Improving the Health of Mental Health Consumers

Effective Policies and Practices

Anita Everett, Johns Hopkins
Jay Mahler, Alameda County Behavioral Healthcare…
Janet Biblin Alameda County Healthcare
Rohan Ganguli, University of Pittsburgh
Barbara Mauer, MCPP Healthcare Consulting Inc.

Executive Summary:

Consumers of mental health services die an average of 25 years earlier than the general public. In general the causes of death based on state data mirror those of the general public although there are no national databases available that directly track this statistic. Many of the health conditions that are associated with death in the US and premature death in mental health consumers can be prevented and managed with positive health habits.

The six most common causes of death are: Heart Disease, Cancer, Stroke, Lung conditions, Accidents and Diabetes. Most of these medical conditions occur in greater proportion in mental health consumers and may occur at an earlier age. The two exceptions are cancer which may not occur at an increased rate and accidents which occur at a higher rate in mental health consumers. Much has been done to understand the risk factors that lead to these causes of death. Through this paper we assert that many of the known risk factors for early death can be addressed with positive health habits. We describe what is known about effective interventions for common risk factors and where information is available, what kinds of special interventions have been found to be effective in mental health consumers. This is a rapidly evolving area or study and much work currently underway has not published.

The many barriers to ideal healthcare are discussed in terms of three groups of barriers. Healthcare systems structure and financing create barriers for consumers. Healthcare professionals may have bias or even fear of working with mental health consumers which can adversely impact ideal healthcare. Finally the area of health literacy of mental health consumers is considered, particularly as Americans increasingly obtain health information from internet resources, many consumers do not have ready access to reliable sources of health information.

In terms of effective practice, there are many practices that can occur to improve the health habits and reduce the risk factors for early death in mental health consumers. We discuss what is known about the risk factors that are most associated with early death and, if they were managed would be most likely to make the biggest difference in the health of consumers. These are generally in rank order and include: smoking, hypertension, cholesterol, diet and weight, exercise, diabetes and accidents.

In terms of effective policy, many of these effective practices that reduce actual risk factors for the major causes of death can be effectively addressed at some level within communities of consumers, family and providers. Increasing health awareness within these communities is a critical element. An effective relationship with available primary care providers is also essential in supporting ideal health. This can be facilitated by attention to communication between systems of care and can be further facilitated for some consumers by importing primary care services into the clinic or Community Behavioral Health Organization (CBHO) thus creating a medical home at the CBHO.

This paper closes with a set of recommendations that are based on three levels of interventions: those that can be readily implemented with little additional resource and usually on a personal or local level, those that require local leadership and some resources, and those that require national leadership to transform the current poor health status of many consumers in the US.

Effective Policies and Practices

I. Introduction

Persons with mental illness die an average of 25 years earlier than the general population[1]. This alarming realization has received much recent attention in the mental health community. It has long been known that individuals with mental disabilities die earlier than members of the general population. This fresh look at the premature mortality of this group in the US punctuates this problem and suggests that if anything the gap between the health of the general population and the part of our population with mental disabilities is widening. This paper provides a background of the current context of this alarming shortened lifespan as well as current information regarding effective practices and policy. This paper concludes with a set of recommendations for stakeholders that are targeted to increase the health of individuals with mental illnesses in the United States. Recommendations are organized into three levels: Those that can be virtually immediately implemented with little additional resources, those that require substantial organizational level changes and leadership efforts to support and those that require substantial national leadership and promotion in order to implement. Specifically this paper aims to create a clear pathway in practice and policy that will increase the lifespan of individuals with mental disabilities by ten years over the next ten years. Ten years within ten years is the goal.

Several leading national organizations involved in driving mental health policy have publicly prioritized the problem of health care in those with mental disability. The Technical Report from the National Association of Mental Health Program Directors (NASMHPD), *Morbidity and Mortality in People with Serious Mental Illness,* identified issues related to access to health care as among the contributing factors to chronic medical illness and early death of people with serious mental illness. [1]

The NASMHPD behavioral health/primary care integration principle, "Physical healthcare is a core component of basic services to persons with serious mental illness. Ensuring access to preventive healthcare and ongoing integration and management of medical care is a primary responsibility and mission of mental health authorities" points the way to a new focus on assuring that the people served by the public mental health system have access to appropriate healthcare and that all care is coordinated. To achieve wellness, we must address the structure and funding of the health care delivery system, lack of capacity for primary care, stigma and discrimination, poor quality/provision of service, and lack of adequate health care coverage.

The Bazelon Center report, *Get It Together: How to Integrate Physical and Mental Health Care for People with Serious Mental Disorders,* focuses primarily on integration and the problems stemming from a fragmented health care system. The report states "In a recovery-oriented mental health system, physical health care is as central to an individual's service plan as housing, job training or education." [2] The report describes barriers to integrated care and highlights four service delivery models for integrating care.

In early 2007, the National Council for Community Behavioral Healthcare (NCCBH) conducted a survey of its member community behavioral health centers (CBHOs) regarding general medical priorities, capacity and current practices. "Among 181 respondents, 91% reported placing a high or medium priority on increasing quality of general medical healthcare for their clients. More than two-thirds of CBHOs reported having the capacity to screen for common medical problems (hypertension, obesity, dyslipidemia and diabetes). However only one in two had the capacity to provide any treatment for those conditions, and one in three had the capacity to provide the services onsite. The most common barriers to providing general medical services were problems in reimbursement (72.1%), workforce limitations (68.4%), physical plant constraints (60.8%) and lack of community referral options (55.8%)."[3]

Mental Health America (MHA) has developed the following policy statement: "Mental Health America (MHA) is committed to ensuring that there is a significant reduction in the alarmingly high rates of overall health problems (morbidity) and premature death (mortality) among individuals with serious mental illnesses. For mental health consumers to have a fair chance to live healthy and long lives, MHA believes that medical practice, health policy and public dialogue must reflect the fact that overall health and mental health are intertwined." This statement is associated with a call to action to promote quality healthcare for individuals with mental illness.

The National Alliance on Mental Illness (NAMI) has recently issued a well developed policy document that includes advocacy for consumer self empowerment in achieving improved health and wellbeing. The NAMI policy states that: "Wellness is a part of the recovery process. Consumers must be empowered to achieve wellness through consumer education and peer support." Additionally the NAMI document advocates for increased access to quality primary care as well as dental care for individuals with mental illness.[4]

II. Defining the Problem:

Much of the premature mortality in mental health consumers is due to the same health problems that our general population faces. In order to understand the nature of premature death it is important to understand the causes of mortality in the general population. We need to understand what is known about successful health interventions and whether or not there is value in creating specialized health interventions or facilitating access to mainstream traditional health resources. Additionally we need to have an understanding as to the barriers to ideal health that individuals with mental disabilities face.

A. Mortality in the general population.

In 2004 the average life expectancy of US at birth reached a record high at 77.8 years.[5] The six most common causes of death in the US general population are:

- Diseases of heart (heart disease);

- Malignant neoplasms (cancer);
- Cerebrovascular diseases (stroke);
- Chronic lower respiratory diseases;
- Accidents (unintentional injuries);
- Diabetes mellitus.

There is no readily available national data on causes of death in persons with mental disabilities. Many of the state studies have found a similar order with a slightly greater chance of death by accident and slightly lower chance of death by cancer.

