



Maximizing Social Impacts and Returns on Investment

*Towards a Sustainable Prevention Infrastructure for Population Mental Health
Promotion and Mental Illness Prevention in Canada*

The Mental Health Summit Network

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EXECUTIVE SUMMARY

In February 2012, at the request of the Premier and the Healthy Child Committee of Cabinet, Healthy Child Manitoba hosted “Mental Health Summit 2012: Mental Health Promotion and Mental Illness Prevention for All” in Winnipeg, Manitoba. The planning process for the Summit was led by Healthy Child Manitoba (HCM) and included participation from the Public Health Agency of Canada (PHAC) and the Mental Health Commission of Canada (MHCC). PHAC and the MHCC also participated in, and contributed financial support to, the facilitation of the proceedings. Over 300 delegates from across Canada attended the Summit, including policy, service delivery, research, and decision-making representatives from provincial, territorial, Indigenous, and federal governments, and national organizations representing a variety of sectors.

Mental Health Summit 2012 engaged a diverse group of attendees and produced a broad foundation of domestic and international evidence. Following the Summit, the Mental Health Summit Steering Committee agreed to convene a follow-up invitational Think Tank to identify and recommend mechanisms which facilitate the exchange of evidence among jurisdictions and provide support for the development and scale up of mental health promotion and mental illness prevention (MHP/MIP) innovation and best practices within and across Canadian jurisdictions.

Following the Think Tank, work towards the original goals and objectives of Mental Health Summit 2012 continued under the banner of the Mental Health Summit Network (MHSN). This report, *Maximizing Social Impacts and Returns on Investment: Towards a Sustainable Prevention Infrastructure for Population Mental Health Promotion and Mental Illness Prevention in Canada*, integrates key principles, elements and objectives highlighted by the Think Tank with core concepts, research and frameworks from the fields of mental health and implementation science. The aims of this report are to:

1. Provide a pan-Canadian framework for the collaboration, implementation, scale-up, and sustained commitment to evidence-based mental health promotion and mental illness prevention.
2. Provide information on the role of strategic, evidence-based implementation to enhance evidence-based programs and evidence-informed innovations’ (EBP/EIIs) fidelity, continuous quality improvement, outcomes, and sustainability.

The major points outlined in the report are:

- ❖ Mental health problems and mental illness are highly-prevalent in Canada and have far-reaching impacts on millions of Canadians’ quality of life and the sustainability of government social and economic systems. Given their significant impacts, increased investment in mental healthcare and MHP/MIP is warranted.
- ❖ Social determinants such as poverty, sex and gender, food insecurity and housing have a pervasive effect on the incidence and distribution of mental health problems and mental illness. Deliberate efforts to fairly distribute the benefits of MHP/MIP (i.e., to reduce, rather than exacerbate, mental health disparities between social groups) are critical.

- ❖ Investments in MHP/MIP can produce substantial social impacts and returns on investment, such as improving quality of life, reducing the burden on children, families and government systems, and bolstering the economy. These investments are only realized when EBP/EIIs are effectively and sustainably brought to scale.
- ❖ Currently, approximately 14% of well-researched practices, programs and policies make it into the field, and it takes an average 17 years for them to reach the community. This ‘implementation gap’ represents a significant barrier to establishing innovative, effective approaches to emerging issues in MHP/MIP.
- ❖ Substantial investments are currently made into programs with no evidence to support them and no proven track records. The potential for existing programming to be inefficient, untested, and even harmful means that EBP/EIIs may be implemented ‘instead of’ rather than ‘in addition to’ in many cases.
- ❖ EBP/EIIs are not sufficient to produce desired social impacts and returns on investment. Deliberate plans for evidence-based implementation and scale-up, including the installation and maintenance of data systems to collect, manage and report on implementation quality, fidelity, and outcomes, are critical for success.
- ❖ The field of implementation science is rapidly developing and shows promise in improving the fidelity, quality and sustainability of evidence-based approaches. Attention to the latest science on mental health interventions, as well as science on how to effectively implement them is the next step for P/Ts’ evidence-based decision making processes for MHP/MIP.

To accomplish the aims of the report, and provide detail on the major points, the following outputs are provided:

- ❖ Background and rationale
- ❖ Tips on the ‘how-to’ of evidence-based implementation
- ❖ Canadian examples
- ❖ Interactive tools
- ❖ Questions for reflection for each of the stages of implementation

OUR VISION

At the core of the Mental Health Summit Network's (MHSN) vision for pan-Canadian developments in mental health promotion and mental illness prevention (MHP/MIP) is generating substantial, reliable, and sustainable social impacts and returns on investment is. Given the escalating costs and limited returns provided by narrowly focused 'illness-care' mental health systems, it has become increasingly apparent the only sustainable way forward is a fundamental shift towards prevention.¹

The legacies of patchwork, siloed, untested, and unsustainable approaches have limited the potential of MHP/MIP investments to date. A new approach, which aims to counteract these legacies while being more efficient, effective, and equitable, is outlined in this report. The new approach is collaborative, centred on the unique needs of communities across Canada, and integrates evidence-based programs, innovations and strategies to strengthen their implementation. The following three key principles underlie this approach:

A Lifecourse Approach to Mental Health Promotion and Mental Illness Prevention

The distribution of mental health and mental illness in the population is determined by a combination of intersecting social, economic, environmental, and biological factors. Importantly, the factors which may enhance resilience or increase risk varies across the lifecourse.

It is well-established that the period from prenatal to around 6 years of age represents the most significant period in human development. The rapid development of children's biological systems (particularly the brain and central nervous system) and their increased sensitivity to environmental influences underpin this critical period in human development. New developments in epigenetic research demonstrate how toxic stressors, such as poverty and child maltreatment, can 'get under the skin' of children, altering the expression of their DNA and negatively affecting the architecture of their developing brain.² These effects can put children on a less favourable developmental trajectory, decreasing their chances of reaching their potential.

Promoting to the greatest degree possible that children are raised in safe, nurturing, and engaging environments during this critical developmental period can have a monumental impact on both their physical and mental health later in life.³ Investments in this critical period, along with appropriate supports through middle childhood, adolescence, and adulthood, sets a lifecourse approach to mental health promotion and mental illness prevention.⁴

The Population Health Approach and 'Proportionate Universalism'

¹ World Health Organization (2004). Prevention of mental disorders : effective interventions and policy options : summary report / a report of the World Health Organization Dept. of Mental Health and Substance Abuse ; in collaboration with the Prevention Research Centre of the Universities of Nijmegen and Maastricht.

² Hertzman C, Boyce T. (2010). How experience gets under the skin to create gradients in developmental health. *Annu Rev Public Health*. 31: 329-47

³ Biglan, A., Flay, B. R., Embry, D. D., & Sandler, I. N. (2012). The critical role of nurturing environments for promoting human well-being. *American Psychologist*, 67(4), 257-271.

⁴ O'Connell, M. E., Boat, T., & Warner, K. E. (Eds.). (2009). *Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities*. Washington, DC: Institute of Medicine; National Research Council.

The introduction of the population health approach caused a shift in thinking about how to tackle challenging problems in health and well-being at the population level. While previous approaches identified and targeted solutions at ‘at-risk’ groups, the population health approach led decision-makers to consider a broader continuum of preventive and protective health interventions. Rather than focusing on smaller ‘at-risk’ populations, this universal approach is guided by the understanding that facilitating small changes among large populations can result in substantive shifts in the distribution of health and wellness.

The population health approach aims to improve the health of the entire population, while reducing health inequities within it.⁵ Health inequities are differences in health that are systematic, socially produced, and avoidable.⁶ Intersecting social determinants such as poverty, sex and gender, food insecurity and housing have a pervasive effect on the incidence and distribution of mental health problems and mental illness.⁷ Accounting for social determinants of health is particularly relevant to MHP/MIP in order to reduce mental health inequities and universally promote mental health.

To address critics of the population health approach’s limitations towards reducing health inequities, Marmot et al. have outlined a complementary concept called “proportionate universalism”.⁸ This concept suggests that to reduce inequities in health, policies and actions should be inclusive and offered widely (universally), but with a scale and intensity proportionate to needs.

Evidence-Based Decision-Making and Evidence-Based Implementation

Evidence-based decision-making have gained significant momentum in Canadian jurisdictions over the past few decades. However, evidence-based strategies to scale up and evaluate programming have lagged behind, contributing to the failure of many evidence-based programs and evidence-informed innovations (EBP/EIIs) to generate reliable and sustainable returns. Currently, only 14% of well-researched innovations are used in practice, and it takes on average 17 years to reach this modest uptake.⁹ With the proper supports and strategies in place, implementation fidelity, i.e., quality, can be drastically improved. A large-scale study of the implementation of one established EBP noted that 80% of sites with proper implementation strategies and supports met fidelity criteria after only 3.6 years, whereas only 30% of sites without strategies and supports reached these criteria after 7 years.¹⁰

A consideration of how to bring policies and actions to large populations is often over-looked. The present report’s (‘Building Capacity’, ‘Choosing the Right Approach’, and ‘Implementing with Intention’

⁵ The Public Health Agency of Canada (2004). What is the Population Health Approach? Online: Retrieved July 17, 2014 from <http://www.phac-aspc.gc.ca/ph-sp/approach-approche/index-eng.php>

⁶ Dahlgren, G., & Whitehead, M. (2007). European Strategies for Tackling Social Inequities in Health: Levelling up (Part 1). Copenhagen, WHO Regional Office: World Health Organization.

