THE PROMOTION OF MENTAL HEALTH AND THE PREVENTION OF MENTAL AND BEHAVIORAL DISORDERS:

SURELY THE TIME IS RIGHT

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THEY SAID IT COULDN'T BE DONE

> ***Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.***
>
> ***–Margaret** Mead,* 1958

Human history is replete with accomplishments that conventional wisdom, at one time or another, declared impossible. In 1156 BC, when Egyptian pharaoh Ramses V died of smallpox (plus a possible blow to the head by detractors), the idea that smallpox might someday be driven from the earth was the stuff of fantasy. Throughout the centuries, as smallpox killed millions of people, physicians used many techniques to try to control the disease. It was not until 1776, however, that an English surgeon, Dr. Edward Jenner, experimenting with the Eastern practice of inoculation, discovered that giving a person a small dose of the relatively benign cowpox virus could provide protection against the dreaded smallpox virus ("Jenner," 2000).

No one knew exactly how the cowpox virus worked to prevent smallpox. It was clearly so promising, however, that people tinkered with the vaccine until it was perfected. The use and success of smallpox vaccinations grew throughout the 19th and 20th centuries, but as late as 1967, an estimated 2,000,000 people died from the disease. At that point, the political will and funding came together to eliminate smallpox from the planet. The World Health Organization launched a massive vaccination project, and in 1977, smallpox was declared eradicated from the earth ("smallpox," *Encyclopaedia Britannica Online, 2000).* The only remaining supplies of the virus were to be safeguarded at the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, and at a laboratory in Russia.

Mental illnesses have probably plagued humankind for at least as long as did smallpox. As was the case with smallpox, various attempts were made over the centuries to "control" mental illnesses, but all too often, the approach was to banish people with mental illnesses from society. It was not until the 19th century that the movement to promote mental health and prevent mental illnesses got under way in the United States with the advent of the mental hygiene movement. A number of organizations have been formed and reports commissioned over the years, but thus far, no national agenda to promote mental health and prevent mental and behavioral disorders has been developed in the United States. In some other countries, including Australia, New Zealand, and Canada, such an agenda *has* been developed.

At least three factors account for the relative lack of attention to promotion and prevention issues in the United States. First, the stigma attached to mental illnesses has led people to believe, among other myths, that nothing can be done to prevent mental and behavioral illnesses. Second, until recently, the hard evidence that something could indeed be done was scarce. However, current research in the relatively new field known as *prevention science* has brought the prevention of at least some mental and behavioral disorders into the realm of possibility, just as Jenner's breakthrough with cowpox vaccinations made the eventual elimination of smallpox possible.

A third reason that promotion and prevention activities have not received more attention is the false dichotomy that currently exists between the concepts of prevention and treatment. This schism is largely due to the scarcity of funds available for mental health services of any sort. Advocates for more and better treatment services for people with mental illnesses have a good point; considerably more funding *is* needed for treatment and recovery services for people who already have mental illnesses. But promotion, prevention, treatment, and recovery are inextricably linked, and adequate funding for the whole continuum of services is as essential to the Nation's psychological health as, say, funding for cancer research and services is to the Nation's physical health.

The good news about treatment and the growing consumer recovery movement is that they work. People who once were thought to be on a "chronic, deteriorating course" are now holding jobs, living in the community, getting married, and being full participants in society. The good news about promotion and prevention is that, because this is an international movement with many scholars contributing to the effort, our knowledge of what works is increasing exponentially. Given the rapid exchange of information today, it seems likely that the 200 years from Jenner's cowpox discovery to the eradication of smallpox will be shortened considerably for the eradication of many mental and behavioral illnesses. Even if it should take 200 years to eradicate all mental illnesses, humankind most likely will benefit along the way as researchers tinker with interventions and gradually learn what works well for whom.

While recognizing the enormous importance of treatment and recovery services, this article focuses mainly on issues related to promotion and prevention. The need for such services is growing, and many effective and/or promising programs are well under way. The time is clearly right for the mental health field to follow the lead of Jenner and others in the medical community and to invest heavily in the promotion of mental health and the prevention of mental and behavioral disorders.

THE NEED FOR SERVICES TO PROMOTE MENTAL HEALTH AND PREVENT MENTAL AND BEHAVIORAL DISORDERS

Mental Illnesses Worldwide: The Global Burden of Disease

The 1990s witnessed a virtual explosion of information about the impact of mental illnesses on the health and functioning of people throughout the world. In 1996, the World Health Organization (WHO), the World Bank, and Harvard University issued a landmark publication, *The Global Burden of Disease*, that quantifies "not merely the number of deaths but also the impact of *premature death* and *disability* on a population." The researchers combined these numbers into a single unit of measurement, which they call the overall *burden of disease* in a given population (Murray & Lopez, 1996, p. 2).

The burden of disease measure marks a major step forward in assessing the health of a nation. Traditionally, mortality statistics alone have been used in such assessments, but disability also

"plays a central role in determining the overall health status of a population," and the causes of disability are often different from the causes of death (Murray & Lopez, 1996, p. 21). Using mortality data alone greatly underestimates the importance of psychiatric conditions in the health – or lack thereof – of nations. While these conditions are responsible for only 1.4 percent of deaths worldwide, they account for *almost 11 percent of disease burden*, and psychiatric and neurological conditions together account for *28 percent of all years lived with a disability* (Murray & Lopez, 1996, p. 21).

The Global Burden of Disease study further found that, of the ten leading causes of *disability*, five are psychiatric conditions. (See Table 1.)

Table 1: The Leading Causes of Disability Worldwide, 1990

	Total (Millions)	**Percent of Total**
All Causes	472.7	100
1. **Unipolar major depression**	**50.8**	**10.7**
2. Iron-deficiency anemia	22.0	4.7
3. Falls	22.0	4.6
4. **Alcohol use**	**15.8**	**3.3**
5. Chronic obstructive pulmonary disease	14.7	3.1
6. **Bipolar disorder**	**14.1**	**3.0**
7. Congenital anomalies	13.5	2.9
8. Osteoarthritis	13.3	2.8
9. Schizophrenia	**12.1**	**2.6**
10. Obsessive-compulsive disorders	**10.2**	**2.2**

(Murray & Lopez, 1996, p. 21)

The report projects that "psychiatric and neurological conditions could increase their share of the total global burden by almost half, from 10.5 percent of the total burden to almost 15 percent in 2020. This is a bigger proportionate increase than that for cardiovascular diseases" (Murray & Lopez, 1996, p. 37). This startling statistic illustrates one reason the United States needs to move ahead aggressively with a promotion and prevention agenda. If it does not do so, the already strained mental health treatment system and other social services will be completely overwhelmed in less than 20 years.

Mental Illness in the United States

Mental disorders already take an enormous toll on the Nation's resources in terms of both human suffering and health care dollars. Consider the following statistics[1]:

- An estimated 20 percent of all children and adolescents in the U.S. have mental disorders with at least mild functional impairment (U.S. Department of Health and Human Services, 1999).

- During a 1-year period, 22 to 23 percent of the U.S. adult population – or 44 million people – have diagnosable mental disorders. When addictive disorders are added, the rate increases to 28 to 30 percent (U.S. Department of Health and Human Services, 1999).

- 60% of visits to physicians for medical symptoms are due to psychosocial problems, but the frequency of a mental disorder's being diagnosed in general medical practice is only 11 to 36 percent (Mrazak & Haggerty, 1994).

- Only 10 to 30 percent of people in need of mental health services receive appropriate treatment (U.S. Department of Health and Human Services, 1999).

- In 1996, the direct cost of mental health treatment and rehabilitation services in the United States totaled $69 billion. Another $17.7 billion was spent on Alzheimer's disease and $12.6 billion on substance abuse treatment. In 1990, indirect costs due to lost productivity were estimated at $78.6 billion (Rice & Miller, 1996, cited in U.S. Department of Health and Human Services, 1999).

In children and adolescents, common mental disorders include *autism, attention deficit hyperactive disorder, depression and anxiety disorders,* and/or *alcohol and other drug abuse or dependence.* In addition, according to Dr. Mark Greenberg and his colleagues at the Prevention Research Center for the Promotion of Human Development at Pennsylvania State University, "*disorders of conduct* are among the most prevalent and stable of child psychiatric disorders. Many of our most costly and damaging societal problems (e.g., delinquency, substance use, and adult mental disorders) have their origins in early conduct problems" (Greenberg et al., 1999a, pp. 2-3). Conduct disorders are extremely difficult to treat, so their prevention becomes all the more important.

