Situational Analysis

Issues of Relevance in Designing a National Strategy to Promote Mental, Emotional, and Behavioral Health and to Prevent/Reduce Mental Illness and Substance Use Disorders

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Purpose of this Document

This document was developed at the request of the Federal Substance Abuse and Mental Health Services Administration (SAMHSA) in order to examine critical issues related to broad-based efforts to promote well-being and reduce risks for behavioral health problems. This situational analysis is based on a review of the literature on mental, emotional, and behavioral (MEB) health, as well as interviews with key informants, and the identification of gaps and potential barriers that might present challenges to national efforts to implement MEB promotion policies and practices.

Introduction

Arguably, America is on the verge of the next revolution in public heath. Not since the advent of the germ theory and the public hygiene movement have we been armed with knowledge whose application promises to dramatically improve the overall public health and well being of the nation. However, the public health infrastructure and commitment to realize these potential gains is significantly underdeveloped. Just as water and sewage treatment technologies and facilities needed to be designed, built, and tested to realize the benefits of preventing infection, we now must design and build sustainable public health infrastructure to realize the promise of current technologies for improving the well being and health of our communities and ongoing evaluation of activities to continue to improve these technologies.

In this situational analysis we will review the state of the science in the prevention of MEB disorders, and the promotion of positive MEB health, building upon the work of the Institute of Medicine in 2009[1,2] as well as the World Health Organization in 2004[3] and 2005.[4] In addition to further synthesizing and updating this literature, we will also review indicators of America's health and well being, which are of great concern. However, the likely causes of our poor health can be positively influenced by systematic prevention and promotion interventions. We will explicate the issues involved in implementation of this prevention and promotion science base in order to identify the strengths and gaps in the implementation literature, particularly with regard to behavioral health. We do this in anticipation of the case that must be built to motivate local infrastructure development and maintenance while also supporting a call to action at the national level.

Our approach to the situational analysis will be to succinctly synthesize the most relevant aspects of the literature to each major section of the analysis and, in the context of the overall frame of the paper, identify gaps that should be addressed. We are explicitly concerned with the application of the research–both in prevention/promotion and implementation–since the goal of this analysis is to provide a guide to the development of a national strategy for the promotion of MEB health and the prevention/reduction of MEB disorders. The strategy is intended as a template for action for the multiple audiences needed to realize the benefits documented in the literature.

One of the explicit assumptions of this analysis supported by earlier work[5] is that key audiences do not fully appreciate the breadth and implications of the research literature and/or do not fully understand the mechanisms that may be used to implement it. This is particularly true for mental health promotion which is often confused with prevention and is little understood by the general or policy public.[6] In discussing the current situation, we will not exhaustively detail the research literature but rather highlight major insights from it, gaps that remain, and the implications of the findings/gaps for wide scale implementation.

In the text that follows, we will document that the United States is facing a series of critical challenges regarding its overall health and well being. These challenges are indicated by a series of social, health and economic indicators in which the United States is slipping relative to our economic competitors and with regard to our historical status.

Many of these indicators are affected by individual behaviors and/or social conditions that can be impacted by systematic interventions. Academic achievement, pro-social engagement, the avoidance of anti-social behaviors and drug use, for example, underpin our social success. Social conditions such as safe neighborhoods, opportunities for social participation, and equitable rewards for participation promote desirable behaviors and development, while chronic stress and trauma predict poor health and diminished achievement.

As a result of decades of investment, we now have a variety of rigorously tested techniques that can impact the behaviors and social conditions that underlie our deteriorating social and health status, including interventions that both foster resilience and reduce the level of environmental risk. They have been tested in representative, real world situations, but generally as part of specially conducted research trials as opposed to ordinary implementation situations. Implementation science from a variety

of fields can assist us in translating these research findings into ordinary community contexts while providing both flexibility in implementation and fidelity to the research validated models.

Although support from national leadership in the development of supportive statutes and regulations, as well as the certification of evidence based strategies is critical, most of the MEB-related prevention and promotion interventions must be implemented at a community level. They often involve school or workplace settings and the engagement of families. They require ongoing support from the communities in which they are implemented in order to be effective. Successful communication strategies, therefore, must identify key community and state based audiences, craft messages that are responsive to their understanding and concerns, and deliver actionable messages with implementation road maps. Marshalling the political will to devote resources to prevention and promotion likely will require a well crafted communications strategy using an explicit behavior change model that can provide the theoretical framework for a social marketing strategy.

We will accomplish these ends through both our summary of the literature, summaries of other SAMHSA projects that predated the current effort, and through information from key informants regarding their impressions of the key concepts in the fields and their experiences regarding attempts to implement MEB-related prevention and promotion programs at the national and local levels. Drawing on all of these resources, we will provide an assessment of the overall social environment in which prevention and promotion technologies must be implemented, identify areas of strength in the research and implementation literature, as well as gaps that must be addressed.

The State of America's Health and Social Well Being[7]

Americans have reason to be concerned about the overall health and well being of our nation. Not only has US life expectancy plummeted in comparison with other countries during the last twenty years from 11th to 42nd,[8] but a number of other health indicators have, as well. Our infant mortality rate is higher than in most developed countries, and the gap is widening with the US rank falling from 12th in 1960 to 29th in 2004.[9] We also rank very low (24th) in comparison with other developed countries on the number of disability free years that can be expected on average in a given population.[10] Within the US, great variability in health status exists across sub-areas of the country. Income

and income inequality are the strongest predictors of this variability.[11] Children living in poverty are seven times more likely to have poor health than children in higher income households.

Comparing 21 wealthy countries, the US has the second highest poverty rate both overall and for children, surpassed only by Mexico.[12] According to the current population reports,[13] we currently have 44 million people living in poverty, 41.3 million people using food stamps and 20.7% of children living below the poverty line. Approximately 3.5 million individuals are homeless.[14] America also has the greatest inequality of income and wealth in the industrialized world.[15] Movement in and out of poverty is lower in the US than in almost every other rich country, underscoring the lack of equitable opportunities for individuals to progress economically which may further strain social and community engagement.

Socioeconomic differences are also reflected in variable life expectancy across US counties. On average, individuals in the healthiest counties, which tend to be the wealthiest, can expect to live nearly 15 years longer than persons in the shortest lived counties, and this gap has widened by 60% in the past twenty years.[16] Overall health status is therefore a serious concern in the US, with the social and personal determinants of health being likely candidates for intervention.

The World Health Organization (WHO) has led an international epidemiological study using community surveys and standardized diagnostic research questionnaires during the last several years.[17] To the surprise of many, the results of this study indicated that of the 17 countries in Africa, Asia, the Americas, Europe, and the Middle East included in the research, the US has the highest rates of mental illnesses and among the highest rates of substance use disorders. We have the highest lifetime rate of "any disorder" (47.4%), anxiety disorders (31%), mood disorders (21.4%), and impulse control disorders (25.0%). In the category of substance use disorders, the US ranked second, with a lifetime prevalence rate of 14.6%, surpassed only by the Ukraine, with a rate of 15%.[18]

Many of our current health problems appear to be related to chronic conditions such as mental illnesses, addictions, obesity, heart disease and diabetes. In a study of 27 countries where health examinations are routine, the US has the highest rate of obesity (30.4%). Mexico is second with a rate of 24.2%; Japan and South Korea have the lowest rates (both at 3.2%).[19] In a comparison with five other nations (Australia, Canada, Germany, New Zealand, and the UK) the United States ranked last on a measure of "healthy lives."[20]

Beyond mortality, disability, and rates of mental and addictive disorders, the US appears to be "sick" in other ways, as well. For example, the rate of firearm-related deaths in the US is eight times that of our economic counterparts.[21] The US homicide rate for males 15-24 years old is the highest of 22 developed countries, more than four times the rate of the next highest country, Scotland.[22] We have the highest rate of incarceration in the world–700/100,000 people compared to 110 for China, 80 for France, and 45 for Saudi Arabia. With a prison population of 2.3 million, we now have more people incarcerated than any other nation. Prison populations disproportionately over-represent minority groups, as do juvenile justice populations that functionally serve as feeders to the adult prison system. Rates of mental illnesses among both adult and juvenile inmates are dramatically higher than the general population, with some studies estimating that up to 16% of adult inmates have a severe mental illness[23], while up to 70% of juveniles have a diagnosable condition.[24]

Mental health and substance use conditions are associated with both juvenile justice involvement and school drop-out.[25,26] US academic achievement is another area in which we should be concerned. Our students ranked in the bottom third or lower on several measures of academic achievement among the 30 OECD (Organization for Economic Co-Operation and Development) countries (21st in science literacy,[27] 24th in problem-solving literacy[28], and 25th in mathematics literacy[29]). Our educational status in comparison with the rest of the world is also decreasing: the US ranking of postsecondary graduation rates fell from second in 1995 to 16th in 2005.[30] Mental and emotional health are among the strongest predictors of educational achievement.[31,32,33] Since we now know that the median age of onset for mental illnesses in the US is about 14 and that significant symptoms appear up to two years before onset, prevention and early intervention to reduce prevalence of mental illnesses should improve academic performance. At the same time, promotion-based efforts to incorporate social and emotional learning into school curricula have been found to meaningfully enhance academic success.[34]

Academic achievement, in turn, is a significant predictor of occupational achievement. Workforce health and social status has profound effects on economic productivity and international competitiveness. Americans work an average of 200 hours per year more than workers in the other OECD countries, even more than the Japanese, a country noted for its strong work ethic. Despite our long hours, the first decade of the 21st century was economically disastrous. According to the International Monetary Fund, US gross domestic product (GDP) as a percentage of world GDP dropped from 32% to 24%

between 2000 and 2010. No nation in modern history, other than the former Soviet Union, has seen so precipitous a decline in relative power in a single decade.[35] Additionally, real wages remained stagnant for the vast majority of American workers during the last two decades except for the top 1% of wage earners whose real wages and wealth grew at a robust rate[36]. Inequality in wealth and the lack of mobility among the socioeconomic classes contributes to disparities in health status and social disengagement.[37]

Across a broad range of social, economic and health indicators, therefore, the US is lagging behind our competitors in other developed nations. Are there common risk factors that underlie these poor social and health outcomes? Are these risk factors amenable to systematic intervention? Are there programs and policies in operation in other nations that are associated with their relatively better overall health and social status? These issues will be explored in subsequent sections of this document.

Do Chronic Stress and Trauma Contribute to America's Poor Health and Social Status?

Trauma: The Adverse Childhood Experiences (ACE) Study[38] is an observational study of the relationship between childhood traumatic stress and the leading causes of morbidity, mortality and disability in the United States, including chronic medical diseases, mental illnesses, obesity, and substance use. The study is a collaborative effort between Kaiser Permanente's Department of Preventive Medicine in San Diego and the Centers for Disease Control and Prevention (CDC). It includes over 17,000 individuals who have been followed longitudinally for 15 years. Research participants are middle-class Americans with health insurance. Eighty percent are white (including Hispanic), 10% black, and 10% Asian; half are men and half women; 74% have attended college; their average age at entry into the study was 57.

In the study, Kaiser Permanente enrollees were asked whether they had experienced any of eight traumatic events in the first wave of the study; two categories of neglect were added in the second wave. The ACE categories are shown in the following chart,[39] along with their overall prevalence rates:

Figure 1: Adverse Childhood Experiences (ACE) Study Categories

ACE Category	Definition	Prevalence
Emotional abuse	Recurrent threats, humiliation	11%
Physical abuse	Beating, not spanking	28%
Sexual abuse	Contact abuse only	22%
Domestic violence	Mother treated violently	13%
Substance abuse	Alcoholic or drug user in household	27%
Incarceration	Household member imprisoned	6%
Mental illness	Household member chronically depressed, suicidal, mentally ill, or in psychiatric hospital	17%
Parental separation	Not raised by both biological parents	23%
Physical neglect	Lack of adequate food, shelter, physical support	10%
Emotional neglect	Family failed to provide a source of strength, emotional support, and protection	15%

The individual's ACE score is calculated by a count of the number of categories in which an event occurred during his or her first 18 years of life. Multiple occurrences within a category are not recorded, making this a conservative measure of trauma severity. ACE scores are then correlated with the individual's current state of health, well-being and measures of health care utilization, cost and mortality.

Interestingly, only one-third of the study population has an ACE score of zero. One in six has an ACE score of 4 or more; one in nine has a score of 5 or more. Women are 50% more likely than men to have an ACE score of 5 or more. Childhood trauma does not occur at random: If any one category is present, there is an 87% likelihood that at least one additional category will be present.

Robust and significant associations are observed between ACE scores and a variety of mental health, health, behavioral, and healthcare utilization measures, decades after the experience of adverse childhood events. Chronic depression, hallucinations, suicide attempts, and use of psychotropic medications are all strongly and significantly related to ACE scores, as are health risk behaviors such as smoking, alcohol use, IV drug use, and multiple sex partners. IV drug use is particularly striking—a male child with an ACE score of 6 or higher is 46 times more likely to become an injection drug user compared to a child with a score of 0. ACE scores predict higher rates of liver disease, autoimmune disease, chronic obstructive pulmonary disease, and coronary artery disease–even after

controlling for conventional risk factors such as smoking. After 14 years of prospective research, the study finds that people with an ACE score of 6 or higher die almost 20 years earlier than those with an ACE score of 0, even with otherwise similar characteristics.

Figure 2: Lifetime Prevalence of Trauma

Traumatic Event	Lifetime Prevalence of Trauma	
	Men (n=2,812)	Women (n=3,065)
	%	%
Rape	0.7	9.2
Molestation	2.8	12.3
Physical attack	11.1	6.9
Combat	6.4	0.0
Shock	11.4	12.4
Threat w/ weapon	19.0	6.8
Accident	25.0	13.8
Natural disaster	18.9	15.2
Witness	35.6	14.5
Neglect	2.1	3.4
Physical abuse	3.2	4.8
Other trauma	2.2	2.7
Any trauma	**60.7**	**51.2**
Note: Adapted from Kessler et al (1995).		

As previously mentioned, the ACE study focuses on adverse events that occur before the age of 18, and there is substantial evidence that abuse occurring early in life has a more profound impact than trauma during adulthood. Young children lack a stable sense of self that can help moderate the impact of extreme events, and toxic stress has a direct impact on biological and neurological development.[40] However, acute and chronic stress in adulthood can also have profound consequences. As the chart at the left shows, over 60% of men and 50% of women experience significant trauma at some point in their lifetime.[41]

Trauma is almost **universal** among people who use public mental health, substance abuse and social services, as well as people who are justice-involved or homeless.[42] While trauma rates vary depending on particular aspects of individual studies, as many as 90% of people in psychiatric hospitals and 92-97% of homeless women have histories of physical or sexual abuse. Between 75 and 93 percent of youth in juvenile justice have experienced some degree of trauma. Among males who experienced maltreatment before age 12, 50-79 percent became involved in juvenile delinquency.[43] One study showed that men who have witnessed their parents' domestic violence are three times more likely to abuse their spouses than children of non-violent parents.[44] A significant proportion of both men and women in the criminal justice system have experienced trauma in childhood. Eighty percent of women in jails and prisons have been victims of sexual and physical abuse,[45] and in one study, all sixteen men sentenced to the death penalty in California had histories of family

violence, including thirteen cases of severe physical and/or sexual abuse while in foster care.[46] Such research on the prevalence of trauma, and its impact, provides a compelling case for the need for broad-based programs and policies that help to reduce child maltreatment and to enhance positive family functioning.

Chronic Stress: Studies reporting the effects of chronic stressors generally focus on topics such as work-related stress, marital discord, or perceptions of being treated unfairly. These reports have examined the possibility of a relationship between chronic stress and the physiological underpinnings of cardiac risk.[47] Sheldon Cohen's findings indicate that stress is a contributing—not determining–factor in human disease, particularly in depression, cardiovascular disease, and HIV/AIDS[48]. Since 2000, several studies have established a relationship between stress and the progression of AIDS. Overwhelmingly, the research on depression provides the strongest evidence that stress contributes to disease. Specifically, chronic stress—stress that is ongoing as opposed to having a beginning and an end based upon the occurrence of a particular event—clearly contributes to cardiovascular illness such as coronary heart disease. What remains unclear is how stress contributes to disease development and progression. One school of thought is grounded in behavior. People experiencing stress tend to sleep and eat poorly, smoke more, and be less likely to exercise as well as less adherent with medical treatment[49].