The Framingham study was designed in 1948 to follow the development of cardiovascular conditions of a large group of individuals over a life time. This study started out with over 5,000 participants and is now in its third generation of recruits. From this study we have learned a great deal about the life course of many major illnesses that relate to the development of the number one cause of death in the US, cardiovascular conditions. We have learned about the risk factors contributing to this condition such as high blood pressure, high blood cholesterol, smoking, obesity, diabetes, and physical inactivity. Other Framingham projects include: stroke and dementia, osteoporosis and arthritis, nutrition, diabetes, eye diseases, hearing disorders, lung diseases, and genetic patterns of common diseases.[6] This study has provided invaluable information about the risk factors that contribute to these illness processes that are the leading causes of death in the US population. Information from the Framingham study has been substantiated by the more recently developed large national survey, the National Health and Nutrition Examination Survey (NHANES). From these large US population based samples and surveys, we know a great deal about general risk factors that contribute to death in the US. From this study we have learned that certain disease states are associated with a relative risk of increased death.

B. Prevalence of high risk medical illness in persons with mental illness.

Prevalence is a term used to describe the rate or number of persons who have a certain condition. Numerous studies have reported an increase in the prevalence of general medical conditions in persons with mental disabilities. What is known about the prevalence in persons with mental illness of each of the six major causes of mortality will be discussed. In general this information is patched together because there is currently no central national database or source on the health statistics of persons with mental illness. Additionally, these patched together resources often look at the prevalence of illness and health conditions depending on what types of data are available. (Insurance claims health surveys, etc.)

The prevalence of **cardiovascular illness** and factors that increase the risk of having cardiovascular illness is higher in persons with mental illness that in the general population. Several studies confirm this. [7 8 9 11 16 22 25 26]

A review of causes of death in UK in a community sample of persons with serious mental illness found that the most common causes of death were CHD and stroke. This

was not wholly explained by antipsychotic medication, smoking, or socioeconomic status.[7]

A comprehensive review of the presence of cardiovascular risk factors in Norway found no significant difference in the rates of cardiovascular risk factors for schizophrenia compared with bipolar disorder but found twice the rate of these risk factors than in the general non-mentally ill population [8] In a study of 234 mental health clinic outpatients in Australia, Davidson found that, the mentally ill had a higher prevalence of smoking, overweight and obesity, lack of moderate exercise, harmful levels of alcohol consumption and salt intake than matched community samples. No differences were found in the prevalence of hypertension. Men at the clinic were less likely to have had cholesterol screening than the women.[9]

Several federal surveys including the SAMHSA administered National Survey on Drug Use and Health (NSDUH) and the National Health Interview Survey, conducted by the Centers for Disease Control (CDC), National Center for Health Statistics (NCHS) use the K6 instrument an indicator for serious psychological disturbance in lieu of actual Psychiatric symptoms and diagnoses. The K6 looks at impairments in a person's life related to the presence of significant mental disturbance and gives reliable estimates of serious psychological distress or SPD.[10] This survey found higher rates of many medical illnesses in persons with SPD. Specifically, those with SPD had higher rates of obesity and were more likely to smoke. They had a higher prevalence heart disease, diabetes, arthritis, and stroke than persons without SPD. This survey concluded that "persons with SPD demonstrate disadvantage in both socioeconomic status and health outcomes".

Dickerson et al looked at the presence of multiple health conditions in persons with schizophrenia and affective disorders in Baltimore.[11] They found a markedly lower health status in persons with mental illness compared with a general population. Persons with mental illness had an increased rate of smoking, less exercise at recommended rates, more presence of other major medical conditions, and more obesity (defined as BMI over 30). This method for examining health status also demonstrated a poor health status in the non-mentally ill controls, but those with mental illness had a lower health status in every criterion.

An additional important contribution that Dickerson et al made was the finding that a higher level of education (defined as either completing high school or not completing high school) in all groups significantly correlated with better health status. Similarly, in a review of the impact of health literacy on the mortality of elderly demonstrated that reading fluency had a significant impact on mortality.[12] This provides information on the value of health literacy in promoting health behavior for the general public as well as those with mental illness.

A study in Canada regarding access to ideal treatment for cardiac condition demonstrates inequitable access to ideal treatment. This research found that in some cases, psychiatric patients were significantly less likely to undergo specialized or revascularization procedures, including cardiac catheterization and angioplasty, especially those who had ever been psychiatric inpatients.[13]

Cancer is the second leading cause of death in the US and may be the only leading cause of death that does not have an increased prevalence in persons with serious mental illness compared with the general population. Using a large pool of insurance claims,

Carney found that individuals with mental disorders were no more or less likely to develop a malignancy than those without. Within the types of cancer that did develop there was a slightly greater chance of respiratory system cancers in persons with mental illness which was postulated to have been related to the increased rate of smoking in this population.[14] Osborn et al similarly found that the rates of cancer related deaths, other than those directly attributable to smoking were not increased.[7] Levav in the UK has found a slightly decreased rate of cancer in persons with schizophrenia he has suggested that possible genetic links to schizophrenia may also be associated with a genetic link to protection from cancer.[15] Carney and Jones conducted a review of health claims for over 3500 individuals with bipolar disorder and described a significantly greater presence of multiple medical conditions. Compared with persons that had no claims for a mental illness, persons with bipolar disorder were more likely to have multiple comorbid and chronic medical conditions. An increased prevalence was found for conditions spanning all organ systems. Additionally, hyperlipidemia, lymphoma, and metastatic cancer were the only conditions less likely to occur in persons with bipolar disorder than the general population.[16]

Cerebrovascular accidents, which are also known as strokes are the third leading cause of death in the US. Over 14 % of those with a stroke have a second stroke within the first year. Stroke is one of the leading causes of disability in the US. Risk factors for stroke include hypertension, diabetes and high blood cholesterol and heavy drinking (more than 5 drinks a day). Other risk factors include smoking, indirect smoking exposure, moderate drinking, weight, inactivity and age.[17] In a study of over 741 practice settings in the UK covering about 8 million lives, the death rates of 46,136 individuals with schizophrenia, schizoaffectve disorder, bipolar disorder and delusional disorder were compared those with the experience of 300,426 randomly selected controls. They found that individuals with a mental illness diagnosis were 2 to 3 time more likely to die from cardiovascular and stoke conditions, specifically they were about twice as likely to die from stroke at an age less that 50years compared with non-mentally disabled individuals. [7] This study also revealed that individuals taking antipsychotic medications, either first or second generation antipsychotic medications, were more likely than those not taking these medications to have a stroke.

Respiratory conditions are listed as the fourth most common cause of death. Smoking is a common cause of chronic respiratory inflammation and conditions such as emphysema, bronchitis and recurrent pneumonia. It is widely known that individuals with long term mental illnesses, particularly schizophrenia, smoke at a higher rate than the general population. Not unexpectedly, it follows that individuals with mental illness have respiratory diseases at a higher rate than the general population. Several large studies have confirmed this. [14 8 1] Looking at health claims information of persons with schizophrenia, Levav found increased odds of having chronic obstructive pulmonary disease or emphysema to be about twice as high as in controls. [16]

Persons with mental illness have an increased rate of early death and complications related to **accidents**. Accidents are the fifth leading cause of death in the US and may be relatively higher in persons with mental disabilities. The NASMHPD paper[1] concludes

that about 30% of premature deaths are related to accidents and suicide. A review of causes of deaths of individuals who had been involved with the Massachusetts Department of Mental Health, demonstrated an increased early death rate by as much as 14.1 years for men and 5.7 for women compared to age matched controls. This study found that individuals with mental illness have an increased rate of ongoing cardiovascular and other illnesses that contribute to early mortality and that a disproportionate amount of these deaths were caused by accidents which included toxicity from medications.[7] Accidents can be due to many potential causes that in some cases are increased in individuals with mental disabilities. Accidents that might increase a chance for early death might include: physical trauma from being the victim of crime of violence, suicide attempts, homelessness, household injury.