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[1] *(Footnote: For an explanation of how the statistics were derived, see U.S. Department of Health and Human Services (1999), Mental Health: A Report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health.*)

Among adults, *depression* is one of the most common mental disorder. The statistics are compelling:

- Major depression affects nearly one in six adults in the United States sometime in their lives, and one in 10 in any one year (Munoz, 1997).

- Fifteen to twenty percent of older adults in nursing homes suffer from *untreated* clinical depression (NIH Consensus Development Panel on Depression in Late Life, 1992).

- Unipolar depression alone is responsible for more than one in every ten years of life lived with a disability worldwide (Murray & Lopez, 1996).

- In a major U.S. corporation, employees treated for depression incurred annual per capita health and disability costs of $5,415, significantly higher than the cost for hypertension and comparable to the cost for heart disease, diabetes, and back problems (Druss et al., 2000).

In terms of the *severity of disability* a condition may cause, the Global Burden of Disease study ranks unipolar major depression in Disability Class 6 out of a possible seven classes, along with blindness and paraplegia (Murray & Lopez, 1996, p. 11). (See Table 2.)

Table 2: Gauging the Severity of Disability: Disability Classes and Weights Set by the Global Burden of Disease Protocol for 22 Indicator Conditions

Disability Class	Severity Weights	Indicator Conditions
1	0.00-0.02	Vitiligo on face, weight-for-height less than 2 standard deviations
2	0.02-0.12	Watery diarrhoea, severe sore throat, severe anaemia
3	0.12-0.24	Radius fracture in a still cast, infertility, erectile dysfunction, rheumatoid arthritis, angina
4	0.24-0.36	Below-the knee amputation, deafness
5	0.36-0.50	Rectovaginal fistula, mild mental retardation, Down syndrome
6	0.50-0.70	**Unipolar major depression**, blindness, paraplegia
7	0.70-1.00	**Active psychosis, dementia**, severe migraine, quadriplegia

Note: These weights were established using the person trade-off method with an international group of health workers who met at WHO in Geneva in August 1995. Each condition is actually a detailed case. For example, angina in this exercise is defined as reproducible chest pain, when walking 50 meters or more, that the individual would rate as a 5 on a subjective pain scale from 0 to 10 (Murray & Lopez, 1996, p. 11).

In his keynote address delivered to the Seventh Annual European Conference on the Promotion of Mental Health, Dr. Ricardo Munoz stressed that depression is "a major public health problem that goes far beyond unipolar major depressive disorder and beyond suicide in terms of its effect on the health of our societies" (Munoz, 1997, p. 2). He noted that seven of the nine causes of death (that account for half of deaths in the United States) may well be influenced by depression. (See Table 3.)

Table 3: Major Causes of Death Per Year in the United States

Rank	Cause	Deaths Per Year
1	**Tobacco**	**400,000**
2	**Diet/Inactivity**	**300,000**
3	**Alcohol**	**100,000**
4	Microbial agents	90,000
5	Toxic agents	60,000
6	**Firearms**	**35,000**
7	**Sexual behavior**	**30,000**
8	**Motor vehicle accidents**	**25,000**
9	**Illicit drugs**	**20,000**

McGinnis & Foege, 1993, reported by Munoz, 1997

He cites other researchers who elaborate on the possible link between depression and these causes of death as follows:

- Many people use tobacco, alcohol, or other drugs to manage their mood, and mood states influence people's activity levels and eating patterns.

- Teenage girls with depression are more likely to engage in sexual intercourse with multiple partners and to become teenage mothers than are teenage girls who do not have depression.

- Suicide accounts for over half of the deaths due to firearms in the United States.

The Role of Treatment

Clinicians are making valiant attempts to treat people suffering from depression and other mental illnesses, and these must be continued and supported. However, according to Dr. Munoz, treatment has many limitations:

- It reaches very few of those in need. In the U.S., *78 percent of people with major depression do not receive treatment.* In minority communities the statistics are even worse. In 1987 in

Los Angeles, for example, *89 percent* of Mexican-Americans with major depression did not receive treatment (Hough et al., 1987, reported in Munoz, 1997).

- *Only two-thirds of those who receive treatment for major depression improve.*

- Even if someone improves, the chances of a subsequent episode of major depression are *50 percent after one episode, 70 percent after two episodes,* and *90 percent after three episodes* (Munoz, 1997).

In the past decade, the prospects for more effective treatment have gotten better, in part because of significant new knowledge about how the brain works, in part because of improved systems of care, and in part because of the mental health consumer movement, a de facto mental health promotion and relapse prevention program for people with mental illnesses. However good our news about treatment and recovery, it would still be an enormous benefit to humankind if even a small percentage of cases of mental illnesses could be prevented now, with prospects of many more cases being prevented as research progresses.

CONTROVERSIES SURROUNDING PROMOTION AND PREVENTION CONSTRUCTS

As a result of the worldwide interest in promoting mental health and preventing mental disorders, a number of critical issues have been raised, though by no means resolved, by researchers, clinicians, public health officials, program users, and policy makers. Major controversies arise when people try to define key constructs such as *mental health, mental illness, mental disorder, mental health problems, promotion, prevention, treatment,* and *recovery.*

Defining Mental Health

Most people would agree that promoting mental health is a worthy endeavor. However, not all would agree on just what that means. No universally accepted definitions of *mental health* and *mental illness* exist. The late Dr. Emory Cowen cautioned us to attend to the issue of values in any definition of *mental health* and/or *wellness:*

> Built into any definition of wellness . . . are overt and covert expressions of values. Because values differ across cultures as well as among subgroups (and indeed individuals) within a culture, the ideal of a uniformly acceptable definition of the constructs is illusory (Cowen, 1994, quoted in U.S. Department of Health and Human Services, 1999, p. 5).

Variation in the definition of, and perhaps values underlying, mental health may be seen when the 1999 U.S. report, *Mental Health: A Report of the Surgeon General,* is compared to

documents written by mental health agencies in two states in Australia. The Surgeon General's report defines *mental health* as

> 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 cope with adversity (U.S. Department of Health and Human Services, 1999, p. 4).

The document that was written by and for the state of New South Wales (NSW) in Australia defines *mental health* as

> the capacity of individuals within groups and the environment to interact with one another in ways that promote subjective well-being, optimal development, and use of mental abilities (cognitive, affective, and relational) and achievement of individual and collective goals consistent with justice (Scanlon et al., 1997, p. 5).

It is striking that, while the U.S. definition does acknowledge the importance of relationships with other people, it focuses mainly on the individual's *doing* something – performing, adapting, and coping. The definition set forth by NSW, however, focuses more on relationships with other people and with society as a whole. Moreover, it takes note of the individual's inner world and of the importance of a just society. Interestingly, the Australian state of Victoria adds a spiritual dimension to its definition that was crafted "to ensure wide community understanding of the importance of mental health and its relevance to all people":

> Mental health is the embodiment of social, emotional, and spiritual wellbeing. Mental health provides individuals with the vitality necessary for active living, to achieve goals and to interact with one another in ways that are respectful and just (VicHealth, 1999, p. 4).

Defining Mental Illness, Mental Disorders, and Mental Problems

Even more value-laden is the construct of *mental illness*. Interestingly, however, the U.S. and Australian definitions of *mental illness* and/or *mental disorder* have more in common than do their definitions of *mental health*. The definition of *mental illness* from the Surgeon General's Report is

> all diagnosable mental disorders, health conditions characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress and/ or impaired functioning (U.S. Department of Health and Human Services, 1999, p. 5).

The NSW document does not use the term "illness," but its definition of *mental disorder* is virtually the same as the U.S. definition of *mental illness*:

> a recognized, medically diagnosable illness that results in the significant impairment of an individual's cognitive, affective, or relational abilities (Scanlon et al., 1997, p.5).

The Surgeon General's Report further distinguishes between *mental illness* and *mental health problems.* It defines the latter as

> signs and symptoms of insufficient intensity or duration to meet the criteria for any mental disorder. Mental health problems may warrant active efforts in health promotion, prevention, and treatment. An example is prolonged bereavement which, if not treated, may evolve into a major depressive episode (U.S. Department of Health and Human Services, 1999, p. 5).

Similarly, the NSW document defines *mental health problems* as:

> a disruption in the interactions between the individual, group, and the environment, producing a diminished state of positive mental health (Scanlon et al., 1997, p. 5).

These definitions reflect a view that *mental health and mental illness are not mutually exclusive categories*. Rather, they are *points on a continuum* ranging from *positive mental health* through *mental health problems* to *serious mental illnesses*. All of us move back and forth along this continuum, depending on a multitude of biological, psychological, and social factors that change over time. A person's need for mental health services and the type of services he or she needs will vary according to where he or she is on the continuum at any given time. The NSW conceptualization of the relationship between the Mental Health Status Continuum and the Mental Health Care Continuum can be seen in Figure 1.