⁷ World Health Organization and Calouste Gulbenkian Foundation (2014). Social determinants of mental health. Geneva, World Health Organization.

⁸ The Marmot Review Team. Fair Society, Healthy Lives: The Marmot Review (2010).

⁹ Balas EA, Boren SA. (2000). Yearbook of Medical Informatics: Managing Clinical Knowledge for Health Care Improvement. Stuttgart, Germany: Schattauer Verlagsgesellschaft mbH

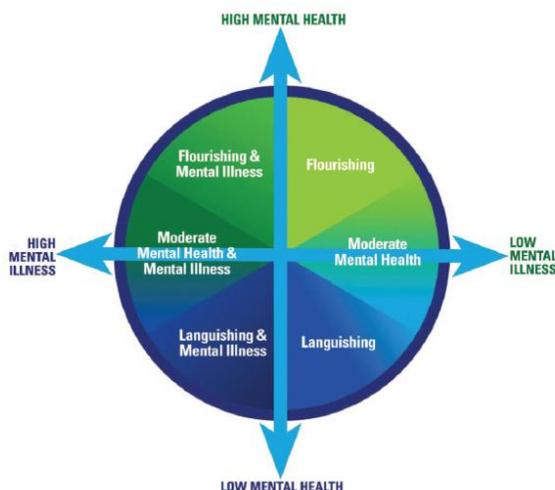
¹⁰ Fixsen, D. L., Blase, K. A., Timbers, G. D., & Wolf, M. M. (2001). In search of program implementation: 792 replications of the Teaching-Family Model. In G. A. Bernfeld, D. P. Farrington & A. W. Leschied (Eds.), *Offender rehabilitation in practice: Implementing and evaluating effective programs* (pp. 149-166). London: Wiley.

sections) outline factors which facilitate the implementation, scale-up, and sustained commitment to evidence-based decision-making processes.

INTRODUCTION

Mental health is a vital asset to Canadian society. It is foundational for our overall health, our happiness, and our ability to foster and maintain positive relationships throughout life. Mental health is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community. Importantly, mental health is not simply the absence of mental illness, but a more complex continuum of mental health and mental illness that shifts over time.¹¹ Accordingly, those with high degrees of mental illness are still able to flourish in supportive environments, just as those with low degrees of mental illness may languish in less supportive environments (see figure 1).

Figure 1 - The mental health continuum: from languishing to flourishing in life (Keyes 2002)



The phrase ‘mental health problems and illnesses’ is used throughout this report and refers to a broad spectrum of behaviours and emotions that cause distress in everyday life, impacting across work, school, family, and other areas. Mental health problems and illnesses range widely from anxiety and depressive disorders to schizophrenia and may be associated with a medical diagnosis. The frequency, intensity and duration of symptoms can vary significantly across problems and illness and across people.¹²

Over the past decade, attention has been afforded to the significant impacts of mental health problems and mental illness across the globe. According to the World Health Organization (WHO), mental illness is the leading cause of disability burden in every country, exacting a far greater impact than heart disease or cancer.¹³ In Canada, mental health problems and mental illness have far-reaching social and

¹¹ Keyes (2002) The mental health continuum: from languishing to flourishing in life.

¹² Mental Health Commission of Canada (2012). Making the Case for Investment in Mental Health in Canada. Online: retrieved from <http://www.mentalhealthcommission.ca/> June 24, 2014.

¹³ Vos, T., et al. (2012). Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*. Vol. 380(9859), pp. 2163-96.

economic costs. One in five Canadians is directly affected by mental health problems and mental illness.¹⁴ When considering the impact on family and caregivers, nearly every Canadian is affected. Mental illness and substance abuse disorders are currently the second leading cause of disability and premature death in the country and account for more than 15% of the total disease burden.¹⁵

Mental health problems and mental illnesses generally take hold early in life. An estimated 70% of mental illnesses manifest themselves during childhood or adolescence.¹⁶ Currently, 15-20% of Canadian children and youth between the ages of 4 and 17 meet the criteria for a mental illness requiring some form of care.¹⁷ For Canadians aged 20 to 29, more than 28% may experience a mental illness in a given year. An American study noted by age 21, the percentage of youth ever affected by mental health problems or mental illness may be as high as 80%.¹⁸ Childhood mental health problems are now seen as a nearly universal experience, occurring at similar rates as physical illness.¹⁸ Furthermore, experts conclude that there is stronger evidence showing that childhood mental health problems are becoming worse over time compared to negative trends in childhood physical health problems.¹⁹

The Impacts of Mental Health Problems and Mental Illnesses

The losses in productivity, declines in health-related quality of life, and increases in health-care expenditures related to poor mental health cost the Canadian economy well over \$50 billion a year,²⁰ the equivalent of roughly one fifth of Canada's GDP growth from 2008 to 2012.²¹ The direct costs of mental health are expected to rise significantly in the next 20 years. These costs were estimated at \$43.3 billion per year in 2011 and are projected to rise to \$156.1 billion by 2031.²²

Evidence shows that the predicted growth in mental health expenditures is not inevitable. We have the potential to greatly improve mental health and reduce the incidence of

“there is strong evidence to show that we have the potential to greatly improve mental health and reduce the incidence of mental illness in the population; in turn enhancing quality of life for hundreds of thousands of Canadians, increasing productivity of the economy, and promoting the sustainability of government systems across the country.”

¹⁴ Smetanin, P., Stiff, D., Briante, C., Adair, C.E., Ahmad, S. & Khan, M. (2011). *The life and economic impact of major mental illnesses in Canada: 2011 to 2041*. RiskAnalytica on behalf of the Mental Health Commission of Canada.

¹⁵ Institute of Health Economics (2008). How Much Should We Spend on Mental Health?

¹⁶ Statistics Canada (2003). Canadian Community Health Survey – Mental Health

¹⁷ Waddell, C., McEwan, K., Shepherd, C., Offord, D. & Hua, J. (2005). A Public Health Strategy to Improve the Mental Health of Canadian Children. *Canadian Journal of Psychiatry*, 50 (4)

¹⁸ Copeland, W., Shanahan, L., Costello, E.J., Angold A. (2009). Cumulative Prevalence of Psychiatric Disorders by Young Adulthood: A Prospective Cohort Analysis from the Great Smoky Mountains Study. *Journal of the American Academy of Child and Adolescent Psychiatry*. 50(3):252-61

¹⁹ Delaney, L., Smith, J.P. (2012). Childhood health: trends and consequences over the life course. *The Future of Children/Centre for the Future of Children*. 22(1):43-63.

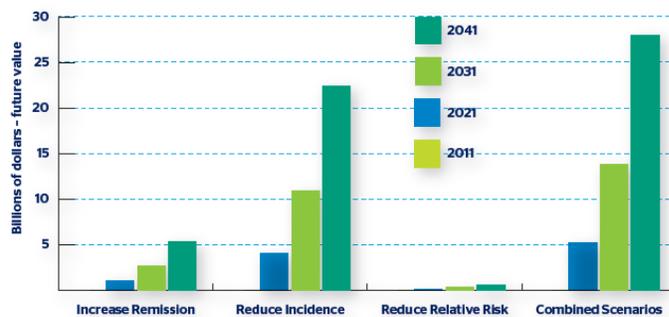
²⁰ Lim K-L, Jacobs P, Ohinmaa A, Schopflocher D, and CS Dewa. 2008. “A new Population-based measure of the economic burden of mental illness in Canada.” *Chronic Diseases in Canada*. Vol. 28, no. 3. p 92-98. Online: http://publications.gc.ca/collections/collection_2009/aspc-phac/H12-27-28-3E.pdf (accessed June 19, 2014)

²¹ World Bank (2014). World Development Indicators: Gross Domestic Product. Online: retrieved from www.google.ca/publicindicators June 20, 2014.

