on one or more of the three determinants of mental health and have clearly defined mental health promotion outcomes.

¹ This resource is informed by *Literature Review to Follow on From Vichealth's 1999-2002 Mental Health Promotion Framework: Final Report*. (Rychetnik & Todd, 2004).

Evidence from the two major reviews has been supplemented with evidence from the Cochrane Database of Systematic Reviews on relevant public health and health promotion interventions, and from a special issue of *Promotion & Education*, the International Journal of Health Promotion and Education, on the evidence of mental health promotion effectiveness.

The mental health promotion interventions identified in this paper have been assigned a level of effectiveness based on the available evidence and appropriateness for British Columbia's health authorities. In terms of effectiveness, the interventions are described as:

- Proven effective for wide-scale dissemination, achievement of outcomes and/or implementation.
- Promising/Warrants further research.
- Limited or no evidence available.

In terms of appropriateness, the interventions are described as:

- Falling within health authority jurisdiction and mandate.
- Requiring collaboration and advocacy with other health system partners.
- Requiring collaboration and advocacy with partners outside the health system.
- Falling outside health authority responsibility but within provincial responsibility.

For the purpose of this report, the Ministry of Children and Family Development and its regional authorities are considered health system partners. The Ministry of Education and school boards are considered partners outside the health system.

2.2 Challenges to the Evidence

At present, there is little consensus on what constitutes evidence in mental health promotion, or on the methods of evaluation that provide the strongest evidence base. While randomized controlled trials are the gold standard in evaluating clinical prevention, epidemiology and medicine, they are not always appropriate for mental health promotion. Aside from the difficulty of achieving random allocation in practice, there are situations in which it would be unethical to randomize a study. In other cases, the cost to randomize may be prohibitive.

More significantly, mental health promotion addresses the social determinants of health, which are comprised of complex and interacting genetic, biological, psychological, behavioural, environmental, social, economic and cultural factors that are not easily disaggregated for evaluation purposes. The more an intervention is related to the social determinants of health, the less the likelihood of using a randomized controlled trial to evaluate it.

As a result, mental health promotion tends to be evaluated using quasi-experimental designs and qualitative methods. In terms of effectiveness of interventions, most of the available evidence focuses on individual behaviour change, rather than community capacity or structural change.

Rigorous and more widely accepted methods are needed to evaluate both the process and the results of enabling positive mental health, and the mediating variables that act as key predictors of change.

The Health Development Agency of the United Kingdom's National Health Service has developed an approach to evaluating public health evidence that may have applicability for mental health promotion. Weightman, Ellis, Cullum, Sander, and Turley (2005) have developed a framework that uses evidence of efficacy, corroboration and cost-effectiveness to assign a graded recommendation for public health interventions. This approach retains the hierarchy of evidence to assess efficacy; however, where such evidence is weakened by research design or methods, evidence from corroborative studies can be used to determine if the interventions are relevant, feasible and could be implemented for the target population. In this way, evidence of corroboration can be used to confirm or strengthen evidence of efficacy (see Appendix 1).

Different stakeholders may have different views on the type of evidence needed to inform best practice and policy development. Researchers tend to be concerned with methodological rigour and contribution to the knowledge base. Policy-makers want evidence to justify resource allocation. Service providers look for evidence of the feasibility of implementation. Service users want to see that the intervention and process of implementation are participatory and relevant to their needs (World Health Organization [WHO], 2005a).

3.0 BACKGROUND

3.1 Fundamental Concepts

3.1.1 Mental Health

The World Health Organization (WHO) describes mental health as a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to his or her community (WHO, 2001b). In this sense, mental health is the foundation for well-being and effective functioning for an individual and community. It is more than the absence of mental illness; it is a resource, vital to individuals, families and societies.

Positive mental health is essential to our ability to perceive, comprehend and interpret our surroundings, to adapt to them or change them if necessary, and to communicate with each other and have successful social interactions. Healthy human abilities and functions enable us to experience life as meaningful, helping us, among other things, to be creative and productive members of society (WHO, 2005a).

The Victorian Health Promotion Foundation (VicHealth) in Australia describes mental health as the embodiment of social, emotional and spiritual well-being. Mental health provides individuals with the vitality necessary for active living, to achieve goals and to interact with one another in ways that are respectful and just (VicHealth, 1999).

The United States Surgeon General (1999) defines mental health as the successful performance of mental function, resulting in productive activities, fulfilling relationships with other people and the ability to adapt to change and to cope with adversity. Mental health is indispensable to personal well-being, family and interpersonal relationships and contribution to community or society. From early childhood until late life, mental health is the springboard of thinking and communication skills, learning, emotional growth, resilience and self-esteem. These are the ingredients of each individual's successful contribution to community and society.

3.1.2 Mental Illness

Mental illness refers collectively to all diagnosable mental disorders. A mental health disorder is a health condition characterized by an alteration in thinking, mood or behaviour associated with distress and/or impaired functioning. Mental health problems refer to signs and symptoms of insufficient intensity or duration to meet the criteria for a particular mental disorder (United States Surgeon General, 1999). The stigma surrounding mental illness has encouraged the widespread and inaccurate use of the term mental health to describe the provision of treatment and support services for people with mental disorders.

Mental illness is determined by numerous interacting social, psychological and biological factors. The international evidence clearly shows that the risk of mental illness is associated with indicators of poverty, including low levels of education, and, in some studies, with poor housing and low income. The potent interaction of mental, social and behavioural problems is more prevalent and difficult to cope with in conditions of high unemployment, low income, limited

education, stressful work conditions, gender discrimination, unhealthy lifestyle and human rights violations (Desjarlais, Kleinman, Eisenberg, & Good, 1995). The greater vulnerability of disadvantaged people to mental illness may be explained by the experience of insecurity and hopelessness, rapid social change, and the risks of violence and physical illness (Patel & Kleinman, 2003).

There is increasing recognition of the rising global impact of mental health disorders. The WHO predicts that by 2020, mental illness will comprise 15 per cent of the total disease burden worldwide and depression will be the second largest contributor to that burden after ischemic heart disease (Murray & Lopez, 1996; WHO, 2002). By 2020, childhood mental disorders will become one of the five most common causes of death, injury and disability among children. This will reduce the quality of children's lives, diminish their productivity in later life and have significant intergenerational consequences (National Institute of Mental Health [NIMH], 2001). It is understood that the global burden of mental illness is well beyond the treatment capacities of developed and developing countries. The social and economic costs associated with this burden will not be reduced by the treatment of mental illness alone (WHO, 2001a).

3.1.3 Mental Health Promotion

Mental health promotion focuses on enabling and achieving positive mental health at the population level. It seeks to build competencies, resources and strengths and to address the broader determinants of mental health. Mental health promotion is not about the prevention of mental illness, which aims to reduce the incidence, prevalence or seriousness of specific disorders and problems. It is a desirable activity in itself that contributes to promoting personal and social development (Barry, 2001; Orley & Birrell-Weisen, 1998).

Mental health promotion takes action to create supportive environments for the positive mental health of populations, communities and individuals. Mental health promotion requires advocacy and action to influence the full range of potentially modifiable determinants of mental health and to address inequalities. Consistent with health promotion generally, mental health promotion is multi-level, intersectoral and concerned with systems, policies and the development of evidence about what works at the population level. The emphasis is on making social and structural changes that will improve mental health for all and enable individuals to achieve and maintain their own mental health (Keleher & Armstrong, 2005).

Key Health Promotion Lessons Relevant to Mental Health
<ul style="list-style-type: none">• Combine individual and structural strategies with advocacy.• Work with an array of public and private sectors, not just the health sector.• Emphasize positive mental health as well as mental illness prevention and treatment.• Use professional tools for program planning, implementation and evaluation.• Strive to increase people's control over their own mental health.• Avoid over-dependence on expert-driven approaches.• Adopt a capacity-building approach with individuals and communities.

Source: Mittelmark, Puska, O'Byrne, & Tang, 2005.

3.1.4 Why invest in mental health promotion?

Mental health is not only fundamental to the health of a population, it is also fundamental to its human, social and economic development. A growing body of international evidence points to the interplay between mental and physical health and improved health and social outcomes, such as higher educational achievement, greater productivity at work, improved interpersonal relationships, reduction in crime rates and decreased harms associated with substance use. Mental health promotion—with a focus on the structural determinants of health—can lead to safer and healthier families, workplaces and communities, as well as lower rates of certain mental disorders and improved physical health (WHO, 2005a). To this end, it is important that mental health promotion be applied equally to the general population, people at risk for mental health problems or with undiagnosed mental illness, as well as to those living with mental disorders. The fundamental challenge is to identify and invest in better ways of promoting mental health and preventing problems before they occur.

The twin aims of improving mental health and reducing the burden of mental illness are best achieved with a “public mental health” approach that balances mental health promotion, mental illness prevention, and the treatment and rehabilitation of people with mental disorders. Taken together, these distinct yet complementary actions can significantly improve population health and well-being (WHO, 2005a). In those settings where resources for mental health promotion are scarce, multi-component interventions that tackle generic determinants of both mental and physical health can enhance the achievement of population health outcomes and the reduction of health inequalities (Jane-Llopis, Saxena & Hosman, 2004). There is a strong case to locate mainstream mental health promotion activities within general health promotion, while keeping mental health advocacy distinct (Herrman & Jane-Llopis, 2005). Mental health promotion will be more efficient and effective if closely integrated with public health strategies across all sectors that influence social life (Keleher & Armstrong, 2005).

3.2 Determinants of Mental Health

A determinants approach to mental health promotion looks at both the influence of behaviour on social processes and disease risk, and the influence of social and structural conditions on opportunities for individual and population health. International evidence suggests that the following determinants have the most impact on promoting positive mental health.

3.2.1 Developmental Pathways

The developmental pathways approach acknowledges common risk and protective factors for mental health that occur across the life span and at key transition points. These factors interact with genetic traits and other aspects of brain function to influence positive mental health and the emergence of mental health problems. Risk factors are social, environmental and individual factors that independently predict the early occurrence of mental disorders. Protective factors moderate and mediate the effects of risk factors, although they do not themselves directly influence the likelihood of positive mental health or mental health problems (Loxley et al., 2004).

There are clusters of known risk and protective factors for mental health and evidence that interventions can reduce identified risk factors and enhance protective factors (Mrazek & Haggerty, 1994). Risk factors exist for each developmental stage and include elements that impede healthy neurobiological, psychological and social development in key life domains. Protective factors range from prenatal nutrition and avoidance of harmful substance use during pregnancy, to positive engagement and bonding with family, friends and community, to optimum levels of cognitive functioning and emotional self-regulation (Toumbourou & Catalano, 2005). Stewart-Brown (2005) identifies cognitive and emotional protective factors for mental well-being:

- Agency or locus of control.
- Autonomy.
- Capacity to learn, grow and develop.
- Feeling loved, trusted, understood and valued.
- Self-acceptance and self-esteem.
- Optimism and hopefulness.
- Resilience and problem-solving.

3.2.2 Resilience

In psychological terms, resilience refers to an individual's ability to overcome adversity and continue his or her normal development. Rutter (1985) defines resilience as the capacity to cope with adversity and to avoid breakdown or diverse health problems when confronted with stressors. Mangham, Reid and Stewart (1996) describe resilience as the capacity of people to draw on their own resourcefulness to deal effectively with the demands of life, to return to full functioning after setbacks and to learn from such experiences to function better in the future. In this way, resilience is seen as a key marker of positive mental health. Today, resilience is broadly understood to include both the individual's role in creating health when faced with multiple risks, and the family, community and cultural factors that must be present to help create that health (Luthar and Zelazo, 2003).

International Resilience Project
The International Resilience Project (IRP) is a multi-year international research study to examine how youth around the world effectively cope with adversity. Over 1,500 youth, ages 12 to 19 years, from 10 countries, including Canada, participated in the first, 3-year phase of research. The Canadian sites included one with urban Aboriginal youth and one with youth in care. Researchers examined individual, interpersonal, family, community and cultural factors associated with building resilience in youth. In the second phase, the IRP intends to apply its research findings to the development of culturally sensitive public policies and interventions for at-risk youth. The IRP is located at Dalhousie University, Nova Scotia, and is funded by the Nova Scotia Health Research Foundation and the Social Sciences and Humanities Research Council of Canada. For more information on the International Resilience Project, please refer to their website at http://www.resilienceproject.org .

3.2.3 Social and Emotional Competence

Social and emotional competence refers to the set of skills, attitudes and values that are essential to the healthy social and emotional development of young people. The Collaborative for Academic, Social and Emotional Learning has identified four categories of competencies: awareness of self and others, positive attitudes and values, responsible decision-making and social interaction skills. Taken together, these key competencies enable young people to recognize and manage their own emotions; appreciate the perspectives of others; establish positive relationships with peers and adults; contribute to their family, school and community; use a variety of interpersonal skills to effectively and ethically solve problems; and make responsible decisions that enhance their health (Payton, Wardlaw, Graczyk, Bloodworth, Tompsett, & Weissberg, 2000).

3.2.4 Social Inclusion

Social inclusion represents the degree to which individuals feel connected to their communities. More broadly, it is about the strength within communities and organizations to sustain positive mental health. Social inclusion incorporates concepts of social capital, social networks, social connectedness, social trust, reciprocity, local democracy and group solidarity. In terms of content, social inclusion is about supportive relationships, involvement in group activities and civic engagement. In terms of structure, social inclusion is about a socially inclusive society where all people feel valued, their differences are respected and their basic needs are met so they can live in dignity. Positive mental health is thus an outcome of social inclusion (Keleher & Armstrong, 2005).

3.2.5 Economic Participation

Economic participation, or access to economic resources, is strongly correlated with positive mental health across the life course. Work, education, appropriate housing and sufficient income to live both protect and promote mental health and well-being. Economic participation incorporates concepts of equity, social inclusion and connectedness, socioeconomic status, access to income and employment and the economic integration of marginalized groups. The outcomes of economic participation go beyond access to appropriate levels of income to the enhancement of life skills, the promotion of attachment and belonging and increased opportunities for control (Keleher & Armstrong, 2005).

3.2.6 Human Rights Protection

A fundamental link exists between mental health and human rights. An environment that respects and protects basic civil, political, economic, social and cultural rights is essential to the promotion of mental health. Conversely, without the security and freedom provided by these rights, it is difficult for a population to maintain a high level of positive mental health. Certain people and groups within society are particularly vulnerable to human rights violations. Inequalities fueled by discrimination and marginalization can shape the distribution of ill-health and the course of health outcomes among vulnerable groups. Victims of discrimination, including people with mental illness, often have their basic human rights curtailed, thus making it difficult to integrate into society and lead well-balanced and productive lives. This increases

the risk of developing or exacerbating mental health problems and acts as a barrier to accessing much-needed health services (Drew, Funk, Pathare, & Swartz, 2005).

3.3 Population Lenses

Research, practice and policy have usually been designed to influence the entire population, without specific attention to differential effects on women and girls, men and boys, or diverse groups. As such, evidence is usually lacking on the impact of population-level policies on specific population groups and the impact of targeted approaches to address population-specific vulnerabilities.