Figure 1 Interactions of the Mental Health Status Continuum and the Mental Health Care Continuum

Positive mental health high-level capacity of the individual, group, and environment to interact to promote well-being, and optimal development and use of mental abilities.

Mental health problem: disruption in interactions between individual, group, and environment, producing a diminished state of positive mental health abilities.

Mental disorder: medically diagnosable illness that results in significant impairment of cognitive, affective, or relational abilities.

MENTAL HEALTH STATUS CONTINUUM

MENTAL HEALTH CARE CONTINUUM

Enhancing health: promoting optimum mental health, e.g., job satisfaction, promoting resilience, self-esteem, and social skills, and improving access to income and workplace certainty.

Primary prevention: addressing risk factors in vulnerable groups, e.g., coping skills for people who are unemployed, home visits for families at risk coping skills for people who are unemployed, home visits for families at risk, coping skills for families experiencing separation and divorce.

Early recognition and intervention: detecting a problem or illness at an earlier stage and increasing access to effective treatment, e.g., earlier detection and treatment of depression or psychosis.

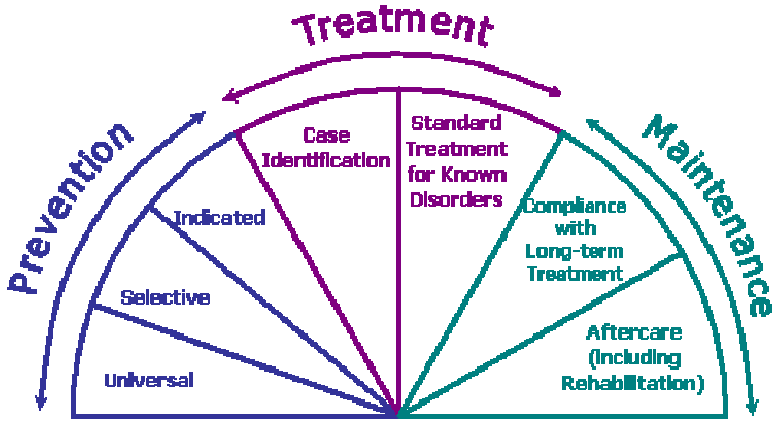
Treatment and rehabilitation: intervening to reduce the symptoms of an illness, diminish disability, and improve quality of life, e.g., effective and compassionate treatment, involvement of consumers and careers, information about patient rights, and full participation in rehabilitation programs

Source: Scanlon, K., Williams, M., & Raphael, B. (1997). Mental health promotion in NSW: Conceptual framework for developing initiatives. NSW Health Department, Sydney, Australia, p. 9.

In the early 1990s, the U.S. Congress appropriated funds for the Institute of Medicine (IOM) to evaluate the status of research on the prevention of mental disorders, make recommendations for Federal policy, and set forth a prevention research agenda. The result was a highly influential publication, *Reducing Risks for Mental Disorders: Frontiers for Preventive Intervention Research* (Mrazek & Haggerty, 1994). The IOM committee developed a Mental Health Intervention Spectrum for Mental Disorders, which is similar to the NSW continuum. This spectrum graphically illustrates a range of interventions for mental disorders, from prevention through treatment to maintenance and rehabilitation. This model is presented in Figure 2.

Figure 2

The IOM Committee's Mental Health Intervention Spectrum for Mental Disorders



Source: Mrazek, P.J., & Haggerty, R.J., Eds. (1994). *Reducing Risks for Mental Disorders: Frontiers for Preventive Intervention Research*. Washington, DC: National Academy Press

Defining Promotion and Prevention

When the IOM committee wrote its report, it decided not to include *mental health promotion* in its spectrum of interventions focused on preventing mental disorders. It acknowledged that mental health promotion activities are "important and widespread," but went on to say this:

> The reason for not including it in the above spectrum is that health promotion is not driven by an emphasis on illness, but rather by a focus on the enhancement of well-being. It is provided to individuals, groups, or large populations to enhance competence, self-esteem, and a sense of well-being rather than to intervene to prevent psychological or social problems or mental disorders (Mrazek & Haggerty, 1994, p. 27).

Despite differences conceptually and philosophically, the goals of promotion and prevention are not mutually exclusive, and considerable overlap exists in techniques used to achieve these goals. Moreover, the same program is sometimes cited as an example of both a promotion and a prevention program. (For a detailed discussion of this issue, see Mrazek & Haggerty, 1994, Chapter 9.)

The Australian/NSW definition of *mental health promotion* also focuses on the positive end of the spectrum:

> enabling people, communities and populations to increase control over and improve and/or maintain their subjective well-being, optimal development, and use of mental

> abilities (cognitive, affective, and relational), and the achievement of goals consistent with social justice (Scanlon et al., 1997, p. 7).

However, in its discussion of the principles underlying its mental health promotion campaign, it stresses that *prevention is included in its definition of mental health promotion*. The first principle states that

> Mental health promotion needs to be seen in two contexts: promoting positive mental health and preventing the development of mental health problems and disorders. These two contexts are inextricably linked ... to the extent that initiatives aiming to promote positive mental health will also impact upon the prevention of mental health problems and disorders. Similarly, initiatives aiming to prevent mental health problems and disorders will also impact upon promoting positive mental health (Scanlon et al., 1997, p. 7).

A great deal of controversy still surrounds the use of the term *prevention*. Historically, the term *primary prevention* has been used to refer to prevention before the onset of a disorder, *secondary prevention* has referred to prevention of disability from a disorder, and *tertiary prevention* has referred to prevention of relapse of a disorder. As can be seen in Figure 2, for the IOM Report, the committee used a rather restrictive definition of prevention:

> For purposes of monitoring federal research and demonstration efforts, prevention research [shall] be limited to processes that occur before there is a diagnosable mental illness (Mrazek & Haggerty, 1994, p. v).

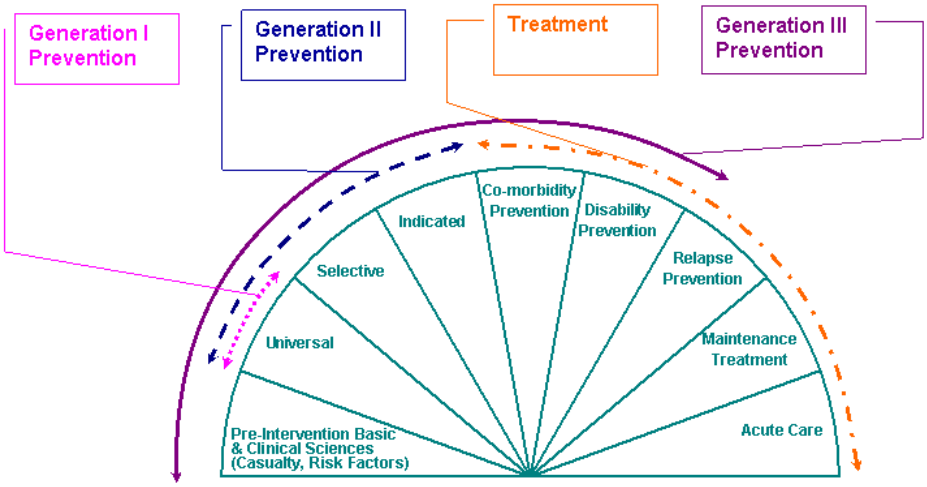
That is, the term refers only to those interventions that occur before the initial onset of a disorder. One reason for defining prevention in this manner was purely pragmatic. Prior definitions had included the prevention of comorbidity, relapse, and disability – all conditions that occur *after* the onset of a disorder. Because funds were scarce and the needs of people with mental illnesses were great, very little money got channeled into "primary" prevention – i.e., that which takes place before the initial onset of a disorder and, one hopes, prevents the disorder from ever occurring. The IOM committee wanted to be sure that "primary" prevention was seen as a legitimate endeavor worthy of sound funding sources.

In 1998, the National Institute of Mental Health (NIMH) Ad Hoc Committee on Prevention issued *Priorities for Prevention Research at NIMH*. This committee reconsidered prior definitions and decided to define prevention in broader terms. Under the NIMH definition,

> prevention refers not only to interventions that occur before the initial onset of a disorder, but also to interventions that prevent comorbidity, relapse, disability, and the consequences of severe mental illness for families.

NIMH also revised the Mental Health Interventions Spectrum to accommodate this broader definition. (See Figure 3). At present, no general consensus has emerged regarding the use of the term, though the prevention science field appears to be moving toward the IOM definition.

Figure 3: The NIMH Committee's Mental Health Interventions Spectrum



Source: NIMH (1998). *Priorities for Prevention Research at NIMH: A Report by the National Advisory Mental Health Council Workgroup on Mental Disorders Prevention Research.* NIH Publication No. 98-4321.