Research on stress highlights the importance of how perceived discrimination might adversely affect health status.[50] Experiences of ethnic discrimination coupled with subtle micro-aggressions based on race, religion, etc. are echoed over a lifetime.[51] Hence, the association between perceptions of discrimination and health can view "measures of mental health status as intermediary mechanisms by which perceptions of discrimination might ultimately affect physical disease processes."[52]

The medical and social costs of chronic and acute stress are staggering. The cost of chronic illness goes far beyond the actual medical expenses. The direct cost for treating seven chronic illnesses in 2003 was $277 billion (a conservative estimate, excluding the cost of co-morbidities, secondary effects, and people in institutions). Total cost to the economy of the same seven illnesses, however, was $1.3 trillion.[53] Failure to prevent mental, emotional and behavioral disorders in youth was estimated to cost about $257 billion in 2008,[54] and the loss of human capital associated with severe mental illnesses was estimated at $193 billion in 2002. For perspective, in 2002, $193 billion was more than the gross revenue of all Fortune 500 companies except Wal-Mart. It is the equivalent of losing the productivity of a Fortune 100 company each year. Although the

full health care costs of interpersonal violence and abuse has not yet been estimated, a study using 2008 health care and population data shows that the predicted incremental cost to the health care system ranges between $333 billion and $750 billion annually, or nearly 17% to 37.5% of total health care expenditures.[55]

The epidemiological data reported in the ACE study suggest that there are two basic pathways through which adverse events affect public health. First, they increase conventional risk factors such as smoking, drinking, over eating and engaging in risky sex. Second, chronic stress affects the developing brain and body and causes dysregulation of the stress response. Biomedical, behavioral and neuroscience research is now confirming this theory.[56,57]

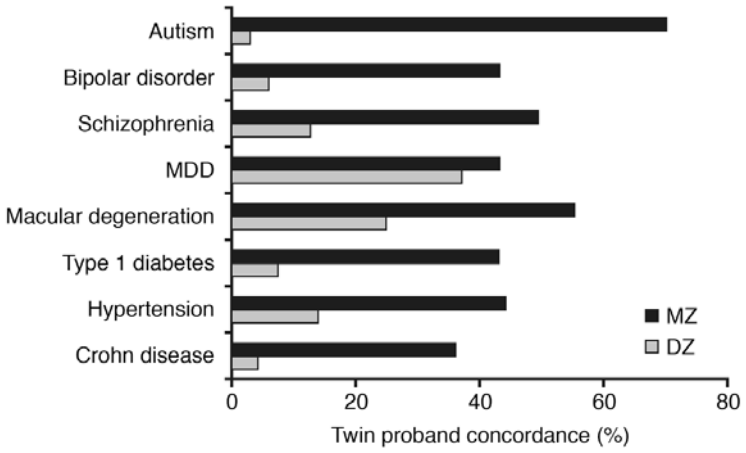
We have animal and human data that elaborate the relationships between genetic predisposition and environmental stressors in the development of illness. We have impressive data regarding the effectiveness of interventions to reduce or ameliorate the effects of risk factors. We have technologies informed by our knowledge of chronic stress and trauma that can dramatically improve public health by reducing the level of stress and stimulating the development of resilience in individuals and communities, as well as providing treatment to individuals who have become ill. Much of the knowledge for an effective, systematic public health response to the behavioral health epidemic is available. What we lack is general acknowledgement of this theory and a concrete plan of action to implement the next great wave in public health in communities across the nation.

Genetic Predisposition and Stress Interact to Increase Risk

Although once a matter of vehement debate, we now acknowledge that mental illnesses and substance use disorders have an important genetic component. Estimates of the proportion of variation in the expression of illness that can be attributed to genetics ranged from 0.16 for phobia to 0.66 for drug abuse or dependence.[58] This means that 16% to 66% of the differences among people in expression of illness can be attributed to genetics. The heritability of schizophrenia is likely higher, approximately 0.80, which indicates significant effects of genetics, or that genetically correlated effects are relatively more important for schizophrenia than other mental or addictive disorders.[59] That being said, the relationship between genetic risk and illness expression is not simple. Genetic vulnerability and life experiences combine to produce the signs and symptoms of mental and addictive disorders. Addiction may be the clearest example. While estimates of the heritability for drug abuse and dependence are relatively high–

indicating an important genetic component for this disorder–an individual who is never exposed to addicting substances will not become addicted (although other compulsive behaviors may be more likely to manifest). Relatedly, Insel, summarizing data from multiple twin studies, notes the greater concordance rates for identical (MZ–monozygotic) as contrasted with fraternal (DZ–dizygotic) twins in the expression of a sample of common mental illnesses (see Figure 3) and further contrasts these findings with those for other health conditions.[60] First, it is clear from these comparisons that the identical/fraternal differences in mental illness are similar to those of other illnesses and that these data indicate a significant genetic component to the illnesses. Secondly, it is also clear that the concordance rate for identical twins is consistently well below 100%, which indicates an important environmental component in the expression of all of these illnesses.

Figure 3: Concordance Rates for Identical Twins



Adapted from Insel (2009) in the Journal of Clinical Investigation.

Understanding environmental influences in the context of an individual's genetic risk profile is therefore essential. In combination with genetic vulnerability, we now know that toxic stress is associated with the development of a wide range of disorders from mental illnesses to cardiac disease.[61] Chronic stress and trauma are associated with structural changes to the hippocampus, amygdala, and pre-frontal cortex of the brain. Events that occur early in life have long term effects on emotionality and stress responsiveness that can affect people's reactions to environmental challenges, predispose them to high risk behaviors, and increase the rate at which the brain and the body age.

We also have important insights into the mechanisms through which environmental stressors impact the nervous, endocrine and immune systems in increasing the risks for

illness. In response to stress or threat, our bodies produce adrenal steroids that support our ability to fight the threat or flee from it. While clearly adaptive in the short term, prolonged exposure to these hormones is associated with neural and endocrine damage that can ultimately result in cognitive impairment, illness, and death. Early life experiences may be particularly important. Animals exposed to pre- and post-natal stressors exhibit life-long behavioral manifestations of the stress that are associated with changes in the brain. These changes cause hyper-reactivity to environmental stimuli and prolonged exposure to cortisol and cytokines that damage neural structures, and ultimately affect multiple areas of mental and general health, as well as social functioning.[62] The brain, as the master controller of motor, affective, immunological and endocrine effects, likely encodes this damage and orchestrates its long term effects.

Human neuroimaging studies indicate that adult trauma directly affects the brain. Subjects with PTSD who are exposed to stimuli that remind them of earlier traumatic events have increased cerebral blood flow in the right medial orbitofrontal cortex, insula, amygdala, and anterior temporal pole, and a relative deactivation in the left anterior prefrontal cortex, specifically in Broca's area, the expressive speech center in the brain. In short, reminders of trauma activate areas of the brain that support intense emotions and decrease activity of brain structures involved in inhibiting emotions and translating experience into communicable language.[63] These findings may have important implications for treatment.

Although findings are still somewhat unclear, some data indicate that the interaction of specific genes and environmental stress are important in the expression of disease. Several investigators have demonstrated that individuals with a particular genotype respond differently to stress than individuals with an alternative gene composition. While replication of these studies is proving difficult, the combination of this genotype and stress seems to be associated with increased depressive symptoms.[64] Other research demonstrates that individuals with specific genetic fingerprints who are exposed to natural disaster and additional environmental stressors (unemployment and high crime rates in their neighborhoods) are more likely to develop PTSD[65] than persons living in areas with less social disruption.

We are also learning that the expression of genetic potential is itself impacted by environmental variables. Epigenetics is the study of these interactions and the degree of influence and mechanisms involved in environmental influences on genetic expression and transmission. While much remains to be learned about the specific interaction of genes and environments in promoting health or predisposing illness, this

early work is a step towards understanding how social events are differentially reflected in genetic and neuronal structures and may even be reflected across generations. We have come a long way from the Mendelian notions of simple genetic expression and increasingly are realizing that the interaction of environmental experience and genetic risk is central to understanding the etiology of mental and addictive disorders as well as of many other illnesses.

If we adopt the working premise that toxic stress and trauma, in combination with biological vulnerability, are likely to be important mechanisms in the development of mental illnesses and addiction disorders, what are characteristics of American society that produce stress or trauma? One class of risk factors involves the social determinants of health. These are characteristics of the built and social psychological environment that have a demonstrated relationship with differences in health status. These determinants are also targets for policy interventions designed to ameliorate their detrimental effects (reduce risk factors) and/or to strengthen the resilience of individuals or groups to withstand their toxic influences (enhance protective factors). We will discuss each in turn.

Social Determinants of MEB Health

The social determinants of health are the conditions in which children, youth, and families are born, grow up, live and work, in addition to the health care infrastructure.[66] Often this term is used in referencing non-medical factors influencing health, including health-related knowledge, attitudes, beliefs, or behaviors.[67] Environmental conditions such as toxins, pollutants, noise, and crowding, as well as exposure to settings such as poor housing, low quality and unsafe schools, neighborhoods and workplaces significantly impact quality of life[68] and produce environmental stress. Consistently, the data show that the poor, and especially the non-white poor, bear a disproportionate burden of exposure to unhealthy environmental conditions in the United States[69] and also have disparate health status. We also know that culture, acculturation, language, classism, racism, and social exclusion greatly influence the experience of environmental adversity and overall health status. Recent studies indicate that socioeconomic inequalities in health have been widening for decades.[70] Disparities among groups on these variables are associated with disparities in health status that result in differential rates of morbidity and mortality. A review of the literature underscores the need for a better understanding of the dynamics between interventions and the social, economic and environmental contexts in which these interventions/services are delivered[71] as

well as the social factors that may be addressed through the reduction of risk factors or the increase of protective factors to enhance resilience.

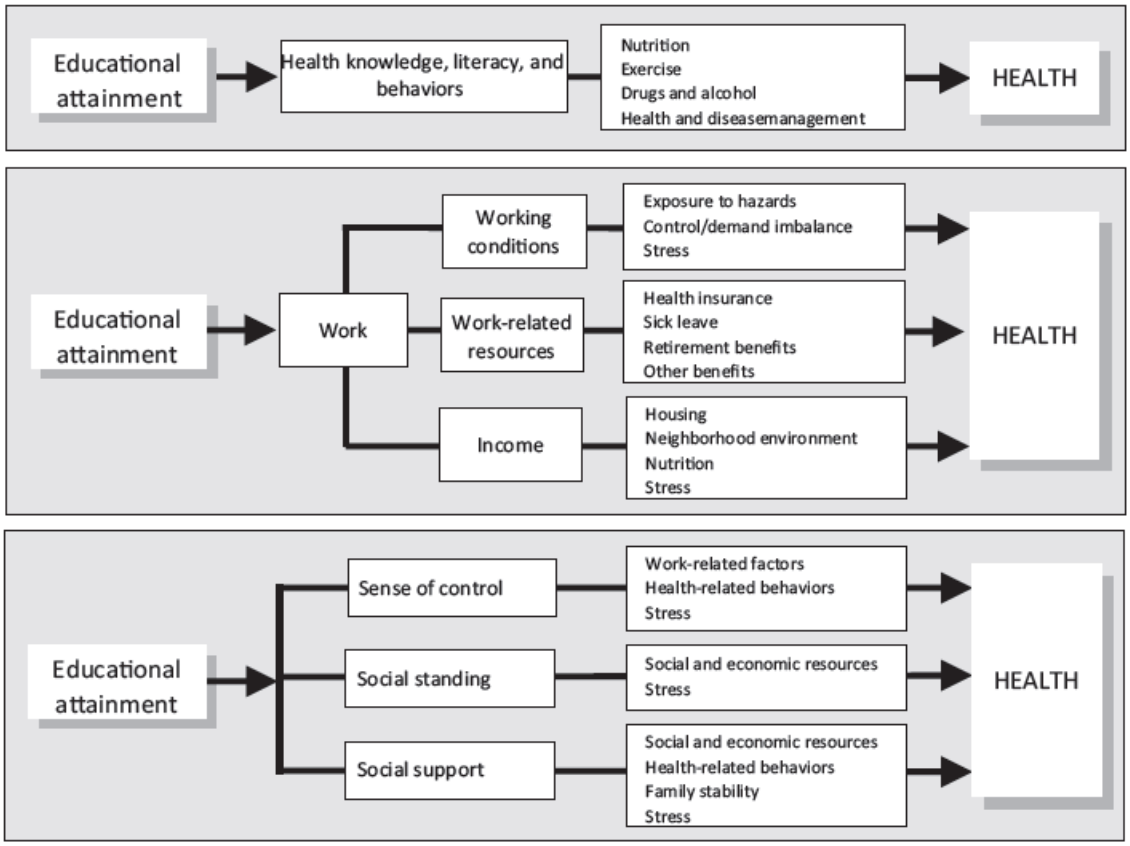
Several groups of social influences have been studied with regard to their impact on health status. Perhaps the best studied of these influences are measures of socio-economic status (SES) that principally relate to income, education and occupational status. SES has been shown in multiple analyses to have a graded impact on health status with lower SES associated with poorer heath status.[72] For example, inequalities in socioeconomic resources are associated with widespread disparities in health conditions, including heart disease, cancer, and diabetes.[73]

The mechanisms through which SES operates to impair health likely relate both to the inability to access helpful resources through limited purchasing power, through the effects of limited education on the ability to fully participate in a range of occupational roles, as well as limited literacy skills to successfully navigate complex social circumstances. The graded effect suggests a dose response effect in which relatively lower socioeconomic status on average is associated with relatively poorer health. This in turn suggests that amelioration of the effects of lower SES (improved occupational and educational attainment) will improve health status.

In Figure 4 (next page) adapted from Braverman, et al's 2011 synthesis of the literature, the potential paths through which differing educational achievement, a common element in the measurement of socioeconomic status, can impact health are illustrated. As can be seen from the figure, both the direct effects of poor working and living conditions, as well as the psychological variables associated with social status and sense of control are thought to result in differential health outcomes.

Further, low socioeconomic position (SEP) is associated with greater exposure to stress over the life span.[74] Therefore, toxic stress is identified directly in many of these causal pathways as leading to poor health outcomes and as a primary risk factor that must be addressed in addressing our poor health and social status outcomes.

Figure 4: Educational achievement and its impact on health



Income Inequality

Not only is the absolute level of income or socio-economic status a predictor of overall health and well being, but the relative inequality of income distribution also powerfully predicts numerous measures of health and social well being. In their 2010 book, Wilkinson and Pickett demonstrate that the relative level of income inequality in a nation predicts multiple measures of health and well being.[75] Among wealthy nations, the relationship is less pronounced than when a wider range of poorer and wealthier nations is included—with the exception of the United States where strong and consistent relationships are obtained. [76] Wilkinson and Pickett demonstrate the relationship between greater income inequality and lower levels of trust in the society, reduced life expectancy, greater infant mortality, increased obesity, higher teenage birth rates, more homicides, and imprisonment and decreased social mobility both internationally and in the United States. Further in the US, greater inequality is also associated with greater rates of high school dropout, higher rates of childhood mental illnesses and greater aggressiveness. Their interpretation of these effects is complex but essentially involves the effects of stress related to situations in which comparative

evaluation with others leads to decreases in sense of self worth or esteem. The more hierarchical or unequal a society, the greater the opportunities for these comparative insults. Also, to the degree to which social mobility is impaired as a consequence of income inequality, individuals also experience helplessness in that their efforts do not produce desired material outcomes. Since the United States routinely is classified among the nations with the greatest income inequality and since this inequality provokes chronic stress, it may further amplify the mechanisms through which stress influences the poor health and social status of the US.

As a social system characteristic, the determinants of income inequality differ from those of individual income. Individual income is largely determined by one's education, skills, and efforts, while income inequality is determined by history, politics, and economics. This becomes a critical distinction in examining health *inequalities* and what appears to be the United States' inability to ameliorate such disparities.[77]

Ultimately, reducing income inequality by increasing the incomes of disadvantaged members of society will improve the health of poor individuals, help reduce health inequalities, and increase average population health.[78]

Race and Racism

Another general class of variables that are related to poorer health and social status involves race and racism.

While often correlated with socioeconomic status and income inequality in the United States, independent effects of race on health status are common. A review of the available empirical evidence indicates that racial/ethnic discrimination, including residential segregation in lower income neighborhoods, is associated with multiple indicators of poorer physical health and mental health status.[79] Both the effects of discriminatory practices on equitable opportunities to participate and the social psychological effects of discriminatory social attitudes likely underlie these effects. Racism, like other forms of social injustice, is a critical factor in creating and maintaining disparities.[80] Similarly, the experience of racial/ethnic bias likely also underlies differences in health.[81] Interestingly, findings from epidemiological surveys consistently indicate that black individuals report lower rates of lifetime mental disorders, even after SES effects had been accounted for. It has been suggested that this patterning could be attributed to a greater utilization of positive coping strategies such as spirituality and social support.[82]

Jackson, et al (2010) posit that "individuals who are exposed to chronic stress and live in poor environments will be more likely to engage in poor health behaviors (PHB), such as smoking, alcohol use, drug use, and overeating, because they are the most environmentally accessible coping strategies for socially disadvantaged groups. These behaviors act on common biologic processes associated with pleasure and reward systems."[83]

In another study, the same author found that while these unhealthy coping behaviors may contribute to lower population rates of mental disorders, over the life span they play a significant role in increased probability of other health morbidities and eventual earlier mortality in comparison to the general population.[84] More appropriate coping mechanisms to accommodate stress may be associated with similar protective effects on mental health status while avoiding the general health consequences of these unhealthy coping strategies.