3.3.1 Gender

Gender is a powerful social determinant of health that influences the control women and men have over other determinants of health, such as income, education, social support and access to services. The differential impacts of sex and gender affect the expression of positive mental health, the development of mental disorders and the responses required to promote mental health and prevent and treat mental illness. For example, while histories of sexual and physical abuse can result in the development of mental disorders in both sexes, women and girls are disproportionately at risk for abuse and related mental illness. Social responses to mental illness clearly show a gendered difference, as women struggling with mental illness experience greater social stigma and rejection than men with similar conditions (Patel, 2005). In many cases, women are deterred from seeking help for mental illness due to stigma, discrimination and fear of losing their children. The lack of child care and transportation are frequent barriers to treatment for women (Ministry of Health [MOH], 2004).

3.3.2 Diversity

Many principles of health promotion have a generic dimension and are applicable to diverse peoples around the world. However, as health promotion is closely aligned with community dynamics, the distribution of power within society, economic growth and the ways that services are delivered, it must also be consistent with the particular world views and contemporary conditions that distinguish populations. The population-specific aspect of health promotion recognizes that cultural values, human aspirations and ecological adaptations are not universally shared and that approaches relevant to one group may be ineffective or counter-productive for other groups (Durie, 2005).

Health Promotion in Aboriginal Cultures

An important unifying characteristic of Aboriginal peoples is a holistic concept of health that incorporates four distinct, shared dimensions of life: spiritual, intellectual, physical and emotional. Health and well-being are a reflection of the balance and harmony among these dimensions. Aboriginal health is at once individual, collective and inter-generational. It is intimately connected with the natural environment and is embedded within a web of sustaining relationships (Durie, 2005). Health is achieved when there are morally and spiritually correct relations with family and community members, ancestors and the larger world that can ensure well-being for future generations (Government of Canada, 2006). Aboriginal health promotion uses norms drawn from both Aboriginal world views and health sciences. It also acknowledges

the pervasive effects of cultural oppression and historical trauma on the individual, family and community. Aboriginal health promotion embraces a wide range of perspectives and approaches in recognition that most Aboriginal people spend their lives on the border between two manifestly different worlds (Durie, 2005).

3.3.3 Vulnerability

Vulnerability is an essential aspect of why some groups of people are more likely to suffer negative physical or mental health than the general population. To be vulnerable means having little or no control over one's health and well-being. For those who experience ill-health, it means having little or no access to appropriate care, treatment and support. Vulnerability is the net result of the interplay among many factors, both individual (including biological) and societal. It can be exacerbated by a range of cultural, demographic, economic, legal and political factors, such as power imbalances within personal relationships and broad social inequalities (UNAIDS Best Practice Collection, 1998). Today, it is recognized that these larger environmental factors increase and perpetuate the vulnerability of certain individuals and groups. Vulnerability, in turn, limits the extent to which people are capable of making informed decisions about their own health, safety and well-being.

4.0 TOWARDS A MENTAL HEALTH PROMOTION APPROACH

The principle international framework for health promotion is the *Ottawa Charter for Health Promotion* (WHO, 1986), and subsequent refinements contained in the *Jakarta Declaration on Leading Health Promotion into the 21st Century* (WHO, 1997) and the *Bangkok Charter for Health Promotion in a Globalized World* (WHO, 2005a). Taken together, these consensus agreements define key areas for action to promote health, including positive mental health.

Ottawa Charter

1. Build healthy public policy.
2. Create supportive environments.
3. Strengthen community action.
4. Develop personal skills.
5. Re-orient health services.

Jakarta Declaration

1. Promote social responsibility for health.
2. Increase investments for health development to address health and social inequalities.
3. Consolidate and expand partnerships for health.
4. Increase community capacity to empower the individual.
5. Secure an infrastructure for health promotion.

Bangkok Charter

1. Advocate for health based on human rights.
2. Invest in sustainable policies, actions and infrastructure to address health determinants.
3. Build capacity for leadership, policy development, knowledge transfer, health promotion practice and health literacy.
4. Regulate and legislate to ensure a high level of protection from harm and to enable equal opportunity to health and well-being for all people.
5. Partner and build alliances with public, private and non-governmental organizations and civil society to create sustainable actions.

Core Public Health Functions for BC: Evidence Review
Mental Health Promotion

Table 1: Mental Health Promotion Implementation

General Principles		
<ul style="list-style-type: none"> • Theoretical basis • Shared mission and clear goals • Comprehensive professional development • Infrastructure and management support 	<ul style="list-style-type: none"> • Systematic rigorous evaluation and monitoring • Program fidelity • Transferability 	
Settings		
School	Workplace	Community
<ul style="list-style-type: none"> • Whole school approach • Social competence approach • Interventions over multiple years 	<ul style="list-style-type: none"> • Participatory approach • Advocacy • Engage partners in dissemination 	<ul style="list-style-type: none"> • Create clear structures • Generate participation • Build core competencies • Comprehensive evaluation
Strategies		
<ul style="list-style-type: none"> • Build healthy public and private policy • Create supportive environments for positive mental health • Strengthen community action • Develop personal skills and coping capacities • Re-orient health and social services 		

Source: adapted from Jane-Llopis and Barry (2005).

5.0 PROVEN AND PROMISING INTERVENTIONS

5.1 Life Stage Interventions

Effective mental health promotion influences developmental pathways across the life course by addressing social and structural determinants, reducing individual risk factors and increasing protective factors. It is important to pay particular attention to key transition points, including: pregnancy and postpartum, early childhood and the transition to school, adolescence and the transition to high school, young adulthood and the transition to independence (e.g., workforce entry or post-secondary education) and later adulthood with transitions related to family and occupation (e.g., changes in family structure and retirement).

The life stage approach is used to organize this review. Interventions that have been shown to have a positive impact on mental health or that are considered promising for people of all ages are reviewed first, followed by a review of interventions specific to each life stage.

5.1.1 All Ages

“Mental health is something everyone has and favourable conditions for good mental health should be regarded as everyone’s right as a citizen.”

(Lahtinen, Joubert, Raeburn, & Jenkins, 2005)

Nutrition

There is strong evidence that improving nutrition in children can lead to healthy cognitive development and improved educational outcomes, especially for children at risk or those who are living in impoverished communities (Hosman & Jane-Llopis, 2005). Comprehensive food and nutrition programs include food assistance and meal programs; nutrition education; and nutrition screening, assessment, intervention and follow-up support. Food and nutrition programs create a safety net that ensures people at risk for poor nutritional intake, especially children and adolescents, have access to a safe, adequate and nutritious food supply. Dietitians and other health providers can help deliver food and nutrition programs; use research and surveillance to evaluate and improve these programs; act as a nutrition resource to individuals, service providers and communities; and advocate for social settings conducive to the development of good nutrition habits (Stang, Taft-Bayerl, Flatt, & the Association Positions Committee Workgroup 2006).

Physical Activity

Physical activity arises in everyday domestic or occupational tasks. Physical exercise implies regular, structured leisure time pursuits. The WHO (2005b) states that physical activity promotes psychological well-being; reduces stress, anxiety and feelings of depression and loneliness; and helps to prevent or control risky behaviours such as unhealthy diet, substance use and violence, especially among children and adolescents.

To date, research on effectiveness has focused mainly on physical exercise, rather than activity, and primarily on the impact of exercise on physical health and mental illness prevention, rather than on positive mental health. Aside from cross-sectional surveys, little research has been

conducted into the relationship between physical activity and mental health. Prospective epidemiological studies are needed to determine the extent to which exercise and activity may be effective for long-term positive mental health (Keleher & Armstrong, 2005).

Among the few rigorous studies available, Ekeland, Heian, Hagen, Abbott, and Nordheim (2004) found that exercise had positive, short-term effects on self-esteem and self-concept in children and young people. The authors noted that the trials included in the review were small-scale and acknowledged the need for further well-designed research in this area. Larun, Nordheim, Ekeland, Hagen, and Heian (2006) found that exercise, regardless of intensity, had a small effect on reducing depression and anxiety for the general population of children and adolescents. The authors noted the small number of studies and that the clinical diversity of the participants, interventions and methods of measurement limited their ability to draw conclusions. Strawbridge, Deleger, Roberts, and Kaplan (2002) found that physical activity reduced the risk of subsequent depression in older adults.

Most evidence on physical exercise is self-reported as subjective well-being and feelings of improved mood following exercise, happiness and positive mental health, feeling better about oneself, feeling better about body image, and perceived fitness and health generally. These benefits are likely due to social interaction and environmental stimuli. While increased social interaction is one measure of positive mental health, the evidence for exercise as a stand-alone intervention is not straightforward and can be applied only to specific populations (Keleher & Armstrong, 2005).

Overall, the research base for whole populations is relatively modest and the widely held notion that physical activity has mental health benefits cannot be substantiated at this time. Definitive policy decisions and investments in this area require a much stronger evidence base, including better prospective observational studies to examine the dose response relationship and larger randomized controlled trials to identify the dose and type of required activity. There is also a need to explore the biological mechanisms for observed mental health benefits (Bauman, 2004).

Sleep

It is generally assumed that a good night's sleep has a beneficial effect on mood. However, most of the evidence on sleep relates to its effect on physical health and the effectiveness of interventions to treat sleep disorders. There appears to be limited evidence on the effects of sleep on positive mental health and the effectiveness of interventions to promote healthy sleep in the general, non-clinical population.

In a study of self-reported estimation of sleep quality and life quality in a representative sample of the Austrian population, Zeitlhofer et al. (2000) found a moderate but significant correlation between subjective sleep quality and quality of life. Earlier studies have found that good sleepers are psychologically capable of maintaining a self-esteem which is in functional balance with their life goals and mental well-being (Hyyppa, Kronholm & Mattlar, 1991).

In a randomized controlled trial of human performance in children after sleep loss, Randazzo, Muehlbach, Schweitzer, and Walsh (1998) found that higher cognitive functions in children,

such as verbal creativity and abstract thinking, are impaired after a single night of restricted sleep, even when routine performance is maintained in the children's lives. Bonnet and Arand (1995) found that over one-third of adults experience significant sleep loss, which results in extensive reduction in daytime alertness. The authors concluded that the alertness function of sleep and increasing consequences of sleepiness require the same attention as the societal impact of alcohol use.

Volunteering

Volunteering provides structured opportunities for people to do voluntary work in their community, which is one aspect of civic participation and engagement. There is good evidence that involvement in meaningful volunteer activity increases feelings of well-being and quality of life and enhances social connectedness, especially among older adults (Wheeler, Gorey & Greenblatt, 1998).

Community Arts Programs

Community arts programs are concerned with community participation, community regeneration/renewal, social inclusion, social connectedness, and health in general. Improved mental health and well-being is often an unintended outcome of arts programs. As a result, evidence of effectiveness relates to subjective measures of pleasure, quality of life, "feeling better" or "happier". In urban regeneration programs, arts projects often have a range of intended community development outcomes, such as increased community identity, reduced social isolation, improved recreational options, development of local enterprise and improved public facilities (Jermyn, 2001). However, there is little rigorous evaluation of the impact of community arts programs on the achievement of these outcomes. While there is a substantial body of research on the positive health impacts of community arts practice, much of the evidence is anecdotal (McQueen-Thomson & Ziguras, 2002). There is a need for rigorous analysis and long-term evaluation of the impact of community arts programs on positive mental health and well-being (Keleher & Armstrong, 2005).

Mental Health Literacy

Mental health literacy is the ability to gain access to, understand and use information to promote and maintain positive mental health. It refers to knowledge and beliefs about mental health and mental illness. Effective mental health literacy efforts are evidence-based, timely and sensitive to age, gender, ethnicity, culture, lifestyle and level of knowledge (MOH, 2003).

Wright, McGorry, Harris, Jorm, and Pennell (2006) examined the application of a health promotion model to a community awareness campaign designed to improve mental health literacy and early help-seeking among young people. The Compass Strategy campaign included the use of multimedia, a website and an information telephone service. Multiple levels of quasi-experimental evaluation were conducted, including a cross-sectional telephone survey of mental health literacy before and after 14 months of the design, and randomly selected independent samples from the experimental region and a comparison region. The program was judged to have a positive impact on awareness of mental health campaigns, self-identified depression, community estimates of the prevalence of mental health problems, increased awareness of suicide risk and a reduction in perceived barriers to seeking help.

Jorm, Kitchener, O’Kearney, and Dear (2004) evaluated the effectiveness of a mental health first aid course for the general public in rural Australia, delivered under both ideal and typical conditions, using randomized controlled trials. The course is designed to give the general public a better understanding of mental illness and the basic skills and knowledge to effectively respond to individuals in the community who are experiencing mental distress. Participants learn to respond in a compassionate, safe and supportive way, and to refer individuals to the appropriate resources in their communities. Mental health first aid training was found to produce positive changes in knowledge of mental disorders and attitudes towards people with mental health problems. In a follow-up qualitative study, Jorm, Kitchener and Mugford (2005) found that those people who had received mental health first aid training subsequently provided support to people with mental health problems. This support had positive effects on the person providing help in terms of increased empathy, confidence and self-efficacy.

Primary Health Care Brief Interventions

The literature provides substantial evidence of the effectiveness of general health promotion in primary health care, including psychosocial interventions, health education, personal skills development, brief interventions in clinical settings and self-care strategies (Frankish, Moulton & Gray, 2000). However, much less is known about the effectiveness of integrating mental health promotion strategies into primary health care. One example is a collaborative European project that has developed a training manual for primary health care professionals to work with families to promote the psychological well-being of children and prevent the development of psychological and social problems (Puura et al., 2002).

Early Intervention for People with Mental Disorders

Mental health promotion within mental illness treatment services adopts a more holistic approach towards mental health, taking into account people’s mental, physical, spiritual and emotional needs. It draws upon people’s own expertise in living and coping with mental distress. Programs that promote supported employment, strengthen opportunities for creativity and social support and reduce the stigma and discrimination associated with mental illness have all been shown to be effective in promoting the mental health of people with mental disorders (Friedli, 1999).

The ***Early Psychosis Prevention and Intervention Centre*** program highlights some of the potential benefits of early intervention. Psychosis can disrupt a very critical stage of a young person’s life. Adolescents and young people are just starting to develop their own identity, form lasting relationships, and make serious plans for their careers and future. Treating psychosis early greatly increases the person’s odds for being able to enjoy a healthy and productive future. The benefits of early intervention include reduced morbidity, more rapid recovery, better prognosis, preservation of psychosocial skills, preservation of family and social supports and the decreased need for hospitalization (Edwards & McGorry, 2002).

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Table 2: Summary – All Ages

Intervention	Level of Effectiveness	Appropriateness	Implications
1. Nutrition	Proven (IUHPE, WHO).	Falls within health authority jurisdiction and mandate.	Enhance role of community nutritionists in research, surveillance, planning, program design, delivery and evaluation of universal and targeted food and nutrition programs.
2. Physical Activity	Proven – for specific populations (VicHealth). Promising – for general population; warrants further rigorous research (Cochrane, VicHealth).	Requires collaboration and advocacy with partners within and outside health system.	Work with health system and other partners to promote evidence-based physical activity/exercise programs for target populations; work with ActNow partners to build positive mental health outcomes into research and evaluation.
3. Sleep	Promising – warrants further research.	Requires collaboration and advocacy with health system partners.	Work with health system partners to promote healthy sleep habits and develop evidence-based responses to prevent sleep loss among the general and target populations (e.g., children, adolescents, shift workers).
4. Volunteering	Promising – warrants further research (VicHealth).	Requires collaboration and advocacy with partners outside health system.	Work with community organizations to promote public health value of volunteering; make achievement of positive mental health outcomes an explicit program objective and evaluation criterion.
5. Community Arts Programs	Promising (VicHealth).	Requires collaboration and advocacy with partners outside health system.	Work with community groups to promote public health value of arts and culture; make achievement of positive mental health outcomes an explicit program objective and evaluation criterion.
6. Mental Health Literacy	Proven (IUHPE, VicHealth).	Falls within health authority jurisdiction and mandate.	Work with health system partners to promote positive mental health literacy; current emphasis is on mental illness literacy.