Diabetes is listed as the sixth leading cause of death in the US. It has been well documented that individuals with schizophrenia have diabetes at a higher rate than the general population. Dixon et al demonstrated that the rate of diagnosed diabetes existed before the onset of the use of many second generation antipsychotic medications.[18] Claims information form research done by Carney in from 1996-2001 on individuals with schizophrenia found a rate of about twice the prevalence of diabetes with complications than in a comparison non-schizophrenia group.[16] While some of the newer antipsychotic medications were available at this time, they alone would not be solely responsible for this two fold increase in rate of complicated diabetes as late as 2001.

A discussion of the prevalence of diabetes and mental illness would not be complete without some consideration of the contribution that several of the new antipsychotic medications play in increasing blood glucose and risk of diabetes. Several contemporary antipsychotic medications are known to contribute to the risk of diabetes and weight gain. Information on metabolic and the onset of diabetes associated with the use of antipsychotic medications specifically from the Clinical Antipsychotic Trials of Intervention Effectiveness study is reviewed by Nasrallah.[19] Recent review of these risks of diabetes and other factors such as weight gain and hypercholesterol has been conducted by Newcomer.[20] [21] In general, the medications clozapine and olanzapine are clearly associated with weight gain as well as a risk of cholesterol and blood glucose increase. This leads to diabetes. It has been suggested that for these two medications, the increase in blood sugar and cholesterol may occur even if a person does not gain weight. These risks of weight gain with clozapine and olanzapine have been described as being similar to the lower potency first generation antipsychotics such as chlorpromazine and thioridazine. The newest medications available for use in the US, ziprasidone and aripiprazole have not consistently been found to increase weight, blood glucose or cholesterol. In small studies, risperidone and quetiapine which have been in use for several years, have been found to be associated with a small amount or no weight gain and are not clearly associated with increased cholesterol or blood sugar. The risk of weight gain with risperidone seems to be similar to that of potent first generation antipsychotic medications such as haloperidol and fluphenazine.

This section has been framed around information that connects the health status of persons with mental illness to the most common causes of death in the general population. A number of other studies have found general poor health in individuals with

mental disabilities. In 1999, Dixon et al reported from a review of 741 persons with schizophrenia in the PORT (Patient Outcomes Research Team) Study that: "a greater number of current medical problems independently contributed to worse perceived physical health status, more severe psychosis and depression, and greater likelihood of a history of a suicide attempt. This study underscores the need to attend to somatic health care for persons with schizophrenia as well as the linkage of physical and mental health status."[22]

C. Specific focus on Early Mortality in Persons with Mental Illness

Colton and Manderscheid reviewed death information on public mental health consumers in 8 states. They found that public mental health clients had a higher relative risk of death than the general population and reaffirmed that the most common causes of death in this population were natural causes similar to commonest causes of death nationwide.[23] This is the landmark work that pulled together informaoitn that supports the statement that individuals with mental disabilities die as much as 25 years earlier than others in the US. Segal and Kotler in California found that compared with the general population, residents of sheltered care facilities were 2.85 times more likely to die than other age matched Californians. Early mortality was due to heart disease, cerebrovascular diseases, and all other natural and unnatural causes except malignant neoplasms.[24] A review of deaths of persons previously admitted to state psychiatric hospitals in Ohio demonstrated that the years of potential life lost or YPLL for persons with mental illness averaged at 32 years. Cardiovascular causes were the most common cause of death and obesity (24 percent) and hypertension (22 percent) were the most prevalent medical comorbidities.[25]

In 1996, Felker conducted a Medline review and found 66 published studies that reported that persons with serious mental illness had an increase in the number and severity of medical illnesses and that these individuals had early death related to both medical problems and accidents compared with the general population.[26]

Figures on the death of persons with mental disabilities are not readily available in national databases as they are with other designated health disparate groups such as Hispanics, African Americans or Asian and Pacific Islanders. These health disparity groups have varying disparities in death rates, but <u>none</u> have a life expectancy that is greater by even 10 years more than the general population. The widest gap in traditional health disparity groups is seen in black males with a life expectancy of 69.5 years in 2004. (This is 8.3 years shorter than the national average life expectancy.) For most minority groups this gap in life expectancy is slowly closing. These readily available statistics enable trends within these special populations to be identified and prioritized in policy, health promotion and resource allocation for these groups. This kind of information about persons with serious mental illness is not readily available on a national scale.

Clearly the 25 year shortened lifespan for persons with mental illness as reported in the NASMHPD technical report is off the scale and should activate alarms throughout health communities that this is of vital concern.

D. Barriers to Effective Health Care.

Individuals with mental disabilities die prematurely and the causes of death are similar to the cause of death for all other persons. Many of the conditions related to these causes of death can be treated and/or prevented through access to effective health care information and health care providers. There are several possible ways to organize a discussion of barriers. This work organizes them into three categories: the health care delivery system including structure, professionals, and financing; the health literacy of mental health consumers; and other indirect factors such as socioeconomic stressors that impact ideal health care for persons with mental illness.

1. Barriers in the Structure and Funding of Health Care Delivery

"Access to physical health care for people with serious mental illness is hindered by both the structure and the under-funding of the publicly supported physical health and behavioral health systems of care. Issues include:

- Lack of reimbursement for coordinated care across service systems
- Lack of reimbursement for health education, support and family services
- Inadequate and under-skilled case management services to support self management and linkage to services
- Poor coordination between health care and behavioral health care systems
- Lack of integrated treatment for co-occurring mental health and substance use disorders which lead to inadequate diagnosis and treatment of substance use disorders." [1]

Negotiating the US health care system in its current state can be a challenge under the best of circumstances. Thirty years ago, as was idealized in the popular television series "Marcus Welby", individuals who required an evaluation were often admitted to a hospital for a full work up or treatment of a problem. This included daily interaction with a caring physician as well as access to a host of highly qualified hospital and nursing staff who had a role in healthcare promotion and education. It was not hard to imagine your physician and these related staff as being your medical home. In contrast, today the physician's office often conceptually serves as a hub from which there are referrals or outsourcing to a variety of labs, radiography settings, specialists and providers such as physical therapists, nutritionists, etc. Inside this conceptual hub, or primary care setting additional pressures have restricted the time available for the physician to oversee all aspects of an individual's health as well as take the time to consistently educate all patients on all aspects of a current presenting problem as well as potential health risk factors. The increasing role for consumerism in obtaining ideal health and is discussed below in section c.

An additional factor that may increasingly limit access is a projected potential shortage of primary care physicians, particularly in rural and underserved areas. [27]

For individuals with mental disabilities there can be additional difficulties in negotiating these complex systems. This is particularly true if the consumer experiences competing uncoordinated demands in keeping up with the management of mental and

physical wellbeing. It has been suggested that the creation of a "medical home" within a community mental health center (CBHO) or mental health treatment program for individuals that have frequent visits to these centers might facilitate greater access to services that support ideal health as well as mental health. In other words for many individuals, importing a **medical home** into the place they choose for mental health care, may make access to all healthcare more efficient and therefore more effective.