²² Smetanin, P., Stiff, D., Briante, C., and Khan, M. (2012). *Life and Economic Impact of Hypothetical Intervention Scenarios on Major Mental Illnesses in Canada: 2011 to 2041*. RiskAnalytica, on behalf of the Mental Health Commission of Canada.

mental illness in the population, and in turn enhance the quality of life for hundreds of thousands of Canadians, increase economic productivity, and promote the sustainability of government systems across the country. A study commissioned by the Mental Health Commission of Canada (MHCC) noted that MHP/MIP efforts reducing the incidence of mental illness by 10% could save \$4 billion in direct annual healthcare costs by 2021 and over \$10 billion by 2031. As demonstrated in figure 2, a scenario that combines an increase in remission of symptoms, reduction in incidence, and a reduction in the risk factors for developing mental illness would save around \$14 billion annually by 2031 and \$27 billion annually by 2041.²³

Figure 2 - Estimated Reduction in Total Direct Costs for Mental Illnesses in Annual Future Value Terms, Four Scenarios (Smetanin et al, 2012)



While continued investment in mental healthcare is warranted, it has become apparent that a narrowly focused ‘illness-care’ model is neither a sufficient nor affordable approach to mental health in Canada. Governments, non-government organizations (NGOs) and the private sector are looking for innovative, effective, and efficient ways to prevent rises in the incidence of mental illness and promote sustainable, mentally healthy communities.

Is a 10% reduction in the incidence of mental illness, 10% remission of symptoms, and a corresponding reduction in the relative risk of mental illness possible in ten years? With the availability of effective evidence-based approaches to mental health promotion and mental illness prevention, and the increased impacts when supports are in place (especially in the early childhood years), it can be argued it is not only possible, but we have a duty to take action.

BUILDING CAPACITY

Vested Partnerships

Governments, NGOs, and the private sector often share the common goals of tackling social problems and enhancing community health, happiness and productivity. These common goals form the foundation and motivation for vested partnerships for MHP/MIP: that is, partnerships where all parties have a stake in achieving progress towards common goals. Fostering and maintaining vested partnerships can take time, but it is a critical step to building sustainable program infrastructure. When

²³ Smetanin, P., Stiff, D., Briante, C., and Khan, M. (2012). *Life and Economic Impact of Hypothetical Intervention Scenarios on Major Mental Illnesses in Canada: 2011 to 2041*. RiskAnalytica, on behalf of the Mental Health Commission of Canada.

partnerships are strong, EBP/EIs encounter fewer obstacles and can be rolled out more efficiently, effectively and equitably than those rolled out unilaterally.

Collective Impact

In Canada, investment in research and innovations has marked a positive shift in the effort to improve public mental health. However, two major factors act together as barriers to our current approach to achieving large-scale impacts: 1) the complex, intertwined nature of the determinants of mental health problems and mental illnesses, and 2) the tendency for funding and organizational mandates to promote fragmented, small-scale and individualistic approaches.

The Collective Impact Framework is gaining attention as a way for partners to collectively approach complex social problems. Based on their research and experience in the non-profit field, Kania and Kramer have outlined five conditions for collective success:²⁴

Common Agenda

Individual organizations often take different approaches to defining and approaching the same issue. While this poses little problem when working in isolation, a collective impact approach requires differences in the key aspects of defining and approaching the issue to be discussed and resolved.

Shared Measurement Systems

Shared measurement systems, including shared indicators of success, is critical for determining the effectiveness of a given strategy, holds all parties accountable for results, and gives the opportunity to build feedback loops for continuous quality improvement.

Mutually Reinforcing Activities

Collective impact initiatives require multiple organizations to work together towards the same goal. Partners are encouraged to work to their strengths. But rather than proceeding independently with unique tasks, the larger collective must develop a comprehensive strategy that fills gaps and builds synergies. Approaching the initiative with mutually reinforcing activities acknowledges the multiple and interdependent causes of social problems and works towards a more comprehensive and impactful way to address them.

Continuous Communication

Creating relationships of trust among diverse organizations such as NGOs, government departments/agencies, and private sector corporations can take years to achieve. Still, all parties must have regular opportunities for meaningful input. Regular meetings (every 2 to 4

²⁴ Kania, J., Kramer, M. (2011). Collective Impact: Large-scale change requires broad cross-sector coordination, yet the social sector remains focused on the isolated intervention of individual organizations. *Stanford Social Innovation Review*. Online: retrieved from http://www.ssireview.org/articles/entry/collective_impact

weeks) of leadership, where delegates are not acceptable, helps to foster trust and set the agenda on a positive course.

Backbone Support Organization

The expectation that efforts at collective impact can succeed without additional infrastructure is a central reason why they fail to accomplish their goals. The respective organizations commonly fail to devote extra time to the initiative. Kania and Kramer suggest the need for a ‘backbone support organization’, with additional staff and resources to carry out communications, management, data collection and reporting, and all other tasks associated with the collective impact initiative.

As stated previously, the Collective Impact Framework is best suited for complex problems that are large in scope. Consequently, the Framework may not be appropriate for other problems. However, this collaborative approach represents a novel, promising way to promote mental health and reduce mental illness at the population-level.

Data Infrastructure

The move towards evidence-based policy and decision-making requires that, to the greatest extent, policy decisions be based on valid, reliable and objective data. Building data infrastructure is therefore critical to any MHP/MIP. Developing a secure data centre, data ownership/ sharing/ transfer protocols, and implementing valid and reliable measurement tools are all centrepieces of a working data system. Of course, any good data system requires trained staff. When working in partnerships, partner organizations may mutually benefit from sharing human and physical resources to fill gaps and limit overlap of work.

Building population-level datasets of developmental indicators (e.g. The Early Development Instrument), health behaviours (e.g. the Youth Health Survey) and contact with government systems (Health, Child and Family Services, Justice, etc.) can be a powerful tool for answering relevant policy questions. This behavioural, attitudinal and administrative data can also be leveraged to evaluate EBP/EIIs, depending on the indicator and outcome data available.

While building data infrastructure may take time and resources, it is a fundamental piece of any evidence-based decision-making process. Local-level data is critical for responding to communities’ needs, determining the impacts of programming, and feeding back information for continuous quality improvement of programs.

Key Questions – Building Capacity

Building capacity is an ongoing process that requires careful attention to process, as well as the assessment of current and future organizational needs and the specific needs of EBP/EIIs. The following questions summarize some of the key considerations highlighted in this section:

- 1) Has your department or organization consulted with key stakeholders in a given policy area and considered a partnership with them? If so, are partners invested in a positive outcome?
- 2) If the problem is complex, involving several potential partners, has a Collective Impact approach been considered?
- 3) Is the data infrastructure in place to take on new evaluations of EBP/EIIs? Will the organization need to expand infrastructure to keep up with changing needs? If so, what investments need to be made or considered now?

CHOOSING THE RIGHT APPROACH

Programs, practices and policies become active in the community through different channels. Some are developed from the ground up, responding to community-level needs. Others are built in academic or research settings, tested under controlled conditions, and then brought in by external advocates, consultants, scientists, or developers. Given the limited resources available for investment in MHP/MIP, governments and NGOs are increasingly looking to approaches with proven track records to promote the greatest impacts and returns on investment. These approaches come in the form of evidence-based programs, practices or policies (EBPs) or evidence-informed innovations (EIIs). EBPs are generally defined as programs which produce intended positive outcomes and are based on rigorous research. The Substance Abuse and Mental Health Service Administration (SAMHSA) National Registry of Evidence-based Programs and Practices sets minimum criteria for EBPs as:

1. The intervention has produced a significant positive behavioural outcome in mental health or substance abuse ($p < 0.05$).
2. The evidence of the outcome was demonstrated in a quasi-experimental or experimental study.
3. The results of the study were published in a peer-reviewed scientific journal or in a comprehensive evaluation report.
4. Detailed information on the program and program evaluation are available to the public.²⁵

While SAMSHA has set out minimum criteria for acceptability, conducting more detailed analyses of the evidence supporting implementation of a given EBP/EII is good practice. Jurisdictions such as British Columbia set specific policy parameters outlining the acceptability of implementing programs based on the research and evaluation data and literature available (see appendix B).

Innovations involve the introduction of novel approaches that are useful in addressing a problem. EIIs are built using strategies to address evolving issues where there may be no evidence-based program

²⁵ See <http://www.nrepp.samhsa.gov/ReviewSubmission.aspx>

available, or the available options are incongruent with the local context.²⁶ When EIs are implemented and tested with a rigorous program evaluation, they may eventually achieve status as EBPs.

Substantial resources are currently consumed in sustaining untested and potentially ineffective – and even harmful – programs (see box 1). The result is not only the misguided use of resources, but also the lost opportunity to create a positive impact in promoting population mental health and preventing mental illness. Consequently, the question is not whether to use EBP/EI for MHP/MIP, but which EBP/EIs to use in a given setting and how? The following are key considerations to choosing the right approach.

Usable Interventions

Certain characteristics of EBP/EIs may impact their ability to be implemented effectively and achieve their desired outcomes. The National Implementation Research Network's (NIRN) 'Usable Interventions Framework'²⁷ notes that for interventions to be usable they should meet the following four criteria:

Clear description of the program

Clear descriptions of the program's values, principles and content make it easier to determine whether the program will fit in a particular context.

Clear essential functions that define the program

Essential functions of the program are tested components that 'make it work'. While other elements of the program may be adapted to fit local contexts, implementing the essential functions of an EBP/EI with fidelity is key to program success. Consequently, clear descriptions of these functions in training and training materials are important.²⁸

Operational definitions of essential functions

The essential functions of an EBP/EI need to be learnable and measurable. The NIRN framework states training and materials must "express each core component in terms that can be taught, learned, done in practice, and assessed in practice."