Lastly, the fact that Latinos and Asians in the US have longer life expectancies than members of the majority groups suggests that other protective factors may be operating in these groups to offset the effects of racism and discrimination.[85]

Acculturation

Sometimes acculturation is used as a synonym for assimilation or interchangeably with race and ethnicity within the context of cultural competency. We may be keenly aware of its presence and significance, but we can find it intangible or difficult to quantify. We know that acculturation in the United States is as unique as the people who cross our borders. Acculturation will take place on a gradient—from first generation immigrants to refugees fleeing war-torn countries and endemic poverty, to those second and third-generation Americans who may identify as bicultural. Ultimately, acculturation speaks to one's ability and willingness to integrate in a larger society. Below, we have chosen a few communities to provide context to acculturation.

For Asian American families, who tend to view mental health conditions as highly stigmatizing, issues around family cohesion are particularly salient. Given that almost 70% of all Asian Americans are recent immigrants, some other issues to consider are nativity as well as acculturation/generational positioning. Among immigrants, social networks or spheres of influence tend to come from the family and workplace. Succeeding generations are influenced by a wider range of networks including their families, workplaces, school, and friends, as well as the connections of their immediate networks.[86]

The African American experience is unique in that this group of individuals are generally not immigrants and did not choose to come to the United States. Issues for African Americans may be compounded as a result of institutional discrimination and the stigma of attributed inferiority, although supportive social networks and attending church may buffer the impact of psychological distress and bolster mental health.[87]

Despite having disadvantaged socioeconomic status, the research shows that Latino immigrants have better mental health than their US-born counterparts and non-Latino Whites. There is also evidence that the mental health of immigrants declines over time in the host country—the acculturation hypothesis. The findings from the National Latino and Asian American Study (NLAAS), demonstrate that the longer the Latino immigrants remain in their country of origin, the less cumulative risk of onset of psychiatric disorders. To be clear, the Latino immigrant community in the United States is extremely diverse in terms of self-identification, racial designation, country of origin, regional dialect, citizenship designation, and geography (South America and the Caribbean). For example, NLAAS found that the prevalence of psychiatric disorders among Latinos in the United States indicated that foreign nativity may be a protective factor for some Latino groups such as Mexicans, but not for others such as Puerto Ricans. The implication is that contributing factors besides nativity have an impact on US Latinos' risk of mental health conditions. As with Asian Americans, the family can act as a buffer to mental health conditions, but the erosion of family bonding is evident with greater time in the United States.[88]

Acculturation therefore highlights the variables that might be considered as persons adjust to American culture. These both impact the definitions of health and illness, as well as help-seeking behavior. As traditional patterns of meaning and social relationships change in response to the dominant cultural motif in the US, the protective factors of culture may be diminished. Designing interventions to both lessen the impacts of acculturation and strengthen the protective factors of culture will likely be an important strategy in promoting MEB health. Similarly, designing interventions that are meaningful within a changing cultural context also presents challenges that must be addressed.

Societal Responses to Sexual Orientation and Gender identity

Conceptually related to racism, a growing body of epidemiological evidence continues to highlight health disparities that are associated with non-majority sexual orientation and gender identity. Studies suggest that lesbian, gay, bisexual, and transgender individuals (LGBT) encounter environmental stress that places them at an increased risk

for various negative behavioral health outcomes. For example, the experience of perceived stigma and discrimination is associated with elevated rates of depression, anxiety, suicidal ideation, substance use, and self-harm among LGBT youth.[89,90,91] Such risks are exacerbated when individuals encounter additional challenges such as sexism and/or racism.[92] These individuals are also at greater risk for harassment and abuse, adding further challenges associated with the experience of trauma.[93]

Fortunately, though, there are factors which have been found to buffer LGBT individuals against the effects of such stressors. For example, acceptance of LGBT young people by their families has been shown to predict higher levels of self esteem and reduce risks for depression, substance use, suicidal ideation, and self harm.[94] Additionally, training for educators on understanding and responding to the needs of LGBT students has been shown to reduce victimization of these young people within school settings. [95]

Social Connectedness/Social Exclusion

Over the past 30 years, researchers have shown great interest in the phenomenon of social support within the context of health. They have demonstrated that health is influenced by the spectrum of social relationships. We know that social support influences morbidity, mortality, and quality of life in chronic disease management. Research is expanding our understanding of the impact of social support and connectedness regarding overall health.

Recent findings demonstrate a robust relationship in which social and emotional support from others can serve as a protective factor regarding one's health.[96] These authors maintain that support can be conceptualized in terms of structural or functional components according to the definitions below:

- Structural components - social integration; being a part of different networks and participating socially; and
- Functional components - different types of transactions between individuals, such as emotional support or favors.

Strong family cohesion, also known as affective bonding within the family, may serve as a buffer to psychosocial stressors. High levels of family cohesion can lower the risk of persons developing psychological distress and depression, suicidal ideation and substance abuse. At the other end of the spectrum, low cohesiveness is associated with refusal of the initial mental health treatment of a child; possibly because less cohesive

families are “less committed to one another” or barriers in the process of accessing services and support.

While strong family connectedness is deemed critical in accessing services, as well as reducing the incidence and severity of behavioral health conditions, there is a countering theoretical perspective. Highly cohesive families may be distrusting of non-kin members and may want to keep individual family members from shaming the family as a whole. By exploring the roles of social connectedness, generational positioning and family cohesion, there is insight to be gained regarding barriers to and facilitators of the receipt of behavioral health services among racial and ethnic minority populations in the United States.

Neighborhood Characteristics

Both the built and social environment of the neighborhood are associated with health status. Neighborhoods characterized by high levels of poverty and residential instability tend to have low levels of social cohesion, which is unfortunate as social cohesion is a protective factor for coping with stress and trauma. As one of the first longitudinal studies to demonstrate a significant association between neighborhood characteristics in which one resides and the subsequent risk for depression, Beard and colleagues provide some of the strongest evidence yet that one’s neighborhood contributes to mental health. In previous research, a significant association between incident depression and neighborhoods *classified* as low socioeconomic status, even after adjusting for individual income, was identified.[97] Previous research by Stockdale and colleagues suggests that physical and structural characteristics of disadvantaged neighborhoods are sources of stress. Neighborhood stressors such as high rates of violent crime are associated with poor mental health outcomes regardless of the neighborhood’s economic context.[98] Such research findings underscore the power of the neighborhood context on well-being.

Rural Residential Status

While some aspects of rural life could be viewed as protective factors, others are believed to contribute to stress, particularly for women. Although rural areas can vary with respect to socio-demographic composition, population size, cultural context and weather, the following generalizations can be made:

- Rural residents are disproportionately poor; rural women have a greater chance of experiencing numerous stressors related to mental health

- Some studies have suggested that with the exception of suicide among males, rural residence is not associated with higher levels of mental health conditions in comparison with urban areas
- Rural areas tend to be medically underserved; significantly lowering the probability of access to screening, diagnosis and treatment services for behavioral health conditions.[99]

This brief review of some of the social determinants of health and social well being highlight the factors that place individuals at higher risk for the development of MEB problems and other health conditions. A persistent theme throughout the social determinants literature involves the degree to which individuals have predictable lives and equitable status relative to others in their community. Both predictability and unfavorable status comparisons (racism, as well as inequality) increase levels of chronic stress with clear impacts on well being. Next we will consider the factors that help to buffer the effects of stress as we talk about protective factors and resilience.

Promoting Positive Behavioral Health and Preventing Mental Illnesses and Substance Use Conditions

Resilience

If stress is a causal factor in behavioral health disorders and in the degradation of overall health and well being in the community, why doesn't *everyone* who is exposed to chronic and toxic stress exhibit symptoms of distress? Individuals respond differently to potentially disruptive events, and their responses can also vary with time. Part of the differences in responsiveness between individuals relates to their genetic predispositions, while acquired attitudes, skills, and resources are important components, as well.

Resilience, as it is typically discussed today, refers to the capacity of individuals or communities to maintain a relatively stable equilibrium and healthy levels of psychological and physical functioning despite exposure to adversity.[100],[101] Conceptualizing and measuring resilience, as well as characterizing the processes under which it develops and is expressed, is therefore essential to understanding how to promote positive MEB health and ameliorate the effects of risk factors on the production of illness or problem behaviors.

Only relatively recently have mental health scientists accepted and used the term 'resilience' as a theoretical construct of mental health protection, promotion, and recovery processes.[102]

Historically, resilience was a term applied almost solely to children and the study of resilient youth. Terms such as "invulnerable" and "invincible" were used interchangeably to describe the concept that is now known as resilience.[103] These terms were misleading because they implied risk evasion, invulnerability, and they were absolute and unchanging.[104,105]

The resilience concept in behavioral health has been characterized by the lack of unified methodologies, as well as poor concept definition. For example, there are ambiguities in both definitions and terminology, including heterogeneity in the level and type (e.g., personal meaning) of risk or stress experienced for someone to be identified as *resilient*.[106] Resilience is sometimes viewed as an individual trait or an epiphenomenon of an adaptive temperament. [107] However, as noted by Luthar et al., over the last two decades, its conceptualization has evolved from that of a personality trait to a dynamic, modifiable process. According to Ramirez, the latter definition allows for the development and empirical study of resilience-based interventions.[108]

As referenced above, there are a myriad of ways to characterize resilience, but there is a general consensus that two central concepts are critical to its definition:

(1) There must be an exposure to some kind of adverse event or threat that is necessary to detect resilient outcome; and
(2) Resilient outcomes entail more than the amelioration of distress or symptoms but broaden to include positive adaptation.[109, 110]

Resilience is also understood as a dynamic process that is multi-dimensional – meaning that resilience can occur in one person in a number of different ways, at different times, in response to different stressors and situations. And even when a person responds resiliently in one circumstance, new vulnerabilities and/or strengths can emerge in response to changing life circumstances, requiring new resilient responses. In this context, resilience thus refers to a relative, rather than a fixed state.[111] SAMHSA embraces this dynamic conceptualization of resilience, noting that it "varies across time and life domains (e.g., relationships, academic and professional life, and health)," and adding that "Resilient adaptation to adversity comes about as a result of characteristics

of an individual *interacting* with resources in the environment, such as caring adults, good schools, safe neighbors, good friends, and other 'protective factors…'"[112]

A simple way to conceptualize the difference between resilience and protective enabling factors is that protective-enabling factors are positive influences originating from the *outside* of a person (that is, social capital) that foster healthy inner cognitive–emotional development. Resilience, on the other hand, is the internalization of these protective-enabling factors, which influence the development of attitudes and values that empower decision making and action. Resilience processes thus reside within a person and can be most clearly seen in how a person manifests competence in successful responses to threats experienced in his/her environment – the movement of resilience thus being from within the person outward. Protective-enabling factors, and the manifested resilience and competencies that result, are therefore closely intertwined (that is, social and individual resilience).[113]

Davydov has extended the concept by identifying three dominant approaches to characterizing resilience that are portrayed in Figure 5 below.[114]

Figure 5: Approaches to Characterizing Resilience

Harm-reduction approach	Protection Approach	Promotion Approach
-describes mental resilience in terms of quick and effective recovery after stress[115] -parallels somatic recovery mechanisms after pathogen invasion through external and internal protective barriers -ability to 'spring back' to initial levels of mental, emotional and cognitive activity after an adversity (such as functional -limitation, bereavement, marital separation, or poverty)	-described in terms of protection mechanisms (analogous to 'immune barriers'), which help to preserve a given measure when faced with adversity[116] -different specific factors may be related to this type of resilience at multiple (e.g., individual and group; family, peer group, school and neighborhood) levels [117]	-development of additional resources, which can be used by harm-reduction and protection mechanisms, but has been mainly associated with high individual levels of positive experience[118] -not restricted to the individual level but can also be considered to be the result of a variety of external (e.g., community and cultural) factors

Similarly to the earlier definition, Davydov is differentiating the ability of an individual to bounce back quickly from an adverse event, which is most closely related to the earlier

definition of resilience and is contrasting this depiction of resilience with protective, external mechanisms that helped to preserve a given level of health and further develop resilience. In addition, he introduces the concepts of promotion by highlighting approaches that extend the concept to include internal capacities or strengths of positive mental health that also aid in response to adverse circumstances.

As psychopathology researchers and clinicians become more interested in assessing resilience and understanding how it operates in the promotion and maintenance of mental health there is an increasing need for high quality measures of the construct. However, to date there are few well-validated measures of resilience for use with adult populations. To address this issue Connor and Davidson (2003) developed a new self-report instrument, the Connor–Davidson Resilience Scale (CD-RISC). This measure was designed with the dual goals of establishing norms for resilience in general and clinical samples and of assessing the extent to which resilience scores change in response to treatment. The CD-RISC is made up of items reflecting several aspects of resilience including a sense of personal competence, tolerance of negative affect, positive acceptance of change, trust in one's instincts, sense of social support, spiritual faith, and an action-oriented approach to problem solving. Initial work suggests that the CD-RISC is a promising measure for use with adult psychiatric and general populations.[119] The identification of dimensions that reflect both characteristics of the person and adaptive styles helps to further delineate the concept. Its operationalization assists in the development of techniques to build resilience.

As with many concepts involved in prevention and promotion as related to MEB health, resilience is also seen in an ecological context that involves its characterization at the individual, community and societal levels. Norris described the features of resilience at each of these levels as depicted in Figure 6.[120] For the individual, resilience is characterized as adaptation to stress and return to baseline functioning following an adverse event (e.g. loss of employment). For communities it is characterized as a capacity to respond in harmony to threats that involves understanding the nature of threat, accommodating it, and continuing with community business (e.g., the Tucson shootings). Similarly, resilience at the social levels reflects strength of the social infrastructure to withstand stress (e.g., a banking crisis). At all levels, resilience is characterized not as a trait but as a dynamic capacity to understand the threat, respond, and return to baseline functioning having further strengthened future responses through each successful trial.

Figure 6: Features of Resilience at Differing Levels of Analysis

Individual	Community	Social	Ecological
Good adaptation under extenuating circumstances; a recovery trajectory that returns to baseline functioning following a challenge	The ability of community members to take meaningful, deliberate, collective action to remedy the impact of a problem, including the ability to interpret the environment, intervene, and move on	The ability of social units to withstand external shocks to their social infrastructure	Positive adaptation in response to adversity; it is not the absence of vulnerability; not an inherent characteristic, and not static

The development of resilience can also be characterized at each of these levels. At the individual level, these involve both temperamental and environmental variables that are associated with a nurturing environment resulting in a portfolio of skills that accommodate stress. Parallel mechanisms are identified at the family level to promote nurturance and skill development. At the community and school level, a dominant theme involves a sense of cohesion and belonging, identification with group norms, and opportunities for meaningful participation as depicted in Figure 7.[121]

Figure 7: Elements Supporting the Development of Resilience

Individual	Family	Community	School
• Easy temperament • Adequate nutrition • School achievement • Attachment to family • Problem-solving skills • Good coping skills • Social skills	• Supportive, caring parents • Secure and stable family • Small family • Responsibility within family • Strong family norms, morality	• Sense of connectedness • Participation in church or other community group • Strong cultural identity and ethnic pride • Access to support services • Community cultural norms against violence	• Sense of belonging • Positive school climate • Pro-social peer group • Required responsibility and helpfulness • Opportunities for some success and recognition of achievement • Social norms against violence

Another, related way to discuss the characteristics associated with resilience is to characterize them across the lifespan, from infancy through older adulthood. While many of the characteristics overlap age groups, a sampling of the issues identified for each is presented below.