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Intervention	Level of Effectiveness	Appropriateness	Implications
7. Primary Health Care Brief Interventions	Proven – for general health promotion (WHO). Promising – for mental health promotion (IUHPE).	Falls within health authority jurisdiction and mandate.	Work with physicians and other members of the primary health care team to integrate mental health promotion into routine primary care service provision.
8. Early Intervention for People with Mental Disorders	Proven (IUHPE, WHO).	Falls within health authority jurisdiction and mandate.	Ensure mental illness treatment services include mental health promotion interventions, such as supported employment, assisted living, opportunities for creativity and social support, stigma reduction and self-care.

Note: Cochrane: Cochrane Database of Systematic Reviews; IUHPE: International Union of Health Promotion and Education; VicHealth: Victorian Health Promotion Foundation; WHO: World Health Organization.

5.1.2 Maternal Mental Health

Home Visiting

Evidence from home visiting during pregnancy has shown significant health, social and economic outcomes, especially among vulnerable populations. Trials of home-based social support to high-risk pregnant women, provided by midwives or lay mothers supported by nurse professionals, strongly suggest that home visiting improves mental health outcomes in both mothers and newborns (Hodnett & Roberts, 1997; Coren, Patterson, Astin, & Abbott, 2003). Home visiting programs are cost-effective because a major portion of the costs can be offset by savings to the health system from avoided emergency room visits, hospitalizations and foster care placements (Olds, 2002).

The ***Prenatal and Infancy Home Visiting Program*** was a two-year educational and support program of home visits by trained nurses for impoverished adolescents who are pregnant for the first time. In a longitudinal randomized controlled trial, the program showed the following benefits for newborns: higher birth weight, 75 per cent reduction in pre-term delivery, more than two-fold reduction in emergency visits, lessening of severity of hospitalizations when they did occur and fewer reports of maltreatment by age 15 in comparison to the control group. During the 4-year period following the intervention, the mothers increased their employment by 82 per cent and postponed their second child by more than 12 months. By age 15, the children were 56 per cent less likely to have problems with alcohol or drugs, reported 56 per cent fewer arrests and 81 per cent fewer convictions, and had 63 per cent fewer sexual partners compared with children in the control group (Olds, 2002).

When tested against a similar paraprofessional model, the nurse home visiting program produced better outcomes. This suggests that a less expensive paraprofessional model with full effectiveness has yet to be developed, although given the prospect for large-scale implementation and wide reach in the population, paraprofessional programs could have substantial impact on population health outcomes (Hosman & Jane-Llopis, 2005).

Perinatal Depression Prevention

Perinatal depression encompasses depressive symptoms and major depressive episodes that occur at any time between conception and one year following childbirth. Available research suggests that depression is one of the most common complications of the prenatal and postpartum periods, yet it often goes unrecognized because many of the discomforts of pregnancy are similar to symptoms of depression.

Perinatal depression interferes with the quality of child-rearing, adversely affecting maternal responsiveness to infant vocalizations, gestures and other stimulation essential for optimal child development, as well as behavioural and cognitive impairment in early preschool years. The most tragic consequences of untreated perinatal depression are infanticide and maternal suicide (British Columbia Women's Hospital and Health Centre, 2006).

Gaynes et al. (2005) found that fairly accurate and feasible screening tools are available to identify major perinatal depression. However, the authors found that larger scale studies are needed that are more representative of the population (e.g., ethnically diverse) and have adequate

power to detect differences. Studies should also be designed to address whether the screening process leads to better access to proven treatment and improved outcomes relative to usual care.

Effective interventions were those that integrated screening with feedback to the clinician regarding depression status, provided a system of care that included treatment (e.g., anti-depressants and/or psychotherapeutic interventions) and case management, and had access to support networks.

Postpartum Depression Prevention

In a systematic review of psychosocial and psychological interventions for postpartum depression, Dennis and Creedy (2004) found no clear beneficial effects compared to usual care. The review did find that intensive, professionally-based postpartum support may be effective in preventing postpartum depression. The most effective postpartum support interventions were individual rather than group-based, initiated in the postnatal period alone rather than combining prenatal and postnatal components, and targeted at-risk mothers rather than the general maternal population. A promising intervention is the provision of intensive postpartum support by public health nurses or midwives.

At present, there is contradictory evidence that prenatal interventions alone are effective in preventing postpartum depression. However, the use of brief and longer term prenatal education has been associated with reductions in postpartum depressive symptoms (Jane-Llopis, Barry, Hosman, & Patel, 2005).

Prevention of Harms from Substance Use

Substance use during pregnancy is one of the most potent factors affecting fetal development. It increases the likelihood of premature birth, low birth weight, long-term neurological and cognitive-emotional development problems in children and perinatal mortality. Premature birth and low birth weight are known risk factors for adverse mental health outcomes and psychiatric disorders in later life (Hosman & Jane-Llopis, 2005).

Educational programs to enable pregnant women to abstain from substance use can have long-term mental health benefits for their children. Windsor et al. (1993) found that brief behavioural interventions with pregnant smokers led to increases in smoking cessation and smoking reduction. For those who quit smoking during pregnancy, their babies were heavier at birth than those who did not stop smoking. For those who cut down their smoking during pregnancy, their babies were also heavier at birth than those who did not stop smoking, but only half as heavy as the babies of mothers who quit.

For low-income populations, adequate access to prenatal care, including HIV testing and treatment, should reduce future involvement in the mental health and criminal justice systems, given the association between prenatal complications and later conduct disorders in children. A few small-scale studies have demonstrated the feasibility and acceptability of prenatal screening, brief advice and follow-up with pregnant women that focus on substance use, as well as other lifestyle issues, such as nutrition and exercise. However, positive behavioural outcomes have not been clearly demonstrated (Loxley et al., 2004).

For more information on the evidence base for interventions to prevent substance use during pregnancy, please see the BC Ministry of Health core programs evidence reviews on early childhood development and the prevention of harms associated with substances.

Parenting Education

In a systematic review of 26 studies, Barlow, Coren and Stewart-Brown (2003) found that group-based parenting programs are effective in improving the short-term psychosocial health of mothers. Results showed statistically significant improvements for mothers in the intervention group for depression, anxiety/stress, self-esteem and relationship with spouse/marital adjustment, as compared to the control group. The authors caution that there is limited evidence on the long-term effects of parenting programs on maternal mental health.

Postnatal educational visits to a pediatrician showed statistically significant improvements in maternal-infant parenting skills in lower income, first-time mothers. Postnatal nurse home visits, combined with case conferencing, produced a statistically significant improvement in the quality of the home environment for women at high risk for family dysfunction and maltreatment of their children. With the similar risk group, home visitation or peer support produced a statistically significant reduction in Edinburgh Postnatal Depression Scale Scores (Shaw, Levitt, Wong, & Kaczorowski, 2006).

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Table 3: Summary – Maternal Mental Health

Intervention	Level of Effectiveness	Appropriateness	Implications
1. Home Visiting Prenatal and Infancy Home Visiting Program	Proven – for at-risk women and families (IUHPE, WHO).	Falls within health authority jurisdiction and mandate.	Provide prenatal home visiting for women at high risk for family dysfunction and child abuse and women living in poverty, with emphasis on adolescent mothers. Use public health nurses for home visiting. Nurses to engage in case conferences with appropriate resources in the community.
2. Perinatal Depression Prevention Integrated screening, clinician feedback, treatment, case management and support	Promising – further studies needed with larger, more diverse samples and follow-up to see if screening leads to better treatment access and improved outcomes (AHRQ).	Falls within health authority jurisdiction and mandate.	Screening is feasible and accurate for diagnosing major depression. Prevention interventions should be consistent with evidence-based treatments for depression (e.g., medication, psychotherapies).
3. Postpartum Depression Prevention Intensive postpartum support Prenatal education	Promising – for intensive, professionally-based postpartum support, initiated in postnatal period alone (Cochrane). Contradictory evidence that prenatal programs alone can prevent postpartum depression, but some evidence that prenatal education can reduce depressive symptoms (IUHPE).	Falls within health authority jurisdiction and mandate.	Provide intensive postpartum support by public health nurses or midwives to at-risk mothers on an individual basis. Provide brief and longer term prenatal education on trial basis and assess results in reducing postpartum depressive symptoms.
4. Prevention of Harms from Substance Use Education programs Prenatal screening, brief advice and follow-up that focus on substance use	Proven (CARBC, IUHPE, WHO). Promising – for feasibility and acceptability, but behavioural outcomes not clearly demonstrated (CARBC).	Falls within health authority jurisdiction and mandate. Also opportunity to work with partners outside the health system. Falls within health authority jurisdiction and mandate.	Provide universal and targeted educational programs on effects of substance use on fetal development. Ensure access for low-income women to prenatal care (including HIV testing and treatment) and prenatal screening, brief advice and follow-up for substance use.

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Intervention	Level of Effectiveness	Appropriateness	Implications
5. Parenting Education Group-based parenting programs	Proven – for short-term improvements in maternal mental health (Cochrane, IUHPE).	Requires collaboration and advocacy with other health system partners.	Work with Ministry of Children and Family Development and community partners to provide group parenting education programs.
Postnatal nurse home visits	Proven – for at-risk women (WHO).	Falls within health authority jurisdiction and mandate.	Ensure nurse home visits combined with case conferencing are provided for women at high risk for family dysfunction or child abuse.
Postnatal education visits to pediatrician	Proven – for low-income, first-time mothers (IUHPE, WHO).	Requires collaboration and advocacy with other health system partners.	Support pediatricians to provide parent education for low-income, first-time mothers.

Note: AHRQ: Agency for Healthcare Research and Quality; CARBC: Centre for Addictions Research of British Columbia, University of Victoria; Cochrane: Cochrane Database of Systematic Reviews; IUHPE: International Union of Health Promotion and Education; VicHealth: Victorian Health Promotion Foundation; WHO: World Health Organization

5.1.3 Infant and Toddler Mental Health

“The roots of later healthy emotional and behavioral functioning lie in the earliest relationships that infants and toddlers have with their primary caregivers.”
(Knitzer, 2001)

Infant Massage

A systematic review of infant massage, in which babies under the age of six months were randomized to a massage or a no-treatment control group, assessed the impact of massage on mental and physical outcomes for healthy infants. The review provided evidence of improved mother-infant interaction, improved sleep and relaxation for both infants and mother, reduced crying and a beneficial impact on a number of physiological processes, including the influence of infant hormones on stress levels (Anderson, Moore, Hepworth, & Bergmen, 2006).

Breastfeeding

The health and developmental benefits of breastfeeding for mother and infant have been widely documented. These include improved nutrition, growth and protection from infection, allergies and some chronic diseases, as well as enhanced psychological and intellectual development and mother-child relationship. For example, significantly higher levels of cognitive function are found in breastfed infants compared to formula-fed infants, even after adjustment for socio-economic confounders (Anderson, Johnstone & Remley, 1999).

The initiation, duration and exclusivity of breastfeeding are partly influenced by the social determinants of health. Evidence suggests that women who initiate breastfeeding are older, married, better educated and have higher family incomes. Callen and Pinelli (2004) found that women breastfeed longer when they have infants of normal weight and gestational age, and these women are less likely themselves to suffer depression.

A systematic review of interventions to initiate breastfeeding among low-income women examined three models of education: health education, breastfeeding promotion packs and early mother-infant contact. The promotion packs and early mother-infant contact had no effect on breastfeeding initiation, whereas health education was shown to be the most effective at increasing breastfeeding rates (Dyson, McCormick, & Renfrew, 2005). The health education intervention included two to four, 15-minute education sessions by a lactation consultant during pregnancy; daily contact on a one-to-one basis by a lactation consultant while in hospital for birth; phone call 48 hours after hospital discharge; visit to a lactation clinic at one week postpartum; and presence of a lactation consultant at each health visit for the first year postpartum.

The most effective approaches to breastfeeding initiation combine prenatal group discussion with postnatal home visits provided by professionals and peer counsellors. Strategies that help extend breastfeeding duration combine information, guidance and support. Those with no effect are characterized by lack of face-to-face interaction, contradictory messages and small-scale interventions (deOliveira, Comacho, & Tedstone, 2001).

Sikorski, Renfrew, Pindoria, & Wade (2002) found clear evidence that additional support prolonged breastfeeding. Professional support was effective at increasing the duration of

breastfeeding, although the effect on exclusivity was unclear. Lay support was effective in promoting exclusive breastfeeding, although the effect was not statistically significant. The review recommended that supplementary breastfeeding support be provided as part of routine health service provision. WHO/UNICEF training courses were identified as an effective model for professional training.

A systematic review of interventions to encourage early skin-to-skin contact between mother and child examined the impact of skin contact on breastfeeding duration. There were statistically significant and positive effects on breastfeeding duration, as well as improved summary scores for maternal affectionate love/touch and maternal attachment behaviour (Anderson et al., 2006).

For more information on the evidence base for interventions to promote, initiate and support breastfeeding, please see the BC Ministry of Health core programs evidence review on early childhood development.

Home Visiting

Early Start is a program for families under stress that uses a social learning model for home visiting. A randomized controlled trial of the Early Start program in New Zealand found positive impacts on child health, preschool education, service utilization, parenting, child abuse and neglect and behavioural adjustment. In this program, community nurses screened clients for a wide range of areas of parent and family functioning. Families indicating two or more risk factors were referred to the program. Services were delivered by trained family support workers who visited families at home. All family support workers had nursing or social work qualifications and attended a five-week training program. Comparisons between the Early Start program and the control group showed significant benefits, including improved use of child health services, reduced rates of hospital attendance for injury and poisoning, increased preschool education, increased positive and non-punitive parenting, reduced rates of severe parent-child assaults and reduced rate of early problem behaviours (Fergusson, Grant, Horwood, & Ridder, 2005).

Home Start International is a volunteer-based, family support program that aims to help families under stress and prevent family breakdown. Trained volunteers visit families over a one-year period, offering time, friendship and practical help to parents and their children. Home Start projects have been implemented in at least 15 countries, including Canada and Australia. Each Home Start project focuses on meeting locally identified needs. There have been some evaluations of Home Start in the United Kingdom, Ireland and the Netherlands, although no randomized controlled studies have yet been undertaken. Evaluation studies have found high levels of reported parent satisfaction, and many parents felt that Home Start had made a positive difference in their lives. However, significant long-term differences between the intervention and control groups have not been clearly identified (Reading, 2005).

The **Community Mothers Program** creates supportive environments for first-time parents. Experienced mothers are recruited and trained as volunteers to give support and encouragement in child-rearing to first-time parents in disadvantaged areas. The program focuses on health care, nutritional improvement and overall child development. Evaluation results showed increased maternal self-esteem, parent-child interactions and improved dietary intake of children. A seven-

year follow-up found benefits had been sustained and extended to subsequent children (Johnson et al., 2000). The Community Mothers Program has been widely replicated, and various models are operating in the United Kingdom, Ireland, the Netherlands, Australia and the United States. The success of this intervention suggests it has potential for adoption by other low-income communities around the world (Jane-Llopis et al., 2005).