Practical performance assessment

Implementation of EBP/EIs should be tracked to maximize the program's intended impact and to enable a feedback loop for continuous quality improvement. EBP/EIs should be accompanied by validated tools (surveys, administrative forms, etc.) that capture data to provide important feedback to implementation teams.

²⁶ See Embry, D. D., Lipsey, M., Moore, K. A., & McCallum, D. F. (2013). Best Intentions are Not Enough: Techniques for Using Research and Data to Develop New Evidence-Informed Prevention Programs. *Emphasizing Evidence-Based Programs for Children and Youth: An Examination of Policy Issues and Practice Dilemmas Across Federal Initiatives.*, 26. Retrieved from Research Brief website: http://aspe.hhs.gov/hsp/13/KeyIssuesforChildrenYouth/BestIntentions/rb_bestintentions.cfm

²⁷ National Implementation Research Network. *Framework 1: Usable Interventions*. Retrieved from <http://implementation.fpg.unc.edu/module-1/usable-interventions> May 30, 2014.

²⁸ NOTE: Fixsen et al. note that many EBP/EIs have not isolated their essential functions. This is often due to when they are tested, there is little variation in implementation of the EBP/EI and only high-fidelity implementation is tested. The NIRN recommends development in determining the essential functions of complex interventions can be undertaken using plan-do-study-act (PDSA) cycles in the piloting stage of implementation. See Blase, K., Fixsen D. (2013). Core intervention components: Identifying and Operationalizing What Makes Programs Work. Online: Retrieved June 17, 2014 from <http://nirn.fpg.unc.edu/sites/nirn.fpg.unc.edu/files/resources/ASPE-Blase-Fixsen-CoreInterventionComponents-02-2013.pdf>

Simple Approaches

Where possible, choosing EBP/EIIs with simple approaches is more likely to result in efficient implementation. Simple approaches can be implemented at lower cost, take less time and expertise to train, and can be scaled up to reach full implementation quicker than more complex interventions.

Embry and Biglan have introduced the term ‘evidence-based kernels’ to signify simple strategies that are proven to change undesirable behaviours.²⁹ Identified as the smallest unit of behavioural change, kernels act as the active ingredients that produce outcomes in EBP/EIIs. Examples include using non-verbal cues to improve transitions in the classroom, using cooperative games at recess to decrease bullying and aggression, or one-page motivational goal maps to avert addictions by young people. Embry and Biglan’s study outlined over 50 examples of evidence-based kernels which can be used as stand-alone strategies to address specific issues, or in concert with existing EBP/EIIs to enhance their effects. While it is not always feasible to choose these approaches, the advantage of ‘keeping it simple’ should be kept in mind when exploring possible MHP/MIP options. A series of papers by Embry, Biglan and others provide guidance on how to “scale up” simple strategies to improve developmental and health outcomes.³⁰

Return on Investment

Evidence-based policymaking in MHP/MIP is firmly rooted in the principle of return on investment (ROI), promoting the premise that ‘an ounce of prevention beats a pound of cure’. With increasing demands being put on government services such as health, child welfare, education, and justice, ROI from evidence-based prevention programs has become increasingly important to sustain these systems. Nobel prize-winning economist James J. Heckman has demonstrated a compelling case for investing in early childhood programming in his work that shows investing in EBP/EIIs for young children can produce returns well above the opportunity cost of funds. His evidence also demonstrates that investments targeting middle childhood and adolescence build on the successes of previous investments and sustain these returns over time.³¹

The ROI for high-quality programming can be significant for both governments and communities. For example, since the invention and wide-spread use of polio vaccines in North America, the ROI is 3-to-1, or three dollars gained for each dollar spent.³²

²⁹ Embry, DD; Biglan, A (2008). Evidence-based Kernels: Fundamental Units of Behavioural Change. *Clin Child Fam Psychol Rev* 11:75–113.

³⁰ Embry, D. D. (2011). Behavioral Vaccines and Evidence-Based Kernels: Nonpharmaceutical Approaches for the Prevention of Mental, Emotional, and Behavioral Disorders. *Psychiatric Clinics of North America*, 34(March), 1-34; Biglan, A., & Embry, D. D. (2013). A Framework for Intentional Cultural Change. *Journal of Contextual Behavioral Science*, 2 (3-4); Embry, D. D. (2004). Community-Based Prevention Using Simple, Low-Cost, Evidence-Based Kernels and Behavior Vaccines. *Journal of Community Psychology*, 32(5), 575.

³¹ Heckman, J. J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science*. 312(5782), 1900-1902.

³² Thompson, K. M., & Tebbens, R. J. (2006). Retrospective cost-effectiveness analyses for polio vaccination in the United States. *Risk Anal*, 26(6), 1423-1440.

Box 1: Reducing the ‘Clutter’ of non-evidence-based programming: Examples from the USA and Canada

In 2013, an independent research team polled 135 school officials representing six of the nine Nova Scotia regional school boards to examine programming dedicated to socio-emotional learning (SEL). Of the 300 programs implemented in Nova Scotia schools identified by school administrators as being targeted at SEL, 28 met the criteria of having a structured curriculum delivered in more than one session, and only 5 (1.7%) were evidence-based.³³

Similarly, a 2011 US Department of Education study found that only 7.8% of school-based prevention programming met criteria to be considered evidence-based.³⁴ Of that 7.8%, only 44.3% met the minimal standards identified for implementation fidelity. Taken together, the study estimated that only 3.5% of prevention programs were both evidence-based and being implemented to the minimum standards intended.

Both cases demonstrate the significant opportunity lost in prevention efforts. As the 2011 US study noted:

“This information suggests that a tremendous amount of resources, in classroom time for prevention programming alone, is being allocated to school-based prevention efforts that either lack empirical support for their effectiveness or are implemented in ways that diminish the desired effect.”³⁵

Introducing EBP/EIs often faces the challenge of overburdening staff. The potential for existing programming to be inefficient, untested, and even harmful means that EBP/EIs may be implemented ‘instead of’ rather than ‘in addition to’ existing programs in many cases. Reducing the clutter of non-EBP/EIs could go a long way to promoting the implementation and evaluation of tested approaches in the community, in turn, promoting the best possible outcomes for program recipients.

Feasibility of Integration (FIT)

Responding to Local Needs

Even when EBP/EIs have demonstrated their effectiveness elsewhere, they may not necessarily be the right fit for a given community. Consultation with communities to determine their strengths and needs, and whether a specific EBP/EI would fit, is necessary to improve integration and the likelihood of program success. In practice, the consultation process may involve outreach to communities, discussions around program details, or a combination of both depending on the context and phase of implementation/ scale-up.

EBP/EIs with overly rigid program frameworks tend to be less effective and encounter more resistance when compared to those that are open to local ‘tweaking’. High fidelity to the essential functions of an

³³ Leblanc, J.C., Parkington, K., Varatharasan, N., Donato, A., Bilsbury, T. (2013). Socio-emotional Learning Programs for Schools. CPSC Atlantic: SEL Toolkit. V1.1.

³⁴ U.S. Department of Education, Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service, Prevalence and Implementation Fidelity of Research-Based Prevention Programs in Public Schools: Final Report, Washington, D.C., 2011.

³⁵ Ibid.

EBP/EII should be a key implementation objective. However, a singular focus on implementation protocols and high-fidelity implementation can often detract from the feedback loops needed for continuous quality improvement (CQI).³⁶ Private sector corporations are constantly updating their products and software as part of their CQI strategies to take advantage of new product developments and feedback from consumers. Chambers et al. argue that developing feedback loops and being adaptable to the local context are critical for EBP/EIIs to continuously produce results, and consequently, be sustained in the long term.³⁷

Integrating into Existing Settings

In an era of limited resources and deficit-fighting governments, obtaining new resources and/or staff to implement EBP/EIIs is a challenge. While obtaining new resources for implementation is sometimes necessary, implementation of an EBP/EII into existing structures is typically the only option.

Integrating EBP/EIIs into existing structures can still result in success. At the policy/ management level, integration may involve taking advantage of existing partnerships and relevant management expertise to guide the process. At the service delivery level, examples are training home visitors or school teachers to implement MHP curriculum and/or programming. The case studies in the final section of this report provide concrete examples of integrating new EBP/EIIs into existing practices.

Equity Considerations

Even when well-intentioned, health promotion programming may have the unintended consequence of exacerbating health inequities by concentrating the benefits among advantaged groups.³⁸ Consequently, specific strategies are required to promote mental health and well-being among the entire population, while reducing the gap between the most and least socially advantaged.