Infants and Children[122,123,124]

- Healthy attachments with related and non-related adults (e.g., teachers, coaches, ministers)
- Healthy attached peer relationships
- Active involvement in community activities
- Problem-solving skills and strategies
- Health status in the first decade of life

Adolescents[125,126]

- Sense of belonging
- Sense of optimism
- Physical Competence
- Social and Relational Competence
- Cognitive Competence
- Emotional Competence
- Moral Competence (ability and opportunity to contribute)
- Spiritual Competence (having faith that one's life matters)

Young Adults[127]

- Increased access to experiences that elicit positive emotions and social support
- Task-oriented coping skills

Adults[128]

- Commitment
- Dynamism
- Humor in the face of adversity
- Patience
- Optimism
- Faith
- Altruism

Older Adults[129,130]

- Optimism
- Perceived Control/Feelings of Self-Efficacy
- Social Support (provision and receipt of instrumental and emotional support from others)
- Greater physical activity
- More social contacts
- Better self-rated health
- Absence of depression and cognitive impairment
- Fewer medical conditions

Overall health status, attitudes, temperaments and general competencies are all associated with resilience. Additionally, many of the characteristics highlighted at one stage of life are relevant for other stages. Successful development involves the continuing acquisition of these skills through interactions with the external environment. As we will see below, many of the characteristics that define resilience and that help to buffer against the harmful effects of trauma and chronic stress are also central to the definition of good mental health. Promotion of mental health involves, among other things, developing, strengthening and sustaining these characteristics that are essential for resilience. Following an exploration of the definition of mental health, we will explore promotion as a mechanism for building resilience, preventing MEB problems from developing, and enhancing full engagement and satisfaction with life.

Definition of Mental Health

In order to understand promotion, one must first understand what *mental health* is– what is being increased or enhanced. The definitions in Figure 8 from various authorities show the similarities and differences in the definition of mental health. All of these definitions share a similar focus on the possession of capacities and/or skills that allow individuals to function successfully in relation to life tasks that are appropriate for their developmental stage. They often feature social, emotional and cognitive components involving the ability to fully engage and enjoy life. As such, it is clear that mental health is much more than the lack of mental illness but involves a set of affirmative characteristics for successfully negotiating life tasks and enjoying the process. As we will discuss below, the promotion of mental health, while typically resulting in decreases in mental illnesses and behavioral problems, involves the development of capacities that enhance life experience.

Figure 8: Definitions of Mental Health

Source	Definition
IOM Report	The extent to which individual children or groups of children are able or enabled to (a) develop and realize their potential, (b) satisfy their needs, and (c) develop the capacities that allow them to interact successfully with their biological, physical, and social environments (p. 68).
The World Health Organization[131]	Mental health is 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.
The Canadian Institute for Health Information[132]	The capacity of each and all of us to feel, think, and act in ways that enhance our ability to enjoy life and deal with challenges we face.
Surgeon General's Report[133]	Mental health is a state of 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.
Health Education Authority of the United Kingdom[134] (Now HAD – part of NICE)	Mental health is the emotional and spiritual resilience which allows us to enjoy life and to survive pain, disappointment and sadness. It is a positive sense of well-being and an underlying belief in our own, and others' dignity and worth.

Defining Mental Health Promotion

The definition of mental health promotion has evolved over the last decade to reflect advances in the literature and an increased focus on intended outcomes. Promotion is generally defined by the outcome that the intervention, service, or policy is intended to affect. The IOM Report developed its definition based on work in the United States and abroad[135,136] and it is characterized as "efforts to enhance individuals' ability to achieve developmentally appropriate tasks (competence) and a positive sense of self-esteem, mastery, well-being, and social inclusion and to strengthen their ability to cope with adversity."[137]

In relation to prevention, treatment, and maintenance/recovery, the IOM Report places promotion on the left side of a Fan continuum, followed by universal, selective, and indicated prevention, treatment, and then maintenance at the far right. Underlying the fan is another continuum of promotion, to indicate that promotion is applicable and useful for all individuals, regardless of their needs or the presence of risk factors or illnesses that might require other preventive or treatment interventions.

Figure 9: Fan Continuum, 2009 IOM Report

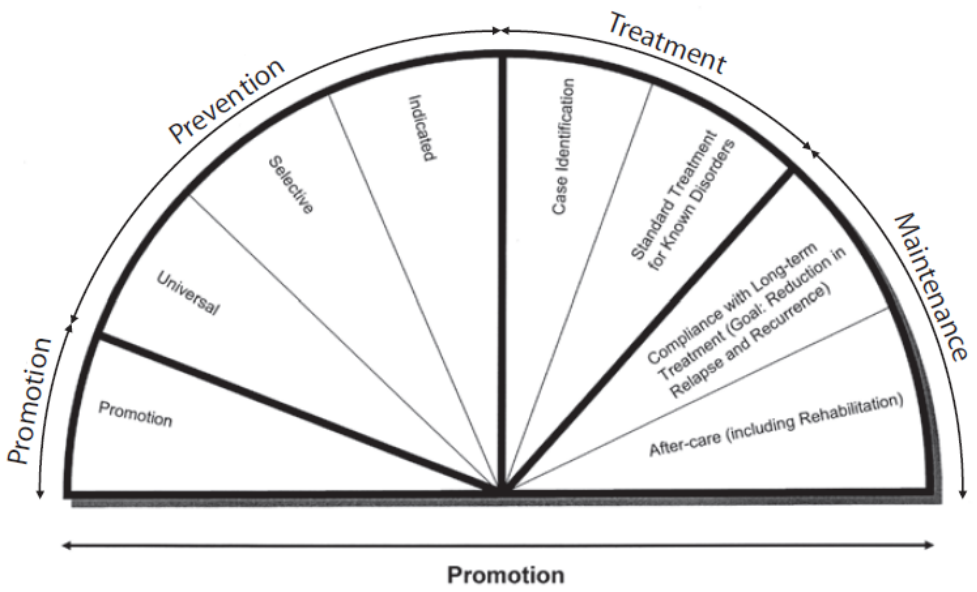


FIGURE 3-1 Mental health intervention spectrum.
SOURCE: Adapted from IOM, Reducing Risks for Mental Disorders, 1994; and Gordon, *Preventive Intervention Research*, 1994.

Corey Keyes, a leading expert in the field of mental health promotion, has further elaborated the concept of promotion. Like others, he describes mental health promotion as activities that improve a person's mental health but further identifies two sub-dimensions of mental health—having positive feelings (hedonic) and exhibiting positive functioning (eudemonic) in life. Keyes has operationalized mental health by using Bradburns[138] measures of emotional well being, Ryff's[139] measures of psychological well being, and Keyes scales of social well being[140] – three dimensions that are prominently featured in the discussion of resilience. He uses scores on these three dimensions to categorically define three overall states of mental health that vary from languishing, in which a person scores in the bottom third of the well being scales, flourishing in which they score in the top third of the scales, and moderate mental health for individuals scoring in the middle of this continuum. While a person who is languishing is six times more likely to have diagnosable depression than an individual who is flourishing, languishing does not denote illness. Languishing is associated with

psychosocial impairments in perceived emotional health, limitations in activities of daily living, and absenteeism from work. Flourishing is described as having "positive emotion and to be functioning well psychologically and socially."[141] Mental health promotion, then, aims to maximize flourishing and minimize languishing.

Earlier research by Ryff and Keyes showed six main components of psychological wellness/mental health. Those six factors included self-acceptance, environmental mastery, purpose in life, positive relations with others, personal growth, and autonomy.[142] The improvement of those six aspects of well-being will help a person move toward flourishing mental health.

Promotion, therefore, emphasizes strengths and skills associated with emotional, instrumental, and social well being. They are correlated with the presence of mental illnesses, since an individual who is languishing is more likely to have a mental illness or to develop one while a person who is flourishing is less likely to be classified as mentally ill or to develop a mental illness[143] but not isomorphic with mental illness since an individual can be flourishing with a mental illness and/or languishing without any formal affliction. Flourishing with an illness may bear an interesting relationship to the concept of recovery.

Because there are various social determinants of MEB health, as outlined earlier in this report, most frameworks for discussing promotion include a strong emphasis on enhancing the *environments* in which people live, work, and play, highlighting the need to enhance equitable access to resources. The WHO 2004 report on promotion establishes "a strong link between the protection of basic civil, political, economic, social, and cultural rights of people and their mental health."[144] Cattan and Tilford draw upon work done in the United Kingdom to offer a concise categorization of mental health promotion as encompassing three main areas of focus, as quoted below:

- *Strengthening individuals:* increasing emotional resilience through interventions to promote self-esteem, life and coping skills, such as communicating, negotiating, relationship and parenting skills.
- *Strengthening communities:* this involves creating social inclusion and participation, improving neighborhood environments, developing health and social services which support mental health, anti-bullying strategies in schools, workplace health, community safety, childcare, and self-help networks.

- *Reducing structural barriers to health:* through initiatives to reduce discrimination and inequalities and to promote access to education, meaningful employment, housing services, and support for those who are vulnerable.[145]

For this reason, the creation of a national strategy to promote positive MEB health and functioning must include an ecological focus on strategies at the individual, familial, community, and societal levels.

Defining Prevention of MEB Disorders

While the promotion of mental health addresses the potential of improving emotions, functioning, and health-fostering environments, the prevention of MEB problems--including mental illnesses and substance use disorders--addresses a reduction in the risks for developing diagnosable conditions and/or problem behaviors. According to the 2009 IOM Report, "mental disorders are defined by a cluster of symptoms, often including emotional or behavioral symptoms, codified in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) or the *International Classification of Diseases* (ICD)." The IOM also identifies problem behaviors and symptoms that might not meet diagnostic criteria but must be considered when discussing the prevention of MEB disorders.

The 2009 IOM Report distinguishes prevention from treatment, but both share the goal of reducing the burden of MEB disorders on healthy development throughout the life span. This definition further builds upon the 1994 IOM Report that first distinguished prevention from treatment and maintenance as contrasted with the then more common approach of classifying preventive activities as involving primary prevention (reduce the incidence of disorder), secondary prevention (shorten the duration of a disorder), or tertiary prevention (minimize deterioration associated with illness). The 1994 report more clearly distinguished prevention interventions as those that are administered prior to the onset of a diagnosable condition from treatment, which improves or cures an already diagnosed condition, and maintenance, which helps maintain functioning for a person with a chronic disorder. Maintenance also helps keep a person in recovery after they have successfully been treated.[146] It must be noted that, for an individual in treatment or recovery, prevention can address reducing the incidence or likelihood of the development of *different* problem symptoms or behaviors other than those that required the initial treatment, such as preventing obesity in persons being treated with some atypical antipsychotic agents.

The 1994 and 2009 IOM Report distinguishes three types of preventive approaches (see Figure 5): universal interventions targeted at whole populations independent of their risk factors; selective preventive interventions targeted at individuals or population subgroups who have elevated risks of developing behavioral health conditions; and indicated preventive interventions targeted at individuals who are exhibiting early signs of developing a condition or have inherited risk factors indicating a predisposition for a disorder. Prevention can operate by reducing malleable risk factors and/or strengthening protective factors, regardless of the individuals' level of risk. Approaches vary depending upon the individuals' life span developmental stage and the risks that he/she is confronting for the development of mental health or substance use conditions.

Relationship of Promotion to Prevention and Mental Health to Mental Illness

The delineation between promotion and prevention has been the subject of much discussion and debate. As described above, on a fundamental level promotion is concerned with enhancing positive health and functioning, while prevention emphasizes the avoidance of risks for illness and negative outcomes. The complexity, as Cattan and Tilford note, is that "in practice, many who support a promotion approach in principle and prioritize positive health outcomes also recognize, implicitly or explicitly, the fact that in doing so mental illness will also be prevented. Others supporting a prevention approach cite positive health outcomes for their programmes…(44)" The authors go on to note that while some scholars prefer to adhere exclusively to either a prevention or a promotion framework, "combining the two does tend to reflect the reality of much practice. (45)." [147] Herrman and Jane-Llopis reference work published out of Helsinki that had made the following observation about promotion and prevention: "Because the former is concerned with the determinants of health and the latter focuses on the cause of disease, promotion is sometimes used as an umbrella concept also covering the more specific activities of prevention."[148]

Indeed, in the introduction to the WHO's seminal report on mental health *promotion*, it is noted that many of the interventions presented are also of relevance to the *prevention* of mental health problems, and that the two are "necessarily related and overlapping activities," but that promotion approaches lend themselves to a much wider scope and target audience. [149] Because promotion is useful for *all* populations, regardless of their health status, it is therefore portrayed in the IOM Fan (Figure 5) as appropriate across the full promotion/prevention/treatment/maintenance continuum. While promotion-oriented approaches will almost always have a preventative effect, the converse is not always true.

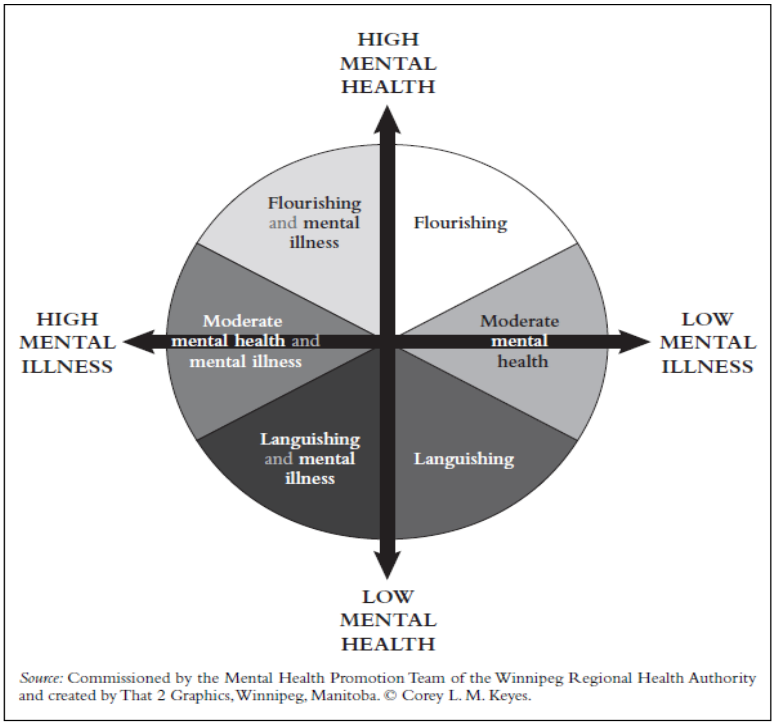
A recent document published by Georgetown University (under funding from SAMHSA) on the public health approach to children's mental health observes that part of the confusion surrounding prevention and promotion is that one cannot necessarily make a ready distinction between the two just based upon the intervention itself due to the overlap in technologies. The authors of that document highlight that the key distinctions are on the stated *goals* of the intervention (e.g., optimizing health and wellbeing versus reducing illness or problems), and therefore the *outcome measurements* that are incorporated into the endeavor.[150] A challenge is that there is a greater knowledge base and familiarity with operationalizing outcome measures for prevention than for promotion[151].

The scope of work under which this National Strategy project is supported has called for efforts to both promote positive MEB health and to prevent/reduce mental illness and substance use disorders. In moving forward with this initiative, an important set of activities will include working with SAMHSA and the Steering Committee to further refine the balance of emphasis in working towards those goals, as well as operationalizing agreed-upon terminology to be used in the National Strategy and related materials. This effort will be of particular of relevance given that different constituencies may respond more readily to one concept versus the other (e.g., messages of health promotion versus risk prevention/reduction).

A significant contribution to the promotion field has been made by Westerhof and Keyes who propose a two continua model of mental health and mental illness. This has evolved from a previous model that had mental health on the left side of the continuum with the absence of any illness, and mental disorder at the right side of the continuum to indicate an absence of mental health. Keyes' thinking has evolved to describe mental health and mental illness on two separate continua, whereby mental illness can be categorized on a line from severe mental disorder to absence of any mental disorder on one axis, and low mental health/languishing to high mental health/flourishing on a completely different axis. Therefore, an individual with a severe mental illness can have moderate or good mental health, while a person without a diagnosed mental illness can have languishing mental health.[152,153]

A visual representation of this two continua model appears on the next page in **Figure 10.**

Figure 10: Two continua model of mental health and mental illness.[154]



Source: Commissioned by the Mental Health Promotion Team of the Winnipeg Regional Health Authority and created by That 2 Graphics, Winnipeg, Manitoba. © Corey L. M. Keyes.

Application to the Ecological Life Span Model

Outlining a national strategic framework for promotion and prevention across the life span requires use of a public health model that can accommodate the many complexities of the field[155]. We adopt an ecological model to discuss promotion and prevention activities as related to individuals, families, communities, and society[156]. This model explicitly recognizes the interactions among these levels, and many of the interventions to be discussed below have effects at multiple levels in building protection and ameliorating risk. Additionally, we recognize that the developmental stage of an individual will have profound impacts on the risks factors to which (s)he is exposed and to the types of interventions that are most likely to be effective. We will discuss interventions targeted at each of these ecological levels and sample those for differing stages of the life cycle in order to demonstrate the potential of these techniques for improving the overall health and well being of communities and the nation.