Parenting Education

Parenting practices play a significant role in the development of emotionally healthy children. A meta-analysis of five studies of parenting programs found some support for the use of group-based parent training programs to improve the emotional and behavioural adjustment of children under the age of three. There was insufficient evidence to reach any conclusions about the role of parenting programs in the primary prevention of such problems. There is also limited data on the long-term effectiveness of the programs (Barlow & Parsons, 2002).

There is a high incidence of poor outcomes among the children of teenage parents, including developmental and learning problems and maltreatment by parents. A review of four randomized controlled trials found that both individual and group-based parenting programs produced positive effects on a range of maternal and infant measures, including mother-infant interaction, language development, parental attitudes, parental knowledge, maternal meal-time communication, maternal self-confidence and maternal identity. While conclusions are limited due to the small number of studies, findings suggest that parenting programs may be effective in improving outcomes for both teenage mothers and their infants (Coren & Barlow, 2001).

Day Care and Preschool

Day care provision varies widely in response to different levels of demand, as well as to cultural and economic interests, including the welfare of children, promotion of mothers' labour force participation and the importance of socializing children. Zoritch, Roberts and Oakley (2006) conducted a systematic review of randomized and quasi-randomized controlled trials of interventions involving the provision of non-parental day care for children under age five. Long-term follow-up of the children demonstrates increased employment, lower teenage pregnancy rates, higher socio-economic status and decreased criminal behaviour. In addition, for the mothers there were positive effects on education, employment and interaction with their children. Most of the trials combined non-parental day care with some element of parent training or education, and did not disaggregate the effects of these two interventions.

There are a number of rigorous evaluations of preventive interventions for children born into poverty and for low birth weight infants. The *Abecedarian Project*, initiated in 1972 as a demonstration project, offered educational child care and preschool for children from infancy to age five, who were from extremely disadvantaged backgrounds. The program was provided on a full-day, year-round basis with a low teacher-child ratio, and used a systematic curriculum of educational games that emphasized language development and cognitive skills. Some of the children also received an intervention in Grades 1 to 3, in which a home-school resource teacher served as a liaison between the child's home and public school, and encouraged parents to work with their children each day on individualized curriculum packets.

A randomized controlled trial of 111 participating children, followed through to age 21, found that educational and life outcomes were far superior for the intervention group than the control group. At age 21, the intervention group had achieved higher grade levels in reading and math compared to the control group. The intervention group also completed more high school education and a much larger percentage were enrolled in school, had attended or were still attending college, or were engaged in skilled employment at age 21, than the control group. A much smaller percentage of the intervention group had become teenage parents compared to the control group. This study provided one of the few tests of early versus later intervention, with the strongest outcomes found in the group with the earliest intervention (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002).

The **Infant Health and Development Program** is an intensive intervention that targets low birth weight and premature babies. Families received home visits after the infant's discharge from hospital following birth to age 3. The children attended a centre-based preschool five days a week from 12 months to age 3. At 36 months, the children in the intervention group had higher IQ scores and more weight gain than children in the control group. The heavier children in the intervention group were double the weight of the lowest birth weight children in the control group. By ages 5 and 8, the earlier beneficial effects on IQ and vocabulary were somewhat reduced, although heavier low-birth weight children still had better outcomes. In the intervention group mothers reported reduced behaviour problems and were themselves more likely to be employed, return to work and use health care services than mothers in the control group (Hosman & Jane-Llopis, 2005).

The **Early Head Start** program is offered to low-income families with children under the age of 12 months with 10 per cent of the spaces reserved for children with disabilities. A randomized controlled trial of 17 Early Head Start programs in the United States showed positive impacts on child cognitive and language development, child social-emotional development (including lower levels of aggressive behaviour), parental emotional support and parental support for language and learning.

Early Head Start uses three approaches to service: centre-based child development services, including parenting education and a minimum of two home visits; home-based child development services, including weekly home visits and at least two parent-child socialization visits per month; and a combination of home-based and centre-based service provision. Impacts were greater for children and parents receiving combined services (Love et al., 2005).

The **High Scope/Perry Preschool Project** targets at-risk three- and four-year-old African-American children living in poverty. The project combined a half-day preschool intervention with weekly home visits over a two-year period. In the short term, the project led to improved cognitive development, better social adjustment, better academic achievement and increased school completion than for the control children in a randomized study. Over the longer term, the project led to increased social competence, fewer social problems, a 40 per cent increase in literacy and employment rates, less welfare dependence, improved social responsibility and a 40 per cent reduction in lifetime arrests by age 27, compared to the control group (Schweinhart & Weikart, 1997).

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Table 4: Summary – Infant and Toddler Mental Health

Intervention	Level of Effectiveness	Appropriateness	Implications
1. Infant Massage	Proven (Cochrane).	Falls outside health authority jurisdiction – intervention considered part of personal health system.	Explore feasibility of incorporating infant massage instruction and support into routine health service provision.
2. Breastfeeding Breastfeeding education to promote initiation among low-income women Breastfeeding support to prolong breastfeeding duration and exclusivity	Proven (Cochrane).	Falls within health authority jurisdiction and mandate.	Provide breastfeeding education using health education model; use WHO/UNICEF training for health care professionals and provide increased breastfeeding support interventions.
2.1 Skin-to-skin contact at birth	Proven (Cochrane).	Falls within health authority jurisdiction and mandate.	Hospital staff involved in labour and delivery to ensure skin-to-skin contact for newborns and mothers at birth, and continuous contact between mother and baby.
3. Home Visiting	Proven (IUHPE, WHO).	Falls within health authority jurisdiction and mandate.	Provide routine screening for new families with preschool children. If risk factors indicate, provide intensive home visitation based on social learning principles and delivered by public health nurses and/or social workers.
4. Parenting Education Group-based parenting programs	Promising/Warrants further research – for improving emotional and behavioural adjustment of children under 3 and improving psychosocial and development outcomes for teenage parents and their children; more research needed regarding long-term effectiveness (Cochrane, IUHPE).	Requires collaboration and advocacy with other health system partners.	Work with Ministry of Children and Family Development and community organizations to ensure all new teenage mothers are referred to community parenting programs.

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Intervention	Level of Effectiveness	Appropriateness	Implications
<p>5. Day Care and Preschool</p>	<p>Proven (IUHPE, WHO).</p>	<p>Requires collaboration and advocacy with other health system partners.</p>	<p>Work with Ministry of Children and Family Development and community agencies to ensure provision of multi-year programs for low-income families with children under 12 months of age. Provide mix of home visiting and day care centre-based development services that include parent education and socialization opportunities for parents and their children.</p> <p>Work with Ministry of Children and Family Development, Ministry of Education and community agencies to enhance provision of non-parental day care from infancy to age five, with comprehensive program of language, cognitive, perceptual-motor and social development. For at-risk children, combine with parent education and regular home visits.</p>

Note: Cochrane: Cochrane Database of Systematic Reviews; IUHPE: International Union of Health Promotion and Education; WHO: World Health Organization.

5.1.4 Child Mental Health

“Health promotion interventions that target children and young people can lay the foundations of a healthy lifestyle that may be sustained into adulthood.”

(License, 2004)

Parenting Education

Group-based parent training interventions can have a positive impact on the behaviour of children between the ages of 3 and 10 years. Most group interventions are more cost-effective and successful in the long-term than methods that involve working with parents on an individual basis (Barlow, 1999). In a review of seven, mixed quality studies, Barlow, Johnston, Kendrick, Polnay, and Stewart-Brown (2006) found insufficient evidence to support the use of parenting programs to reduce child physical abuse or neglect. However, there is limited evidence that some parenting programs may be effective in improving outcomes associated with physically abusive parenting.

The ***Triple P Positive Parenting Program*** is a population approach to the promotion of parenting competence. This multi-level system of family intervention aims to reduce the prevalence of behavioural and emotional problems in pre-adolescent children. There are five levels of intervention of increasing strength: universal media campaign targeting all parents, two levels of brief primary care consultations targeting mild behaviour problems, and two more intensive parent training and family intervention programs for children at risk of more severe behavioural problems. In Australia, Triple P has been successful in improving parenting skills, reducing parent-reported behavioural problems in children and improving parental well-being and relationship/marital satisfaction (Sanders, Markie & Turner, 2003.)

Divorce/Family Breakdown

Wolchik et al. (2002) conducted a 6-year follow-up of 2 programs designed to prevent mental health problems in children of divorce, aged 9 to 12 years, using a randomized controlled trial. The first program offered 11 group and 2 individual sessions for mothers who were the custodial parent (mother program). The second program offered the same for custodial mothers, plus 11 group sessions for children (mother plus child program). For the control condition, participants were given books on post-divorce adjustment.

At the 6-year follow-up, adolescents, aged 15–19 years, who were in the mother plus child program and whose mothers were in the mother program had fewer diagnosed mental disorders, less substance use (marijuana, alcohol and other drugs) and fewer sexual partners than the control group. The adolescents in both groups who had higher initial mental health problems had lower externalizing problems and fewer symptoms of mental disorder than the control group. The follow-up captured 91 per cent of the original sample. The authors conclude that group-based interventions for children of divorced parents were more effective than usual care for reducing mental health problems later in life.

A controlled trial evaluation of a prevention intervention for children of divorce, aged 10–13 years, examined the impact of a 12-session, school-based program to improve children’s coping, self-esteem and assertiveness. The children’s adjustment was measured pre- and post-test against an equal number of demographically matched peers. Before the intervention, the participants

were less well-adjusted than their peers. After the intervention, they reported improved problem-focused coping behaviour and self-esteem, with decreased anxiety, anti-social behaviour and substance use. The results suggest that coping skills and self-esteem interventions can reduce mental health problems in children of divorce (Short, 1998).

School-Based Programs

The school setting is central in influencing the behaviour and development of children and youth. In addition to their key role in fostering academic development, schools play an important part in the health and social-emotional development of students (Weare, 2000). Several types of interventions at the school level have been identified as achieving improved competence and self-worth, as well as decreasing emotional and behavioural problems. While some interventions target the overall school environment, others target only one part of the school system or a specific group of students.

For a review of the evidence base for interventions to promote healthy schools, please see the BC Ministry of Health core programs evidence review on healthy communities.

Social and Emotional Learning

Social and emotional learning (SEL) is a process by which children and young people acquire and develop skills to support learning, positive behaviour and constructive social relationships. These skills include recognizing and managing emotions, developing concern for others, establishing positive relationships and effectively handling difficult situations. The Collaborative for Academic, Social, and Emotional Learning (www.casel.org) has created resources for developing and implementing effective, evidence-based SEL programs.

Universal school-based SEL programs have been found to yield benefits in three domains: feelings and attitudes, behavioural adjustment and school achievement. Specifically, participants show improvement in social and emotional skills, school bonding, prosocial norms, self-perception, positive social behaviours and academic achievement. Participants also demonstrate significant reductions in conduct problems, substance use and internalization of symptoms (Greenberg et al., 2003; Zins, Weissberg, Wang, & Walberg, 2004; Durak & Weissberg, in press).

A universal skill-building program, *I Can Problem Solve*, for children in Kindergarten, has been found to significantly improve cognitive problem-solving abilities and reduce inhibition and impulsivity. Positive effects were found at the one-year follow-up (Shure, 1997). A similar program for older students, *Improving Social Awareness - Social Problem Solving*, promotes social competence in middle school by teaching problem-solving and social skills. This program led to improvements in youth-reported coping with stressors related to middle school transition and teacher reports of student behaviour, along with significant reductions in measures of future adjustment. At the six-year follow-up, boys in the comparison group had higher rates of alcohol use, violent behaviour towards others and self destructive/identity problems than the intervention group. Girls in the comparison group had higher rates of tobacco use and vandalism than the intervention group (Bruene-Butler, Hampson, Elias, Clabby, & Schuyler, 1997).

Another intervention that teaches social, emotional and cognitive skills is *Promoting Alternative Thinking Strategies (PATHS)*. This program includes components for students, teachers, parents and the overall school environment. Several randomized controlled trials have shown that PATHS improves student emotional knowledge and problem-solving skills and results in fewer internalized problems, such as depression, anxiety and eating disorders, and fewer externalized problems, such as conduct disorders, aggression, substance use and vandalism (Conduct Problems Prevention Research Group, 1999; Greenberg, Kusche, Cook, & Quamma, 1995).

Whole Schools Approach

Evidence from systematic reviews and intervention trials on mental health promotion in schools demonstrates that comprehensive programs within a coordinated, whole school approach are the most consistently effective (Jane-Llopis et al., 2005). Successful whole school programs lead to increased mental well-being, social competence and social skills, reduced aggression and bullying and increased school achievement (Greenberg, Domitrovich, & Bumbarger, 2001). Key ingredients of mental health-promoting schools include a focus on cognitive and social outcomes along with behaviour change, comprehensive and holistic programs that link the school with the broader health system, multi-year interventions that respond to changes in the social and cognitive environment and professional and resource development for teachers.

The **School Transitional Environment Project (STEP)** aims to create a supportive school context by redefining the role of teachers and restructuring the physical environment to support student transition to a new educational setting. For students aged 11–12 years who are moving to junior high school, the school environment is organized to create stable peer support and reduce the complexity of the physical setting. Students are assigned to groups that attend all core classes together. Homeroom teachers act as key resources for the students and their parents. Evaluations have shown that STEP reduces absenteeism, drop-out rates and the internalization of symptoms, while improving self-concept and academic performance (Felner, Brand, Adan, Mulhall, & Flowers, 1993).

Roots of Empathy (ROE)² is a promising universal school-based intervention with demonstrated effects in reducing levels of aggression and violence among students, while raising social emotional competence and increasing empathy. The goal of ROE is to change the ecology of the classroom to emphasize belonging, caring, collaboration and the understanding of others. The program offers a 10-month, developmentally appropriate curriculum for students in Kindergarten, Grades 1–3, 4–6 and 7–8. To date, unpublished results of multi-year and multi-site evaluations, using a quasi-experimental research design, have found that ROE children demonstrate increased emotional knowledge, social understanding and prosocial behaviour with peers, as well as decreased relational and proactive aggression with peers, as compared to control students.

The **Norwegian Bullying Prevention Program** was the first comprehensive, anti-bullying program, and became the model for programs around the world. Implemented in 1983 in Bergen, Norway, the program involved 2,500 students aged 11–14 years from 42 elementary and

² For more information on Roots of Empathy, visit their website at www.rootsofempathy.org.

secondary schools. The Bergen program emphasized rules and the use of negative sanctions. Strategies included the development of school policies on bullying, anti-bullying curriculum, group and individual interventions, playground strategies and peer support schemes. The program showed a 50 per cent reduction in student reports of bullying for all age and sex groups, a marked reduction in other anti-social behaviour, such as vandalism, fighting, theft and truancy, and improved social climate (Olweus, 1997).

Results from other anti-bullying programs around the world have been mixed. None have been as successful as the Bergen model and most have shown only modest improvements, no effects or adverse effects. In general, schools that put more effort into program implementation tend to have more positive results. Some kinds of bullying appear to be more readily reduced than others; for example, physical bullying responds better to intervention than verbal bullying. Reductions were more commonly found in the proportion of children being bullied, rather than in the proportion of bullies. Most positive results were reported with younger rather than older children.

Current evidence also does not indicate which anti-bullying approach is more effective: the “no blame” approach that uses elements of restorative justice, or the Bergen “rules and sanctions” approach. The evidence also does not indicate which program components are responsible for the reported effects (Smith & Ananiadou, 2003; Rigby, 2002).