Types of Preventive Interventions: Universal, Selective, and Indicated

The IOM committee developed a new system, classifying preventive interventions as *universal*, *selective*, or *indicated*, according to the target population of the intervention:

- *Universal interventions* are conducted with an entire population, regardless of risk. The best example -- infant immunization programs -- comes from medicine. An example of a potential universal mental health intervention would be primary care physicians' screening all of their patients for depression, regardless of whether a patient was at risk for, or showing symptoms of, the illness.

- *Selective interventions* are those offered to a subset of a population which is deemed to be at risk. For example, one might provide an evidence-based nurse home visitation program to pregnant adolescents regardless of a given adolescent's mental status because, as a group, adolescent mothers are known to be at high risk for depression and other mental and behavioral disorders.

- *Indicated interventions* are provided to individuals who are at elevated risk for developing a negative outcome and who may or may not show symptoms. Interventions

with children who are showing signs of disruptive behavior at school and whose parents have major affective disorders are examples of indicated interventions.

The Links Among Promotion, Prevention, Treatment, and Recovery

As the NSW document makes clear, the concepts of promotion and prevention are "inextricably linked" (Scanlon et al., 1997, p. 7). We would argue that these concepts also are – or should be – inextricably linked to the concepts of treatment and recovery. For example, in the course of conducting a preventive intervention such as screening children of parents with depression, a clinician or researcher is likely to identify one or more children who may already have the full-blown illness and are in need of treatment. Similarly, in the course of treating a mother with depression, the clinician is likely to identify her children as in need of prevention services.

In addition, many clinicians have begun speaking about "prevention-oriented treatment." By this they mean that, in the course of treating someone, the clinician must be knowledgeable about how to prevent comorbidity, disability, and relapse. For example, in the case of a person with depression, a common warning sign of relapse is early morning awakening (EMA). People with depression may try to "treat" EMA with alcohol, but doing so increases their risk of developing comorbidity of depression and alcohol abuse. A clinician who practices "prevention-oriented treatment" will help the patient monitor warning signs of relapse and understand the circumstances that place him at risk for comorbidity and/or relapse.

The IOM Mental Health Intervention Spectrum includes rehabilitation under maintenance. The NIMH spectrum includes prevention of comorbidity, disability, and relapse under both treatment and prevention, and it lists maintenance as a separate category. Perhaps it is time that the spectrum be revised yet again to include *recovery*, and that *promotion and prevention* be both a *segment* of the spectrum plus the *foundation of the spectrum* since promotion and prevention activities may, and indeed should, occur at any point in the spectrum.

It should be noted that many techniques used by consumers in the recovery movement are similar to those common in mental health promotion programs: wellness action plans, self-advocacy, psychoeducational classes and seminars, strengths model case management, and spiritual practices (Ridgway, 2000, p. 8). As research with and by consumers becomes more available, we will likely know better which of these practices are more effective not only in preventing disability and relapse of mental illnesses but also, perhaps, in preventing the onset of some mental illnesses in the first place. (For information regarding research involving consumers, see http://www.mhselfhelp.org/research.html.)

Resilience

Considerable health promotion is done today in programs whose aim is to "foster resilience." While this is a very popular concept, it has come under criticism from many in the scientific community because of the lack of consensus regarding the definition of the construct. Indeed, it is currently used as if it were a trait, an outcome, and/or a process.

In the popular press and in many programs, “resilience” is frequently used as if it were a character trait, as in “John is very resilient.” However, using the term this way has had an untended but serious negative consequence in that it has paved the way for perceptions that some individuals will “pull themselves up by their bootstraps” no matter what their circumstances, while others simply do not "have what it takes" to overcome adversity. Such perceptions let policy makers off the hook by allowing them to believe that their actions do not matter when it comes to programs and policies that support healthy human development. In the words of noted resilience researcher, Dr. Ann Masten,

> *The great danger I see in the idea of resilience is in expecting children to overcome deprivation and danger on their own....There is no magic here; resilient children have been protected by the actions of adults, by good nurturing, by their assets, and by opportunities to succeed. We cannot stand by as the infrastructure for child development collapses in this nation, expecting miracles (Masten, 1998*).

It is extremely important to stress that resilience does not represent a discrete trait of an individual (Luthar, Cicchetti, & Becker, 2000; Masten, 1999; Rutter, 1999; 2000). Besides being misinformed, unwarranted, and potentially harmful, such a perspective does little to illuminate processes underlying resilience or to guide the design of appropriate interventions (Luthar, Cicchetti, & Becker, 2000). We recommend avoiding using the term resilient as an adjective for individuals and apply it, instead, to profiles or trajectories of adaptation (Luthar, 2000; Luthar & Cicchetti, 2000). The positive adjustment of an at-risk child may reflect in part his or her own sturdiness of character, but it may equally derive from the effects of an exceptionally well-functioning family or community. In situations that necessitate reference to individuals or groups, somewhat qualified descriptors might be used such as "apparently, or manifestly resilient" youth, or still more simply, "behaviorally competent" or "emotionally healthy" youngsters.

It is further important to note that resilience is not absolute – neither across domains, nor over time. At-risk individuals can show remarkable success in many important domains of functioning, such as job or academic performance, while still experiencing difficulties in domains such as family and social functioning. Moreover, a person’s behavioral functioning might be quite good in any or all of these areas, but he or she might still experience high depression or anxiety (Luthar Cicchetti, & Becker, 2000), what has been called “the price of resilience.” Similarly, successful adaptation at one point in development by no means guarantees subsequent immunity from dysfunction. Rather, depending on the matrix of biological, psychological, and environmental forces, manifestly resilient individuals (like all others) will show some fluctuations over time and within discrete domains of adjustment.

We propose that the term *resilience* be used to refer to a *dynamic process encompassing positive adaptation within the context of significant adversity* (Luthar, Cicchetti, & Becker, 2000). For a thorough discussion of the implications of resilience for interventions and social policy, see Luthar & Cicchetti, 2000.

WHY A PUBLIC HEALTH APPROACH IS NEEDED

It is a truism in the public health arena that no major epidemic has ever been eradicated by treating individual cases. The public health model virtually mandates that one take a broad perspective in developing promotion and prevention initiatives. The Surgeon General's report on mental health describes this model as follows:

> In the United States, mental health programs, like general health programs, are rooted in a population-based public health model. Broader in focus than medical models that concentrate on diagnosis and treatment, public health attends, in addition, to the health of a population in its entirety. A public health approach encompasses a focus on epidemiologic surveillance, *health promotion, disease prevention,* and access to service. Although much more is known through research about mental illness than about mental health, *the report attaches high importance to public health practices that seek to identify risk factors for mental problems; to mount preventive interventions that may block the emergence of severe illnesses; and to actively promote good mental health* (U.S. Department of Health and Human Services, 1999, p. viii).

The public health approach has had an extremely positive impact on the health status of Americans during the past century. For example, the campaign against cigarette smoking has led to the elimination of millions of cases of lung cancer, and the campaign encouraging the wearing of seat belts has greatly reduced the number of deaths from automobile accidents. It seems reasonable, therefore, to use the public health approach to promote mental health and prevent mental and behavioral disorders.

The core elements of the public health approach include

- Community-based methods for *identifying the sources of the problem* -- taking a population-based perspective, in contrast to the individual intervention approach of the physician's office;

- Epidemiological data and analyses for identifying and *delineating patterns of risk and protective factors* associated with the problem;

- Ongoing surveillance and tracking of the problem and the identified risk and/or protective factors to establish trends in their prevalence and incidence -- telling who suffers from specific problems and why;

- Designing community-based interventions based on a scientific analysis of the problem to *reduce or eliminate risk factors and enhance or introduce protective factors;*

- Evaluating and monitoring interventions to establish and improve their effectiveness; and

- Public education to share information about the problem and effective and ineffective interventions (Elliott et al., 1998, pp. 20-42).

The public health approach is an optimistic approach that provides tools for individuals and communities to proceed in a positive, problem-solving manner.

The Issue of Risk and Protection

Central to the public health approach is the issue of risk and protection. This issue is set forth in the first key principle of preventive interventions in the IOM Report:

> Prevention of the initial onset of mental disorders can be accomplished through intervention programs aimed at risk reduction, which can include both reduction of causal risk factors and enhancement of protective factors. The goal is to *address malleable, or modifiable, risk and protective factors related to the onset of disorders,* including precursor symptoms, to reduce the incidence of mental disorders or at least to delay their onset (Mrazek & Haggerty, 1994, p. 215).