Individual Level Considerations

As we discussed earlier, both genetic and environmental influences clearly impact the individual's MEB status both independently and in interaction. We summarized the heritability estimates for the diagnosis of various mental and general health conditions earlier. We could also demonstrate the genetic influence on many personality and temperament characteristics (e.g. emotionality, impulsivity) that are likely involved in both promoting well being and predisposing vulnerability to illness. As we have discussed, trauma and chronic stress can also have deleterious effects on well being, particularly in children with rapidly developing brains.[157] Animal models in which maternal attachment and grooming behaviors are manipulated demonstrate life long effects on the developing animal's behavior and structural changes in the brain that underlie these behavioral changes[158]. Given the behavioral similarities in human children who have experienced early trauma, it is quite likely that the developmental animal models are relevant to human development.

In humans, environmental factors like the social determinants discussed earlier– poverty, racism, can have a major impact on individual functioning, mental health, and the development of mental disorders. Attitudes, beliefs and behaviors that contribute to an individual's lifestyle, sense of self, and ability to cope with obstacles and disappointments affect mental health and the rates of mental and addictive disorders. This is true across the lifespan–the amount children are nurtured, the way adolescents are treated by their peers, the feelings adults have of mastery in their jobs, and the sense of purpose an older adult feel –all contribute to the mental health status of Americans.

<u>Interventions:</u> With proper tools and supports, individuals can increase their resiliency and adaptation skills, which can have a positive impact on bolstering mental health and functioning and decreasing the risks of developing behavioral health disorders and the expression of other problem behaviors.

Many of the interventions available at the individual or small group level are either selective or indicated and many of these involve skill training to enhance individual resilience. Coping with depression (CWD), for example, uses both cognitive and behavioral coping skills to forestall the onset of depression and has been demonstrated to reduce levels of depression by 38% in several differing age and sex groups.[159]

Screening techniques can also assist in the identification of at-risk groups. The United States Preventive Services Task Force (USPSTF) has endorsed depression screening for both adults and adolescents as having a sufficient evidence base to merit wide scale adoption.[160] Programs like TeenScreen are attempting to broadly disseminate and implement (www.teenscreen.org) mental health check-ups that are consistent with the USPSTF recommendations regarding the quality of the screening instrument and follow-up from screening. Additionally, screening for early signs of psychosis is emerging as a promising technology for reducing the expression of psychotic illnesses when followed by appropriate preventive practices. McFarlane summarized the literature for the 2009 IOM report and indicated that the conversion rates to psychosis for high risk persons who received the preventive intervention was 11% as contrasted with a 36% conversion rate for individuals who did not receive the intervention. Screening and brief intervention for alcohol problems is another individual level intervention with a substantial scientific base. It has been a recommended procedure by the USPSTF since 1996 and, in a 2002 meta-analysis of 32 trials indicated significant effects including reduction in alcohol use, prevention of morbidity and mortality, reduced medical utilization and a decrease in adverse social consequences related to alcohol use.[161]

Screening and early intervention, therefore, are important individual level preventive interventions. However, there are important barriers to their implementation including the overall strength of the science, implications of false positives both in terms of discrimination and the unintended negative consequences of some treatments–principally pharmaceutical.

While promotion and prevention efforts are useful and important throughout the lifespan, they are especially beneficial for young children and youth, since they can lay the foundations for healthy development and can reduce the risk of developmental problems that can be debilitating and long-lasting. For that reason, interventions that are aimed at promoting attachment, such as the Nurse Family Partnership, which provides support to new mothers from prenatal through age two, help to support positive functioning and reduce the risk of criminal involvement and aggressive behavior later in life.[162]

For school-aged children, programs like the Incredible Years, Triple P, and Good Behavior game seek to reduce the incidences of bullying, substance use, anti-social behavior, and other issues that often emerge for children and youth. They also have the positive effects of increasing self-esteem, problem-solving behavior, and other competencies that improve mental health and functioning, as well as prevent future

problems. These programs have research to support the use of them in universal or selective prevention efforts where there are elevated risks in a community due to the risk factors discussed earlier.

At the same time, there are a variety of activities that individuals of all ages can undertake that can enhance their positive MEB health (e.g., exercising, getting adequate sleep, connecting with others, becoming meaningfully involved in one's community, etc.)[163]. Campaigns to encourage such health-promoting behaviors are one strategy for advancing the well-being of a population.[164]

For older adults, issues of cognitive health and dementia are of great importance. While no preventive interventions for Alzheimer's disease are currently available,[165] several interventions for older adults result in improved cognitive abilities. Intensive volunteer activities in schools by older adults resulted in cognitive and other health benefits for the elders as well as educational gains for the children.[166,167] In a multi-site randomized trial using ethnically diverse samples, the Advanced Cognitive Training for Independent and Vital Elderly (ACTIVE) demonstrated specific cognitive gains in daily living skills associated with the particular areas on which the intervention focused (e.g. memory, reasoning and speed of information processing) but the training effects did not transfer across domains.[168] These later interventions have positive mental health effects on children and older adults–strengthening their cognitive base and educational achievement.

Family Level Considerations

Prevention and promotion interventions targeted at the family level are particularly important since they can have life long effects on the child's developmental trajectory including secure attachments, emotional regulation and social competencies. Owing to the extended period of interaction between children and their parents/caregivers there are opportunities to intervene across several developmental periods. Family based interventions are particularly powerful since they have the ability to reduce early risk factors that give rise to subsequent MEB disorders. A wide variety of interventions have been developed for families involving home visitation, parent skill training, and bereavement/divorce interventions among others.

Home visitation interventions**:** Perhaps the best known and most rigorously researched program in home visitation is the Nurse Family Partnership of David Olds.[169] The logic of the program is to influence the ecology of the home among low income, first time mothers by improving their health, their maternal skills and how these impact

maternal/child interactions. Nurses provide assistance and education to new mothers from early in their pregnancy to 24 months post partum. Three longitudinal, randomized trials have been conducted with nearly two decades of follow-up data on some of the early program participants. The interventions are associated with reduced levels of child abuse and neglect, improved behavioral health of the children at age 6, improved school readiness, reduced rates of internalizing disorders at age 12, and decreases in maternal substance abuse and child anti-social behavior. Maternal health was improved since intervention mothers had lower levels of substance use, longer intervals between pregnancies, and reduced cigarette smoking. Additionally, they had better employment outcomes, reduced use of welfare and increased rates of fathers in the home.[170] At age 19, girls whose mothers were in the experimental condition were less reliant on Medicaid, had less criminal justice involvement and fewer children than girls in the control group. Interestingly, no effects for boys were detected at 19 years.[171]

The Nurse Family Partnership is an excellent example of the broad scale benefits associated with a systematic, early childhood intervention on many of the variables that underlie our social health. Not only did it have direct effects on the health status of mothers and babies, it also reduced trauma and abuse levels, therefore reducing the intergenerational effects of stress. It reduced anti-social and criminal behavior that drives many of the incarceration and violence indicators. Additionally, mothers who participated in the intervention were found to be better able to manage stress than individuals in the control groups–indicating that the causal mechanism we have featured in the introduction appears to be active in this preventive intervention.[172]

Parent training: These programs all seek to improve parenting skills and to reduce the level of harsh or inconsistent parenting. They are based on behavioral principles of reinforcing desirable behaviors and promoting positive child-parent interactions while using mild and consistent consequences for undesirable behaviors. Among the best known are highlighted below.

The Incredible Years, a group intervention program targeted at improving outcomes for at-risk youth, has a parental component that assists parents in learning problem-solving and parenting skills to better equip them to nurture healthy children. The program has been shown to reduce child problem behaviors, increase child independent play, increase positive parenting and increase parent confidence and skills.[173]

The Strengthening Families Program is a universal, family-based intervention with the goal of preventing substance use in adolescents. It has been shown to reduce the

likelihood of substance use, delinquency, school problems and internalizing disorders and to improve coping.[174]

The Positive Parenting Program (Triple P) includes universal, selective and indicated interventions that have been shown to have multiple beneficial affects. This intervention was originally developed as a treatment program for children with behavioral problems and has been grown over a 25 year period to include a full population based public health program.[175] It has been shown in meta-analyses of 11 randomized trials to have medium to large effects on reducing child and parent undesirable behaviors and to improve positive parenting skills across several differing client populations.[176] Additionally, recent work detected large effects on reducing substantiated child maltreatment, out of home placements and child maltreatment injuries *at the county level* in a randomized control trial contrasting counties that had received training in Triple P versus those that had not received the intervention.[177]

These are three of a wide variety of parent training programs. Most are distinguished by focusing on behavioral techniques to improve child/parent (caregiver) interactions and have been shown to have positive effects on both children and parents. These three, among others, are also distinguished by serious efforts at dissemination and implementation and by their public health perspective. While they were designed as prevention programs, they have many promotive effects including improved academic performance and parenting skill building and confidence in the parenting role. Many of these interventions have been shown to reduce the level of child maltreatment which is a key link in the proposed causal chain that ultimately produces compromised social, educational and occupational functioning underlying growing concerns with the health of America.

<u>Parental treatment:</u> In 2009 the IOM released a report addressing the needs for the treatment of parental depression as a preventive technique to assist in healthy child development[178]. In this document the IOM demonstrates the deleterious impacts on child development that are associated with untreated parental depression and identifies several strategies that can be used to ameliorate these effects through identification and treatment of afflicted parents. While we will not discuss these strategies in detail, it is essential that they be considered as part of the armamentarium of interventions that are needed to support healthy childhood development and prevent the onset of MEB problems in children. Understanding the heath of the family *in total* is crucial to fostering healthy development and preventing the onset of MEB problems.

Bereavement and Divorce: Families and the children within the family are at high risk for developing significant behavioral health problems following divorce or the death of a parent. Identifying families at risk and providing a family-based intervention can improve the outcomes for both the child and parent. For instance, Parenting through Change is an intervention for families who are experiencing a divorce. The intervention has been shown to improve parenting practices and child compliance, and to reduce maternal depression. Additionally, as might be expected in those households in which maternal depression is present, the effects on children were most pronounced at 30 months.[179]

While this literature has been primarily developed with a preventive framework and while several family interventions have been shown to have beneficial effects on children, parents and communities that typically involve decreases in problem behaviors, it is also clear, at least by implication, that the skills that are imparted through these interventions also have health-enhancing qualities. Heightened parental confidence and improved school performance are both indicative of social role improvements following intervention. Increased ability to cope with stressful life events and reductions in child maltreatment that are attendant to many of these interventions also speak to their potential direct influence on the overall social health of the community by reducing powerful risk factors, enhancing resilience, and improving social functioning.

Community Level Considerations

Communities are critically important in realizing the potential of prevention and promotion techniques. Ultimately, these techniques are implemented within community settings such as schools and workplaces, activity programs, etc. Support of community leaders and the overall community is therefore essential to their success. Understanding and accommodating the community context is therefore essential. Here we will specifically highlight school and workplace based interventions, as well as community wide approaches.

School-Based Interventions: Given the ubiquity of school environments, the fact that children spend a good part of the day in these settings and that prevention and promotion interventions positively impact academic performance, it is not surprising that much work has focused on educational settings. Further reinforcing this theme, Mendelson and colleagues cite several meta-analyses that indicate that both positive youth development and problem behaviors (substance use, aggressive behavior, and mental health problems) are impacted by these programs.[180] While mental and

emotional health factors are among the most powerful predictors of early drop out and poor academic achievement, Kataoka and colleagues[181] point to disjuncture between mental health and educational policy that have frustrated implementation of mental health prevention and treatment programs. As with family focused programs, we will highlight a few better known interventions programs to illustrate the logic and approaches used[182].

Good Behavior Game is a first grade intervention that rewards positive group behavior through team assignments and rewards/demerits for the team based on team members' individual behaviors. It may also be accompanied by an enhanced curriculum in reading, writing, math and critical thinking. Results from the initial randomized trial on first grade students followed up at age 19 (approximately a 13 year follow-up) indicated 36% reduction in special education placements, large effects in reading and math (equating to an additional year proficiency for the experimental as opposed to control group), 21% increase in high school graduation, and a 61% increase in college attendance. Additionally, at ages 19-21, male participants were about 50% less likely to have become drug involved, 60% less likely to smoke and 35% less likely to have met criteria for antisocial personality disorder; both males and females in the experimental group were about 35% less likely to have abused alcohol.[183]

Seattle Social Development Project is a universal intervention that sought to set children on a positive developmental course through teacher, student and parent intervention components. The approach promoted opportunities for children's active involvement in the classroom and at home, skill development for participation, and reinforcement from parents and teachers for children's effort and accomplishments. The intervention has demonstrated significant positive outcomes during childhood and adolescence and, perhaps most impressively, in young adulthood some 15 years following the end of the intervention. At 15 year follow-up, a significant overall benefit accrued to individuals served in the experimental condition. Specifically, young adults who were served in the intervention as children had better educational and economic attainment, reduced rates of mental illness diagnoses and safer sex practices than individuals in the control conditions.[184]

Promoting Alternative Thinking Strategies (PATHS) is a universal school based program for social-emotional learning that focuses on emotional self regulation and self control. It has been shown in trials to improve pro-social behavior and reduce aggressive behavior and poor academic performance.[185]

The Coping Power program is an indicated prevention program for 4th and 5th graders with aggressive or disruptive behaviors. The program uses parental and student interventions based on a social cognitive approach that involves social skills and problem solving training to modify social cognitive processes involved in aggression. It has been demonstrated to reduce substance use and aggression while improving social competence and teacher's rating of school relevant behavior.[186]

The Positive Behavior Interventions and Supports Program (PBIS) applies positive behavioral learning at the individual and organizational level to impact school culture. It is a whole school intervention that has been supported widely by school administrators and policy makers to change the school environment to focus on promoting positive behaviors and mental health. PBIS includes universal practices that can be implemented widely in order to promote mental health in the school environment. Other selected and indicated MEB-related prevention interventions can then be incorporated for the children and youth who have been identified as being high risk or already exhibiting disruptive behaviors. PBIS has been shown in trials to improve organizational climate in schools, reduce disruptive behavior and significantly reduce suspensions. PBIS was been widely adopted with estimates[187] that it is being employed in over 10,000 schools in 45 states, but this still accounts for less than 10% of schools overall.[188]

Additional activities have been demonstrated to improve the school climate by making the environment a safer one in which to grow and learn. The Olweus Bullying Prevention Program, for example, is a comprehensive, school-wide program that has been designed and tested for use in elementary, middle, and junior high schools as a mechanism to prevent bullying problems among school children and to improve their peer relations. In addition to reducing bullying and improving the classroom climate, it has also been shown to reduce antisocial behaviors, such as vandalism and truancy.[189,190] Similarly, schools which have Gay/Straight Alliance groups [i.e., student-led school groups for youth of all sexual orientations that work to promote tolerance, understanding, and support for LGBT student issues] have: fewer problems with bullying and harassment of students on the basis of perceived sexual orientation; reduced truancy on the part of LGBT students who otherwise might have felt unsafe to attend school; and greater levels of self-reported academic engagement, as compared to schools without such supports.[191]

<u>Workplace Interventions:</u> Like schools for children, workplaces are the settings in which most adults spend a large portion of their time. While there are many challenges to implementing workplace wellness interventions due to stigma, cost, and political will

within many organizations, there are good reasons to focus on the workplace as a key community intervention setting. Although the number of programs for workplaces is far fewer than that of school-based interventions, and the literature is still relatively less robust, promising interventions have been developed and tested.

Many of the wellness/promotion interventions developed for workplaces were first developed for the prevention of general health problems or for the reduction of substance use.

One approach is to reduce the effects of stigma by integrating a behavioral health intervention into a more generally focused wellness program. For example, Heirich and Sieck[192] demonstrated reductions in alcohol consumption in a trial in which workers in the experimental condition received outreach for health status monitoring and behavioral counseling, as opposed to the control condition that included only educational material. After 3 years, high risk alcohol use had been reduced in the experimental program.