Multi-Component Programs

Programs that focus on changing school ecology and improving individual skills are more effective than programs that intervene in only one area, because they take the students’ complete environment into account. Multi-component programs often seek to engage parents and the community in creating environments that are conducive to learning.

Linking the Interests of Families and Teachers (LIFT) helps parents create home environments that support ongoing classroom-based discipline and supervision. It is designed to promote the positive development of children and adolescents, especially among those at risk for aggression. LIFT combines problem-solving and social skills training, playground behaviour modification and group-based parent training. In a randomized controlled trial, the intervention group showed greater improvement in problem-solving and conflict resolution skills and lowered aggression during peer interaction compared to the control group. In the three years following the program, the intervention group was less likely to show increased severity in teacher-reported problem behaviours than the control group (Reid, Eddy, Fetrow, & Stoolmiller, 1999).

The ***Seattle Social Development Project***, a 6-year intervention launched in 1985, involved 18 elementary schools that served high-crime neighbourhoods across Seattle, Washington. The intervention combined teacher training, parent education and social competence training for children. The teachers for Grades 1–6 received 5 days of in-service training each intervention year, parents of children in Grades 1–3 and 5–6 received developmentally-appropriate parenting classes, and children in Grades 1–6 received developmentally-adjusted social competence training. Students in the intervention group had significantly stronger attachment to school, greater improvement in self-reported achievement and less school misbehaviour than the control students (Hawkins, von Cleve & Catalano, 1991).

Follow-up at age 21 years (9 years after the intervention ended), using a non-randomized controlled trial, showed significant effects on self-reported school/work functioning and emotional and mental health in the intervention group as compared to the control group. There were fewer significant effects on crime and substance use at age 21 among the intervention group (Hawkins, Kosterman, Catalano, Hill, & Abbott, 2005). In a similar follow-up at age 21, the intervention group reported significantly fewer sexual partners and experienced a marginally reduced rate for sexual initiation by age 21 as compared to the control group. Women in the intervention group had a significantly reduced likelihood of becoming pregnant and experiencing a birth by age 21. Among single individuals, there was a significant probability of condom use during last intercourse by the intervention group (Lonczak, Abbott, Hawkins, Kosterman, & Catalano, 2002).

This suggests that theory-based social development interventions that promote academic success, social competence and bonding to school during the elementary grades have wide-ranging beneficial effects on functioning in early adulthood.

Targeted Programs for Children at Risk

There is an extensive literature base describing resilience in children and the risk and protective factors for resilience. Minnard (2001) identifies the optimization of social and academic competence, caring adult-child relationships and supportive school environments as important correlates of resilience. However, most school-based resilience interventions have been implemented with children and adolescents at risk for depression or anxiety disorders. Consequently, the best available evidence examines the effectiveness of resilience interventions in terms of mental illness prevention, rather than mental health promotion.

School-based resilience interventions generally include teacher training, parent involvement and direct skills training for children. The children may receive training in cognitive and other skills that are either generic in nature, such as problem-solving and self-efficacy skills, or specific to a given problem, such as coping with threat and fear. Programs that target children with high stress levels, children from immigrant families, refugee children and children suffering from parental divorce or the death of a parent have demonstrated improved emotional and behavioural functioning, as well as reductions in depressive and anxious symptoms (Hosman & Jane-Llopis, 2005).

The ***FRIENDS*** program aims to prevent child anxiety disorders and is proven effective for both universal and targeted groups. In this combined child, family and school intervention, children receive weekly, 1-hour, teacher-led cognitive behavioural sessions over a 10-week period. Parents attend three sessions of child management skills training. Results of a randomized controlled trial involving children in Grades 5–7 showed significant reduction of anxiety symptoms, regardless of the initial risk status. In the intervention group, 75 per cent of the children who were at risk pre-test were no longer at risk post-test, while 55 per cent of the children who were at risk pre-test in the control group remained at risk post-test. These effects were maintained at follow-up one year later (Lowry-Webster, Barrett, & Dadds, 2001; Lowry-Webster, Barrett, & Lock, 2003).

The *Queensland Early Intervention and Prevention of Anxiety Project* targets children's coping skills, emotional resilience and parental coping skills to prevent anxiety symptoms and the onset of anxiety disorders. In this ten-week intervention, the children receive weekly one to two hour cognitive behavioural sessions, and the parents attend three child management training sessions. A randomized controlled trial showed improvements in anxiety symptoms, with positive effects maintained at follow-up two years later (Dadds, Holland, Laurens, Mullins, Barrett, & Spence, 1999).

The *Penn Resiliency Program* (PRP) aims to change cognitive distortions and improve coping skills in children with depressive symptoms. Randomized controlled trials have consistently shown that PRP reduces depressive symptoms by half at post-test, six months and two-year follow-up. (Gilham, Reivich, Jaycox, & Seligman, 1995). In a randomized controlled study with Latino and African-American children from low-income families, PRP achieved a sustained effect over six months in the reduction of depressive symptoms for those who were initially symptomatic (Cardemil, Reivich, & Seligman, 2002). PRP has been implemented in China, where it has prevented and reduced levels of depressive symptoms in at-risk children and adolescents for up to six months (Lei Yu & Seligman, 2002).

Prevention of Harms from Substance Use

In a systematic review of the effectiveness of 32 school-based interventions to prevent substance use, Faggiano, Vigna-Taglianti, Versino, Zambon, Borraccino, & Lemma (2005) looked at programs that focused on knowledge acquisition, skill-building and a combination of both (e.g., affective-focused), compared to usual curricular activities. The review found that skills-focused programs have a positive effect on drug knowledge, decision-making, self-esteem, peer pressure resistance and early drug use, compared to the knowledge and affective-focused programs. A meta-analysis of study data found that all three intervention groups showed lower drug use years after the intervention.

In a systematic review of the characteristics of successful school-based programs to prevent substance use, Cuijpers, Jonkers, de Weerd, & de Jong (2002) found strong evidence for the following elements: interactive nature of the program, use of a social influence model (e.g., inoculation in the classroom against social pressure to use drugs will help prevent substance use), focus on norms, student commitment and intention not to use drugs, use of peer leaders and the combination of community interventions (e.g., family interventions, mass media campaigns, and community mobilizing efforts) with school-based interventions.

For more information on the evidence for school-based interventions to prevent substance use in children, please see the BC Ministry of Health core programs evidence review on the prevention of harms associated with substances.

Child Sexual Abuse Prevention

Schwartz, Waddell, Harrison, & Garland (2006) found three high quality systematic reviews of school-based sexual abuse prevention programs for children, aged 5 to 12 years. The reviews found that programs successfully teach children sexual abuse concepts, such as "body ownership", how to recognize abusive situations and self-protection skills. The retention of

knowledge and skills was demonstrated in follow-up periods. One review found programs that used active participation and behavioural skills training produced the best outcomes. Programs that were longer in duration and number of sessions were associated with better outcomes. Two reviews found that younger children received greater benefit from program participation than older children. None of the reviews assessed whether program participation actually reduced rates of sexual abuse.

Table 5: Summary – Child Mental Health

Intervention	Level of Effectiveness	Appropriateness	Implications
1. Parenting Education	Proven (IUHPE, VicHealth, WHO).	Requires collaboration with other health system partners.	Work with Ministry of Children and Family Development and community agencies to promote parenting competence; support programs that combine universal media campaigns, brief primary care consultations, group-based parenting education and family interventions; remove barriers for low-income families.
1.1 Divorce/Family Breakdown	Proven (IUHPE, WHO).	Requires collaboration with other health system partners.	Work with Ministry of Children and Family Development and community agencies to offer group-based programs for children of divorce that include separate groups for mothers and children.
2. School-Based Programs	Proven (IUHPE, VicHealth, WHO).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards to implement proven, classroom-based skill-building programs in social, emotional and cognitive problem-solving for elementary and middle school; create supportive family and community environments to reinforce lessons learned in classroom.
2.1 Social and Emotional Learning			
2.2 Whole Schools Approach	Proven (IUHPE, VicHealth, WHO).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards to promote comprehensive policy change, curriculum, classroom interventions, playground strategies, peer support and teacher professional development to achieve student cognitive, social and behavioural outcomes.
2.3 Multi-Component Programs	Proven (IUHPE, VicHealth, WHO).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards to promote theory-based social development interventions that engage students, teachers and parents.

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Intervention	Level of Effectiveness	Appropriateness	Implications
2.4 Targeted Programs for Children at Risk	Proven (IUHPE, VicHealth, WHO).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards and Ministry of Children and Family Development to provide resilience-focused programs for children at risk for anxiety and/or depression that combine child, family and school-based interventions.
2.5 Prevention of Harms from Substance Use	Proven (CARBC).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards and Ministry of Children and Family Development to ensure provision of accurate, realistic, age-appropriate information on substance use and associated harms.
2.6 Child Sexual Abuse Prevention	Promising – effective at teaching sexual abuse concepts and self-protection skills to children; warrants further research on reducing rates of sexual abuse (CHPC).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards and Ministry of Children and Family Development to provide child sexual abuse prevention in elementary schools; emphasize active participation and behavioural skills training.

Note: CARBC: Centre for Addictions Research of British Columbia, University of Victoria; CHPC: Children’s Health Policy Centre, Simon Fraser University; IUHPE: International Union of Health Promotion and Education; VicHealth: Victoria Health Promotion Foundation; WHO: World Health Organization.

5.1.5 Adolescent Mental Health

“Promotion and prevention programs that address positive youth development constructs are definitely making a difference.”

(Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002)

Universal Interventions

Considerable evidence exists that supports the provision of universal programs to promote positive mental health outcomes for youth. **Positive Youth Development** (PYD) emphasizes the provision of services and opportunities in the family, school and community domains to support youth in developing a sense of competence, usefulness, belonging and empowerment. PYD interventions enable youth to become successful and productive members of society, rather than focusing simply on risk reduction and problem avoidance (Catalano et al., 2002).

Mind Matters (Australia) is a promising national program that provides a framework for mental health promotion in widely different school settings. Its objectives are to facilitate exemplary practice in the promotion of whole school approaches to mental health promotion, develop resources, curriculum and professional development programs that are appropriate to a wide range of schools and students, test guidelines on mental health and suicide prevention and encourage partnerships between schools, parents and community support agencies to promote the mental well-being of youth.

The program was piloted in 24 secondary schools across Australia, and then amended and disseminated nationally. Results of the pilot found that promoting the mental health and well-being of students is a vital part of the core business of teachers. Teachers need to be comfortable and confident in promoting and teaching mental health. To this end, the teacher professional development dimension of the program is central to enhancing the role of schools in broad population mental health promotion (Wyn, Cahill, Holdsworth, Rowling, & Carson, 2000).

Although not formally evaluated by a controlled trial, the **Youth Life Enrichment Program** in the Philippines appears to have had considerable impact on the lives of adolescents and their families and friends since 1975. The program is implemented through student mental health clubs in schools, and focuses on youth as family facilitators. Program themes include self-awareness, positive relationships and leadership and communication skills. As well, the program fosters positive attitudes toward mental health, and toward people struggling with mental disorders. After three revisions, the program now includes awareness of social issues in regard to mental health, social responsibility, spirituality and prevention of drug use (de Jesus, 2003, as cited in Jane-Llopis et al., 2005).

Sexual Health Education

Access to effective, broadly based sexual health education, which includes an affirmative view of sexuality and access to safer sex resources, is an important factor in the health and well-being of youth. Although there is little evidence that links sexual health education to increased positive mental health, there is a large body of evidence that demonstrates the significant impact of well-designed adolescent sexual health interventions on the reduction of sexual risk behaviours, many of which are mediating variables in a range of negative physical and mental health outcomes (Sex Information and Education Council of Canada, 2004).

For example, it is generally understood that lack of sexual health education and access to contraception among youth can lead to increased rates of unintended teen pregnancies. These, in turn, can lead to increased risk of depression and other mental illnesses for adolescent mothers. Being a teen parent also limits access to employment and educational opportunities, and can be socially isolating, all of which increase the risk for mental illness. Babies born to teen mothers are often low weight and premature, which sets them up for socio-economic, physical health and mental health risks later in life.

Reducing the Risk is a 16-session program for high school students designed to build skills in sexual refusal, negotiation and communication (including parent-child communication), through knowledge acquisition and experiential activities. An evaluation using a quasi-experimental design was conducted in 10 school districts in Arkansas. Comparison groups received the usual sex education provided in that school district. The evaluation concluded that students in the intervention groups significantly increased their discussions with parents about abstinence and contraception at 6 months follow-up. There was a significant percentage of participating youth who delayed initiation of sexual intercourse. The incidence of unprotected sex among lower-risk youth in the intervention group was 10 per cent lower than in the comparison group (Advocates for Youth, 2003).

The ***Reach for Health Community Youth Service Program*** is a community and school partnership that builds on community-based service learning. In addition to health curriculum delivered in the schools, students spend approximately three hours a week providing service in community settings, such as nursing homes, day cares and health clinics. The evaluation compared one group receiving the curriculum only to one group receiving the curriculum and community service. The curriculum-plus group demonstrated delayed initiation of sexual intercourse, reduced frequency of sex, increased condom use and increased use of contraception in comparison to the curriculum-only group. The study noted that special needs students appeared to experience some of the greatest benefits of the curriculum-only intervention (O'Donnell et al, 1999; O'Donnell et al, 2002).

Depression Prevention

Depression in young people is associated with poor academic performance, social dysfunction, problematic substance use, suicide attempts and completed suicide. In a review of the literature on preventing depression in children and youth, Waddell, Hua, Godderis, & McEwan (2004) found that both universal and targeted psychological programs based on cognitive-behavioural theory (CBT) effectively prevented depression and continued to demonstrate benefits for up to one year. Psychological programs that used CBT-based techniques to teach stress management and problem-solving skills were found to be more efficacious than educational programs that only provided information about depressive symptoms and available treatments. However, the authors noted that the potential effectiveness of educational interventions had not been sufficiently investigated and a clearer understanding was needed of gender-specific responses to such interventions. The authors recommended additional research regarding long-term impacts of depression prevention programs before committing to large-scale implementation.

For more information on the evidence base for interventions to prevent depression in youth, please see the BC Ministry of Health core programs evidence review on mental illness prevention.

Suicide Prevention

In a systematic review of the literature on youth suicide prevention, White (2005) found that empirical support is strongest for targeted interventions for high-risk youth. Recent studies provide renewed support for school-based peer recognition and response training, youth skills building and family and group interventions for youth at risk. Other approaches with strong theoretical bases that warrant further research include family support and skill development, parent education about suicide, means restriction education for parents of high-risk youth, school in-service training, community gatekeeper training, education for health practitioners, media education and post-suicide response controls. There is also a growing body of evidence that confirms the importance of local control, cultural renewal and healing in reducing suicide risk among Aboriginal youth. White noted that the evidence of effectiveness for youth suicide prevention is far from conclusive and many questions remain about what works best. At this time, there is insufficient evidence to support large-scale implementation of curriculum-based suicide prevention in schools.

For more information on the evidence base for interventions to prevent youth suicide, please see the BC Ministry of Health core programs evidence review on mental illness prevention.

Prevention of Harms from Substance Use

A systematic review of 25 evaluations of adolescent substance use prevention programs found that social influence programs were effective in preventing or reducing substance use for up to 15 years post-intervention. This review provides long-term empirical evidence of the effectiveness of social influence programs (Skara & Sussman, 2003).