Dr. David Olds and his colleagues echo the words of the IOM Report. "The most useful investigations," they say, "have focused on risk and protective factors that, *at a group level*, can be traced developmentally to predict adaptive and maladaptive functioning" (Olds, et al., 1999, p. 4). Similarly, Greenberg and his colleagues state:

> Preventive interventions are best directed at risk and protective factors rather than at categorical problem behaviors. With this perspective, it is both feasible and cost-effective to target multiple negative outcomes in the context of a coordinated set of programs (Greenberg, et al, 1999a)**.**

A problem does exist, however, if we assume that decreasing risk factors and/or increasing protective factors will *inevitably* lead to improved mental health *for a given individual*. In talking about risk and protective factors that are *associated with* a given condition, we must keep in mind that these factors are only *correlated with mental health*, and *correlation does not imply causality*. According to Olds and his colleagues,

> risks, by themselves, explain *only a small part of variance* in the incidence of mental disturbance.... The outcomes for children may be predicted in probabilistic terms, but *efforts at predicting later outcomes for any individual child from conditions very early in life will almost always be less than satisfactory*. This is because current research methods are limited (e.g., by the numbers of participants who exhibit particular conditions, limits of measurement, etc.), and because *the list of biological strengths and vulnerabilities found in any single child and the environmental circumstances that the child will encounter over his or her life time will be enormous* (Olds et al., 1999, p. 5).

Given these complexities, many developmental theorists now subscribe to *transactional theories of development* that maintain that "the child's adaptation is continuously transformed by the child's biological characteristics and transactions with the external environment (e.g., parents, family members, peers, larger milieu)" (Olds et al., 1999, p. 5). Unfortunately, adequate research methods to study development in transactional models do not yet exist. Rather, researchers must try to identify as accurately as possible those risk and protective factors implicated in particular disorders, reduce the risk factors and enhance the protective factors, then document any changes in mental health status of the target population. Finally, they must make a judgment about *whether correlative or causal processes are occurring*. While this method of research is not ideal, many very useful investigations have been based on this approach (Olds et al., 1999).

What are those malleable risk factors for mental illness that can be decreased and those significant protective factors that are amenable to enhancement and that, one hopes, will lead to improvements in a population's mental health?

Some researchers have focused on identifying risk factors that are unique for specific illnesses. The IOM Report summarizes some of these findings regarding risk factors for schizophrenia, depression, and conduct disorders. The report notes, however, that "even though some risk factors may be specific to a particular disorder, *other risk factors are common to many disorders,"* and they see great "value in clarifying the role of these risk factors that appear to be common to many mental disorders, especially in view of the frequent comorbidity of these disorders" (Mrazek & Haggerty, 1994, p. 182). (See Table 4 for risk factors common to many disorders and Table 5 for protective factors common to many disorders.)

Table 4: Risk Factors Common in Many Mental Disorders

Individual Risk Factors

Individual risk factors during childhood can lead to a state of vulnerability in which other risk factors may have more effect. For instance,

- A *prematurely born, low-birthweight* baby may be more vulnerable than a full-term, healthy sibling in a suboptimal family environment.

- A child may be vulnerable to parent-child interaction difficulties by reason of a *difficult temperament*, a *chronic physical illness*, *neurophysiological deficits*, or *below-average intelligence*.

- *Low I Q* is associated with several mental disorders.

- *Language disabilities* have been linked to the development of later severe behavior disorders.

- *Gender*: From before birth through the first 10 years of life, boys are more vulnerable to both physical and psychosocial stressors. Between 10 and 20 years, girls are more vulnerable. In early adulthood, men appear to be more vulnerable.

Family Risk Factors

Family factors that constitute significant risk factors for increased childhood psychopathology:

- *Severe marital discord*
- *Social disadvantage*
- *Overcrowding or large family size*
- *Paternal criminality*
- *Maternal mental disorder*
- *Admission into the care of child welfare services*

Community Risk Factors

Community factors that impinge on children:

- *Social disadvantage*, particularly the experience of being part of a welfare family. This is not simply due to income levels; with income controlled, rates of impairment have been found to be significantly higher for children from low-income welfare families than for children from low-income non-welfare families.
- Living in *subsidized housing*.
- Living in a community that has a high rate of *community disorganization*.

(Mrazek & Haggerty, 1994, pp.182-185)

Table 5: Factors That Are Protective Against Many Mental Disorders

Individual Protective Factors

- *Positive temperament*: Children who are easygoing and responsive *call forth the best* from their parents and from peers, teachers, and other adults.
- *Above-average intelligence*, which allows a child to do well in school and also to develop *problem-solving skills,* a sense of *perspective,* and *psychological differentiation* from family or community, fostering the growth of the *autonomy* and *independence* necessary for optimal adult functioning.
- *Social competence*, which includes the ability to get along with others.
- *A sense of coherence.*
- An *internal locus of control* orientation.

Family Protective Factors

- *Smaller family structure*, i.e., not more than four children in the family, and spacing of more than two years between siblings.
- In early childhood, having a *close relationship with a parent who is responsive and accepting*.
- For older children, *supportive parents, good sibling relationships,* and *adequate rule setting by parents*.

Community Protective Factors

- *Relationships* with peers, significant other adults, church, youth groups, school, and recreational activities, all of which build *competence* and provide children with *success.*
- *Good schools* positively affect *academic achievement* and, subsequently, vocational outcome, and they reduce the rates of truancy, school dropout, and juvenile court appearances for children in disadvantaged areas.
- The IOM report further cites Dr. Emmy Werner's and Dr. Ruth Smith's 1992 Kauai Longitudinal Study, in which they report that three clusters of protective factors distinguished their resilient subjects from those who did not do well over the 30 years they have studied this group:
    - *At least average intelligence* and *temperamental attributes that elicit positive responses* from family members and strangers.
    - *Good relationships* with parents or parent substitutes, which encourage *trust, autonomy*, and *initiative.*
    - An *external support system that rewards competence* and *provides a sense of coherence*.

(Mrazek & Haggerty, 1994, pp. 182-185)

Olds and his colleagues identify a "set of factors within the child and his environment that, with some consistency, increase the likelihood that the child will exhibit emotional, cognitive, and/or behavioral disturbance later in life" (1999, p. 4). When these risks are combined and interact with each other, Olds says, the likelihood of poor adjustment increases. He and his colleagues conceptualize these risk factors as "putative mediating conditions that an intervention may seek to alter, with the long term goal of preventing mental health problems for the child" (1999, pp. 9-10). These risk factors are detailed in Table 6.

Table 6: Early Risk Factors for Emotional, Cognitive, and/or Behavioral Disturbance Later in Life

- Prenatal exposure to toxins, including alcohol, tobacco, and other drugs.
- Parental mental illness and/or alcohol and other drug abuse.
- Child abuse and neglect.
- Relationship disturbances that cause problems in parent-infant bonding and result in insecure attachment.
- Emotional, cognitive, and/or behavioral regulatory difficulties on the part of the child.
- Generalized environmental adversity such as growing up in poverty and/or in single-parent households.

(Olds et al., 1999, pp. 9-10)

The Australian/NSW plan acknowledges that a multitude of factors contribute to one's mental health -- or lack thereof. It therefore lists a number of risk factors as possible targets for promotion and prevention interventions throughout the life span. The issues it targets for children and young people are presented in Table 7, and those for adults are presented in Table 8.

Table 7: Intervention Targets for Children and Young People Advanced by Australia/NSW

- Key support people
- Parenting skills
- Resilience and competence
- Psychosocial development
- Parental discord
- Loss in childhood
- Child abuse and violence
- Stressful life events, including injury or chronic physical illness, hospitalization, witness to violence, and transition periods
- Substance use and abuse
- Children of parents with a mental illness
- Early identification of and intervention (particularly for conduct disorders, depression, anxiety, and early psychosis)

(Scanlon, Williams, & Raphael, 1997, p. 18).

Table 8: Intervention Targets for Adults Advanced by Australia/NSW

1. Issues affecting the whole population include

   A. Issues affecting the community
   - Income
   - Employment and education
   - Housing
   - Stigma and discrimination
   - Recreation
   - Social support
   - Access to services (transport, health, community, shopping)

   B. Issues affecting individual adults and older people within the population
   - Resilience and competence
   - Relationships
   - Job satisfaction
   - Recreation Quality of life

2. Issues affecting populations at risk include
   - Violence and abuse
   - Bereavement and loss (including cultural loss)
   - Marital conflict, separation, and divorce
   - Disaster, torture, and trauma
   - Job loss
   - Migration and resettlement
   - Homelessness
   - Poverty and financial crises
   - Stressful life experiences including illnesses and transitions

Early identification and appropriate interventions are needed for at-risk populations exposed to the issues listed above, especially for individuals experiencing specific mental health problems such as
   - Psychoses, depression, anxiety disorders, and alcohol and other drug abuse
   - Assessment and management of suicidal risk.