Web based programs have several attractive characteristics in that they can be accessed anonymously and can provide an ongoing source of support and information in monitoring heath. For example, the Stress and Mood Management Program includes an initial assessment that screens for several problems. The program assists in developing an individual's wellness plan based upon cognitive behavioral strategies, relaxation, problem solving technologies, etc. Initial evaluation of the intervention in a randomized trial indicated that participants had increased knowledge about stress and mental health, more positive attitudes about help seeking, decreased stress and binge drinking, and slightly improved work productivity when contrasted with a wait list control.[193]

The JOBS program is an intervention developed to reduce depression and promote success for individuals who are out of work and seeking employment. The intervention is administered in a group with the aim of promoting mental health, including confidence and self-efficacy. Research found lower levels of depression and increased employment among those who received the intervention. It appears to be particularly effective for individuals at high risk for untoward job loss consequences.[194]

Community-Wide Interventions: As we noted earlier in the discussion of the social determinants of health, community factors such as violence, poor living conditions, etc. can have a profound effect on health. Similarly, community resources can also play an important role in strengthening resilience, and a sense of community cohesion and

belonging may be particularly important in preserving well being. Additionally, as noted earlier, most of the interventions will ultimately need to be implemented in communities by community residents. Community factors, therefore, are quite important.

A typical method of community involvement includes the development of community coalitions. These coalitions use problem solving techniques to address community identified challenges. Most of these coalition activities have not been rigorously evaluated owing to the difficulty in studying such diffuse innovations as well as constructing appropriate contrast conditions.

One program that has been rigorously studied is Communities that Care (CTC). This operating system for community action involves technical assistance in the use of epidemiological data to identify risk and protective factors and a systematic, community driven process to select among evidence based interventions to address idiosyncratic community needs. Results of a multi-site randomized trial of the program indicate that it has been effective in reducing the incidence of alcohol, cigarette and tobacco initiation, and in reducing the level of delinquent behaviors for students in grades 5-8.[195] The approach has been manualized with the support of SAMHSA and is consistent with the Center for Substance Abuse Prevention Strategic Prevention Framework.[196] While the CTC program had success with student participants, parent engagement was problematic.

Violence prevention efforts address a powerful neighborhood risk factor for both externalizing and internalizing disorders. Cease Fire–a Chicago based intervention at the community level aimed to reduce violence through communication regarding the costs of violence, efforts to change community norms, and provision of alternative dispute resolution methods other than violence. A quasi experimental evaluation of the program indicated that it was successful with high risk individuals with very low academic achievement who had already been arrested. These individuals achieved vocational and educational goals. Additionally, the overall level of violence was reduced in the participating neighborhoods relative to their matched control neighborhoods.[197] A Baltimore version of the program was successfully implemented. Neighborhoods with the best implementation showed the most violence reduction.[198]

Safe housing is another important component of neighborhood life. Voucher programs that allow individuals living in poor neighborhoods to move have had mixed success in improving the health of residents. A Chicago based program stimulated by a court

decree provided vouchers to families in housing projects to move, and was accompanied by better educational achievement for children who were involved[199] although mothers' adjustment to the move was difficult.[200]

The Housing and Urban Development (HUD) program *Moving to Opportunity* involved a voucher program and housing assistance. It was evaluated in a three group experimental design in five large US cities. The results, however, are complicated by specific group effects. Adults who received vouchers showed decreased levels of depression and reduced stress relative to the control conditions who continued in public housing. Girls in the two voucher conditions showed large reductions in generalized anxiety disorders, while girls in the control condition had less depression. Boys in the voucher programs had higher levels of criminal involvement, either from increased criminal involvement or improved policing in their new neighborhoods. Neither voucher group showed changes in educational achievement, employment or self sufficiency.[201]

PROSPER (PROmoting School-community-university Partnerships to Enhance Resilience) is another intervention program designed to engage communities with university partners to assure high fidelity implementation of community selected evidence based prevention programs.[202] The intervention capitalizes on the successful technology transfer capabilities of the agricultural extension service to represent universities as partners with community based teams. A prevention coordinator is the liaison between the university and the community and serves as a technical assistance resource. In addition to the coordinator and extension representatives, local community representatives from the school and human service system as well as parents and students are represented on the teams. As in the CTC model, the community team can help to assure the fit between the selected evidence based practices and community assets and challenges. Results indicated that students in PROSPER communities had a lower level of substance use initiation, lower past year use of marijuana and inhalants and a trend toward less drunkenness and cigarette use than persons in the non-PROSPER communities. As in other interventions, high risk students appeared to benefit more than low risk individuals from the PROSPER intervention.[203]

Community Center Interventions: In addition to schools, community centers for both youth and seniors can be another venue for promoting MEB health and preventing the onset of risky behaviors or behavioral health disorders. After-school and extra-curricular programs can promote self-esteem, resiliency and pro-social behaviors among youth as well as discourage gang behavior and other community mischief. Senior centers can promote social inclusion and social connectedness for a population that is

often marginalized and isolated, as well as provide activities to keep older adults active cognitively, emotionally and physically.

Individuals of any age, but especially older adults, can benefit from activities like participation in religious practices, volunteerism, and multi-generational family events.[204] These promotive activities can be employed to improve the quality of life of all people.

For older adults, senior centers can be a place for socialization and meaningful activities, after they have left the workforce and no longer have children at home. Older adults are less likely to be happy with their lives than their younger counterparts, and this is often attributed to loss of meaningful activities, increased medical problems, and decreased social inclusion. These issues have an even higher prevalence among older adults living in poverty.[205]

The Walking the Way to Health Initiative (WHI) in the United Kingdom arranges community walks for older adults to increase physical activity and the associated positive behavioral health benefits as well to increase socialization. Randomized controlled trials showed improvements in vitality, emotional, and physical health indicators.[206] Such a program could be administered in senior centers, churches, or other community settings where older adults gather.

Communities as Implementation Tools: Communities are one venue to promote and support the implementation of individual and family interventions. This includes funding or sponsoring programs that have been found to be evidence-based, or creating environments that are more conducive to implementing promotive and preventive interventions.

Schools and workplaces that understand the importance of the social and emotional development and health of students and employees can provide the physical space for programs to be administered during the evening or lunch hours. Churches can decide they will use some of their ministry funding to open their doors to MEB health promotion programs for youth in their community. Senior centers can choose to fund evidence based programs that are effective in promoting wellbeing and reducing social isolation and depression among older adults.

Additionally, community settings can implement less formal strategies to promote positive MEB health and social inclusion. In Connecticut, schools host informal

breakfasts regularly for parents in order to encourage involvement in school and provide a venue for discussing parenting and other community issues. Workplaces can promote their employees' well-being by encouraging them to take breaks for lunch and exercise throughout the day. Neighborhoods can come together to plant flowers and trees, clean up parks, and paint over graffiti, all small things to make their environment healthier.

Communities can also invest in other solutions to address many of the social determinants and risk factors associated with poor behavioral health outcomes. Gang prevention programs, including those administered jointly by local school and police departments can assist in reducing youth involvement in and the influence of gangs in neighborhoods[207]. Job training programs can equip unemployed people to with marketable skills[208]. Food banks, the development of grocery stores with healthy foods, and promoting new businesses and organizations, including health care providers, to move into low-income neighborhoods can increase access to needed resources for those living in poverty.[209]

An interesting example of a community-wide effort to enhance the overall wellbeing of its residents is Albert Lea, MN. With funding from AARP and the United Health Foundation, a broad-based initiative was launched with schools, businesses, restaurants, and community groups to: institute wellness policies; offer healthier eating options; create walking trails; start community gardens; and offer community clubs and workshops. Results included weight loss, reduced absenteeism from work, and reduced health care costs, while simultaneously promoting social inclusion and community cohesiveness. This endeavor—structured on the BlueZones principles of replicating practices of those parts of the world with the greatest longevity—is an excellent example of a promotion-based effort that generates whole-health benefits.[210,211]

Society Level Considerations

Society level interventions often involve statutory or regulatory mechanisms that either promote or inhibit various activities known to be related to health. Food and drug safety, occupational safety, and environmental standards all seek to regulate individual and corporate activities to promote safety and health. In the behavioral health arena, laws that relate to insurance and educational practices, that enable epidemiological and surveillance activities, that seek to address inequities in access to valuable social resources, that regulate family medical leave, that tax alcohol and cigarettes, and that seek to regulate access to guns are likely the most relevant.

Many preventive practices are covered in public and private insurance, like mammograms and colonoscopies. Some screening interventions are now covered for private insurance and Medicaid, due to new provisions in the Patient Protection and Affordable Care Act requiring plans to offer preventive services endorsed by the U.S. Preventive Services Task Force. However, alcohol misuse screening for adults, depression screening for adults and adolescents, and tobacco use screening for adults and pregnant women are the only behavioral health practices that are currently endorsed. Medicare also requires annual well-visits to include screening at no cost to the beneficiary. Similarly, Medicaid reimbursement for evidence based home visitation services should stimulate the growth and availability of these services and help to assure that their benefits are more widely realized. These insurance policies should increase access to evidence based, preventive interventions through the general health sector.

Educational policies that improve educational effectiveness and the provision of the range of necessary services within school settings are extremely important. In that regard, the No Child Left Behind law included several important provisions with regard to MEB health. Several Titles including provisions for low income schools, Title 1 Part D programs for neglected, delinquent or at risk children, Title 1 Part H dropout prevention, Title IV Part A Safe and Drug Free Schools Title V, Part D school counseling, and Title V Part D grants aimed at improving behavioral health are all important.[212] Unfortunately, these parts have been only modestly funded, but at a minimum provided policy frameworks to help buttress effective prevention programming that we discussed earlier. The Obama Administration's proposed revamping of this act (under the reauthorization of the Elementary and Secondary Education Act), includes key components related to family and community engagement, family literacy, and neighborhood-based supports to help children and their families succeed, which will be important factors for promoting child and family well-being via this Federal initiative.[213]

Surveillance activities are key to improving public health. In order to understand the dimensions of a situation or problem and to assess the impact of public health initiatives, it is critical to have reliable, timely data on health status. Until relatively recently, no national, population based surveillance activities were underway. The implementation of the Behavioral Risk Factors Surveillance Survey in the mid 1980's signaled a realization that behavioral factors play a critical role in health. Data from the survey on health status and behavioral health practices, as well as specific information regarding mental health and substance use status of populations at state and sub-state areas are available from this survey.

The National Survey of Drug Use and Health (NSDUH) is an annual population based survey that includes interviews with about 70,000 individuals selected through a probability sampling method. It employs the individual interviews with highly structured survey protocols to assess drug and alcohol use as well as include measures of mental health status. The NSDUH can be used to establish state level estimates of population behavioral health status on these dimensions and to help identify risk and protective factors that may be useful in designing prevention and/or promotion activities. In a subsequent section of this document on international activities, examples are provided of efforts underway in other countries that are measuring positive mental health functioning and happiness, which may be instructive to future efforts in the US concerning national data collection.

Given the clear relationship between poverty, stress, and trauma in impacting health and behavioral health status, social policies that seek to address inequities in access to economic resources are key social policy tools to help reduce the prevalence of MEB disorders. As mentioned earlier, international comparisons in inequity in income underscore the importance of policies that assure everyone fair access to the opportunities to improve their financial well being. Policies that promote social mobility should ultimately help to promote overall well being and prevent the onset of behavioral health disorders. As the WHO notes, "many of the activities of mental health promotion are socio-political: reducing unemployment, improving schooling and housing, and working to reduce stigma and discrimination of various types."[214]

Family cohesion and attachment are important protective factors in helping individuals and families, particularly children, in better coping with the adversities of everyday life. Government policies that assure time for new families to bond and that allow individuals leave to help care for family members with health needs support these important family functions. They therefore can be an important social lever to help build healthier communities.

Tax policies have been shown to be effective in helping to reduce levels of alcohol consumption. In a recent meta-analysis Wagenaar and colleagues (2009) demonstrated from the review of 112 studies that these taxes that result in higher prices for alcohol are an effective way to reduce drinking as evidenced by sales or consumption of alcohol.[215] Additionally, in other synthetic work they estimated that doubling the alcohol tax would reduce alcohol related deaths by an average of 35%, traffic crash deaths by 11%, sexually transmitted disease by 6%, as well as violence and crime.[216]

Finally, regulation of access to firearms has some demonstrated effectiveness in reducing gun injuries, the psychological sequallae from injuries or the threat of them, as well as the predictable consequences of intoxicated individuals having access to firearms. For example, states that regulate access to guns by children in their homes evidence reductions in accidental youth fatalities[217] and suicides.[218]

Social policies therefore are a critical link in an overall strategy to prevent mental and addictive disorders and in promoting positive MEB health. Along with individual, family and community interventions, they form the ecological network of settings in which preventive and promotive services may be implemented. Social policies also harmonize the influences of individual, family and community interventions and enable communities to understand community challenges and mobilize evidence based resources. It is in this regard that we can profitably examine the work that has occurred in countries outside of the US. As mentioned earlier, many of these nations have substantially lower levels of MEB conditions and/or relatively better health and social status than the United States. While we could find no comparable data on the degree to which these nations experience trauma or chronic stress relative to the US rates, many of them have social policies and have implemented programs that seek to promote health and/or to prevent the problematic behaviors reflected in measures of poor social well being.

International Efforts

Health and Social Insurance

Perhaps the clearest difference between the US and other developed nations relates to the provision of health and social insurance. In 2000, the World Health Organization ranked the world's health care systems. The United States ranked 37th of the 191 countries. The United States spent far more than any other country on health care per capita and as a percentage of the GDP, and health outcomes and satisfaction with the health care system were lower than many other industrialized nations. Just as importantly, the analysis showed that the United States is the only industrialized nation that does not offer universal health insurance coverage to its citizens.[219,220]

The provision of universal health insurance to a nation's citizens is an important social policy that can assist in the implementation of promotion and prevention interventions. Universal health insurance ensures access for all people to basic health care, which is a mechanism to enable care for illnesses when problems present, but also for preventive and promotive services to help keep people healthy.

Additionally, when everyone is covered by health insurance and when it is difficult or impossible to de-select individuals from coverage because of illness, payers have the incentive to keep the entire population healthy, because when an individual gets sick – whether the presenting problem is depression or heart disease – the insurance system will have the responsibility to cover the costs of care. If there is no way to shift sick individuals to other payers or only to insure people who are at lower risk of developing a medical or behavioral health problem, insurers are incentivized to offer preventive services like periodic screenings, child well-visits, and behavioral interventions to seniors to help them stay engaged in their communities. When the government is the single payer, as in many other developed nations, the general public has an incentive to maintain population health and reduce the prevalence and impact of chronic illnesses.

Many of the industrialized nations that offer universal health insurance also offer forms of social insurance. Social insurance provides a safety net for individuals who are unable to meet the basic needs of their families by offering supports like housing and food assistance, and other programs for the entire population regardless of need, like employment training and child care. While the United States has some needs-based social insurance programs like food stamps and Temporary Assistance for Needy Families (TANF), those programs have high thresholds for qualification and, in the case of TANF, are time-limited to five years of participation for the lifetime of the participant.

Other developed nations have social insurance policies with more generous service offerings that reach a greater proportion of the population and are not necessarily based on needs. For instance, the provision of generous maternity and paternity leave in Scandinavian countries allows new parents time to care for and bond with their children without the stress [221] of lost income and fear of losing their job. State subsidized child care programs allow parents to work while lessening the burden of child care expenses, and support a system of child care settings that are accountable to the government, and that may offer better care and venues for universal promotion and prevention services for children and youth.

The UK's National Health Service (NHS) offers social care services through local councils that are able to provide the services in various settings, including community centers, schools, and individuals' homes. The NHS offers 34 different types of social care services, including day care, meal delivery, respite care, and even community development. The social care services are closely aligned with the health care services of NHS, so general health practitioners and other medical professionals can help

facilitate the provision of social care services to assist people with health issues to better adapt their lives and remain full and contributing members of the community.

Promotion and Prevention in Other Countries: Lessons Learned

In addition to universal social and health insurance programs, we can also look abroad for examples of other countries that have successfully implemented prevention and promotion agendas. Along with the World Health Organization, [222,223] the European Union has recently made promotion and prevention a priority for its member states, and the UK, Canada, and Australia have had success in developing and implementing strategies to create healthier communities.

Community Level Interventions: At the community level, the UK's NHS National Institute for Health and Clinical Excellence (NICE) has developed both clinical and public health guidance to assist clinicians and communities understand best practices in health service delivery[224]. Several of the public health guidance documents are related to MEB health promotion and the prevention of behavioral health problems for various populations and settings. Public health guidance has been developed for several different levels of educational settings, workplaces, and residential settings for older adults. These guidances are developed to be used by stakeholders–teachers and principals in schools, executives and managers in workplaces, and administrators and clinicians in nursing homes and assisted living communities. They provide practical, research validated strategies for working with the targeted population.

Along with the guidance of best practices to promote MEB health and prevent mental illnesses and problem behaviors, NICE provides implementation tools to support the use of the guidance.[225] For each guidance, a targeted tool has been developed to provide stakeholder background on the purpose of the new services, as well as presentations that can be used in public or policy education sessions that include cost data, and practical advice on how to implement the practice and what considerations and issues might arise in the process. NICE also provides resources for evaluation of implementation. For the workplace wellness guidance, a business case was also provided so managers, executives, and human resources managers can make the case for investing in promotion.