Predicting unintended consequences for socially defined populations, and developing strategies to mitigate potential differential impacts, is a critical step in planning the implementation of MHP/MIP initiatives. Equity-focused health impact assessments (EfHIA) or rapid EfHIAs can identify equity gaps in policy and programming and provide the basis for a more integrated, equity-focused approach to public health initiatives.³⁹

Figure 3 demonstrates an adapted version of the classic policy stages model. As shown below, an assessment of the potential equity impacts of an EBP/EII should be undertaken in the planning stages before implementation. Judging from the information gathered in the completed equity impact assessment, three options should be considered:

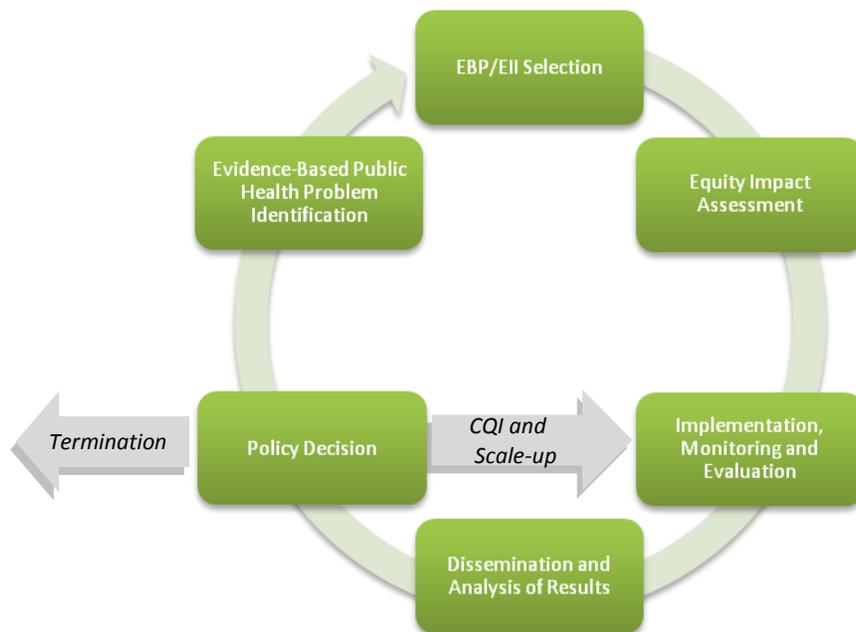
³⁶ Chambers DA, Glasgow RE, Stange KC (2013). The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. *Implementation Science*. 8:117.

³⁷ *ibid*

³⁸ Frohlich, K. L., & Potvin, L. (2008). Transcending the Known in Public Health Practice: The Inequality Paradox: The Population Approach and Vulnerable Populations. *Am J Public Health*, 98(2), 216-221.

³⁹ Harris-Roxas, B. F., Harris, P. J., Harris, E., & Kemp, L. A. (2011). A rapid equity focused health impact assessment of a policy implementation plan: An Australian case study and impact evaluation. *International Journal for Equity in Health*, 10(1), 6.

Figure 3 -Stages of the Evidence-based Policy Decision Model⁴⁰



1) proceed with confidence that the EBP/EII will reduce inequities in its current form, 2) proceed to implementation with modified strategies to mitigate the potential unintended consequences, or 3) given the scope of potential unintended consequences of proceeding with the EBP/EII in question, consider other options.

The model can be used to guide the implementation of new EBP/EIIs, or to assess policies and programs that are already in place. Recognizing that real-world implementation does not always occur in a linear fashion, users can work either prospectively or retrospectively through the steps of the process. Importantly, the policy decision stage is where, given enough information from analyzing fidelity, quality and outcomes of the program, stakeholders may decide whether to continue/ modify the EBP/ EII, or terminate its implementation. If an EBP/EIIs meets this 'litmus' test, the next tasks to follow are continuous quality improvement, strengthening implementation, and scaling it up.

⁴⁰ McArthur, P. (2011). Striking a Balance and Levelling the Playing Field: A Working Model for Policy Decision-Making towards Reducing Social Inequities in the Developmental Health of School-Aged Children and Youth in Canada. Report prepared for Healthy Child Manitoba.

Key Questions – Choosing the Right Approach

Choosing the right approach is the first step in designing a successful and sustainable strategy for MHP/MIP. The following questions summarize some key considerations highlighted in this section:

- 1) Is the approach based on rigorous evidence and proven results? (see appendix B)
- 2) Is the approach a ‘usable intervention’? That is:
 - a. Are the principles and practices clearly defined?
 - b. Are the essential elements clearly defined?
 - c. Are the essential elements of the approach defined in operational/ measurable terms?
 - d. Are there valid and reliable tools available to assess program performance – for fidelity, quality and outcomes?
- 3) Where feasible, have simple approaches (including evidence-based kernels) been considered as strategies to solve finite problems, or to enhance other, more complex initiatives?
- 4) Can approaches be compared using economic data indicating their return on investment (ROI)?
- 5) Will the approach fit the needs of the community and fit the resources available in the local context?
- 6) Can the EBP/EI take advantage of existing infrastructure (staff, resources, facilities, etc.)?
- 7) Are there concerns the EBP/EI will differentially affect socially-defined populations in a way that may increase or perpetuate social inequities in health? If so, have strategies been developed to mitigate unintended consequences?
- 8) Considering all of the key questions, does the approach have a relative advantage over what’s being done now, or over other approaches being considered?

IMPLEMENTING WITH INTENTION

Evidence-based Implementation

Since the institutionalization of evidence-based medicine in the 1940s, considerable investment has been made in the effectiveness of medical interventions and policy changes. Evidence-based policy making in public health and mental health have followed this trend, and increasing attention has been made to programming based on sound evidence and with proven results. However, until recently, the science and application of how to effectively *implement* evidence-based policy and programming (i.e. implementation science) has received little attention.

Implementation science is the “scientific study of methods to promote the systematic uptake of proven clinical treatments, practices, organisational, and management interventions into routine practice, and hence to improve health”.⁴¹

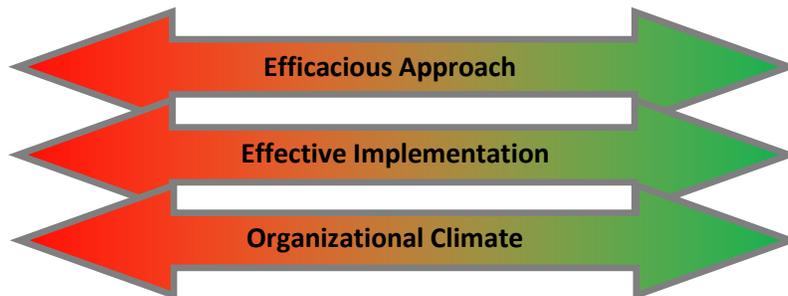
⁴¹ About Implementation Science. Retrieved from <http://www.implementationscience.com/about> June 16, 2014.

Quality policy and program implementation doesn't happen by accident. Unlike controlled academic settings, implementing EBP/EIIs in practice is subject to real-world challenges. Financing, training, staff turnover, competing priorities, and political roadblocks are some of the obstacles encountered when attempting to bring EBP/EIIs to scale. Rigorously tested by implementation scientists, evidence-based implementation strategies are intentional, measured actions which are designed to overcome these obstacles, and foster the quality, fidelity and sustainability of a given EBP/EII.

“Financing, training, staff turnover, competing priorities, and political roadblocks are some of the obstacles encountered when attempting to bring EBP/EIIs to scale...evidence-based implementation strategies are intentional, measured actions which are designed to overcome these obstacles, and foster the quality, fidelity and sustainability of a given EBP/EII.”

Simply training staff to implement a new approach is unlikely to result in a high rate of implementation, let alone implementation with high fidelity.⁴² Even when strategies are in place for programming with proven results, an unfavourable organizational environment may prevent EBP/EIIs from having success, or being implemented at all. Consequently, the following three factors need to be present to reliably generate the desired social impacts and returns on investment from EBP/EIIs: an effective approach, effective implementation strategies, and a favourable organizational climate (see figure 4):⁴³

Figure 4 –Components of Successful EBP/EIIs



A 2009 meta-analysis of programs for juvenile offenders revealed that the quality with which the program was implemented was so strongly related to outcomes that in some cases well-implemented but less efficacious programming can outperform more efficacious programs that are poorly implemented.⁴⁴ The factors in figure 4 may reach different strengths on separate continuums at a given time period in the implementation of an EBP/EII. To achieve the best possible results, feedback loops for continuous quality improvement should be developed to advance all three factors in tandem.

While jurisdictions across Canada continue to build their infrastructure to implement EBP/EIIs, this report underlines the concurrent need to commit to evidence-based implementation strategies to support their development. How does one go about improving effectiveness of a given EBP/EII's

⁴² Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M. & Wallace, F. (2005). Implementation Research: A Synthesis of the Literature. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network

⁴³ Adapted from NIRN website @ <http://implementation.fpg.unc.edu/>

⁴⁴ Lipsey, M. W. (2009). The Primary Factors that Characterize Effective Interventions with Juvenile Offenders. *Victims & Offenders: An International Journal of Evidence-based Research, Policy, and Practice*. 4(2): pp 124-147

implementation? Research from the private sector and the health sciences has revealed some key strategic factors, which will be summarized in the following sections.⁴⁵

Rolling it Out

When rolling out and scaling up EBP/EIIs, the process can be just as (or more) important than the end result. As mentioned in ‘Choosing the Right Approach’, consulting with communities to determine their needs, and whether a given EBP/EII will fit, is the first step. Careful consideration of the process when rolling out and scaling up EBP/EIIs is beneficial for at least two key reasons.