3. Issues affecting adult and older populations with identified mental health problems or disorders

   A. Systemic issues
   - Preventive approaches within mental health and related services
   - Appropriate comprehensive and integrated mental health and related services (including involvement of consumers and care givers)
   - Caregiver burnout and staff burnout in mental health and related fields
   - Human rights and safety
   - Discrimination and stigma

   B. Individual issues
   - Appropriate and effective treatment and rehabilitation
   - Self help and social supports
   - Physical health status (including nutrition, smoking, dental, and other basic care)

(Scanlon, Williams, & Raphael, 1997, p. 18).

WHY A BIOPSYCHOSOCIAL, DEVELOPMENTAL, LIFE SPAN APPROACH IS NEEDED

The development and/or prevention of a mental illness is an extremely complex matter. Neither a single cause nor a single cure exists. The IOM Report stresses the fact that mental illnesses are *biopsychosocial* conditions that *may occur at any point in the life cycle*. Interventions must be appropriate to one's age and developmental stage, and they must be culturally competent.

Most mental illness prevention activities thus far have targeted children and adolescents. However, research and life experience remind us that neither development nor adversity ends with adolescence. *Young adults* must find their way in the adult world and deal with the developmental tasks of intimacy and career choice. In the most vulnerable, biochemistry mingles with life events to precipitate a first psychotic episode. *Middle-aged adults* caring for both the young and the old are the "sandwich generation," and without good adaptive skills, they may fall prey to significant anxiety and depression. Their mental health and emotional resilience are essential for the health and well-being of the many who depend on them. *Elderly adults* encounter multiple losses as spouses and friends die and as their own health begins to decline. In short, vulnerability to mental illness may change at different points in the life cycle; at each stage, the biopsychosocial issues must be understood and addressed with appropriate interventions.

According to the IOM Report, the academic discipline that best accommodates the complexity necessary for preventive intervention research is developmental psychopathology. This field is concerned with the concepts of "risk and protective factors, precursors, sequelae, competence/ incompetence, developmental antecedents of disorders, age-defined adaptation, resilience, and predictability" (Mrazek & Haggerty, 1994, p. 65). Because it is an *interdisciplinary* field of study, developmental psychopathology is likely to acknowledge the multiplicity of risk and protective factors – and their interaction – that might account for health or illness at any given time. Moreover, developmental psychpathology stresses that effective programs must deal with the *complexity* of the problems they are addressing, and that the preventive interventions must be *developmentally appropriate* to the target audience's age and life stage issues.

Finally, developmental psychopathology provides examples of how *one element of the biopsychosocial paradigm may inform other elements*. For example, findings from the field of genetics -- the "bio" element -- "identify the potential importance of environmental preventive interventions for individuals who are known to be at genetic risk through mechanisms involving vulnerability to environmental factors" (Mrazek & Haggerty, 1994, p. 68). Thus, if we know that someone is at risk for, say, schizophrenia, by virtue of his genetic makeup, we can design programs aimed at decreasing those environmental risk factors – high negative emotional expressiveness in a family, for example – that are known to interact with genetics in the etiology and/or exacerbation of schizophrenia.

MENTAL DISORDERS MOST LIKELY TO BE TARGETED FOR PREVENTION INTERVENTIONS AT THIS TIME

The mental conditions for which the most evidence-based interventions are currently available are the most frequently occurring disorders – conduct and oppositional defiant disorders among children and adolescents (Greenberg et al., 1999b), and dysthymia and major depressive disorders among adults (Munoz et al., 1987). In the case of manic-depressive illness and schizophrenia, work is under way to intervene during the prodromal phase of these conditions to prevent the development of full-blown psychotic episodes. As is noted in the IOM Report:

> The best hope now for prevention of schizophrenia lies with indicated preventive interventions targeted at individuals manifesting precursor signs and symptoms who have not yet met full criteria for diagnosis. The identification of individuals at this early stage, coupled with the introduction of pharmacological and psychosocial interventions, may prevent the development of the full-blown disorder (Mrazek & Haggerty, 1994, p. 154).

Several organizations around the world are actively engaged in research regarding prodromal intervention. The Early Psychosis Prevention and Intervention Center (EPPIC) in Melbourne, Australia, convened international experts to develop an Early Psychosis Training Pack for use by clinicians and other caregivers. A journal, *Interventions in Early Psychosis*, has been established. And conferences are being held that speak of "schizophrenia as a process and a stage in a process" with different treatment foci for different stages. No one is claiming that he or she can prevent schizophrenia, but many are increasingly confident that, with sound, early psychosocial and psychopharmacological interventions, they can delay the onset and/or lessen the impact of the illness.

Ethical concerns must be addressed when one is considering the optimum time for any intervention, especially in the use of medicine. For example, does the risk involved in giving a psychotropic medication to a person presumed to have a serious mental disorder before irrefutable signs of psychosis are apparent outweigh the potential benefits of staving off a possible psychotic episode? What constitutes "informed consent" in such a situation? These and many other ethical questions must be thoroughly discussed among clinicians, consumers, and researchers before prodromal interventions become a widespread, accepted practice.

TRANSLATING RESEARCH INTO PRACTICE

The process of developing and pilot testing an intervention, doing efficacy and effectiveness studies and replications of it, and ensuring that it is appropriate for the age, developmental level, gender, and ethnicity of the target audience is both long and complicated. But these steps are necessary to ensure that, once the intervention is taken into the "real world" on a large scale, it will actually decrease the risk factors and increase the protective factors being targeted in order to promote mental health and/or prevent the specified mental disorder. Once all these tasks are accomplished, an intervention is said to be ready to "take to scale."

For a number of years, researchers have been working on various interventions to prevent mental and behavioral disorders, and some guiding principles for effective programs have been developed. In a review of programs for children ages 0 to 5, Olds and his colleagues set forth the following principles:

1. ***Epidemiologic foundation*:** An intervention must be grounded in "an understanding of the *specific modifiable risks and protective factors* associated with (and possibly contributing to) the adverse outcomes the investigator wishes to prevent."

2. ***Theoretical foundation*:** It is crucial that an intervention have a theory of behavioral change, such as self-efficacy theory or reasoned action. These theories, then, must be translated into programmatic activities for reducing risks (such as parents' attributions of hostile intent on the part of their babies) and increasing protective factors (such as consistently supportive relationships between the mother and others close to her).

3. ***Relevant and perceived as needed by the population to be served*.** Using "client focus groups and pilot studies to shape new interventions prior to testing them in larger trials ... is necessary to ensure that the content, methods, and service providers who deliver the program are perceived as sufficiently needed and helpful to engage the family or child in the intervention."

4. ***Manualized*:** The program will have a greater chance of being delivered reliably if its contents, methods, and timing of activities are written and spelled out in sufficient detail to make it easy for service providers to follow. Manualization also makes it easier to replicate the program outside of research contexts (Olds et al., 1999, p. 52).

In their review of programs for children, ages 6 to 18, Goldberg and his colleagues enumerated these principles:

5. ***Adequate duration*:** A program must run long enough to secure its desired benefits. Short-term promotion and prevention interventions produce time-limited benefits, at best, with at-risk groups, where as multiyear programs are more likely to foster enduring benefits. Preventive interventions may operate throughout childhood when developmentally appropriate risk and protective factors are targeted. However, given the resistance to treatment of serious conduct problems, ongoing interventions starting in the preschool and early elementary years may be necessary to reduce morbidity.

6. ***Multiple domains*:** Promotion and prevention programs that focus independently on the child are not as effective as those that simultaneously "educate" the child and instill positive changes across both the school and home environments. The success of such programs is enhanced by focusing not only on the child's behavior, but also on the teacher's and family's behavior, the relationship between the home and school, and the needs of schools and neighborhoods to support healthy norms and competent behavior.

7. ***Necessity of collaborative strategies*:** There is no single program component that can prevent multiple high-risk behaviors; a package of coordinated, collaborative strategies and programs is required in each community. For school-age children, the school ecology should be a central focus of intervention.

8. ***Systems of care*:** In order to link to other community care systems and create sustainability for mental health promotion and the prevention of mental and behavioral disorders, programs will need to be integrated with systems of treatment. In this way, communities can develop common conceptual models, common language, and procedures that maximize the effectiveness of programs at each level of need. Schools, in coordination with community providers, are a potential setting for the creation of such fully integrated models (Greenberg et al., 1999a, p. 3)**.**

Once these first eight guiding principles have been adhered to, the ninth is absolutely crucial.