Whereas at one time, conceptually at least, the most seriously mentally ill were treated in all inclusive asylums which provided health care onsite, our current treatment paradigm is bifurcated with primary care sites being distinct from specialty mental health care.

In the last decade we have learned some detail about the efficacy of programs designed to increase the diagnosis and treatment of some behavioral health conditions in primary care settings. Through the MacArthur Depression and Primary Care Initiative,[28] we have learned that the identification and treatment of depression in primary care can be greatly enhanced through specialized training of office staff as well as the importing of direct onsite access to mental health treatment with defined follow up. The evidence based tool kit culminating from this project recommends a system approach in enhancing the diagnosis of depression in primary care. Through the work of the PRISM E study we have learned that elderly individuals seen in a primary care setting are more likely to receive more appropriate diagnosis and treatment of a substance abuse or a mental health condition when specialty mental health care are imported into the primary care clinic. Imported providers were more effective than facilitated referral out to mental health specialists.[29]

This line of services research has resulted in more primary care practice settings being better equipped to address depression and behavioral health problems onsite. Additionally the US, HHS, Health Resources and Services Administration (HRSA) which funds Community Health Centers (CHC), has changed requirements such that to be considered a full spectrum clinic site, CHCs are working to provide onsite mental health services. The CHC system in the US now serves over 14 million individuals in nearly 1200 clinical sites and targets uninsured individuals in underserved areas[30]. Although significant progress has been made in the area of increasing access to the treatment of depression in primary care, significant barriers remain. In many settings financing is described as the greatest barrier.

Work on integrating mental health services into primary care settings has demonstrated that there are a number of barriers in how Medicaid and Medicare reimbursement is structured (e.g., disallowance of more than one type on encounter on the same day). For example, the 2005 National Correct Coding Initiative Policy Manual for Medicare Services, Chapter XI, Evaluation and Management Services, C; Psychiatric Services, contains the following language: When medical services, other than psychiatric services, are provided in addition to psychiatric services, separate evaluation and management codes cannot be reported. The psychiatric service includes the evaluation and management services provided according to CMS policy.

Medicaid and Medicare must become partners in improving access to care, data analysis, and designing and implementing strategies that will be effective with the population served by the public mental health system. The NASMHPD Report recommends the following:

- “Assure financing methods for service improvements. Include reimbursement for coordination activities, case management, transportation and other supports to ensure access to physical health care services.
- As a health care purchaser, Medicaid should:
  - Provide coverage for health education and prevention services (primary prevention) that will reduce or slow the impact of disease for people with serious mental illness.
  - Establish rates adequate to assure access to primary care by persons with serious mental illness.
  - Cover smoking cessation and weight reduction treatments.
  - Use community case management to improve engagement with and access to preventive and primary care.” [1]

There is some but far less information and research on models of care that import primary care into existing mental health care centers. At least one study has determined that [31].

Lack of Adequate Health Care Coverage

According to the SAMHSA 2005 National Survey on Drug Use and Health, one in five people with a serious mental health condition are uninsured. Lack of health care coverage represents an enormous barrier to addressing the health care needs of the uninsured population with serious mental illness. Within the CHMC population, the uninsured may be as many as one in four, depending on the state system; in some states, people with serious mental illness who are uninsured may have difficulty being served in the mental health system, much less the health care system.

Individuals may be uninsured or underinsured. Many individuals who seek services in community mental health centers have healthcare insurance through Medicaid. Eligibility for Medicaid is determined by each state and is income based. Depending on the state Medicaid system, from 25% to 90% of persons served by CBHOs will be covered by Medicaid some of the year. An unpublished analysis done by MCPP Healthcare Consulting shows that subsets of people frequently drop on and off of Medicaid coverage within any given year.

CBHO infrastructure may not be familiar with Medicare as a payer source. Even though many individuals who are disabled are Medicare beneficiaries, Medicare has minimal coverage for outpatient mental health services so that it may not have been billed for specialty mental health services. (Most CBHO behavioral rehabilitative services are covered by Medicaid and not Medicare.) Medicare does however become an important payer when considering the delivery of physical health care services. The morbidity and mortality that has been identified in this group has enormous impact on healthcare costs. Moving toward more prevention and early intervention services could have significant long range impact.

In some states, contracts with managed care companies to manage general health care are used to provide enhanced and preventive oriented benefits for individuals and reduce emergency room care. In some cases, such as Washington State, the population

with serious mental illness, covered under the disability aid codes of Medicaid, is not included in Medicaid managed care contracts.

Another contemporary facet in considering barriers to services for Medicaid and Medicare enrollees is that due to low reimbursement rates, in certain areas of the country, primary care physicians are closing their practices to these patients. Additionally there is a trend in some states since the enactment of the 2006 Deficit Reduction Act to provide greater benefits and incentives to Medicaid recipients who agree to be compliant with preventive medical recommendations. These are new program designs, and it is not at all clear at this time that any restrictions of access based on noncompliance will help individuals who have difficulties with health literacy to become more proactive in the management of their own healthcare. In other words, many individuals opine that this style of program will only further the gap between individuals who are health literate, compliant and do well and those that struggle with basic access to and compliance with ideal healthcare recommendations.[32]

2. Barriers related to Health Care Professionals

"Research suggests that people with serious mental illness frequently face discrimination in accessing and receiving appropriate health care. This may be due to: unease of primary care providers with the needs of the serious mental illness population and decreased expectations of clients as partners in care"[1] Often physical health care providers erroneously believe that persons with mental illness are not capable of participating in making decisions regarding their own health care and do not involve them in weighing risks and benefits, considering alternative treatment strategies etc. They may be dismissive of that person's motivation to be healthy which may result in lesser care such as not recommending smoking cessation etc. Primary care providers who have not had much contact with persons with serious mental health issues often think that they are dangerous and are afraid of them

There is some research that indicates that there is a difference (which could be labeled discrimination) in the healthcare that people with mental illness receive. The VA system offers better health care access and more support for recommended monitoring and disease management than is available to many people with serious mental illness. Despite this, Desai et al found that in the VA system, the odds were greater that a diabetic with a record of a psychotic or substance use disorder received standard of care diabetic monitoring (e.g., HbA1c testing, LDL testing, eye examination) at lower rates than those who did not have a record of a behavioral health diagnosis. This may be "the best case scenario" currently experienced by diabetic individuals with serious mental illness—those without health care coverage and/or a medical home would likely receive less monitoring and disease management.[33] A study of access to cardiac revascularization procedures in a large national sample found that individuals with any history of a mental illness diagnosis were significantly less likely to have received procedures such as angioplasty and cardiac surgery after having an MI or heart attack.[34] Additional research in a study of elderly Medicare recipients recovering after myocardial infarction found that individuals with mental illness had significantly higher mortality one year after the signal hospitalization than those without a mental illness.[35] A fourth related study of access to

preventive care in the VA found that individuals with mental illness were only slightly less likely than other veterans to receive preventive care.[36]

Poor Quality / Poor Provision of Service

Druss and colleagues provide us with examples from his research regarding Overuse, Underuse, and Misuse of services related to the population with serious mental illness:

Overuse of intensive resources:

- Persons with serious mental illness have high use of somatic emergency services

Underuse of less intensive resources:

- Fewer routine preventive services [36]
- Lower rates of cardiovascular procedures[34 35]
- Worse diabetes care[68]

Survival Following Myocardial Infarction

- 88,241 Medicare patients, 65 years of age and older, hospitalized for MI
- Mortality increased by
  - 19%: any mental disorder
  - 34%: schizophrenia
- Increased mortality explained by measures of quality of care

Druss BG et al. *Arch Gen Psychiatry.* 2001;58:565-572.