NICE also provides implementation teams that are available to consult with communities and programs to implement their recommendations. The NICE teams are available to give practical advice on implementation, including performing action plans, assessing cost and benefits, and evaluating the effects of the new service or program.

NICE hopes that providing accessible teams to assist with the implementation will promote the wide-spread adoption of these practices more quickly and effectively than if the guidances were simply published with reliance upon individual or corporate initiative for their implementation.

Western Australia has initiated a community-based effort, the *Act-Belong-Commit Mentally Health WA* campaign, in 6 regional townships to promote positive mental health on multiple levels. The initiative includes efforts to raise individuals' awareness of steps that can be taken to improve well-being, specifically, to: *Act* (stay physically, socially, and cognitively active); *Belong* (become engaged in groups, clubs, or other opportunities for interpersonal interaction); and *Commit* (participate in community programs, or volunteer efforts). At the same time, the initiative works with community organizations to make them aware of how they might sponsor activities that support positive mental health (e.g., parents' groups, book clubs, outings for seniors, etc.), and to build a collective cohesiveness within the community around that objective. Finally, the initiative targets individuals who are service providers to support the mental well-being of the people that they care for by *Actively* involving them in the community, *Building* their skills, and *Celebrating* their achievements. This model supports promotion activities, then, for both the general public, as well as for individuals who have mental health problems, in a collective endeavor to foster individual and community well-being.[226]

Society Level Interventions: The United States can use examples and lessons learned from other countries in developing a national strategy for the promotion of MEB health and the prevention of MEB problems. Australia has actively been working on mental health promotion since its development of the Mental Health Statement of Rights and Responsibilities in 1991. Since then, Australia has developed, implemented and evaluated three National Mental Health Strategies, and is currently implementing the Fourth National Mental Health Plan.

Each plan also has a policy component, and in 2008 the National Mental Health Policy was revised to focus the strategy on the entire government.[227] The policy recognizes that the entire government, not just the departments specifically responsible for mental health, has a responsibility for the success of the implementation of the National Mental Health Plan. Therefore, the federal government directs provincial health ministers to lead the effort across government departments for the transformation of the mental health system.

The most recent National Mental Health Plan was developed in 2009, and is a strategy for government action in mental health through 2014.[228] The plan sets out five priority areas for Australia, two of which are focused on promotion and prevention. These include social inclusion, recovery, prevention and early intervention. Priority area 3 focuses on treatment. The final two priorities are process oriented and ensure the success and sustainability of the agenda, including the promotion and prevention initiatives–quality improvement, innovation and accountability.

Australia's process of developing a national plan, implementing it through policy directives and stakeholder engagement, evaluation, and then development of a new plan is an example that might be used in the United States as we look to develop a national framework to move this agenda forward.

The European Union (EU) is engaging in a similar process to Australia by attempting to implement the European Pact for Mental Health and Well-being which was developed in 2008. The EU has identified five priority areas to implement interventions and best practice in the health and social sectors, as well as in other community settings. The five priority areas are promotive and preventive in nature: prevention of depression and suicide; mental health in youth and education; mental health in workplace settings; mental health of older people; and combating stigma and social exclusion.[229]

The EU is working to implement best practices in the five priority areas by developing consensus papers on each issue and holding meetings on the state of the literature and policy strategies to promote action. A policy brief, "Improving the Mental Health of the Population," was developed based on the consensus papers to assist in this effort.[230] The European Commission is working through the EU as well as the governments of member states to develop strategies, engage stakeholders, and implement relevant policies to support the priority areas.

Canada has been considered a leader in the field of promotion and prevention efforts, especially regarding mental health promotion for individuals with mental illnesses. They were early adopters of policy frameworks that attempted to promote social inclusion for individuals with mental illnesses and promote recovery.[231]

Canada developed the Mental Health Promotion Unit (MHPU) in 1995 as part of their health system, but separate from their health services division. In 2001, the mental health services were incorporated into the unit, so the MHPU has an overarching goal of promoting population mental health and affecting the social determinants of mental

health, but also oversees mental health service allocation in the provinces. Taking the population perspective, the MHPU focuses on knowledge development and dissemination of best practices, and supports the implementation through the development and evaluation of policies and programs.[232]

In February 2011, the United Kingdom released a cross-governmental mental health strategy, *No Health without Mental Health*, which outlines the government's commitment for enhancing the mental health of its citizenry. In collaboration with local governments, providers, and community groups, the UK identified 6 main goals spanning the areas of promotion, prevention, treatment, and recovery. The strategy takes a full lifespan, ecological approach to mental health and sets forth an ambitious set of objectives for supporting health enhancing activities across diverse sectors. [233] It will be very instructive to observe the roll-out and adoption of this new plan over the next year.

National Data Collection:

The collection of national surveillance data helps to inform a country's understanding of the health of its citizenry. Other countries have taken steps to implement national studies that more comprehensively assess--not only MEB health problems--but also indicators of well-being. The Netherlands, for example, has used the Mental Health Continuum Short Form (MHC-SF) developed by Keyes, and Canada is now doing so, as well.[234] This tool, which offers one questionnaire for adults and another for adolescents, includes 14 items that address facets of emotional, psychological, and social well-being.[235] Britain announced in November of 2010 that the UK would also begin to measure the subjective happiness and well-being of its citizens, though it is still in the process of identifying the questions to be used.[236] Data generated from such surveys can help to inform a nation's efforts to enhance the MEB health of its residents. If multiple countries use the same instruments, informative cross-comparisons might also prove to be fruitful.

International examples, therefore, provide guidance with regard to the differences between the US and other developed nations both in the nature of social insurance that helps to improve access and reduce stress and trauma, as well as providing insights into national policies and initiatives to address promotion and prevention. As such, they can suggest components of the US national strategy.

Other Sources of Information Relevant to the National Strategic Framework

In preparing this situational analysis, we were also informed by four additional sources of information in addition to this literature review:

- A concept mapping exercise,
- A series of key informant interviews,
- An earlier project on mental health promotion conducted by the Gallup organization for SAMHSA, and
- A one day workshop sponsored by SAMHSA to investigate methods for better disseminating and implementing the findings of the 2009 IOM prevention report.

These activities helped to identify a preliminary conceptual structure for our work and began the process of identifying barriers and facilitators that might help to inform the national strategy. We will briefly discuss the major insights from each activity here in anticipation of the final section of the paper in which we will more completely discuss gaps and barriers.

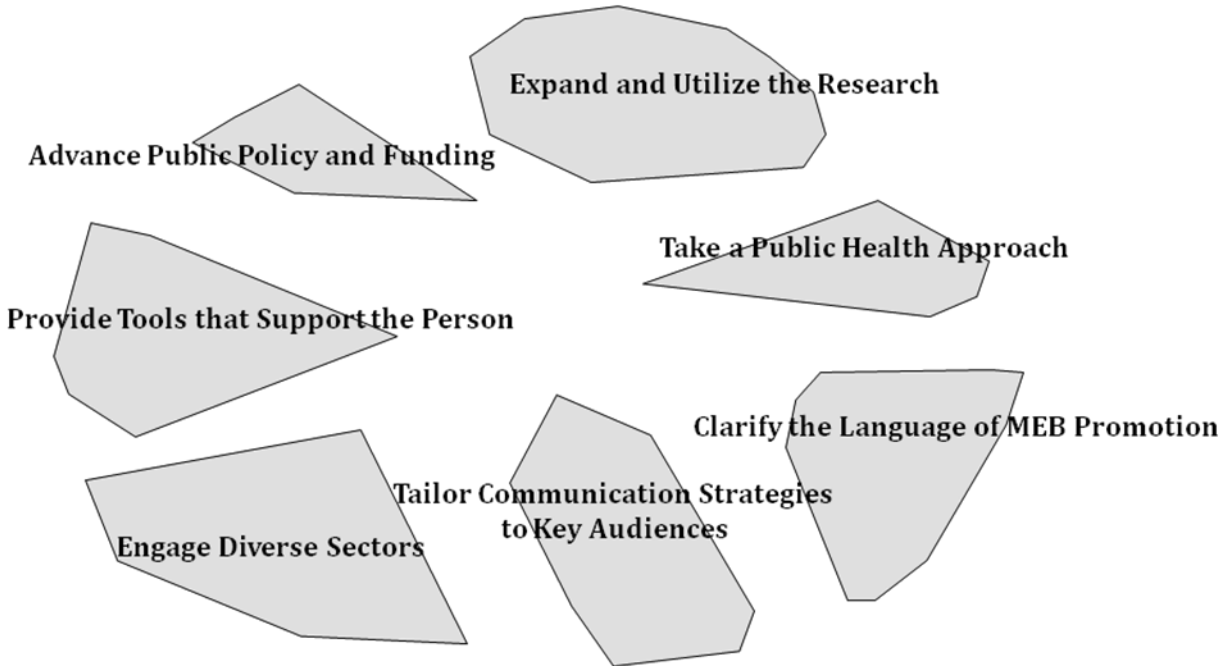
Concept Mapping

In late 2010 the project team working with staff from Concept Systems, Incorporated conducted a concept mapping exercise with a group of approximately 30 invited individuals who broadly represented the constituencies interested in developing the national strategy. Participants represented program coordinators, researchers, community based providers and advocates. The process began with participants brainstorming short statements or phrases in response to the following focus prompt

> *In order to promote positive mental health and well being and to reduce mental, emotional and behavioral health problems, we need to….*

A total of 95 unique statements were derived from the brainstorming exercise that were subsequently sorted by a subgroup of the initial participants. The sorters broadly represented the initial work group. Items were sorted into groups based on similarity, and each item was also rated for importance and current progress in accomplishing the goal of the statement. Based upon the sorting, a similarity matrix was calculated and subjected to statistical analyses that resulted in a concept map that is portrayed below.

Figure 11: Seven-Cluster Concept Map Indicating Suggested Key Topics to be Addressed to Improve the Nation's MEB Status



The concept domains illustrate the areas that stakeholders thought needed to be addressed. Domains that are more closely placed in proximity to one another are most alike, and those farthest apart are least similar. The bottom part of the map relates most directly to communication and engagement. Items in the "Clarify Language" domain related to the confusion involved in describing MEB promotion, such as differentiating mental health from mental illness. Audiences will have differing valences for differing concepts, and understanding their needs and motivators as well as their cultural context (in a broad sense of the word) will be essential for effective dissemination as is indicated in the 'Tailor Communication' domain. Finally, multiple diverse sectors will need to be engaged if we are to fully realize the promise of MEB-related prevention and promotion efforts. Individuals, communities, school, workplaces, state and national governments all must be involved and engaged on terms that make sense to them as is indicated by the "Engage Diverse Sectors" domain.

The upper reaches of the map portrays issues related to the utilization and expansion of the existing research base. This domain is connected to the language clarification domain by a domain addressing the use of a public health model. Translating research findings in a common public health vernacular should help clarify language used in discussion prevention and promotion. Similarly, the 'Advancement of Public Policy and Funding' domain bridges the research and the 'Provide Tools' concept clusters

suggesting the need to provide individuals with the research based tools that support their involvement in MEB promotion. This map, then, may help to identify the areas in which we must work in order to develop a national strategy and help to elucidate the potential relationships among these content areas.

A second component of the concept mapping process involves identifying individual actions that are represented in each cluster relative to their importance and the progress that we have realized in achieving them. Illustrative of items that are important and on which we have made some progress is:

- Linking MEB promotion/prevention to other promotion/prevention activities, like exercise or nutrition, (Tailor Communications Strategy);
- Educate providers about the importance of behavioral health issues that may emerge in the development of general health concerns (Engage Diverse Sectors);
- Articulate a definition of mental health that is not just the absence of mental illness (Clarify Language);
- Recognize the universal aspects of mental health and well-being reflected in employment, social justice and equality (Take a Public Health Approach);
- Engage people in settings that are familiar to them (Support the Person);
- Promote state and national partnerships to blend funding for comprehensive services (Advance Public Policy and Funding); and
- Expand research to identify simple techniques that can be incorporated readily into someone's daily life (Expand Research).

The full report provides greater detail regarding specific activities[237]. Nonetheless, this concept map should prove useful in identifying target areas for the national plan.

Key Informant Interviews

Interviews were conducted over the phone with 8 stakeholders who are leaders in the field of MEB-related promotion and prevention. Key informants represented business leaders, prevention and implementation scientists, individuals engaged in implementing preventive interventions, government leaders, and legislative staff. Each interview lasted approximately an hour and was specifically tailored to address the unique perspectives of the respondent. So, for example, the prevention scientists who also had direct experience implementing prevention interventions were asked to identify:

- gaps in the scientific literature that made implementation difficult;
- difficulties in communicating scientific findings to relevant community partners;
- specific gaps for urban or African American communities; and

- the degree to which conflicts between a medical model of disease versus one that is more psychosocially oriented contributed to confusion.

Examples of the interview protocols used are included in Appendix 1, under separate cover. Interview content was discussed with the project team and results of the interviews are incorporated into the barriers discussion below.

Gallup Report on Activities to Promote Mental Health and Prevent Mental Illness[238]

In conjunction with a project supported by SAMHSA, Gallup completed several activities to survey the field with regard to efforts in mental health promotion. In its environmental scan, it identified top organizations that are championing promotion but concluded that there is no overall national leader in this area. In fact, most mental health related organizations do not include any substantive reference to mental health promotion in their activities. Similarly, few organizations identify specific indicators of well being. The term 'mental health promotion' is rarely used but 'well-being' and 'wellness' seem to capture the content connoted by mental health promotion.

In reviewing the media, Gallup concluded that the coverage of mental health promotion is nearly non-existent while prevention activities receive some limited coverage. Gallup observed that newspaper and blog coverage related to happiness probably most closely approximates topics related to promotion and that this material often involves content related to autonomy, physical exercise, and competence-enhancing activities.

Finally, a literature review was conducted by Gallup, the results of which have been incorporated as appropriate earlier in this paper. Some conclusions from the review indicated that there is no shared definition of mental health promotion. The public thinks that mental health equals mental illness. Efforts in this area should include a population approach with special emphasis on multiple levels of social organization including the individual, community and structural characteristics of the society that either promote or frustrate the development of mental health. They further identified seven key action areas to promote mental health including:

- Positive Relationships
- Lifelong Learning
- Contribution to Others
- Physical Health
- Positive Activities – doing things you enjoy
- Positive Attitude

- Spirituality

They concluded by reviewing other successful public health campaigns and recommended a series of steps that SAMHSA could undertake to advance the field of mental health promotion. Their recommendations are incorporated, as appropriate, in this document and will be available for the deliberations of the steering committee and national advisory meeting for their consideration.

SAMHSA One Day Meeting on the IOM Report

On December 9, 2010, SAMHSA invited two dozen subject matter experts to an all-day meeting to review key messages from the 2009 IOM report on the prevention of MEB health problems and to discuss a potential plan for further dissemination of the report's findings and recommendations. After a review of the major findings from the report and their potential importance for the American people, the group agreed that there was a sense of urgency for the implementation of the document's findings. Similarly to the approach taken in this paper, the group also noted the poor state of America's health and the centrality of behavioral health issues for successfully improving America's social well-being. Much of the discussion focused on effective message development from the report and, like the concept mapping exercise, the importance of developing specific messages that are relevant for differing sub-groups. The group further discussed cross cutting themes, key messages and components of a communications strategy, key audiences, and strategies for moving forward. Barriers were discussed, as well, and these will also be incorporated into our barriers discussion below. Perhaps the most consistent theme, resonating to the Gallup report and concept mapping, is that we need much greater clarity in the general population's understanding of the terms prevention and promotion and mental health and mental illness. Even individuals who are otherwise well-versed in behavioral health issues, have much to learn about prevention and promotion.

Barriers and Opportunities for Successfully Implementing a National Strategy for the Prevention of MEB Disorders and the Promotion of Positive MEB Health

From the review of the scientific literature, the state of America's health and well being, as well as the issues that were identified in the Gallup report, SAMHSA IOM workgroup and key informant interviews, a relatively clear set of opportunities and barriers emerge. Perhaps the opportunities are best expressed by the benefits that will accrue

to individuals, families, communities, and the nation if we were to successfully bring to scale the knowledge from our scientific literature. It appears from this work that we could meaningfully improve the academic and occupational achievement of Americans while driving down the rates of many of the problem conditions/behaviors that underlie our deteriorating public health. Quality of life and community participation can also be enhanced. The recent positive review by the IOM of the prevention and promotion literature, as well as international adoption of the findings from this literature, give us further impetus to move forward to enhance our individual well being and to regain the US position as an international economic and social leader. Given the consensus regarding the opportunity, we must proceed with a measured appreciation of the barriers that must be confronted. As mentioned earlier, we have used observations from the key informant interviews, as well as the other activities supported by SAMHSA, in constructing these barriers to the implementation of a successful national strategy in the promotion of MEB health and the prevention of MEB problems.