First, taking the time to adequately inform potential stakeholders about the content and benefits of a given EBP/EII is a key step in gathering support and mitigating roadblocks. Active demonstration that you are committed to a fair process can go a long way in promoting uptake and sustainability.

Second, offering a fair opportunity for all interested parties to participate also contributes to the equitable distribution of benefits of the program. Conversely, one of the ways that roll-out can contribute to an increase in health inequities is by only offering EBP/EIIs to sites with the most capacity to implement at the baseline. These ‘low-hanging fruit’ may be attractive demonstration sites, but favouring them could concentrate the benefits of the EBP/EII in places where the need is lowest, in turn increasing inequities in the distribution of the targeted outcomes.

‘Proportionate Universalism’, where programming is offered widely (universally), but with additional supports targeted on the basis of need, has been defined by Marmot et al. as a key strategy in reducing health inequities while promoting health for all.⁴⁶ In the Canadian context, reaching and supporting rural, remote and First Nations communities, even when they cross jurisdictional barriers, is one example of taking a Proportionate Universalist approach.

When communicating the benefits of EBP/EIIs is carried out appropriately, demand for training and implementation may outstrip the funders’ ability to supply. A lottery approach may be considered in this scenario, where the number of available training spots is assigned randomly to applicants. This approach also allows a very strong evaluation design in cases where it is ethically and functionally feasible to do so.

Taking this approach, training spots for the first round of training are randomly assigned from a master list of applicants. Those applicants who aren’t assigned to the initial training group are assigned to the wait-list, and act as the control group in the first phase of the evaluation. Once follow-up is conducted with the first implementation and control groups in phase one, the second phase of evaluation can proceed. In phase 2, the control group (or wait-list) is trained and their evaluation data is included in the larger analysis for evaluation.⁴⁷ This randomized, controlled community trial approach allows for a

⁴⁵ To learn more about implementation science and ‘Active Implementation’, the United States’ National Implementation Research Network’s online training is available at: <http://implementation.fpg.unc.edu/>

⁴⁶ The Marmot Review Team. Fair Society, Healthy Lives: The Marmot Review (2010).

⁴⁷ See CASE STUDIES section of this report for applied examples of the lottery approach.

strong causal evaluation design, where benefits from the EBP/EII can more likely be attributed to its implementation and not extraneous factors. This type of rollout also advances the science of implementation and efficacy, as there are always lessons learned via a continuous improvement model.

Training Methods

In addition to the availability and quality of training materials, the training methods for an EBP/EII can have a significant impact on whether individuals leave training sessions well-equipped for implementation. Training conducted with more intensive and interactive methods, including discussion, demonstrations, and role play, produces better results. A study that compared a didactic lecture and discussion model with more intensive and interactive methods for mental health providers found that none of the standard group ended up changing their approach to service delivery, while 3 out of 5 (60%) of the intensive training groups did.⁴⁸ A Cochrane systematic review regarding educational workshops for health providers confirmed these results by looking at over 30 published intervention studies. The review concluded that interactive workshops are likely to be more effective than lecture-based training and that didactic presentations were unlikely to change practice.⁴⁹

Coaching

Follow-up training, supervision and coaching in the field is also critical for effective implementation of EBP/EIIs. Without coaching, application of newly acquired knowledge and practices in the field is unlikely. Joyce and Showers' systematic review of studies implementing teacher training revealed that without peer coaching and follow-up, an average of only 5% of training is actually transferred into the classroom. As shown in figure 5, this was bumped up to an average of 95% with the peer coaching and follow-up.

Figure 5 – Meta-analysis Summary: Effects of Training and Coaching on Implementation⁵⁰

Components	Knowledge	Skills	Transfer
Study of Theory	10%	5%	0%
Demonstration	30%	20%	0%
Practice	60%	60%	5%
Peer Coaching	95%	95%	95%

Similar conclusions have been drawn from the private sector, with estimates that only around 10% of knowledge gained in training sessions is actually being transferred into practice.⁵¹ It is clear that to

⁴⁸ Dixon, L., Lyles, A., Scott, J., Lehman, A., Postrado, L., Goldman, H., et al. (1999). Services to families of adults with schizophrenia: from treatment recommendations to dissemination. *Psychiatric Services*, 50(2), 233-238.

⁴⁹ Forsetlund L, Bjørndal A, Rashidian A, Jamtvedt G, O'Brien MA, Wolf F, Davis D, Odgaard-Jensen J, Oxman AD. Continuing education meetings and workshops: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews* 2009, Issue 2.

⁵⁰ Joyce, B., and Showers, B. (2002). *Student achievement through staff development* (3rd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

⁵¹ Rogers, R. W. (2002). White Paper – The power of realization, from <http://www.ddiworld.com/research/publications.asp>

encourage implementation with any degree of quality and fidelity, coaching is an essential part of the implementation strategy for a given EBP/EII.

Implementation Teams

The deliberate formation of implementation teams is an essential process in scaling up EBP/EIIs. As noted previously, on average it takes 17 years to get only 14% of well-established scientific discoveries to enter into practice. Uptake can improve to 80% over an average period of just over 3 years with the use of adequate implementation infrastructure, including implementation strategies and teams.⁵²

Implementation teams oversee the implementation of EBP/EIIs in the various jurisdictions within Provinces and Territories, and carry out distinct but interdependent roles, depending on their organizational mandate. According to the NIRN, implementation teams:

- Consist of a core group of individuals (usually a minimum of 3 to 5),
- Have adequate and dedicated FTE for implementation activities and supports,
- Have special expertise with regards to effective innovations (EBPs/EIIs), implementation, and improvement strategies, and
- Are accountable for guiding overall implementation of an initiative from exploration to full, effective, and sustainable implementation⁵³

In a school-based scale-up model, implementation teams may look as follows:

Box 2: Example of School-based Implementation Teams

- **School-based implementation team**
 - Teachers or school staff trained in implementation
 - Administrators kept in the know
- **School division/ Region-based team**
 - School division staff
 - Health Authority staff
 - Regional agency staff (ex. CFS agency)
 - First Nation/ Inuit/ Metis community staff
- **Provincial / Territorial implementation team**
 - Central coordinator
 - Evaluation and data management staff
 - Management-level supervisory staff

⁵² Fixsen, D. L., & Blase, K. A. (1993). Creating new realities: Program development and dissemination. *Journal of Applied Behavior Analysis*, 26, 597-615.

⁵³ NIRN website @ <http://implementation.fpg.unc.edu/module-3/topic-2>

The composition of implementation teams, as well as their necessary time commitments to implementation may vary depending on the nature, complexity and stage of the intervention. In many cases, teams can be formed by repurposing existing resources. However, it is important to note that effective implementation can rarely be accomplished ‘off the side of your desk’. Assuring that adequate staff time is allotted to management and implementation is critical to the success and sustainability of EBP/EIIs.

Continuous Quality Improvement

To achieve significant scale-up and high-fidelity implementation of an EBP/EII, the expected time frame is 2 to 4 years.⁵⁴ In this time, training, coaching, and follow-up by implementation teams is taking place, and fidelity and quality improvement data is feeding back into the system.

Actively collecting and feeding back data into the system is important in both the initial implementation phase and also once the EBP/EII is established. In the initial stages, achieving widespread implementation with high-fidelity is a clear priority, and quality and fidelity data can help steer efforts towards improving the overall implementation process, as well as lending additional support to specific sites. This data can also decipher whether the failure to obtain the desired impacts of the EBP/EII is due to the program itself, or due to ineffective, low fidelity implementation.

“While high-fidelity to the essential functions of an EBP/EII is a necessary objective, it should not be considered the ‘finish line’. In fact, overly focusing on high-fidelity can often detract from the need for feedback loops for continuous quality improvement”

Fidelity and quality feedback continues to be important even after EBP/EIIs are well-established and are being implemented with high fidelity. While high-fidelity to the essential functions of an EBP/EII is a necessary objective, it should not be considered the ‘finish line’. In fact, overly focusing on high-fidelity can detract from the need for feedback loops for continuous quality improvement (CQI).⁵⁵ Chambers et al. argue that developing feedback loops and being adaptable to the local context are important for EBP/EIIs’ ability to continuously produce results, and consequently, the sustainability of the EBP/EII.⁵⁶

Sustainability

Ultimately, all of the key elements of ‘Building Capacity’, ‘Choosing the Right Approach’, and ‘Implementing with Intention’ contribute to the sustainability of an EBP/EII. When evidence-based approaches fit the needs of the community, and rigorous implementation strategies and continuous quality improvement are pursued, the resulting positive impacts contribute to funders’ and all stakeholders’ commitment to sustain this momentum.