Misuse:

- During medical hospitalization, persons with Schizophrenia are about twice as likely to have infections due to medical care postoperative deep venous thrombosis and postoperative sepsis.[37]

3. Barriers related to the Health Literacy of Mental Health Consumers

Increasingly the health literacy of individual patients has become a vital component in assuring ideal health. Americans can no longer expect that all health information comes from a single primary care resource, rather health information is provided from a variety of resources including communities, schools, public health campaigns, social networks and from a variety of commercial advertisements. Thus being able to access as well as effectively sort out the relative validity of health information has become complex.

Health literacy is defined by the US, Health and Human Services (HHS) in *Healthy People 2010* as: "the degree to which individuals have the capacity to obtain process and understand basic health information and services for appropriate health decisions."[38] Others have extended this definition to include the ability to act on health information.

Increasingly individuals are receiving health information from a variety of resources on the internet which is relatively unmonitored and unregulated. The Pew Foundation, issued a report in 2003, that found that half of Americans receive health information from the internet. [39] By now, in 2007 this is likely to have significantly increased. Common health searches included questions about weight management, smoking cessation and information on prescription drugs. Additional information from this project reveals that low income households (defined in this study as households less

that $30,000.00 a year) are less likely to have internet access than other households. [40] Mental Health consumers particularly those in low income settings may have difficulty accessing internet based health information which can be a disadvantage in understanding and implementing health recommendations.

Consumers bring to any healthcare encounter their experience, knowledge and expectations. Anyone can experience barriers to an ideal health encounter, but some mental health consumers may have additional barriers. These might include intense anxiety, difficulty concentrating, and active features of a mental illness such as paranoia about the provider or certain procedures. An example of this would be a consumer with a family history of breast cancer who refuses routine mammogram screenings. This could be a temporary paranoid feature of a mental illness that is not consistent with the person's usual belief and/or it could be a concern about radiation that is completely unrelated to any state of a mental illness. Either way this is a barrier to accessing ideal health.

It is also important to remember that some mental health consumers have experienced the 'trauma of treatment' including coercive treatments, involuntary institutionalization, misinformation regarding known side effects of medication and other mistreatment by mental health professionals. They have lived historical reasons for mistrusting medical professionals. Special needs such as this may be hard for traditional primary care providers to sort out efficiently and may result in frustration in working with a person who might appear to be resistant to sound medical advice. Individual consumer issues are very important to understand in working to achieve ideal health care. One study of VA patients has established a pattern of differences in health care access between individuals with Schizophrenia and Bipolar disorder. Kilbourne et al determined that VA consumers with bipolar disorder reported greater problems with actual access to health care, while those diagnosed with schizophrenia were less satisfied with the process of care.[41]

Often mental health consumers dependent on SSI or SSDI live on very limited income which limits their range of food choices and living environments. There is much information regarding the impact that financial limitations have on health. Turrell recently demonstrated that food shoppers in low-income households were less likely to purchase foods that were high in fiber and low in fat, salt and sugar.[42] One interesting example of this is a study by Cauter and Spiegel that suggests that disrupted sleep may be a significant factor in overall poor health status[43]. Cauter suggests that often individuals living in low income and transient settings are unable to get good sleep which significantly impacts their overall health status. In general, persons living at or near poverty have a variety of difficulties with initial access to providers, access to procedures and tests and limitations in the capacity to consistently adhere to long term treatment and follow-up services.

Druss et al reviewed CBHO consumer accounts of access to general health care. This was a sample of primarily Medicaid recipients in South Carolina. This was a small study but it demonstrated several interesting points. Mental Health consumers reported lower quality of care and more difficulty accessing care. They reported that usually care was not coordinated between their primary care and mental health care professionals. This study did not find mental health consumers to be uninterested in primary care or to doubt the benefits of medical health care.[44]

III. Effective Practice: What Works

In the first sections of this paper the background for the scale and scope of the health problems in persons with mental illness was defined. Persons with mental disability in the US have high rates of common medical illnesses and have markedly early deaths associated with this. The impact of virtually all of these medical conditions can be reduced through changes in health habits. Health habits include: lifestyle changes such as nutrition and exercise, attention to recommended preventive monitoring, and adherence to recommended medical treatments that are designed to reduce or prevent longer term complications of an illness.

Keeping in mind the overarching goal of this project in achieving ten years of life added to the average lifespan of individuals with mental illness within ten years we will focus on the illnesses and processes most associated with death and then to think about how members of the mental health community might shape effective interventions to address these.

The health habits that contribute to the common causes of death overlap so that a change in one health habit may help to reduce the risk of several medical conditions that are associated with death. Smoking, for instance, contributes directly to the five most common causes of death. Each health habit or risk factor will be discussed in terms of what are current recommendations for effective interventions, what if anything is known about the efficacy of these interventions in persons with mental disability.

A. Smoking

The Robert Wood Johnson Foundation, Smoking Cessation Leadership Center site states that "Persons with mental illness smoke half of all cigarettes produced-and are only half as likely to quit as smokers without mental illness. Approximately 50% of those with serious mental illness are smokers, compared with 23% for society at large. Half of MH deaths are due to smoking related illnesses." [45] These are alarming facts.

Stopping smoking has immediate and long term effects. Quitting smoking has an immediate effect on improving cardiovascular risks and over time reduces the risk of respiratory cancer. It has been estimated that 35 year old males who quit smoking extend their lives by 6.9 to 8.5 years for men and 6.1 to 7.7 years for women. Quitting at any age extends life span. [46] In the quest to add ten years to the lifespan of individuals with mental illness, we propose that stopping smoking will get us more than five of the ten years.

Today there are a number of effective interventions that can be used to help persons quit smoking. The majority of individuals, who quit, maybe as many ay 80% of all quitters do so on their own without a specific program or medical assistance. Individuals who attempt to quit and are actually able to quit were more likely to have some college education and to value health than those who are not interested in quitting. Factors that predispose one to be able to quit include: Smoking less than one pack a day, perceiving oneself as being less likely to be smoking in a year, having fewer smoking friends, and being employed. Factors that were associated with less likelihood of

stopping smoking are higher number of cigarettes a day and marginal understanding and belief in the negative health risks of smoking.[47]

Research in smoking cessation in consumers has revealed information that is helpful in thinking about promoting smoking cessation. Rohde et al studied factors that are associated with likelihood of successful quitting in 941 individuals with major mental disorders. Individuals with antisocial personality traits and major depression were less likely to be able to quit. Persons with all other major psychiatric diagnoses were equally as likely to be able to quit smoking. Other traditional factors such as nicotine dependence predicted quit rates and this was independent of the mental disorder.[48] Smoking for some with mental illness can be a normalizing experience.[49] Gershon in Los Angeles found that individuals with substance use and schizophrenia/schizoaffective disorder were less likely to have stopped smoking after entry into an out patient smoking cessation program. They concluded that more specialized programs might be useful for certain types of behavioral disorders such as substance use and schizophrenia/schizoaffective disorders. [50] Dalack et al concluded that smoking cessation and the use of a nicotine patch do not cause worsening of the hallucinations that can be associated with schizophrenia, although there might be a slight increase in dyskinesia.[51] [52]

There is much more information from hospital based smoking cessation experience than for outpatient community mental health center experience. There may be useful material from hospital based experience with smoking cessation that could be used to help community programs develop smoking cessation initiatives. At least one recent study has determined that there is no clear advantage in providing specialized smoking cessation groups for individuals with schizophrenia Vs using generally available community resources such as those provided by the American Lung Association.[53]

In summary, there are a variety of methods available that can be used to facilitate smoking cessation. There is no clear information that specialized programs are superior to other programs, but for certain persons, individually created supports might increase the likelihood of success with smoking cessation.