School-Based Interventions

There is good evidence that school-based drug education programs based on social learning principles consistently demonstrate short-term positive effects on intention to use and substance use, particularly in relationship to tobacco and alcohol (Loxley et al., 2004). However, the effects are diminished unless the programs are supplemented by other strategies, such as social marketing, community mobilization or parent involvement. The inclusion of peer leaders can benefit outcomes, but they must be carefully selected and well supported with skills learned from professional teachers. McBride (2005) found that the key ingredients of successful school-based drug education programs were student input to ensure interesting and interactive class exercises, investment in teacher training and booster sessions throughout secondary school.

Thomas and Perera (2006) reviewed 23 high quality randomized controlled trials of school-based programs to prevent children and youth who had never smoked from becoming smokers. The interventions included information-giving, social skills training, social influence approaches and community interventions. There is little evidence that information alone is effective. Over half of the social influences studies found positive short-term effects on smoking prevalence. However, the largest and most rigorous study, the *Hutchinson Smoking Prevention Project*, found no long-term effects of an intensive eight-year intervention. There was some evidence of effectiveness for interventions that combined social influences and social competence, and for those with a multi-modal approach that included community initiatives.

Parent Education

In Australia, *Parenting Adolescents a Creative Experience* (PACE) is a promising parent education program that engages vulnerable families from a range of culturally diverse communities. The program is delivered through the schools and teaches parents about communication, conflict resolution and adolescent development. Alternative service delivery models, such as phone counseling, are showing positive trial results and support future investment in service delivery innovation (Loxley et al., 2004).

Community Mobilization

Community mobilization programs have been found to be effective at using school and parent influences to alter the acceptability of legal and illegal substances and access to them by adolescents (Toumborou, Williams, Waters, & Patton, 2005).

Youth Sport and Recreation/Mentorship

Efforts to reduce drug use have included the provision of sport and recreational opportunities outside the school setting. These opportunities may be particularly important to youth who do not attend school. Sport and recreation programs and mentorship schemes show promise, but they require careful matching of clients to mentors, mentor/staff training, ongoing support and rigorous evaluation (Loxley et al., 2004).

Primary Health Care Interventions

In the United Kingdom, a randomized controlled trial evaluated the effectiveness of primary health care teams in maintaining youth as non-smokers. Information about smoking was sent to young patients under the signature of their physician, along with certificates and posters intended to reinforce non-smoking behaviour. The intervention was associated with substantially reduced smoking uptake among youth, particularly boys. The study concluded that primary health care teams can play an important role in maintaining the non-smoking status of young patients (Fidler & Lambert, 2001).

Restrictions on Access

Many well-conducted studies have examined the impact of changes in the legal restrictions on youth access to alcohol and tobacco (Voas, Tippetts, & Fell, 2003). While there is little political will to raise the legal drinking age, there is strong community support in most countries for the enforcement of existing laws, which can have equal effect (Stockwell, 2004). Both voluntary codes and legal restrictions on access to precursor chemicals for youth can greatly reduce opportunities for activities involving psycho-stimulant drugs (Loxley et al., 2004).

For more information on the evidence base for interventions to prevent harms from adolescent substance use, please see the BC Ministry of Health core programs evidence reviews on tobacco control and prevention of harms associated with substances.

Interpersonal Violence Prevention

Mytton, DiGuseppi, Gough, Taylor, & Logan (2006) conducted a systematic review of trials of school-based violence prevention programs for youth identified as aggressive or at risk of being aggressive. The authors found that school-based secondary prevention programs aimed at

reducing aggressive behaviour appeared to produce improvements in behaviour. The improvements were achieved in both primary and secondary school age groups and in both mixed-sex groups and boy-only groups.

The authors noted that none of the studies collected data on violent injury, so it was not clear if an improvement in behaviour translated into actual injury reduction. The authors concluded that further research is needed to determine if the beneficial program effects can occur outside the experimental setting and in settings other than schools, if they can be maintained over time and if the benefits can be justified against the costs of implementing such programs.

Dating Violence/Sexual Violence Prevention

Foshee, Bauman, Arriaga, Helms, Koch, & Linder (1998) conducted a randomized controlled trial to assess the effects of *Safe Dates*, an adolescent dating violence prevention program. The intervention group demonstrated less psychological abuse, sexual violence and violence perpetrated against the current dating partner than the control group. Most program effects were explained by changes in dating violence norms, gender stereotyping and awareness of services.

A randomized controlled trial of a CD-ROM-based sexual violence prevention program for middle school students found use of the CD-ROM significantly increased knowledge of sexual violence in the intervention group compared to the control group. However, there was no difference between the groups in attitudes towards sexual violence. The authors concluded that a CD-ROM-based program can be effective in delivering instruction (Yom & Eun, 2005).

School-Based Youth Violence Prevention
In the United States, the National Center for Mental Health Promotion and Youth Violence Prevention has identified school-based youth violence prevention strategies in <i>Key Strategies for Violence and Substance Abuse Prevention II: Working with the Classroom and School Environment</i> . These evidence-based strategies help students develop critical social and thinking skills, including empathy, social problem-solving, anger management, communication, stress management and media literacy. The most successful programs engage youth throughout the school, have peer-led components, are culturally relevant, use standardized interventions with age-appropriate, interactive methods, provide training for school staff, and engage parents to reinforce at home the students' newly acquired skills. For more information on the Centers strategies, visit their website at http://www.promoteprevent.org .

Eating Disorder Prevention

Waddell et al. (2004) reviewed the available literature on the prevention of eating disorders in children and adolescents. They found the most effective interventions were media literacy programs and cognitive-behavioural techniques that targeted high-risk girls over age 15 and used interactive, multi-session formats. The least effective interventions were non-interactive educational programs that only provided information about eating disorders.

Media literacy interventions teach youth how to critically analyze the media and recognize cultural pressures regarding body shape and weight. They focus on changing youth perception about the “thin ideal” promoted by the media, and developing their ability to realistically assess what constitutes a healthy body shape and size. Cognitive-behavioural techniques focus on promoting self-esteem, developing stress management skills and encouraging healthy weight-control behaviours. Waddell et al. (2004) noted that while many eating disorder prevention

programs reduced risk factors, few programs reduced eating disordered behaviour. The authors concluded that further research is needed before committing to large-scale interventions.

Leaving Care

Stein (2006) reviewed international research on youth leaving state care. A consistent finding is that the majority of care leavers move to independent living at 16–18 years of age, while many of their peers who are not in care remain at home much longer. The journey of care leavers to adulthood is both accelerated and compressed, and there is an expectation of instant adulthood without the opportunity for transition. The review found that the support of key workers and peer mentoring from youth formerly in care significantly assisted care leavers. Stein suggests the need for comprehensive responses to youth in care and care leavers that include early intervention and family support, better quality care to compensate for pre-care experiences, opportunities for more gradual transitions that are closer to normal transitions and ongoing support for youth with complex needs.

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Table 6: Summary – Adolescent Mental Health

Intervention	Level of Effectiveness	Appropriateness	Implications
1. Universal Interventions Positive youth development	Proven (IUHPE, VicHealth, WHO).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards to promote proven universal, school-based skill-building programs in social competence, problem solving, stress management and leadership.
2. Sexual Health Education	Proven – for reduction in sexual risk behaviour (Cochrane, WHO). Promising/Warrants further research – for impact of sexual health and sexual health education on positive mental health (WHO).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards and community agencies to promote proven, school-based sexual education programs and develop/promote community-based service learning programs that combine school-based sexual health education with opportunities for youth to engage in community service provision.
3. Depression Prevention	Promising/Warrants further research – insufficient evidence at present to recommend large-scale interventions (CHPC).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards and Ministry of Children and Family Development to explore provision of universal, school-based depression education programs using proven strategies; develop targeted programs for youth at risk, including youth with parents suffering from mental disorders.
4. Suicide Prevention	Promising/Warrants further research – insufficient evidence at present to recommend large-scale interventions (CHPC).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards and Ministry of Children and Family Development to explore provision of universal, school-based suicide prevention programs that include brief depression screening tool.

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Intervention	Level of Effectiveness	Appropriateness	Implications
5. Prevention of Harms from Substance Use 5.1 School-Based	Proven (CARBC).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards to ensure the provision of school-based, social influence programs. Ensure programs are supplemented by social marketing, community mobilization and parent involvement. Consider the inclusion of peer educators, and provide support for their skill development with professional teachers.
5.2 Parent education	Promising/ warrants further research (CARBC).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards to explore provision of parent education programs for prevention and reduction of substance use in children.
5.3 Community mobilization	Proven (CARBC).	Requires collaboration and advocacy with partners outside the health system.	Support community mobilization programs that aim to reduce perceived community norms that favour early drug use, and restrict youth access to legal and illegal substances.
5.4 Youth sport and recreation/mentorship	Promising/ warrants further research (CARBC).	Requires collaboration and advocacy with partners outside the health system.	Work with Ministry of Children and Family Development, local governments and community groups to provide sport and recreational opportunities outside the school setting. Increase youth exposure to mentorship programs that include careful matching of mentors to clients, training and ongoing support.
5.5 Primary health care brief intervention	Promising (Cochrane).	Falls within health authority jurisdiction and mandate.	Support primary care physicians and nurses to provide substance use information directly to youth patients.
6. Interpersonal Violence Prevention	Promising/ warrants further research (Cochrane).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards and Ministry of Children and Family Development to provide multi-component, school-based programs promoting positive development for all students. Provide programs targeted specifically to youth at risk.

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Intervention	Level of Effectiveness	Appropriateness	Implications
6.1 Dating violence/sexual violence prevention	Promising/Warrants further research (Cochrane).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards and Ministry of Children and Family Development to provide sexual violence prevention programs for all youth. Consider use of a CD-ROM educational program for middle school students.
7. Eating Disorder Prevention	Promising/Warrants further research (CHPC).	Requires collaboration and advocacy with partners outside the health system.	Work with school boards and Ministry of Children and Family Development to provide media literacy skills training and cognitive behavioural techniques; use interactive, multi-session formats; target high-risk girls over age 15. Conduct further research into reducing eating disordered behaviour.
8. Leaving Care	Promising/Warrants further research.	Requires collaboration and advocacy with other health system partners.	Work with Ministry of Children and Family Development to explore provision of early intervention, family support, opportunities for gradual transitions closer to the norm and ongoing support after youth leave care.

Note: CARBC: Centre for Addictions Research of British Columbia, University of Victoria; CHPC: Children’s Health Policy Centre, Simon Fraser University; Cochrane: Cochrane Database of Systematic Reviews; IUHPE: International Union of Health Promotion and Education; VicHealth: Victoria Health Promotion Foundation; WHO: World Health Organization.

5.1.6 Adult Mental Health

“Social relations, self-views of competence and relatedness play important roles in characterizing adjustment during the adult years.”

(Gralinski-Bakker, Hauser, Stott, Billings, & Allen, 2004)

Spirituality

Spirituality makes an important contribution to quality of life for many people worldwide. Qualities such as awe, meaning of life, faith and connection to a spiritual being make a significant contribution to the overall rating of quality of life, beyond that of psychological well-being or social connection (Saxena, O’Connell & Underwood, 2002). Spirituality can exist independently of religious practice or affiliation, but in most people their spirituality is nested within a religious context. Religious doctrines may support positive views of human nature and the self that create attitudes and emotional states that are associated with improved physical and mental health outcomes (Chatters, 2000).

In a systematic review of over 850 international studies on the relationship between religion and mental health, Moreira-Almeida, Neto and Koenig (2006) found the majority of well-conducted studies showed that higher levels of religious involvement are positively associated with indicators of psychological well-being and with less depression, suicidal thoughts and behaviour, and problematic substance use. The review also found that the positive effects of religious involvement on mental health are more robust among people in stressful circumstances, such as those with disability and medical illness.

A number of well-conducted clinical and epidemiological studies have shown that spirituality can help prevent depression (Koenig, McCullough, & Larson, 2001). Numerous studies have looked at the role of spirituality/religiosity in preventing alcohol problems. A study of over 2,000 female-female twins reported that current drinking and smoking, as well as lifetime risk for alcoholism and nicotine dependence, were inversely associated with personal devotion, such as frequency of praying and spiritual comfort-seeking (Kendler, Gardner, & Prescott, 1997). Religiousness and spirituality can also improve overall health by encouraging behaviours that can improve physical health and subsequently mental health and well-being (Koenig et al., 2001).

Workplace Mental Health Promotion

For many people, work is a source of satisfaction, pleasure and a key contributor to health and well-being. Both the quantity and quality of work have strong influences on mental health and related factors such as income, social networks and self-esteem. In an evidence review of work and health, the National Health Service (2004) concluded that work that provides fulfillment and allows individuals control over their working lives confers considerable health benefit.

However, for a large number of people, work can be a source of psychological distress and ill-health. Occupational stress is a major public health problem that is increasing but is largely preventable. It is defined as the combination of high job demands and low job control, and it predicts physical and mental health problems (particularly depression in women), cardiovascular disease, increased absenteeism, employee turnover and workers’ compensation costs (LaMontagne, Louie, Keegal, Ostry, & Shaw, 2005). The consequences of living under stressful working conditions can extend beyond the individual to family and society.

Interventions to promote mental health in the workplace can be directed at the coping capacity of employees or at the work environment. Coping capacity can be increased through stress management training, stress inoculation techniques, relaxation and social skills and fitness training (Murphy, 1996; Van der Klink, Blonk, Schene, & van Dijk, 2001). Stressors in the work environment can be reduced through task and technical interventions, such as job enrichment, ergonomic improvements and the reduction of noise, as well as through interventions to improve role clarity, conflict management and social relationships (Semmer, 2002). In a systematic review of psychosocial interventions in the workplace, Michie and Williams (2003) found evidence of effectiveness in reducing psychological ill-health and absence due to sickness. Notwithstanding the existence of legislation to protect the psychosocial work environment, these interventions remain underused (Schaufeli & Kompier, 2001).

Systems approaches that target individual and organizational change hold the most promise for positive mental health in the workplace. This is echoed in reviews of physical health promotion programs, where there is strong evidence that comprehensive workplace interventions combining behavioural and structural components have higher clinical and cost-effectiveness compared to single component programs (Breucker & Schroer, 2000; Pelletier, 2001). Employee participation is a key mechanism for mental health promotion in the workplace. Organization-wide approaches to employee participation are most effective when they support staff involvement, enhance job control, encourage workload management, clarify roles and involve policies to tackle bullying and harassment (Health Education Authority, 2001).

The *Caregiver Support Program* (CSP) is an example of an effective employee participation intervention. The CSP was designed to increase social support and participation in work-related decision-making for caregiver teams in health and mental health care facilities. The program involved 6 training sessions of 4–5 hours duration, with training groups consisting of up to 10 home managers and 10 direct care staff. The program used social learning principles to create a strong sense of mastery and to inoculate participants against setbacks. A large-scale, randomized controlled trial found that the CSP increased the amount of supportive feedback on the job, strengthened participant perceptions of their abilities to handle disagreements and overload at work, and enhanced the work team climate. The CSP enhanced the mental health and job satisfaction of those who attended at least 5 of the 6 training sessions. It also had positive effects on the mental health of employees most at risk of leaving their jobs (Heaney, Price, & Rafferty, 1995).