Gaps in Shared Meaning and Understanding

Within the mental health and substance use communities and the general public–educators, policy makers, parents–there is no universal understanding of mental health, mental illness, and substance use/abuse/addiction, nor is there a shared understanding of the differences and relationship between promotion and prevention. Telling a compelling story regarding the need for promotion and prevention that will move individuals and communities to action will be very difficult if there is confusion within the field about the meaning of these terms. The use of other language to describe promotion and/or resilience is likely required.

A set of constructs and concepts need to be developed to better unite the mental health and substance abuse communities regarding prevention and to a lesser extent promotion interventions. Substance use disorder experts portray mental health prevention activities as overly focused on interventions at the individual level and on 'fixing' the person. From the substance use perspective, mental health interventions are overly modeled on medical interventions that seek to prevent persons from becoming ill. Substance use models, in contrast, are portrayed as having a much more systemic approach looking at the community policy, legal and attitudinal levers that can be utilized to reduce the incidence of substance use disorders. Individuals representing the mental health community see the development of the individual as an important target for intervention through both skill and support interventions. They characterize the SU perspective as not linking the use of substances to any emotional or cognitive states in the individuals or understanding substance use as a potential reaction to other

disease processes. To the degree to which these two perspectives could be better understood and unifying constructs developed, national leadership in prevention and promotion would be greatly enhanced.

Stigma

Although the United States has improved dramatically over the last 100 years in our treatment of people with mental illnesses and in our ability to address mental health and addiction in public and private forums, shame, discrimination and stigma continue to be associated with mental illness and addictive disorders. The confusion of mental health with mental illnesses and addictions when coupled with these personal and public attitudes creates significant difficulties in building the political will for prevention and promotion. At all levels of the ecological model, for individuals, families, communities, and societal institutions, mental health is still poorly understood and confused with mental illnesses and substance use conditions that have moral overtones and that still engender issues of blame and shame.

Mental health and mental illness have different meanings and connotations in different cultural communities. In order to increase awareness and move communities to action, the level of understanding and issues of stigma must be known and addressed in culturally-appropriate ways. New communication strategies that use well-understood, strength-based language to describe mental health might help to avoid these problems.

The concept of universal mental health promotion can assist in reducing the stigma. The message that '*everyone can benefit from promotive interventions and practices*,' and that '*regardless of the presence of illness, individuals and communities can take action to have flourishing mental health'* is quite compelling. However, as stated above, this concept is not widely understood, and further work is needed.

Stigma is especially a barrier in implementation of workplace wellness programs. If a workforce is not mentally healthy, managers might feel that they are being blamed for this, and resent the issue being addressed. In order to be properly addressed, workplace stress must be discussed in the context of management and organizational issues, which often means that the root of the problem is not addressed. Methods should be developed that do not blame management or employees for problems, but work on strengthening personal skills and designing environments that maximize productivity and minimize stress.

Gaps in the Research

While we know quite a bit about what interventions work to improve MEB health and resilience and to reduce risk factors, mental illnesses, substance use disorders, and problem behaviors, gaps in the research still remain. For example:

- Programs for older adults are less available than those for younger individuals.
- Interventions for adolescent aggressive behavior need strengthening.
- Early interventions in severe mental illnesses are underway and are greatly needed.
- Development of sensitive early indicators of disease onset (analogous to cholesterol measures for cardiac disease) would be enormously helpful in quantifying risk and gauging early prevention (diet for heart disease) interventions.
- Better understanding all aspects of implementation including community involvement, purveyor roles, skill sets, fidelity measures and processes, as well as other aspects of implementation need to be studied, codified and disseminated.
- More longitudinal research like that conducted on the Seattle Social Development program, Nurse Family Partnership or the Good Behavior Game with additional process measures to help understand the mechanisms that are sustaining long term change would aid in gaining support for their long term social benefits and in their successful implementation.
- Knowing what practices are effective in engaging stakeholders is especially important for bringing programs to scale and ensuring the community continues to invest in promotion and prevention efforts.

While the prevention literature is quite extensive, the promotion literature is still in its relative infancy. While measures of mental health, from languishing to flourishing, have been developed, they have not been widely utilized in the United States and have not yet been fully accepted by the international community.[239] The United States should move from solely measuring mental illness–the presence or absence of a condition–to also measuring mental health on the separate continuum.

In these difficult economic times, the federal government, states, communities, businesses, and families have to make difficult decisions regarding how they utilize their limited funding. While there are some compelling studies[240] showing the cost-effectiveness of many of the interventions highlighted in this analysis and the 2009 IOM report, the majority of interventions have not been studied for cost-effectiveness.

These analyses should be developed to examine savings within the health care sector to inform public and private payers regarding net costs of interventions. Additionally, other public systems like juvenile justice, adult corrections, education, child welfare, etc., must be informed by cost savings and substantive benefits incurred with successful prevention and promotion programs. Researchers in the UK have noted that there are various challenges associated with quantifying the benefits of mental health promotion efforts, including: the lack of a universally agreed upon definition of positive mental health which hinders outcome measurements; incomplete availability of economic data (e.g., public sector only); differences with regard to the ease of evaluating certain interventions versus others; and the fact that costs are easier to measure than benefits, particularly long-term or indirect benefits.[241] Despite such challenges, this is an area of research which should be expanded, because with convincing cost-effectiveness data, policy makers and other stakeholders will be more likely to implement programs in their communities.

Another gap in the research includes evidence regarding workplace wellness. The research available is generally from European countries, largely because companies in the United States do not allow researchers to come into their businesses and gather the information needed. The European research is not useful to US businesses because the variables that have been studied are not applicable to US companies and are not compelling for management or employees.

In order for it to be useful, the literature must be better tailored to real world situations that companies face. Concrete methods and outcomes of MEB health and wellness interventions should be developed, especially metrics that can be incentivized. All programs should be studied with a focus on productivity, absenteeism, and effective work cultures. Similarly, randomized trials of intervention programs should document all of the processes that are required to implement the program and gauge their importance to the overall success (or failure) of the trial. Manuals should include these practical as well as theoretical implementation tools.

Gaps in Implementation and Dissemination

While we have quite a bit of information regarding what interventions work, we have much less information regarding how to implement the programs and bring them to scale. Implementation literature is still in its infancy in this area, and although there has been an increase in the last five years, there is much more to be done. The field can look to other disciplines and domains to learn about implementation, as there are many

similarities. We can apply many of the lessons learned from other domains to promotion and prevention implementation.

The complexity of implementation research is a barrier to moving the field forward. There are many variables that contribute to success or failure in implementation, and to getting quality programs brought to scale. Before we can bring these interventions to scale, we need to better understand *what* should be brought to scale. In order to do so, many factors must be considered and integrated into the research agenda–workforce issues, policy issues, funding issues, service structure, etc. Just like other disciplines within the field, implementation researchers and practitioners are siloed in their understanding of how to bring deserving interventions to scale.

Another barrier to implementation includes the understanding of the independent variables in the program effectiveness studies. For example, many intervention trials provide incentives or assistance to help recruit participants to come to the program (transportation cost, child care, meals, etc.) but these are not described as part of the overall intervention success. This causes problems when others attempt to replicate and implement those programs, because they are missing essential information about what made the intervention plausible.

In African American communities, implementation of programs with an evidence base can often run into challenges based on historical mistrust of researchers. There is such a distrust of science in the African American community that these communities often opt to not participate in research, leading to interventions being implemented and tested in non African American communities. Their relevance for African American these communities is therefore an open question.

Workforce Issues

Barriers have been identified in having a properly trained workforce for each step of the MEB health-related promotion and prevention processes. First, the current workforce in the community settings that often implement programs and services (educators, clergy, health professions, day care staff, community center staff, etc.) and who are well-placed to influence the experiences of students, employees, seniors, etc. are not properly trained in promotion and prevention methods.

Additionally, the individuals who are attempting to implement programs have not been trained in the 'soft skills' of engagement and leadership that assist in the acceptance of researchers into the community to study the implementation and scaling of evidence-

based practices. Individuals need both research skills as well as softer skills that are often used in sales and marketing. Having culturally competent researchers who are able to engage diverse communities in a respectful manner can help to alleviate some of these issues. Researchers who are better trained in evaluation and engagement skills are more likely to produce meaningful research, especially among disadvantaged populations.

Workforce shortages in the health care and social services fields make it especially difficult for individuals who work closely with potential beneficiaries of promotion and prevention to receive the training needed to successfully implement and run a program. For those organizations that depend on the billable hours of their staff, taking time for training can be prohibitively expensive.

Additionally, developing systematic programming and funding to educate our current workforce on prevention and promotion needs will assist in the broad dissemination of informed practices. In many settings, culture change is needed to infuse promotive and preventive practices and develop organizations that are ready for implementation of programs. State and federal funding of workforce development for health care providers, teachers, corrections staff, child welfare workers, and other individuals who work within systems can assist in this effort.

Changes to curricula at educational institutions and within accrediting bodies can assist in the development of a workforce that understands promotion and prevention and is able to implement programs and practices into their organizational and community settings. Curricular changes, however, are difficult to implement, as well. Academic institutions are purposely insulated from market pressures, particularly the health related disciplines. It might be argued that tenure as well as academic promotion policies further calcify academic institutions and make change even more difficult. Creating clear career paths with certification requirements can help create student pressure for more relevant curricula. Given declining levels of state support for public institutions, market pressure in the human service area may have a better chance to influence academia than has traditionally been the case.

Gaps in Funding

There is never enough funding to implement, evaluate, and sustain promotion and prevention programs. Given the dire state of our country's economy, federal, state, community, workplace, and family budgets are enormously strained. Identifying

creative methods of funding promotion and prevention that are sustainable must be a priority in order to move this agenda forward.

Our current insurance system is poorly prepared to pay for promotive and preventive interventions. Other than screening and EPSDT services, home visitation is the one of the only other promotive or preventive services that is a widely-covered benefit. Home visitation services are reimbursable by Medicaid and are also supported by additional federal funding from the American Recovery and Reinvestment Act. Screening and home visitation conform to the delivery pattern for medical services in that they can be delivered by a health care professional to a designated individual and assist in the diagnosis of illnesses. We have sufficient knowledge regarding the effectiveness of other interventions that should be considered for endorsement by the USPSTF and coverage by public and private insurance plans.

The following issues frustrate coverage of prevention and promotion practices by insurance:

- Insurance generally requires medical necessity criteria to be met in order to administer a service. Promotion/prevention interventions are generally administered to promote health or prevent the development of a problem behavior or disorder, and therefore medical necessity criteria may be difficult to meet.
- Many of the interventions reviewed in this analysis address promotion and prevention at the family, group, or community level in non-medical settings. Schools, community centers, churches, and other community settings do not generally have the capacity or proper medical personnel to bill insurance if the services they delivered were included in an insurance benefit.
- The recipient of the intervention is not necessarily the beneficiary. For instance, parents who receive an intervention to help them parent and promote the mental health of their child are receiving a service for which they are not the primary beneficiary. This is especially problematic when the parent and child have different insurers. The insurer would be paying for a service that is administered to someone they do not insure, with the hope that it will benefit one of their covered lives.
- The transience of covered lives from one insurer to another and the lack of universal coverage act as disincentives for covering prevention or promotion activities. An insurer who covers prevention might not benefit from reduced costs associated with the interventions since these may take some time to develop. Since beneficiaries switch insurers, there is little incentive to invest in

prevention up front. European countries with national health systems have clearer incentives to promote population health than with the US system of health care.

Based on these barriers, there are many policy changes and interventions at the societal level that can support promotion and prevention at the individual, family, and community levels. These interventions include making changes to federal and state Medicaid policy, private insurance reimbursement, and federal investment in implementation research to take evidence-based interventions to scale. Medicaid, especially, as the largest payer of public mental health care and the payer with the largest at-risk population, could revise its medical necessity and group billing standards to promote the implementation of many programs we know work. As a public payer, Medicaid can also make the case that investing in promotion and prevention through the health care system can help to reduce costs in other parts of federal, state, and local budgets.

Siloed financing in states is another barrier to the implementation of promotion and prevention. Policy makers often do not recognize the high costs to other state systems outside of health care—like juvenile justice, adult corrections, child welfare, and education--when they fail to make behavioral health a priority. Additional focus should be placed on lost tax revenue when individuals are not able to enter the workforce and maximize their productivity.

As stated above, training needs are a major barrier to successful implementation of promotion and prevention. It is very difficult for community based organizations to finance comprehensive and regular training for their workforce. Medicaid currently does not pay for training, but this policy could be a recommended change to federal policy and the use of state Medicaid dollars.

Directing use of other federal dollars, including SAMHSA discretionary and Block Grant funding, NIMH research funding, the federal Administration for Children and Families' Child Care and Development Fund, and other federal and state dollars for adult corrections, juvenile justice, child welfare, and education toward sustainable promotion and prevention efforts will assist in the broad dissemination of evidence-based programs. Creating a compelling case for the alternative use of these funds will require great political acumen and a re-crafting of the current illness/deviance oriented systems to promote overall well being.

A last funding barrier that must be mentioned is the difficulty community based organizations have in identifying sustainable funding. Pilot projects are often funded by SAMSHA or NIH with a strong evaluation component, but when the initial funding is completed, it is difficult for the program to be kept in place and further evaluation to be financed. It will be important for sustainable funding to be identified within federal and state budgets, as well as with changes to the way health insurance functions.

In the juvenile justice, adult corrections, child welfare, and education settings, sustainability can be financed by changing the philosophy and methods of these departments. Instead of funding punitive, often traumatizing interventions, these systems should attempt to identify ways they can replace existing interventions with ones that are evidence-based and promotive and preventive in nature.

Gaps in Incentives for Implementation

To change behavior in any situation, incentives or consequences must be offered to elicit new behavior. In order to implement promotion and prevention, incentives must be institutionalized to bring about new behavior.

In the workplace, general wellness promotion programs incentivize gym attendance, healthy eating, and having preventive check-ups and procedures like blood pressure screenings and colonoscopies. These programs often provide financial rewards for participating in the form of cash or reductions in insurance premiums. As mentioned before, MEB-related promotion and prevention programs have not been developed with these incentives in mind. Therefore, developing readily available measures and/or activities which could be incorporated into a workplace wellness plan would greatly aid in implementation for those firms that reward employee healthy behavior.

Incentives to promote participation in promotion and prevention programs have not been well developed in other settings either. Schools often do not have the funding to provide rewards in the form of cash or gift certificates to parents to participate in trainings. Insurance companies do not widely cover promotion and prevention interventions. However, moves to incentivize individuals to be more responsible for their health by employers or insurers (e.g. weight reduction, lipid scores, etc.) are encouraging but would require easily measureable MEB health status or activity indicators. Lack of a US National Health System does not incentivize promotion and prevention. In the main, our health care system is designed to rescue individuals when they become ill rather than to monitor and be accountable for population health.

Similarly, public funds are generally used for solving problems rather than preventing them, which needs to change in order for the country to have a healthy future.

Gaps in our Information Base

Although we have made progress with the BRFSS and the NSDUH, more systematic measures of population health status would be helpful. Particularly needed are measures for positive mental health and functioning, as are being implemented in other nations. Additionally, validating measures that could be used in smaller areas than states (communities, counties) would greatly assist in the development of local plans.

Additionally, a catalog of federal investments in prevention and promotion programming is not readily available. Cataloguing these investments and/or outcomes from federally funded projects would enhance our ability to scope and target investments.

Conclusion

We feel that we can make a compelling argument that our nation's health has been deteriorating and that our global competitiveness is being compromised. Many of the factors that are contributing to this decline are related to behavioral health. Additionally, we now understand that it is the combination of genetic predisposition and environmental experiences that produce health or illness and that we have techniques to both improve individual and community resilience to environmental stress and trauma, as well as to reduce the rate at which such risk factors occur. Our challenges involve designing a framework that will motivate individuals to action in their communities, properly equip these actors with implementable and sustainable technologies to improve well being, and to monitor and tune these interventions in each community so that they are responsive to idiosyncratic circumstances. Our hypothesis is that energizing the various audiences around these issues will require thoughtful, tested methods that clearly portray the personal or institutional stake in our future and the way forward to improve well being. The design of this national strategic framework is an important initial step in activating these groups and identifying a path forward that is meaningful and actionable for them.

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