B. Hypertension:

Persons with hypertension have increased rates of heart attacks, heart failure; stroke, dementia related to small recurring cerebrovascular infarcts (strokes), diabetes, and kidney failure and can cause damage to many other body organs. Hypertension can easily be checked by trained lay people in many places. It is recommended that a primary care provider be involved with initial diagnosis and planning a treatment course. There are two basic elements to treatment, lifestyle changes and medications. Generally medications would need to be provided by a primary care physician or provider however the lifestyle changes can be made by an informed individual and supported by others such as family and mental healthcare providers.

To help make treatment choices, the U.S. National Heart, Lung, and Blood Institute has created categories (denoted as groups A, B, and C) according to a patient's risk factors for heart disease. Applying these categories to the severity of hypertension helps determine whether lifestyle changes alone or medications are needed. [54]

Treatment Recommendations By Stage And Risk Groups			
Risk Groups	**Blood Pressure Stages (Systolic/Diastolic)**		
	Prehypertension (120 - 139/80 - 89)	Mild (Stage 1) Blood Pressure (140 - 159/90 – 99)	Moderate-to-Severe (Stage 2) Blood Pressure (Systolic pressure over 160 or diastolic pressure over 100)
Risk Group A Have no risk factors for heart disease.	Lifestyle changes only. (Exercise and dietary program with regular monitoring.)	Year trial of lifestyle changes only. If blood pressure is not lower at 1 year, add drug treatments.	Lifestyle changes and medications.
Risk Group B Have at least one risk factor for heart disease* (excluding diabetes) but have no target organ damage (such as in the kidneys, eyes, or heart, or existing heart disease).	Lifestyle changes only.	6-month trial of lifestyle changes only. If blood pressure is not lower at 6 months, add drug treatments. Medications considered for patients with multiple risk factors.	Lifestyle changes and medications.
Risk Group C Have diabetes with or without target organ damage and existing heart disease (with or without risk factors for heart disease).	Lifestyle changes and medications.	Lifestyle changes and medications.	Lifestyle changes and medications.

* Risk factors for heart disease include the following: family history of heart disease, smoking, unhealthy cholesterol and lipid levels, diabetes, being over 60 years old.

Hypertension and Lifestyle Changes

Healthy lifestyle changes are an important first step for lowering blood pressure. Current guidelines recommend that people should:

- Exercise at least 30 minutes a day
- Maintain normal weight
- Reduce salt intake
- Increase potassium intake
- Limit alcohol consumption; however, moderate alcohol consumption (1 – 2 glasses a day) may actually lower the risk for heart attack among men with high blood pressure
- Consume a diet rich in fruits, vegetables, and low-fat dairy products while reducing total and saturated fat intake. (The DASH diet is one way of achieving such a dietary plan.)

It is known that individuals with hypertension especially untreated or under treated hypertension die at an earlier age[55]. Estimating exactly how much life is to be gained in approaching our goal of 10 years in ten years is difficult to estimate. This is because there is not readily available information and because there is considerable variability in the severity of the high blood pressure and variability in treatment compliance.

C. High Cholesterol

High levels of cholesterol or blood lipids lead to cardiovascular disease such as atherosclerosis or building up of plaque in the artery walls. Considered alone it is not clear that moderately high cholesterol directly causes death, rather it contributes to heart disease and is associated with other metabolic abnormalities that clearly increase the chances of having cardiovascular disease and death.

High cholesterol can be caused by many factors and can be caused by certain of the new antipsychotic medications and is part of what we call the metabolic syndrome. The metabolic syndrome is a combination of high cholesterol, high blood sugar, and being overweight. Hypertension is commonly included. This collection of features increases the chances of having heart disease, stroke and progressive diabetes. High cholesterol can also be caused by genetic risk factors and diet. High cholesterol is diagnosed by a blood test which may be checked by a physician or primary care provider from medical or psychiatric settings. In general, once diagnosed, the treatment has two aspects: lifestyle changes and medication.

The most important lifestyle changes that help to treat cholesterol levels include:

- Choose foods low in saturated fat.
- Exercise regularly.
- Lose weight if you are overweight.
- Get routine health checkups and cholesterol screenings.

These are changes almost everyone can make on their own or with help from a supportive family member or other supportive persons including a mental health professional. If lifestyle changes do not reduce the cholesterol enough, your doctor may recommend medication. There are several types of drugs available to help lower blood cholesterol levels. Some are better at lowering LDL cholesterol; some are good at

lowering triglycerides, while others help raise HDL cholesterol. The most commonly used drugs for treating high LDL cholesterol are called satins. Other drugs that may be used include bile acid sequestering resins, cholesterol absorption inhibitors, fibrates, and nicotinic acid (niacin)[56].Generally these are prescribed by a primary care physician or provider.

D. Diet and Nutrition:

There is ongoing debate regarding whether or not being overweight or obese causes early death. [57] [58] Leading research indicates that being overweight but not obese may not alone increase death. Overweight is generally defined as being a BMI that is between 25 and 30. Obesity, or a BMI greater than 30, may be a significant cause of premature death, particularly in younger and middle aged adults. [59]

What is very clear about being overweight and obese is that it is associated with many factors that contribute to lower overall health and early death. Individuals who are obese have a much more high risk of problems with many medical conditions. They have more complications from general surgery, have more falls, and less active lifestyles.

Sustaining a healthy weight and nutrition is difficult for most Americans. There is no single diet or intervention that works uniformly well. Ganguli has recently published a summary of the relative effects of weight loss interventions in persons with schizophrenia.[60] This review determines that individuals with mental illness can successfully lose weight and maintain weight loss, and that there is no single most effective best practice. Additionally this work included the results of a short term study that found that individuals with schizophrenia and mental illness can effectively avoid gaining weight associated as a side effect of certain medications when nutrition, diet and exercise are addressed early. This is confirmed by a small study by Jean Baptist et al that used an established weight loss program, modified for this specific population. This program was supplemented with practical community education regarding grocery shopping and preparing healthy food. They found that cognitive impairment had no bearing on the outcome and concluded that this type of intervention can be very successful in a community sample of persons with mental illness. [61]

There are several approaches that can be taken to increase the quality of the diet and nutrition for individuals with serious mental illness. Certain individuals would require consultation with a registered dietitian. Others would need consultation with a primary care physician to define any special needs. However for many, simple community based intervention that could be supported by case management or peer specialists can be implemented. This might include grocery store choices, healthy food preparation, and substitution of healthy for less than healthy foods, portions, elimination of full calorie drinks and other simple behavioral guidelines.