9. ***Sound Research Designs:*** The soundness of a program's research design tells others the strength of the level of evidence of the program's efficacy and/or effectiveness. The higher the level of evidence, the more likely the program is to work in other settings. In 1998, the U.S. Preventive Services Task Force articulated the following ***levels of evidence***:

    1. Evidence obtained from at least one properly designed randomized controlled trial;
    2a. Evidence obtained from well-designed controlled trials without randomization;
    2b. Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.
    2c. Evidence obtained from multiple time series with or without the intervention, or dramatic results in uncontrolled experiments.
    3. Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

    (U.S. Department of Health and Human Services, 1998)

The tenth guiding principle was recommended by the National Mental Health Association (NMHA):

10. ***The program must be accessible, understandable, and affordable for communities to replicate with fidelity.*** These concepts should be considered at the program design stage, long before they are "going to scale," for without these characteristics, programs "are not worth the dollars invested in them" (NMHA, 2000, personal communication).

Identifying Evidence-Based Programs

Various organizations have enlisted scholars to identify and evaluate many programs which, according to one set of criteria or another, they have labeled "evidence-based**."** Sometimes words such as "exemplary" or "model" are assigned to these programs. However, "promising" is probably a more accurate term for most, as most have not been subjected to extensive replication and effectiveness testing to know just how well they perform in the "real world," in different settings, and with different racial and ethnic groups. Reviews of several promotion and prevention programs may be found in the following documents:

- Mrazek, P.J., & Haggerty, R.J., Eds. (1994). *Reducing Risks for Mental Disorders: Frontiers for Preventive Intervention Research.* Washington, DC: National Academy Press.

- Olds, D., Robinson, J., Song, N., Little, C., & Hill, P. (August 1999). *Reducing Risks for Mental Disorders During the First Five Years of Life: A Review of Preventive Interventions.* A report prepared for the Center for Mental Health Services, Rockville, MD.

- Greenberg, M.T., Domitrovich, C., & Bumbarger, B. (July 1999b). *Preventing Mental Disorders in School-Age Children: A Review of the Effectiveness of Prevention Programs.* A report prepared for the Center for Mental Health Services, Rockville, MD.

- Stuart, B.J., & Stuart, R.B. (2000). *Hardiness and the Prevention of Mental Illness in Midlife Adults: Theoretical Perspectives, Review of Empirically Substantiated Programs, and Recommendations for Action.* A White Paper prepared for the Center for Mental Health Services, Rockville, MD.

- Mrazek, P.J. (1998). *Preventing Mental Health and Substance Abuse Problems in Managed Health Care Settings.* Alexandria, VA: National Mental Health Association.

- Dorfman, S.L. (October 1999). *Preventive Interventions for Mental Health and Substance Abuse Under Managed Care.* A report prepared for the Offices of Managed Care of the Center for Mental Health Services and the Center for Substance Abuse Prevention, Substance Abuse and Mental Health Services Administration, Rockville, MD.

A review of specific programs is beyond the scope of this paper. However, it should be noted that one nurse home visitation program for low-income, unmarried mothers decreased child abuse, a major risk factor for a wide range of mental and behavioral disorders, by 80 percent. At 15 year follow-up, the children showed less drug and alcohol use, ran away from home less frequently, and were arrested less frequently, compared to the control group. An evaluation done by the Rand Corporation found that investments in the preventive services were recovered with dividends by the fourth year of the child's life. For every dollar invested, $4.00 were saved.

(Olds et al., 1997).

In addition, conduct disorders are precursors to many of our most costly and damaging societal problems – delinquency, substance use, and adult criminality, for example. Not only do anti-bullying programs prevent the aggressiveness and disciplinary referrals associated with conduct disorders, but they also show marked increases in students' social relationships and in their satisfaction with school (Olweus, 1994). A more general program to promote social and emotional competence through cognitive skill-building not only improved social problem-solving skills and understanding of emotions in elementary school students, but also decreased conduct problems, depression, and somatic complaints (Greenberg & Kusche, 1997, 1998a; Greenberg, Kusche, Cook, & Quamma, 1995). Similarly, a group intervention for high school students at high risk for depression prevented the development of a full-blown depressive disorder. Since depression is a risk factor for substance abuse disorders, this program has considerable preventive potential (Clarke et al., 1995).

Existing prevention programs are not for children only. Unemployment is a major risk factor for depression in adults. One effective intervention decreases depressive symptoms and increases coping skills of people who have recently lost their jobs (Price et al., 1992; Vinokur et al., 1992). This protocol has been so successful in the United States that it is now also being used in China and Finland. An evaluation of the program found that the net total benefit per person 32 months after completing the program was $6, 420, and this increased to $12,619 by the time five years elapsed (Price, 2000). Recent bereavement is a high-risk time for the elderly. One program for widows that provides one-to-one support, practical help, and small group meetings has been found to decrease social withdrawal and depressive symptoms (Vachon et al., 1980, 1982). Finally, an intervention targeting low-income Hispanic American women in primary care settings significantly decreased depressive symptoms (Munoz, et al., 1995).

Measuring the Outcomes of Evidence-Based Programs

At this time, almost no programs present outcomes in terms of DSM or ICD diagnoses. However, several do report decreases in *symptoms* of several mental and behavioral disorders, among which conduct disorder, oppositional defiant disorder, attention-deficit hyperactivity disorder, some forms of depression and anxiety disorders, and post traumatic stress disorder are key.

Many programs demonstrate that it is quite possible to *reduce a number of risk factors* and *increase a number of protective factors* for the above-mentioned disorders. Common malleable risk factors include low birthweight, poor parenting and family management, child abuse and neglect, violence, school failure, and alcohol and other drug use. Common malleable protective factors include parent-child attachment, self-efficacy, problem solving skills, realistically high confidence and self-esteem, self understanding, stress management skills, and social supports. And a number of programs report behavioral outcomes that *correlate* with good mental health –

better school attendance, less school dropout, less arrests, less need for special school services, and more employment, for example.

Relatively few promotion and prevention programs have done cost-benefit and other financial analyses. Among those that have done these analyses, however, the results have been quite promising. In addition to those programs mentioned above, one program for preschoolers has been credited with reducing the cost of delinquency and crime by approximately $2,400 per child (Barnett & Escobar, 1990). And a major longitudinal study in a large midwestern city found that every dollar invested in preschool programs for at-risk children returned $7.10 in reduced costs of crime and remedial programs and increased earnings capacity from higher levels of education (Reynolds et al., 2001). This is extremely significant because the annual cost to society of school dropout and crime is approximately $350 billion (National Science and Technology Council, 1997).

The prevention science field would be strengthened if researchers could come to some agreement on standard outcome measures so that findings among different programs could be readily compared. In addition, from early on, attention must be paid to modifications that may be required to ensure that the practice is useful and appropriate in varied cultural contexts. Furthermore, in keeping with the trend of consumerism throughout health care services and increasingly in the mental health arena, the field would be strengthened if researchers worked more closely with mental health consumers and consumer researchers to provide consumer satisfaction analyses and evaluations. An enormous need also exists for the replication of programs by independent investigators and for long-term follow-up evaluations to examine stability of program efforts. Finally, due in part to the categorical nature of funding, programs now often assess quite narrow outcomes (e.g., only substance abuse, psychological symptoms, positive adaptation). As programs begin to focus the intervention on modifying common risk factors for multiple problem behaviors as well as on promoting competence, measures of multiple dimensions of outcome are necessary (Greenberg et al., 1999b).

A WORLDWIDE RESPONSE TO THE NEED FOR PROMOTION AND PREVENTION SERVICES

Just as the 1990s witnessed an explosion of information regarding the impact of mental illnesses on the world's health, the decade also witnessed efforts by governmental and nongovernmental organizations (NGOs) throughout the world to institute promotion and prevention policies and programs. The governments of Australia, New Zealand, Finland, Canada, and other countries have developed comprehensive agendas for the promotion of mental health and the prevention of mental disorders in their countries. Interestingly, many developing countries are enthusiastic about and active in promotion and prevention initiatives for they readily acknowledge that they will never have adequate resources to create sufficiently large treatment systems to attend to the needs of their rapidly growing populations. Among the organizations actively working in the field are the following:

World Federation for Mental Health (WFMH)
www.wfmh.org

When Margaret Mead uttered the famous statement quoted in the introduction to this paper, she was speaking as president of the WFMH, the world's oldest, international, nongovernmental, multidisciplinary mental health advocacy and education organization. Founded in London in 1948, WFMH's membership includes mental health professionals of all disciplines, consumers and their friends and family, and other concerned citizens in more than 100 countries on six continents. Its mission is "to promote, among all people and nations, the highest possible level of mental health in its broadest biological, medical, educational, and social aspects" (WFMH, 1998, p. 3).