For a review of the evidence base for interventions to promote healthy workplaces, please see the BC Ministry of Health core programs evidence review on healthy communities.

Sexual Health Promotion

The World Health Organization has begun to look at sexual health as an area of research in its own right, separate from reproductive health, with the aim of promoting optimal sexual health and an affirmative view of sexuality for women, men and young people. Effective sexual health promotion requires a comprehensive set of activities that encompass the health and education sectors, as well as the broader political, economic and legal domains. In each area, action is needed to remove barriers and promote factors that support sexual health. The twin goals are to enable people to exercise control over their sexual lives and to create environments that will promote and sustain sexual health and reduce vulnerability to sexual ill-health (WHO, 2005c).

To date, there has been little research conducted on the relationship between sexual health, sexuality and positive mental health. There is also little evidence of the effectiveness of sexual health promotion on mental well-being. The outcomes of sexual health promotion interventions are typically measured in terms of sexual risk reduction, improvements in reproductive health or declines in sexual dysfunction.

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Table 7: Summary – Adult Mental Health

Intervention	Level of Effectiveness	Appropriateness	Implications
1. Spirituality	Proven (WHO).	Requires collaboration and advocacy with partners outside the health system.	Actively engage faith communities in service planning and delivery (e.g., as part of referral networks and case management strategies), with emphasis on role of spirituality in drug treatment programs.
2. Workplace Mental Health Promotion Employee coping capacity Work environment Comprehensive interventions	Proven (IUHPE, VicHealth, WHO).	Requires collaboration and advocacy with partners outside the health system.	Work with employers, unions and professional associations to promote comprehensive strategies that target individual and organizational change in the workplace.
3. Sexual Health Promotion	Proven – for reduction in sexual risk behaviour, sexual dysfunction and sexual ill-health (WHO). Limited or no research – impact of sexual health and sexual health promotion on positive mental health.	Requires collaboration and advocacy with partners within and outside the health system.	Opportunity to promote public health value of affirmative sexual health and sexuality and advocate for further research on link between sexual health promotion and positive mental health.

Note: IUHPE: International Union of Health Promotion and Education; VicHealth: Victoria Health Promotion Foundation; WHO: World Health Organization.

5.1.7 Older Adult Mental Health

“The mental health of older people would be improved by efforts to maximize opportunities for improved physical health, supportive social conditions and personal growth.”

(Copeland, 2003, as cited in Sturgeon & Orley, 2005)

It is becoming increasingly understood that concepts of positive mental health held by older people do not differ substantially from those of younger people. Most differences in behaviour are the result of physical or mental disease or social disadvantage, rather than the aging process itself. What were previously considered normal results of aging, such as depression and dementia, are now being seen as the results of preventable illness, deprivation and abuse. Sturgeon and Orley (2005) highlight misconceptions about the mental health of older people; i.e., that they choose to disengage socially, that depression is natural, that intellectual decline is a normal feature of aging and that older people are not distressed by the death of contemporaries or their own disabilities.

Most approaches to improving the mental health of older people represent the fundamental importance of valued participation, connectedness, support and encouragement (Moodie & Jenkins, 2005). Successful aging has been defined as multidimensional, encompassing the avoidance of disease and disability, maintenance of high physical and cognitive function, and sustained engagement in social and productive activities (Rowe & Kahn, 1997). Crowther, Parker, Achenbaum, Larimore, & Koenig (2002) suggest positive spirituality as a fourth component and provide evidence that the addition of spirituality to mental health promotion interventions has been well received by older adults.

Universal interventions have been successful in improving the mental health of the general population of older adults through public awareness of depression and interventions to promote social support, community empowerment and healthy lifestyles.

The ***Mental Fitness for Life*** program, an eight-week series of intensive workshops to help older adults achieve a more positive mental attitude, links healthy aging to mental fitness, a concept that includes optimism, mental flexibility, self-esteem and willingness to take risks. Pilot program participants, aged 55 to 84 years, from diverse educational and employment backgrounds, were engaged in activities to stimulate creative thinking, problem-solving, memory, mental flexibility, risk taking and confidence. Following completion of the program, participants showed significant improvement in mental fitness knowledge, skills and attitudes (Cusack & Thompson, 1998; Cusack, Thompson, & Rogers, 2003).

Brief Primary Care Interventions

Targeted interventions have been successful in improving the mental health of older adults at risk for depression, suicide and other mental health problems. These include brief primary care interventions, such as making patient education about chronic medical conditions a part of routine care for older adults (Hosman & Jane-Llopis, 2005) and screening for hearing loss.

In a primary care intervention to assess whether hearing aids could improve the quality of life of elderly people with hearing loss, Mulrow et al (1990) found there were significant improvements

in social and emotional function, communication function, cognitive function and depression in those subjects who received the hearing aid compared to the control group. This intervention demonstrated the added value (e.g., increased efficiency) of assessing mental health outcomes as a part of primary health care initiatives.

For more information on the evidence base for interventions to promote healthy aging and to maintain optimum brain health in older adults, please refer to the BC Ministry of Health core programs evidence reviews on healthy seniors and chronic disease prevention.

Social Support

In a systematic review of 30 outcome studies of interventions to reduce social isolation and loneliness among older people, Cattan, White, Bond, & Learchmouth (2005) found that targeted educational and social activity group programs were the most effective. The authors noted the evidence for home visiting and befriending interventions remains unclear. Befriending is widely used to increase social support and reduce loneliness and depression among the elderly. However, befriending programs have only been evaluated using control groups on an incidental basis. Stevens and van Tilburg (2000) found significant reductions in loneliness among older women who participated in 12 group sessions based on theories of social support, friendship and self-help. Twice as many women who followed the program significantly reduced their loneliness compared to the control group. More than two-thirds of the participants reported having made new friends since the start of the program. To date, no other controlled outcome studies on befriending programs are available for non-clinical, community dwelling elderly (Hosman & Jane-Llopis, 2005).

Ageing Well UK Network
The Ageing Well UK Network, facilitated by Age Concern England, is a national health promotion program with and for older people. The program recruits and trains volunteers 50 years or over to become Senior Health Mentors. Volunteers make contact with isolated people, providing vital links to health services and opportunities in local communities. Volunteers act as positive role models, as “normal everyday people”, reducing the common perception that health is linked only to medical services. Ageing Well projects provide advice on a range of issues, including diet and nutrition, physical activity and falls prevention. Services are offered within the context of positive and holistic health. For more information on Age Concern England, visit their website at http://www.ageconcern.org.uk .

Exercise

Exercise has been frequently advised for older adults to deal with the physical disabilities of advancing age. In a meta-analysis of 36 studies linking physical activity to well-being in older adults without clinical disorders, Netz, Wu, Becker and Tenenbaum (2005) found physical activity had the strongest effect on self-efficacy and that improvements in cardiovascular status, strength and functional capacity were linked to overall improvement in well-being. Spirduso and Cronin (2001) looked at the effects of exercise on quality of life and independent living in older adults. The most consistent results showed that long-term physical activity is related to postponed disability and independent living in the oldest-old subjects. Even in individuals with chronic disease, systematic participation in physical exercise enhances physical function.

Although there is no convincing evidence yet that exercise can lead to increases in cognitive function such as memory, some recent controlled studies have shown that exercise, particularly aerobic classes, tai chi and weightlifting, does provide psychological benefits, including reduced depressive symptoms and increased mental well-being in both clinical and non-clinical elder populations (Hosman & Jane-Llopis, 2005). In a randomized controlled trial of the impact of a six month tai chi exercise program performing slow rhythm movements, Li, Duncan, Duncan, McAuley, Chaumeton and Harmer (2001) found elderly people in the intervention group showed higher levels of health perceptions, life satisfaction, positive affect and well-being, and lower levels of depression, negative affect and psychological distress than the control group. In a subsequent randomized controlled trial, Li, Fisher, Harmer, Irbe, Tearse and Weimer (2004) found a six-month, low to moderate intensity tai chi program to be an effective sleep enhancement for sleep-disturbed elderly individuals. Montgomery and Dennis (2002) also found evidence for the effectiveness of an exercise program involving brisk walking and moderate resistance training in enhancing sleep and quality of life for older adults.

Kerse, Elley, Robinson and Arroll (2005) found New Zealand's *Green Prescription* physical activity counseling program increased activity and quality of life in older community-dwelling people. The large cluster, randomized controlled trial involved 117 doctors, treating 270 sedentary primary health care patients, aged 65 and older, in 42 primary care practices in New Zealand. Patients in the intervention practices prompted their primary care doctor or practice nurse to deliver brief activity counseling. A "green prescription" was written involving the negotiation of activity goals. Trained exercise specialists from a regional sports foundation gave follow-up telephone support over 3 months.

This physical activity intervention improved activity, energy expenditure, health-related quality of life and hospitalizations for older primary care patients. The authors noted that systematic inclusion of the Green Prescription program in routine primary health care would likely result in health gains for older people.

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Mental Health Promotion

Table 8: Summary – Older Adult Mental Health

Intervention	Level of Effectiveness	Appropriateness	Implications
1. Brief Primary Care Interventions Patient education Hearing aids	Proven (IUHPE, WHO, Cochrane).	Falls within health authority jurisdiction and mandate.	Support physician and nurses to provide patient education about chronic medical conditions for at risk older adults, and screen for hearing loss and assess if hearing aids could improve QOL, as part of routine primary care for older adults
2. Social Support Education/social activity groups Befriending Home visiting	Proven – activity groups to reduce social isolation and loneliness (IUHPE, WHO). Promising/Warrants further research – impact of befriending and home visiting on positive mental health (IUHPE, WHO).	Requires collaboration and advocacy with health system partners.	Work with health system partners and community organizations to promote targeted educational and social activity group interventions.
3. Exercise Physical activity counselling	Proven – for increased activity, quality of life, independent living and postponed disability (IUHPE, VicHealth, WHO). Promising/Warrants further research – impact of exercise on increased cognitive function, reduced depressive symptoms and positive mental health (IUHPE, VicHealth, WHO).	Requires collaboration and advocacy with health system partners.	Work with health system partners and community organizations to promote six month, low to moderate intensity exercise programs, including tai chi, aerobics and weightlifting. Support physicians and nurses to include brief advice and follow-up on exercise/daily activity goals as part of routine primary care for older adults.

Note: Cochrane: Cochrane Database of Systematic Reviews; IUHPE: International Union of Health Promotion and Education; VicHealth: Victoria Health Promotion Foundation; WHO: World Health Organization.

5.2 Structural Interventions

One of the key tasks of mental health promotion is to engage in policy-related advocacy to increase the value of positive mental health at the societal level and to create social and economic environments that support mental health. Policies that relate to the public good are understood to have an indirect effect on enhancing mental health, including policies to address education, employment, income, housing and other socio-economic factors. However, given the challenges associated with evaluating structural interventions, there is little available evidence of the effectiveness of these interventions in promoting positive mental health.

5.2.1 Income

Income can have an impact on mental health because it influences a person's ability to meet basic needs, make choices in life and deal with unexpected events. Adequate income enables healthy living conditions, such as safe housing and the ability to buy sufficient good food. It also provides opportunities that are unavailable to low-income individuals and families (Government of Canada, 2006).

The literature indicates that effective mental health promotion needs to be comprehensive and address the structural conditions that exacerbate poor mental health. Those living in disadvantaged communities are exposed to significant chronic stress and anxiety caused by adverse living and working conditions. As a result, they are unlikely to fully benefit from psychosocial or behavioural mental health promotion interventions. There is also some evidence that marked social and economic inequalities are associated with poor mental health, separate from the direct effects of poverty or material deprivation. Mental health promotion interventions, therefore, need to address both structural factors and socio-economic inequalities (Rychetnik & Todd, 2004).

Food Insufficiency

Food insufficiency is one dimension of a more pervasive vulnerability to a range of physical, mental and social health problems among households struggling with economic constraints (Vozoris & Tarasuk, 2003). Low-income women and children are disproportionately represented among the food insufficient (Siefert, Heflin, Corcoran, & Williams, 2001), and mental health problems in mothers and children are more common when the mothers are food insecure (Whitaker, Phillips & Orzol, 2006).

In a sample of 753 female welfare recipients in urban Michigan, tracked over a three-year period, Heflin, Siefert and Williams (2005) found the relationship between household food insufficiency and clinical depression remained highly significant even after controlling for factors known to confer risk for depression. The authors note the public health burden of depression in low-income women could be reduced by policy-level interventions to reduce their exposure to household food insufficiency.

5.2.2 Housing

There is strong evidence that safe, secure and adequate housing has an independent effect on physical and mental health (Tilford, Delaney, & Vogels, 1997). In a systematic review of

housing interventions in the United Kingdom, Thomson, Petticrew and Morrison (2001) found that housing improvements have positive impacts on self-reported mental health and general well-being, perceptions of safety, crime reduction and on social and community participation. The review found that positive mental health effects were likely to occur ahead of physical health effects in a dose-response relationship. However, in disadvantaged areas where the local environment requires significant improvement, a focus on housing alone is considered a limited and fragmentary response. The authors noted the quality of housing studies has been generally poor.

Evidence from cross-sectional and longitudinal data from a major urban renewal program in a disadvantaged area of the United Kingdom (1992–1998) found a significant decline in psychological stress after a housing intervention comprised of environmental improvements, external repairs, refurbishment, demolition of void dwellings, renovation grants for individual dwellings and improvements to security and road safety. In both the cross-sectional and longitudinal samples, the prevalence of smoking was halved (Blackman, Harvey, Lawrence, & Simon, 2001).

5.2.3 Employment

Economic participation is a key determinant of mental health and well-being. A critical dimension of economic well-being is access to employment. Paid work can be categorized along a continuum from high-grade to low-grade employment. High-grade employment typically has positive job attributes and lower risk of unemployment, whereas low-grade employment has relatively poor job attributes and negative material and health effects (Cave, Curtis, Aviles, & Coutts, 2001).

Adults experiencing unemployment or underemployment for various reasons include those with involuntary job loss and those who need to retrain and acquire new educations and skills. The effectiveness of adult work programs is context-dependent, but common impacts measured include job satisfaction, motivation, self-esteem, job-seeking confidence and reduced depression (Health Education Authority, 2001). However, it has been shown that there are negative mental health effects when people move from unemployment to low-grade work rather than high-grade work (Cave et al., 2001).

The *Winning New Jobs Program* was developed in the United States to help unemployed workers effectively seek re-employment and cope with the multiple challenges of unemployment and job search. The program is based on theories of active learning, social modeling, gradual exposure to acquiring skills, practice through role-playing and inoculation against setbacks. Two trainers deliver 5, intensive, half-day workshops over a 1-week period to groups of 12 to 20 people. The workshops focus on identifying effective job search strategies; improving participant job search skills; and increasing self-esteem, confidence and motivation to persist in job search activities. The intervention is designed to achieve its goals by creating supportive environments and relationships between trainers and participants and among participants.

The program has been evaluated in replicated, randomized controlled trials involving thousands of unemployed people and their partners. At the two-year follow-up, results indicated the program had increased the quality of re-employment, increased self-esteem and decreased

psychological distress and depressive symptoms, especially among those with higher risk for depression (Price, Van Ryn, & Vinokur, 1992). In addition, the program was shown to inoculate workers against the adverse effects of subsequent job loss (Price, 2003).