E. Exercise and Fitness

It has been demonstrated that fitness has many health benefits. Most recently a focus on metabolic syndrome which dramatically increases the risk of premature death due to cardiovascular disease can be reduced if not prevented with cardiovascular

fitness.[62] It has been demonstrated that sedentary individuals who are a normal weight, overweight and obese have a significantly greater chance of death from cardiovascular causes.[63] Several studies over time have demonstrated an increase in a sense of wellbeing and overall mental health with the onset of an exercise program. [64] There is much work that supports the idea that there is a mental health benefit from exercise and fitness. A study in the VA found that in a system of care that emphasizes preventive healthcare and counseling, individuals with mental illness received the same level of exercise and nutrition counseling that individuals without mental illness received.[65]

F. Monitoring

Monitoring includes a wide variety of health activities that are designed to identify risk for or an actual illness as early as possible. This includes routine cancer screening such as pap smears and mammograms for women, periodic lab testing and the administration of vaccines that prevent illness. Druss et al identified in a VA sample of over 100,000 individuals with chronic medical illnesses, individuals with serious mental illness were less likely than those veterans without mental illness to have received 4 of the 6 preventive health interventions. These preventive indices were: two measures of immunization, four measures of cancer screening, and two of tobacco screening and counseling.[66] They also found that individuals with co-occurring substance abuse had fewer of the recommended preventive interventions than individuals with mental illness. Although Cancer itself may not occur at an increased rate in mentally disabled individuals, it remains as a significant cause of death and all recommended screens should be followed. Most of these tests and actual screens require ordering and coordination through a primary care physician. Interested communities of mental health providers and peers could easily administer basic health screens and provide this information to consumers and primary care providers.

F. Diabetes

Studies of individuals in community settings indicate that there is a wide range but overall lower quality of diabetes care provided to individual with serious mental illness compared with non seriously mentally ill individuals in the same community. Goldberg et al in studies the diabetic care of just over 300 individuals in Baltimore. This study looked at diabetic laboratory monitoring tests as well as follow up on maintenance checkups such as eye exams and foot care. They found that individuals with serious mental illness received fewer recommended services and less education about diabetes. Thus this study demonstrated that individuals with SMI were less likely to receive the full complement of recommended services and care support. [67]

Krein et al conducted a national review of care delivered to 36,546 veterans with diabetes in a attempt to determine if care delivered to individuals with serious mental illness had poorer outcomes. [68] They determined that in the VA system, individuals with serious mental illness received diabetes care that was comparable with the care that other patients with diabetes received. This included frequency of monitoring of hemoglobin A1c, low-density lipoproteins (LDL), and cholesterol. Both groups had comparable A1c, LDL, and cholesterol values. Patients with diabetes and serious mental illness had more

outpatient visits, both primary care and specialty visits, and made more multiclinic visits, including visits to both primary care and mental health services on the same day. This is in contrast to an earlier study published in 2003 of the records of over 38,000 individuals with diabetes served by the VA. This study conducted by Desai et al determined that Veterans with mental disorders were slightly less likely to have had the same level of ideal diabetic care that those without mental illness had[33]. Furthermore they determined that most of the difference was seen in individuals with substance abuse and not as much in those with mental illness alone. This important work establishes that at least in a relatively closed and coordinated system (with a common electronic medical record) such as the VA, barriers to care can be effectively addressed.

While in general it is beyond the scope of practice for most CBHOs and other mental health providers to provide diabetes treatment, monitoring for diabetes can readily occur. There are many things a community mental health staff and/or peer counselors can to do facilitate good diabetic control and follow up with the recommended examinations, diet and health screens for diabetes. It is possible to receive reimbursement for diabetes education classes under some circumstances.

G. Accidents

Persons with mental disabilities are at in creased risk of death due to accidents and other types of trauma. This includes a variety of possible causes and many that relate to living at least a portion of time in high risk or non-ideal settings where they might be more likely to be the victim of a violent crime, motor vehicle accident, and suicide attempt. The increased likelihood of substance abuse in persons with mental disability brings in another set of risk factors such as driving under the influence, being in fights, falls, suicides and other risk taking activity.

H. Systems organization.

We have discussed each of the major health interventions that contribute to medical conditions that are the cause of death in the US population. In general many of these risk factors can be averted through a good working relationship with a primary care physician coupled with access to reliable health information and support from a community of friends and family. In many cases much health promotion can be supported and facilitated by mental health providers.

IV. Recommendations:

A. Background for recommendations:

So far we have reviewed the background for premature deaths in persons with mental disabilities in the US. We have considered the medical conditions that cause early death and have related a broad overview of the types of interventions that can be helpful in treating and managing these health factors. This section will begin with a brief

discussion of potential models for enhancing access to health promotion and healthcare and will conclude with recommendations that are designed to stimulate action on three levels of potential and transformational intervention.

In a paper prepared for the American College of Mental Health Administration, a review of the research concluded that "a range of strategies appear to be effective in improving linkage with, and quality of, medical care, and improving self-reported health outcomes in groups with higher levels of baseline medical co-morbidity."[69]

The table below, developed by Druss, summarizes these strategies.

Strategies to Improve Medical Care in Persons with Serious Mental Disorders: A Continuum of Involvement of Medical Providers		
Strategy	**Involvement of Medical Providers**	**Requirements**
Training for Patients or Staff	Low	Time; training; motivated trainees
Onsite Medical Consultation	Intermediate	Sufficient flow of patients to support medical consultant
Collaborative Care	Intermediate	Regular contact between medical and mental health/addiction staff
Facilitated Referral to Primary Care	High	Adequate community medical resources Mechanism for linkage between the systems

"At one end of the continuum, training programs may provide psychiatrists with additional medical training, or patients with expertise in self-management and/or therapeutic lifestyle change strategies. Studies in this area have demonstrated considerable potential to reduce lifestyle risk factors such as poor diet, smoking, and obesity in persons with serious mental illness.

In medical consultation models, a part-time or full-time medical consultant comes on-site in the specialty mental health setting to provide for the medical needs for patients. This approach has been tested in several inpatient studies where it has been shown to improve the quality of medical care. Collaborative care models in which care is delivered by multidisciplinary teams made up of both internists and mental health or substance use specialists are analogous to evidence-based approaches to treating depression in primary care. Finally, under facilitated referral models, a mental health facility can hire a care manager to provide linkage and coordinate follow-through with medical care in a community medical setting. These models are among the simplest programs to implement in free-standing mental health settings such as CBHOs, although they depend on the availability of a high quality community medical provider and effective linkages between the MH/SU and primary care provider organizations."[69]

Many CBHO programs work with physician groups in seeking primary care collaborators. Yet another model that has certain advantages includes the integrations of a nurse practitioner who is connected with a primary care practice setting and "deployed" to a community mental health site. Through this type of model the primary care provider

is not professionally isolated and has colleagues that can strengthen coverage and a range of services, equipment and advantages that are part of group medical practice. The use of a Nurse Practitioners is comparable in terms of outcome for primary care settings.[70] Physician Assistants are another level of provider that may be considered. Generally these providers are not able to function independently and the degree to which proximity to a physician varies by state licensing regulations.

CHCs and CBHOs have partnered in the past to integrate mental health and substance abuse services into CHC primary care settings, consistent with the federal initiative to integrate MH/SA services into primary care. CBHOs and CHCs have more recently initiated discussions about bringing primary care into mental health settings, where the population with serious mental illness is accustomed to receiving care, building on current research efforts. These efforts have encountered a federal policy barrier.