WFMH, in collaboration with the Clifford Beers Foundation and with the cosponsorship of the World Health Organization, the Carter Center, Federal agencies including the Center for Mental Health Services, the National Institute of Mental Health, the Centers for Disease Control and Prevention, and other organizations, held the *Inaugural World Conference on the Promotion of Mental Health and Prevention of Mental and Behavioral Disorders* in Atlanta, Georgia, in December 2000. Leading scientists, policymakers, program developers, consumers, and advocates met "to develop a common vision, shared strategies, and a course of action for the development of science-based mental health promotion and prevention of mental and behavioral disorders worldwide" (Inaugural World Conference, 2000). Proceedings of the conference will be available early in 2002. In September 2002, a second such conference will be held in London, England.

National Mental Health Association
www.nmha.org

Since its establishment in 1909, the organization now known as NMHA has been a strong advocate for the promotion of mental health and the prevention of mental illnesses. To NMHA, prevention is "about equalizing chances and leveling the playing field for *all* people" (NMHA, 2000, p. 1).

The Society for Prevention Research (SPR)
www.oslc.org/spr

SPR is a professional organization focused upon the advancement of science-based prevention programs and policies through empirical research. A primary goal of SPR is "to create a scientific, multidisciplinary forum for prevention science" (SPR, 2000, p. 2).

The U.S. Federal Government

Substance Abuse and Mental Health Services Administration (SAMHSA)
Center for Mental Health Services (CMHS)
www.samhsa.gov/centers/cmhs/cmhs.html

When the U.S. Congress created the Substance Abuse and Mental Health Services Administration (SAMHSA) in 1992, it instructed the Secretary of the Department of Health and Human Services, acting through the Administrator of SAMHSA, not only "to improve the provision of treatment and related services to individuals with respect to substance abuse and mental illness," but also "to improve prevention services,[and] promote mental health" (United States Statutes at Large, 1992). In enumerating the 12 duties of the Director of the Center for Mental Health Services (CMHS), Congress placed promotion and prevention at the top of the list as it instructed him or her to "design national goals and establish national priorities for the prevention of mental illness and the promotion of mental health."

CMHS has pursued its promotion and prevention mission in many ways. For example, it commissioned three of the above-mentioned reviews of preventive practices, developed a curriculum to train mental health professionals to deliver prevention services, developed and field tested a monograph on hiring mental health consultants for day care centers, and commissioned *A Resource Guide on Preventive Mental Health Services for Children in the District of Columbia*. CMHS has provided support for prevention conferences including the Inaugural and Second World Conferences on the Promotion of Mental Health and the Prevention of Mental Disorders and the New York State Office of Mental Health's *Mental Health Prevention: Research in Practice Working Conference*. CMHS is striving to strengthen the evidence base of preventive interventions via the development of *A Consensus Report on the Conceptual and Practical Issues in Measuring the Effectiveness of School-Based Mental Health Prevention Programs* and *A Review of Standards of Evidence Used by Key Stakeholders Who Disseminate Evidenced-based Practices in Mental Health***.** Furthermore, CMHS is supporting projects to enhance the replicability of a family-focused preventive intervention for depression in families with parental psychopathology and to alter other programs to meet the needs of diverse racial and ethnic minority groups.

The Resilience Project. A key element of the CMHS Promotion and Prevention Initiative is the Resilience Project, which advocates a strengths-based approach to child and adult development and to prevention and treatment services. Tasks undertaken in this project include *Resilience: Status of Research and Research-Based Programs* (Davis, 1999), a working paper on resilience for policymakers and the general public, and projects to identify and promote indigenous models of resilience among African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanic Americans.

U. S. Federal Grant Programs

A number of Federal agencies sponsor grant programs that relate to the promotion of mental health and the prevention of mental and behavioral disorders. An especially innovative program is the *Safe Schools/Healthy Students Initiative* (SS/HS). Begun in FY-1999 and continued through FY-2001, this multifaceted school violence prevention program is a collaborative effort of the U.S. Departments of Education, Justice, and Health and Human Services (DHHS). The goals of the program are to promote the healthy development of children and youth, foster their resilience in the face of adversity, and prevent violence. One provision of the initiative is that grantees must use evidence-based programs in their youth violence prevention activities.

As of this writing, 97 SS/HS sites have been awarded $1,000,000 to $3,000,000 per site for three years, for a total of approximately $445 million. CMHS is the lead DHHS agency in this initiative. In addition to helping manage the overall grant program, CMHS provides a technical assistance center for grantees, a communications program, and interactive violence-prevention technology. CMHS also provides smaller violence-prevention grant programs to compliment SS/HS.

Substance Abuse and Mental Health Services Administration (SAMHSA)
Center for Substance Abuse Prevention (CSAP)
www.samhsa.gov/csap/csap.html

In addition to CMHS, SAMHSA includes two substance abuse components, the Center for Substance Abuse Treatment (CSAT) and the Center for Substance Abuse Prevention (CSAP). Over the last 15 years, CSAP (and its predecessor agency) has played a leadership role in substance abuse prevention theory, programming, and research. The more general field of mental health promotion and mental illness prevention encompasses a larger, more diverse collection of illnesses than those focused upon by CSAP. However, since substance use disorders are a significant category of mental and behavioral disorders, many of the principles of substance abuse prevention developed by CSAP are applicable to the promotion of mental health and the prevention of other mental and behavioral disorders. Among these principles are

- In the individual domain, build social and personal skills.
- In the family domain, target the entire family.
- In the peer domain, design intensive programs that include a variety of approaches and a substantial time commitment.
- In the school domain, avoid relying solely on knowledge-oriented interventions.
- In the community domain, develop integrated strategies rather than one-time community-based events (CSAP, 2001).

CLEARLY THE TIME IS RIGHT

As Dr. Jenner learned 200 years ago, discovering a method of preventing a dreaded illness – be it physical or mental – is only half the battle. Getting that method perfected, widely accepted, and implemented with fidelity brings human nature with all its foibles into the fray. The Royal

Medical Society rejected Jenner's article on the success of his vaccine, so in 1798, he published *An Inquiry into the Causes and Effects of the Variolae Vaccinae, a Disease Known by the Name of Cow Pox*, on his own. Even after publishing the book, he had trouble recruiting volunteers. The vaccine was popularized in London by two other doctors, one of whom tried to steal credit from Jenner, and the other of whom contaminated the vaccine with the smallpox virus ("Jenner," *2000).*

Fidelity proved to be a major problem for smallpox vaccinations, as doctors did not always follow the procedures exactly as Jenner instructed them to do. Other problems arose because pure cowpox vaccine was difficult to obtain, preserve, and transmit. Moreover, no one understood the biological factors that produced immunity, and many mistakes were made in the process of gathering information and standardizing effective procedures. Over the years, Jenner received many honors, but he also aroused much opposition. He apparently devoted so much time to promoting his vaccine that his private practice and personal affairs fell into disarray ("Jenner," 2000).

In the promotion of mental health and the prevention of mental and behavioral disorders, scholars now readily acknowledge the need for more well-controlled research. However, they also generally conclude that *adequate data are available for the field to proceed, provided that the research meets rigid standards of design, control, and evaluation.* An NIMH committee concluded that, as a result of earlier research,

> Scientifically rigorous studies are now yielding promising evidence of the efficacy of preventive interventions.... The field is ready to build on prior prevention research accomplishments and integrate these with advances in the biomedical, behavioral, and cognitive sciences (NIMH, 1998, pp. 14-15).

One researcher sums up her position by saying

> While the documented state of the art is in an early stage of development, intervention research has produced solid evidence that selected preventive programs and services are associated with positive outcomes and that the cost of providing them may be offset by savings elsewhere in the health care system (Dorfman, 1999, p. 3).

The story of the eradication of smallpox, though different in many obvious ways from the prevention of mental and behavioral disorders, reminds one of a proverb that all people interested in promotion and prevention must keep in mind: "A journey of a thousand miles begins with the first step." The journey to prevent smallpox was a long one, but what if the Chinese had not spread the word about inoculation? What if Jenner had not noticed the connection between falling ill with cowpox and *not* falling ill with smallpox?

The first steps have been taken on the journey to promote mental health and prevent mental and behavioral disorders, but many more steps remain. We must remember that Jenner persisted

despite personal attacks and human chicanery, and doctors eventually figured out why fidelity is so important. Surely the time is right to persist on this long journey, and for community advocates, consumers, researchers, program developers, clinicians, academicians, and policymakers to launch a major initiative to promote mental health and to make the eventual prevention of mental and behavioral disorders a reality.

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