The Winning Jobs Program has been successfully disseminated in China, Korea and Finland, and is currently being implemented in the Netherlands and Ireland (Jane-Llopis et al., 2005). The Finnish program, known as the *Työhön Job Search Program*, targets both the recently unemployed and those who have been unemployed for long periods. In a similar randomized controlled trial involving over 1,000 unemployed job seekers, the Finnish evaluation results showed increased quality of re-employment at six months for those who were unemployed for a moderate period of time and at risk for becoming long-term unemployed. The short-term results also indicated reductions in levels of distress that were strongest for those who were at high risk for depression. At the two-year follow-up, the study found decreased depressive symptoms, increased self-esteem, as well as higher engagement in the labour market through employment or participation in vocational training (Vuori, Silvonen, Vinokur, & Price, 2002; Vuori & Silvonen, 2005).

5.2.4 Community Capacity

Social networks are seen as a resonant measure of community strength. Strong communities, in turn, are associated with civic engagement and stronger democracy, improved early childhood outcomes, improved mental and physical health and improved local economic performance (Johnson, Headey, & Jensen, 2003).

Community interventions have focused on developing empowering processes and building a sense of ownership and social responsibility among community members. The *Maryborough Mental Health Promotion Project* in Australia (VicHealth 2002) and the *Rural Mental Health Project* in Ireland (Barry, 2003) are two examples of projects that employ community models in strengthening community capacity through partnerships for mental health promotion. In both projects, diverse community members were engaged in participatory planning processes to effect community-wide change through the implementation of a series of local initiatives.

In the United States, the *Midwestern Prevention Project* is a comprehensive, multi-faceted community intervention designed to prevent problematic adolescent substance use. The program is implemented through well-coordinated, community-wide strategies introduced in sequence: school program, parent education program, community organization and training, mass media, and local policy change regarding tobacco, alcohol and other substances. Evaluation showed reductions in gateway drug use, increased parent-child communication about substance use, decreased self-reported prevalence of monthly drinking up to one year after the intervention (although not after three years) and positive effects on monthly intoxication through the end of high school (Pentz, Mihalic, & Grotz, 1998).

The *Communities that Care Program* (CTC) has been implemented in several hundred communities in the United States and is currently being adopted and replicated in the Netherlands, United Kingdom and Australia. CTC is a strategy to activate communities to implement community violence and aggression prevention systems. Using local data on risk and protective factors, communities develop interventions that operate at multiple, interacting levels:

community, school, family and individual. The interventions range from mobilization, media and policy change at the community level, to changes in teaching practices at school, to parent training at home. CTC supports communities in selecting and implementing evidence-based programs that fit their unique needs.

To date, CTC has been evaluated in the United States using pre-post test designs and comparisons with baseline data that involve approximately 40 communities in each field test. Outcomes indicate improvements in youth cognitive skills, parental skills, community relations, a 30 per cent decrease in school problems, 45 per cent decrease in burglary, 29 per cent decrease in drug offences and 27 per cent decrease in assault charges (Hawkins, Catalano, & Arthur, 2002).

For a review of the evidence base for interventions to promote community capacity building, please see the BC Ministry of Health core programs evidence review on healthy communities.

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Table 9: Summary – Structural Interventions

Intervention	Level of Effectiveness	Appropriateness	Implications
1. Income Income support policies	Proven – income adequacy and income equality as key determinants of physical health (WHO). Promising/Warrants further research – impact of income support policies on positive mental health (IUHPE, VicHealth, WHO).	Falls outside health authority jurisdiction but within provincial responsibility.	Advocate with provincial and federal governments for income support policies that address guaranteed annual income, minimum wages, welfare benefits and progressive taxation.
1.1 Household food support policies	Promising/Warrants further research – impact of household food support policies on positive mental health (IUHPE, WHO).	Falls outside health authority jurisdiction but within provincial responsibility.	Work with local and provincial governments and community organizations to develop and implement food security policies and programs.
2. Housing Housing improvements	Proven – safe, secure, adequate housing as key determinant of physical health (WHO). Promising/Warrants further research – impact of housing interventions on positive mental health (IUHPE, VicHealth, WHO).	Falls outside health authority jurisdiction but within provincial responsibility.	Work with local, provincial and federal governments, development community, and housing providers to support health-related improvements to existing housing stock, and to provide health-related services for supportive housing.
3. Employment Adult work programs	Proven – for improved re-employment, labour market engagement, reduced depression (IUHPE, VicHealth, WHO). Promising/Warrants further research – impact of work programs on positive mental health (IUHPE, VicHealth, WHO).	Falls outside health authority jurisdiction but within provincial responsibility.	Advocate with Ministry of Employment and Income Assistance and employers to provide access to evidence-based work programs to address adult and youth unemployment and under-employment, and to provide supported employment opportunities for people with mental disorders.

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Intervention	Level of Effectiveness	Appropriateness	Implications
4. Community Capacity	Proven (IUHPE, VicHealth, WHO).	Requires collaboration and advocacy with partners outside the health system.	Work with local governments and community organizations to develop comprehensive, multi-component community interventions to address mental health promotion, problematic substance use and violence (e.g., mass media, local policy change, individual and group interventions within family, school and community).

Note: IUHPE: International Union of Health Promotion and Education; VicHealth: Victoria Health Promotion Foundation; WHO: World Health Organization.

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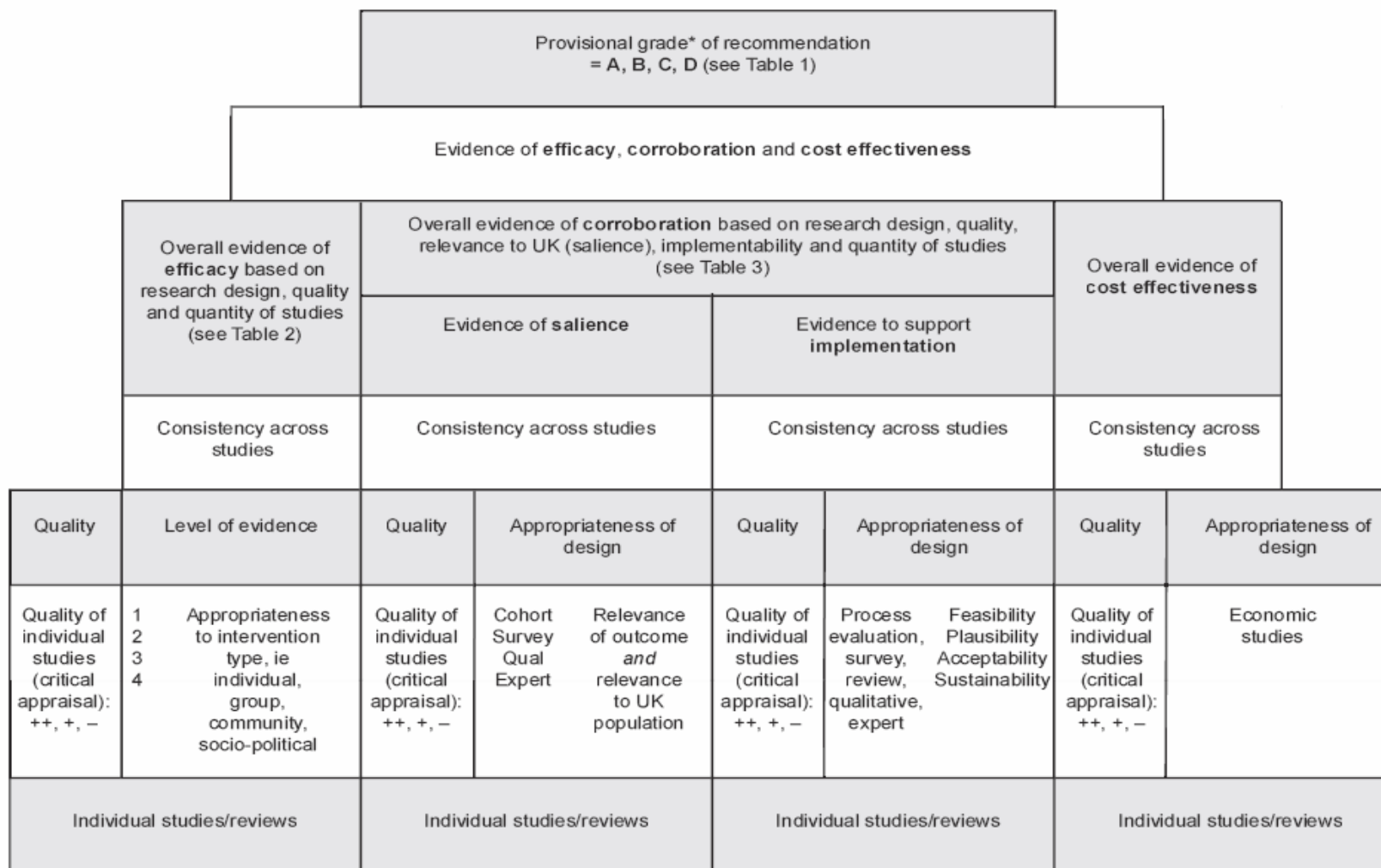
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APPENDIX 1: GRADING EVIDENCE FOR PUBLIC HEALTH INTERVENTIONS



*The final grade would take into account magnitude/effect size(s) (+ve or -ve)
 Key to quality: ++, very low risk; +, low risk; -, high risk of confounding, bias or chance.

Source: Weightman, A. et al. (2005). *Grading Evidence and Recommendations for Public Health Interventions: Developing and Piloting a Framework*. London: NHS, Health Development Agency.

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Table 1: Evidence Grading System for Public Health Recommendations

Class	Basis for Decision*
A [PH]	At least one 1++ study or consistent findings in a body of studies** principally rated as 1+ for efficacy,*** with strong or moderate evidence of corroboration. <i>OR</i> Consistent findings in a body of 2++ studies for efficacy, with strong evidence of corroboration.
B [PH]	At least one 1++ study or consistent findings in a body of studies principally rated as 1+ for efficacy, with limited/ no evidence of corroboration. <i>OR</i> A single 1+ study for efficacy, with strong or moderate evidence of corroboration. <i>OR</i> A single 2++ study or consistent findings in a body of studies principally rated as 2+ for efficacy, with strong evidence of corroboration. <i>OR</i> Consistent findings in a body of studies principally rated as 2++ for efficacy, with moderate evidence of corroboration.
C [PH]	Consistent findings in a body of studies principally rated as 2++ for efficacy, with limited/ no evidence of corroboration. <i>OR</i> A single 2++ study or consistent findings in a body of studies principally rated as 2+ for efficacy, with moderate evidence of corroboration. <i>OR</i> A single 2+ study for efficacy, with strong evidence of corroboration. <i>OR</i> A body of level 3 or 4 evidence for efficacy, with strong evidence of corroboration.
D [PH]	A single 2++ study or consistent findings in a body of studies principally rated as 2+ for efficacy, with limited/no evidence of corroboration <i>OR</i> A single 2+ study for efficacy, with moderate evidence for corroboration. <i>OR</i> A body of level 3 or 4 evidence of efficacy, with moderate/limited evidence of corroboration. <i>OR</i> Formal consensus.
D [GPP]	A recommendation based on experience of best practice by health professionals and expert groups.

* See Tables B and C for key to study type, quality and strength of evidence

** Body of studies = 3 or more, or a systematic review

*** For national environmental/socio-political interventions, a body of 2+ studies is acceptable

Note: [PH] Public health; [GPP] Good practice point.

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Table 2: Evidence of Efficacy of an Intervention – Did it Work?

Level of Evidence	Type of Evidence
1++	<i>High quality</i> meta-analyses, systematic reviews of randomized controlled trials (RCTs) including cluster RCTs or RCTs with a <i>very low</i> risk of bias.
1+	<i>Well conducted</i> meta-analyses, systematic reviews of RCTs or RCTs with <i>low</i> risk of bias.
1- *	Meta-analyses, systematic reviews of RCTs or RCTs with a high risk of bias.
2++	<i>High quality</i> systematic reviews, individual non-randomized intervention studies (e.g., controlled non-randomized trial, controlled before-and-after, interrupted time series), or comparative cohort and correlation studies with a <i>very low</i> risk of confounding, bias or chance.
2+	<i>Well conducted</i> non-randomized intervention studies (e.g., controlled non-randomized trial, controlled before-and-after, interrupted time series), or comparative cohort and correlational studies with a <i>low</i> risk of confounding, bias or chance.
2-*	Non-randomized intervention studies (e.g., controlled non-randomized trial, controlled before-and-after, interrupted time series), or comparative cohort and correlational studies with a high risk of confounding, bias or chance.
3	Non-analytical studies (e.g., case reports, case series).
4	Expert opinion, formal consensus.

* Studies with a level of evidence of (-) should not be used as a basis for making recommendations.

Source: Adapted from SIGN (2001).

Table 3: Evidence of Corroboration

Level of Evidence	Type of Evidence
Strong	Consistent findings in two or more studies with very low risk of confounding, bias or chance, carried out <i>within the country of interest</i> and applicable to the target population, with evidence of salience (e.g., relevant outcomes for this population) and implementation.
Moderate	One study with the features listed above, or two or more studies with very low risk of confounding, bias or chance, <i>not carried out in the country of interest</i> but applicable to the target population, with evidence of salience and implementation.
Limited	Only one study of low (as opposed to very low) risk of confounding, bias or chance, carried out <i>within the country of interest</i> , or two or more studies with inconsistent findings but on balance providing evidence of benefit, or studies of low risk <i>not carried out in the country of interest</i> but applicable to the target population.
No evidence	No study of acceptable quality, or inconsistent studies with unclear benefit, or no relevant research available.

APPENDIX 2: MENTAL HEALTH-RELATED WEBSITES

Canadian Mental Health Association: <http://www.cmha.ca>

Centre for Addiction and Mental Health: <http://www.camh.net>

Centre for Applied Research in Mental Health and Addiction: <http://www.carmha.ca>

Centre for Health Promotion: <http://www.utoronto.ca/chp>

Children's Health Policy Centre: <http://www.childhealthpolicy.sfu.ca>

Clifford Beers Foundation: <http://www.cliffordbeersfoundation.co.uk>

Coalition for Evidence-based Policy (Social Programs That Work):
<http://www.evidencebasedprograms.org>

Collaborative for Academic, Social, and Emotional Learning: <http://www.casel.org>

European Mental Health Implementation Project: <http://mentalhealth.epha.org>

Evidence for Policy and Practice Information and Co-ordinating Centre: <http://eppi.ioe.ac.uk>

Global Consortium for the Worldwide Advancement of Promotion and Prevention in Mental Health (GCAPP): <http://www.gcappmentalhealth.org>

Mental Health Council of Australia: <http://www.mhca.org.au>

Mental Health Foundation (United Kingdom): <http://www.mentalhealth.org.uk>

Mental Health Foundation of New Zealand: <http://www.mentalhealth.org.nz>

Mental Health Europe: <http://www.mhe-sme.org>

National Institute for Health and Clinical Excellence: <http://www.nice.org.uk>

National Institute for Mental Health in England, Knowledge Community: <http://kc.nimhe.org.uk>

Prevention Research Centre: Mental Health Promotion and Mental Disorder Prevention (Netherlands): <http://www.preventioncenter.net>

Sainsbury Centre for Mental Health (England): <http://www.scmh.org.uk>

Victorian Health Promotion Foundation (VicHealth): <http://www.vichealth.vic.gov.au>

wellscotland: <http://wellscotland.info>

World Health Organization, Mental Health Evidence and Research:
http://www.who.int/mental_health/evidence/en