⁵⁴ Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M. & Wallace, F. (2005). Implementation Research: A Synthesis of the Literature. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231). p.17

⁵⁵ Chambers DA, Glasgow RE, Stange KC (2013). The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. *Implementation Science*. 8:117.

⁵⁶ *ibid*

A strong initial commitment is necessary to see the EBP/EII through to high-fidelity implementation. Once this milestone is achieved, analyses can be conducted to determine whether the desired social impacts and returns on investment were realized and whether continued investment is warranted.⁵⁷ Continuous commitment to implementing with intention, including continued financial support, will contribute to the long-term sustainability of the EBP/EII and ultimately the reliable generation of desired social impacts and returns on investment.

Sharing information and resources across jurisdictions is a key area for quality improvement of EBP/EIIs and may contribute to generating economies of scale. Negotiating the purchase of project materials, software or evaluation materials can generate these economies of scale and reduce the cost for the end user. Once EBP/EIIs are well-established in multiple jurisdictions, networks can be developed to share information and resources to guide cross-jurisdictional implementation of EBP/EIIs.

Key Questions – Implementing with Intention

The key factors outlined in ‘Implement with Intention’ can drastically improve quality and fidelity of EBP/EIIs, leading to enhanced social impacts and returns on investment. The following questions summarize some of the key considerations highlighted in this section:

- 1) Have efforts been made to reach low-resource sites in addition to higher-resourced ‘low-hanging fruit’ sites?
- 2) Has a lottery approach been considered as part of the registration and evaluation design of the EBP/EII?
- 3) Do the training methods for the EBP/EII include interactive activities as well as instruction?
- 4) Is a plan in place for follow-up and coaching of new trainees in the field?
- 5) Are implementation teams adequately staffed in all regions?
- 6) Is there fidelity and quality data feeding back into central coordination and is it being analyzed to improve implementation of the EBP/EII?
- 7) Are contingency and sustainability plans in place in the case the EBP/EII is successful or unsuccessful in achieving its goals?

“PROMISING PROCESSES” CASE STUDY

The case study outlined in this section applies the principles and practices outlined in this report. To avoid conflicts of interest in ‘advertising’ EBP/EIIs, and to increase the focus on the process of implementation rather than content or outcomes, the name of the EBP has been removed.

⁵⁷ See figure 3

School-based MHP/MIP in Manitoba

Context

In 2010, the Healthy Child Manitoba Office (HCMO) started a pilot implementation of an evidence-based approach to mental health promotion/ mental illness prevention in grade 1 classrooms in a rural school division. HCMO acts as the staff for the Healthy Child Committee of Cabinet (HCCC); Canada's first and only legislated cabinet committee dedicated towards improving outcomes for children and youth. This unique organizational structure provided a strong platform to guide the interdepartmental, collaborative approach to implementation. In addition, the *Healthy Child Manitoba Act*⁵⁸ (HCMA) allowed HCMO to collect student data and conduct a comprehensive program evaluation. Following positive results from the evaluation of the initial pilot implementation, Manitoba scaled up implementation of the EBP over the next 2 years to over 200 schools across the province under a randomized, controlled evaluation model.

BUILDING CAPACITY

Vested Partnerships

HCMO, the Department of Education, and the Manitoba First Nations Education and Resource Centre (MFNERC)⁵⁹ were the key partners guiding the EBP, along with the school divisions and schools involved. Each of the partners had a vested interest in improving student behaviours and mental health and preventing incidence of mental health problems and mental disorders. HCMO leveraged the partnership of both education policy venues to develop trust relationships with school representatives and to facilitate a more integrated, accurate, and timely exchange of information on the EBP. The partnership undertaken for this initiative was truly vested in that all parties had a stake in the outcome and none of the parties could have accomplished the task independently.

While the implementation and evaluation of the EBP was supported by many school and school division partners across the province, some opposed its rollout on ideological grounds. Face-to-face meetings were organized with those opposed to the EBP to hear their concerns and give more information on the EBP's content and the research supporting its effectiveness.

⁵⁸ See www.gov.mb.ca/healthychild/

⁵⁹ MFNERC is a federally-funded organization that provides educational services and supports to First Nations schools across Manitoba.

Collective Impact

A Collective Impact approach was not considered for the pilot implementation or evaluation of this EBP in Manitoba.

Organizational Infrastructure

The *HCMA* provides a legislative basis to conduct evaluation and collect data on/ from students, giving HCMO considerable power to evaluate programs. Data collection and usage must follow the guidelines set forth in the *HCMA*, the *Personal Health Information Act* and the *Freedom of Information and Protection of Privacy Act*. In this case study, a parent letter from HCMO, outlining the evaluation and what data was being collected about their child, was sent to schools for teachers to distribute. Parents were given the option to “opt out” of the evaluation. Once data was collected through a secure data sharing process, they were stored in HCMO’s secure data centre.

A data collection team was assembled for the initial data collection in schools. Following this data collection, the management team directed a project coordinator and evaluation coordinator along with a small team of staff to coordinate trainings, data collection, and analysis/ reporting. Based on the recommendations of the management team in collaboration with the evaluation and project coordinators, additional capacity was added on an ad-hoc basis for specific tasks related to data collection, data analysis and reporting.

While the necessary human resource requirements were eventually put into place, it is important to note that the tight timelines of EBP recruitment and implementation (some of which were due to fiscal year-end and budgeting processes) led to over-burdening staff with duties at times. Growth of the team and streamlining processes eventually led to a more equitable workload for implementation team members.

CHOOSING THE RIGHT APPROACH

Evidence for Implementation

Worrying trends in the socio-emotional development and mental health problems in children and youth in Manitoba and across Canada led HCMO to seek evidence-based programs to curb these trends and promote positive mental health. The chosen EBP was based on 30 years of longitudinal research that demonstrated significant, long-term positive social impacts. A body of research had also been developed on implementing the EBP across a range of ages and geographical settings. An assessment by Manitoba experts concluded the evidence of the EBP’s effectiveness was strong and a convincing case could be made for investment towards implementation in Manitoba.

Usable Interventions

The scientists/ social entrepreneurs that license the EBP had invested considerable time and resources into developing training. HCMO reviewed the training materials prior to implementation. Upon analysis, HCMO confirmed that the materials were comprehensive in defining the principles, practices

and essential elements of the EBP. However, HCMO's management, project, and evaluation teams all agreed they should be tailored for local context. HCMO collaborated with the licensor and trainer to develop amendments that were culturally safe and relevant, and all materials were translated in French in fulfillment of Manitoba's 'Active Offer' policy.⁶⁰ Validated tools to assess quality, fidelity and outcomes were available and utilised for the evaluation of the EBP.

Simple Approaches

Preventing incidence of mental health problems and mental illness in children and youth is a complex task that requires a comprehensive continuum of services and supports for children, youth and their families. The EBP selected was designed to integrate into existing services and supports and fill a gap in the provision of prevention/promotion initiatives. In addition, rather than having a single essential function, the EBP contained several strategies based on evidence-based kernels (i.e. proven strategies representing the smallest units of behavioural change). A combination of these simple strategies that together form the 'active ingredients' of the EBP are easily learned by trainees.

Return on Investment (ROI)

When the EBP was selected, empirical ROI data showed significant returns for every dollar invested in the EBP. The favourable ROI was due to: 1) low per-student costs to implement, and 2) significant long-term impacts attributable to implementation, resulting in savings to government systems (e.g. justice, healthcare, social services) and positive education and employment outcomes, leading to increased government revenue and GDP.

Integrating into Existing Structures

The implementation of this EBP was able to take advantage of existing management structures and service delivery structures. The partnership of HCMO and the department of Education through the HCCC served as a key organizational structure to drive management-level decision making about implementation of the EBP. As this partnership had already been developed and had facilitated the implementation of various school-based EBPs in the past, the implementation of this EBP integrated well into this structure. The partnership with MFNERC was equally important at a management level to steer the implementation of the EBP in First Nations independent schools across the province. Again, this partnership has been fostered over many years, and had been leveraged in the past for previous EBP implementation in First Nations schools in Manitoba; facilitating a relatively easy integration of the EBP into schools.

The EBP was designed to integrate at the service-delivery level by training teachers to implement the approach. From the perspective of the implementation teams, the access to trained practitioners to

⁶⁰ Manitoba's 'Active Offer' policy requires that French language services are evident, readily available, easily accessible, and publicized, and that the quality of these services is comparable to that of services offered in English.

deliver the EBP in the classroom environment was a significant advantage for this approach that holds great potential for generating social impacts and returns on investment. In this case, from the peer-reviewed evidence that existed for the EBP, the case could be made that implementing the approach would actually increase the time teachers had to deliver standard curriculum, rather than take time away from it. From the perspective of (most) teachers, implementing the EBP was an opportunity to positively impact the social and emotional development of their pupils, without overburdening them and/or impacting their ability to deliver standard curricula.

Equity Impact Assessment

No formal equity assessment was conducted for the purposes of planning implementation of this EBP. However, the design for the implementation and evaluation of the EBP deliberately followed the population health approach, offering the EBP universally with the aim of improving population health and reducing health inequities between the most and least socially advantaged groups in society. Strategies such as actively seeking interest from rural and First Nations schools, as well as budgeting for additional training costs for these delegates were deliberately put in place with the intention of reducing health inequities. Additionally, given the content of the EBP, it was predicted that children with less developed socio-emotional and behaviour skills would experience a differentially large impact from the EBP which would also contribute towards the reduction in health inequities.⁶¹

Relative Advantage

Given the strength of the evidence supporting implementation of this EBP (including the ROI), and the fact that it would fill a gap in primary prevention of mental health problems and mental illness in the early years in Manitoba, HCMO staff predicted a considerable relative advantage to implementing the EBP compared to business-as-usual.

IMPLEMENTING WITH INTENTION

Accessing Low-Resource Sites

Through partnership with MFNERC, HCMO was able to ignite interest in implementing the EBP in a significant number of First Nations independent schools in rural and remote communities across the province. HCMO also received interest (and ultimately participation) from urban and rural public schools, Colony, Faith-based and other independent schools. Training costs were significantly higher for rural and remote teachers due to increased costs for travel to Winnipeg and accommodations. To make steps towards accomplishing the aim of reducing inequities in the developmental health of children in Manitoba, a commitment to equitable opportunity to participate in the EBP was made from the start, and planning for these elevated costs was included in the budget.

Lottery Approach

⁶¹ It has been reported previously that boys and children from low-income families may be at a greater risk for lower than average socio-emotional development and behaviour problems. Based on research findings of the EBP, it was hypothesized that the EBP would provide higher-risk groups such as these with a differentially large benefit.

HCMO followed the lottery approach for the evaluation and training of the EBP. A wide call for interest was put out to public and independent schools, and a list of applicants was received thereafter. From the applications list, consisting of some 200 schools, half of the schools were randomly assigned to the first wave of training, while the other half were assigned to the wait-list. Wait-list schools implemented both pre and post surveys (using a valid, reliable, and tested evaluation tool) and this data was used for the comparison or control group in the evaluation. The group who received training completed the same surveys, along with an implementation fidelity survey and acted as the implementation or intervention group in the evaluation.

Training Methods

HCMO consulted with the scientist/ social entrepreneur prior to training to discuss their approach and their needs for room setup, audio-visual equipment, and materials. Trainers used both interactive and didactic methods and multiple mediums (verbal, PowerPoint, videos, etc.) to promote engagement and uptake of the training objectives.

Follow-up/Coaching

The EBP was implemented across the province in a diverse set of schools. For the training process, all of these schools sent representatives to be trained in Winnipeg; bringing their knowledge and training materials back to their home communities after training. Once training was completed, follow up was centrally coordinated by HCMO staff from Winnipeg via telephone and e-mail collaboration.

Ongoing coaching in the field did not take place, but additional 'up-skilling' trainings have been held to enhance trainees' skills in implementing the EBP. A model for trainee certification in the EBP, and subsequent ability to train other staff members within certified trainees' home communities, is under development.

Quality/ Fidelity Data and Continuous Quality Improvement

A simple fidelity survey was implemented, asking teachers to retrospectively recount whether the methods of the EBP were in fact implemented in the class and how often (dosage effect). Fidelity data collected serves as a key indicator to determine whether the program is ineffective at achieving results, or whether low-fidelity or a low dose of the EBP was stifling progress.

Key informant interviews and the completion of feedback forms were also conducted with teachers to determine the strengths and challenges of the current approach to training and implementation, and consequently what could be done to improve the efficiency and effectiveness of the approach.

Contingency and Sustainability Planning

As depicted in figure 3, once the evaluation of a given EBP/EII is complete and we can be confident in its conclusions, the decision as to whether to proceed with continuous quality improvement and potentially scale-up, or to terminate implementation would follow. If possible, considering the evidence of the health equity impacts of the EBP/EII would also be valuable at this time. In practice, achieving high

fidelity implementation of an intervention and conducting a rigorous evaluation may take 2 or more years. At the time of publication of this report, the possibility of sustained funding for implementation of the EBP considered in this case study was under review.

APPENDIX A: GLOSSARY OF TERMS

- **Continuous quality improvement (CQI):** a commitment to the continuous measurement of the quality of implementation of a policy or program, and to using quality data to improve implementation.
- **Epigenetic research:** the study of environmental influences' impact on the expression of genes, and the resulting changes in phenotypic characteristics. In the context of child development, epigenetic scientists have demonstrated that influences in children's physical and social environments can 'get under the skin', impacting the architecture of their developing brain, central nervous system, and greater biological systems.
- **Evidence-based program (EBP):** generally, a social program that is based on empirical, scientifically tested principles, has undergone rigorous testing itself, and has materials readily available for training and implementation across multiple sites.
- **Evidence-informed innovation (EII):** a novel social program that is based on empirical, scientifically tested principles, but hasn't yet undergone rigorous testing.
- **Experimental study:** a planned scientific study, where subjects are randomly assigned to implementation or control groups, designed to give insight into cause-and-effect relationships.
- **Implementation fidelity:** the degree to which policies and programs are implemented as they were intended by their designer.
- **Opportunity cost of funds:** in economic theory, the cost of lost benefits (financial and other) due to choosing an alternative investment.
- **Plan-do-study-act (PDSA) cycles:** also called 'improvement cycles', a management-oriented approach to collecting, analyzing and applying program quality data/ information to continuously improve implementation processes.
- **Population health approach:** an approach to health that pursues a complement of policies and programming which promotes health among the entirety of the population and reduces the gap in health outcomes between the most and least privileged social groups.
- **Proportionate universalism:** offering policies and programs widely (universally), but with a scale and intensity proportionate to need.
- **Reduction in incidence:** a reduction in the number of new cases of a disorder or health condition over a specified time period, usually a year.
- **Reduction in risk factors:** a reduction in factors which increase the risk or make one more susceptible to developing a disorder or health condition. For example, reducing obesity rates as a means to lower the risk of heart disease.
- **Remission of symptoms:** the improvement of symptoms present due to a health condition. For example, a person with depression improves their sense of appetite.
- **Quasi-experimental study:** a planned scientific study, where random assignment is not feasible, but results of the implementation group are still compared to a control group.

APPENDIX B: EVIDENCE-BASED GUIDELINES⁶²

Intervention evidence ratings

- ① Limited investigation
- ⊗ Evidence is contra-indicative
- Warrants further research
- ★ Evidence for implementation
- ★★ Evidence for outcome effectiveness
- ★★★ Evidence for effective dissemination

① **Limited investigation:** no relevant effectiveness studies are located and there are no empirical or theoretical grounds suggesting the intervention might potentially impact the outcome: may also indicate that the evidence is inconsistent or contradictory.

⊗ **Evidence is contra-indicative for the use of this strategy to prevent the targeted outcome:** consistent null or negative findings in well-controlled evaluation studies.

○ **Warrants further research:** applied to strategies that appear theoretically sound or have some promising evidence for their implementation or outcome, but the operational specifics of the delivery format are not clearly resolved or have been investigated only in small scale or inadequately controlled studies. Policies and programs utilising these strategies might be considered priority targets for future research funding focusing on innovations to better define service delivery.

★ **Evidenced for implementation:** published studies report a sound theoretical rationale, a clearly specified service delivery format, acceptance within service delivery organisations, target population recruitment on a scale sufficient to usefully contribute to population health impacts, and adequate consumer approval measured using indicators such as program retention. The proportion of positive demonstrations of impacts on risk factors, protective factors or outcome behaviours is reported. Although this rating requires a clear service delivery format, in some cases not all other criteria are satisfied and in such cases this is indicated in the summaries. Policies and programs utilising these strategies might be supported for implementation where there are few costs and obvious benefits. In other cases wider implementation may await rigorously controlled outcome evaluation to better establish benefits.

★★ **Evidence for outcomes:** applied where positive outcomes are consistently published in well controlled interventions, interventions are required to be of sufficient scale to ensure outcomes within the constraints imposed by large-scale population health frameworks. Policies and programs utilising these strategies might be carefully monitored for their impacts while being supported for wide-scale dissemination.

★★★ **Evidence for dissemination:** published reports of impacts where programs are delivered on a large scale, not by research teams, but rather by government auspice bodies or other service delivery agents. Evidence for dissemination is only sought for strategies demonstrating evidence for outcomes. Policies and programs utilising these strategies might be accorded some priority for dissemination. Initial Canadian dissemination trials should monitor for impacts. Where possible, cost-effectiveness has been considered for programs using these strategies.

⁶² Adapted from Toumbourou JW, Patton GC, Sawyer S, Olsson C, Webb-Pullman J, Catalano R, et al. Evidence-Based Interventions for Promoting Adolescent health. Melbourne, Australia: Centre for Adolescent Health; 2000.