The Bureau of Primary Health Care (BPHC) PIN 2002-07: Scope of Project Policy notes that "it is crucial that health centers request approval for changes of scope in the areas of site and services, and update the BPHC regarding any other changes to the scope of project prior to occurrence." Scope of project is described as having five core elements: services, sites, providers, target population, and service area, and is used to:

- Stipulate what the total approved grant-related project budget supports, inclusive of 330 funding, program income and other non-300 funds
- Define the scope of coverage of the Federal Tort Claims Act (FTCA) for providers
- Define covered entities for the 340B Drug Pricing Program
- Define approved service delivery sites and services for Medicaid Prospective Payment calculation
- Define approved service delivery sites for CMS determination of Medicare cost-based reimbursement

In local discussions about the CHC placing a primary care provider employee in the CBHO, with documentation in the CHC chart and billing under the auspices of the CHC, the BPHC Scope of Project policy has come up, and there seems to be variation in understanding the policy and its applicability. The range of perceptions includes:

- The CHC cannot place a provider in the CBHO because it would completely jeopardize their 330-funding and FTCA coverage.
- The CHC can place a provider in the CBHO, but only if the site also serves its other target populations, not just the population with serious mental illness —so a separate entry door and waiting area are being created.
- The CHC can place a provider in the CBHO and must file a scope of project change per PIN 2002-07, but anticipates no issues in doing so, other than a 6 month wait to get it approved.
- The CHC can place a provider in the CBHO and does not envision that a scope of project change will be necessary because it already outstations providers in a number of sites.

The HRSA/BPHC is currently working on a revision to the Scope of Project policy. Ideally, the policy revision will clarify the appropriateness of placing CHC primary care

practitioners in mental health settings, given the data demonstrating the people with serious mental illness are a health disparities population.

Nationally, discussions on improving the structure and funding of health care include the concept of a **medical home**. The American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and American Osteopathic Association recently released Joint Principles of the Patient-Centered Medical Home. These principles include:

- Personal physician
- Physician directed medical practice (team care that collectively takes responsibility for the ongoing care of patients)
- Whole person orientation
- Care that is coordinated and/or integrated
- Quality and safety (including evidence based care, use of information technology and performance measurement/quality improvement)
- Enhanced access to care
- Payment structure that reflects these characteristics beyond the current encounter-based reimbursement mechanisms.[71]

Related to the payment principle, a team of physicians, including representation from the Commonwealth Fund, has proposed a new payment methodology tied to medical homes. The encounter-based reimbursement system would be replaced by a per-patient payment (a case rate, not capitation), substantially increasing payments for primary care in return for greater accessibility, quality, safety, and efficiency. Over two-thirds of the payments would be for multidisciplinary health care teams.[72]

The public mental health system must enter into a dialogue with those leading these initiatives, to assure that the needs of people with serious mental illness are addressed as a part of improving the structure and funding of health care.

We suggest that there are three tiers in organizing services to enhance the health of individuals with mental disabilities in a CBHO.

B. Specific recommendations for effective policy and practice:

Recommendations stemming form this report will be organized into three tiers. As was identified in the introduction to this paper, these recommendations are based on a structure that was proposed for consideration of levels of organizational transformation in multiple speeches delivered by Kathryn Power as The Presidents New Freedom Commission Report on Transforming the US mental health system was put forth. These three levels include: A. those that can be virtually immediately implemented with little additional resources, B. those that require substantial organizational level changes and leadership efforts to support and, C. those that require substantial national leadership and promotion in order to implement.

A. Initiatives that can be readily implemented with minimal additional resources:

- Expand WRAP and plans to address consumer- generated goals for physical well-being including physical activity, nutrition and primary care.
- Redesign clinical treatment and service plans so that they support recovery

that is inclusive of health promoting activities.

- Consumer centers and CBHO staff access existing community health resources and speaker programs. This would include:
  - Smoking cessation resources from public health departments, local hospitals or groups such as American Lung Association.
  - Diet and weight related support group resources such as overeaters anonymous and commercial programs such as Weight Watchers that are available
  - Nutrition information seminars and talks which might be available to community groups and staff through local public health department or hospital outreach dietitian
- Include a physical activity component in existing day treatment and other psychosocial rehabilitative programs
- Restructure the work priorities of any existing nursing staff within CBHOs so that they can devote time to the physical health aspects of consumers
- Collaborate with existing national organizations such as the American Lung Association and the American Diabetes Association who have a wealth of health promotion materials and protocols that could be used by people with mental health issues.
- Existing performance improvement project structures within CBHOs can be used to create projects that promote better health screening, monitoring, prompting about smoking cessation and care coordination with primary care providers.
- Ask local county or state medical associations to provide speakers and talks on health risks and to conduct "ask the doctor" sessions to groups of consumers and/or CBHO staff. Through these connections, offer to provide consumers experience to healthcare to medical professionals.
- Assure that psychiatric staff have access to CME trainings on contemporary Smoking cessation pharmacology and other basic health monitoring courses.
- Include health promotion materials in waiting rooms and create health resource bulletin boards in consumer areas.

B. Initiatives that require organizational changes, leadership and resources.

- **Contract with a consumer operated organization to survey the physical health concerns of consumers.** This would include a national snapshot of what consumer-operated programs are currently doing as well as what they would be willing to do. This should also include having consumers help frame the message and approaches that will encourage and empower consumers to take positive actions in their own lives. Publish this information prominently.

- **Encourage state level leadership to develop health promotion initiatives** for individuals with mental and other disabilities. This might include members of the department of mental health, department of health, hospital association, state medical association, state nursing associations, state psychiatric and other allied

mental health professional organizations, mental health and other concerned advocacy groups, state groups of community behavioral health organizations, statewide consumer organizations and any other stakeholder with a vested interest in the health of citizens.

- **Develop a consumer run health education training module for consumers** to become peer health coaches. This would include training for peers to help other consumers interface with primary care by acting as advocates.

- Utilize Pat Corrigan's contact approach for combating stigma and discrimination to primary care health providers so they can better serve clients with serious mental health issues. Focus on listening, providing physical health care in non-judgmental ways. Include training front office staff on how to interact with consumers in a respectful manner. Opportunities for this can be explored through state medical societies and primary care organizations.

- Develop RN level nursing positions within CBHOs such that they have time allocated to provide basic teaching on common medical conditions. This could facilitate screening for basic health problems and help to monitor health treatment.

- Develop onsite primary care services.

- Develop proactive leadership level relationships with local primary care providers that see high numbers of consumers form a particular CBHO.

- As ongoing statements of national significance on recovery are developed and updated, include health as a prominent feature of recovery.

C. Initiatives that require national leadership and promotion.

- **National mental health advocacy groups work together with national medical organizations** to promote awareness of the health needs of persons with mental disabilities. Organizations to contact would include:
  - American Medical Association
  - American Academy of Family Practice
  - American College of Physicians
  - American Nurses Association
  - Association of Clinicians for the Underserved
  - American Academy for Physicians Assistants
  - American Academy of Nurse Practitioners

- Medicaid and Medicare must become partners in improving access to care, data analysis, and designing and implementing strategies that will be effective with the population served by the public mental health system. Assure financing methods

for service improvements. Include reimbursement for coordination activities, case management, transportation and other supports to ensure access to physical health care services.

As a health care purchaser, Medicaid should:

- **Provide coverage for health education** and prevention services (primary prevention) that will reduce or slow the impact of disease for people with serious mental illness.
- Establish **rates adequate to assure access to primary care** by persons with mental disaility.
- **Cover smoking cessation and weight reduction treatments**.
- **Use community case management to improve engagement with and access to preventive and primary care.**

▪ The BPHC within HRSA is currently working on a revision to Scope of Project policy. Seek to assure that the policy revision will clarify the appropriateness of placing FQHC primary care practitioners in mental health settings, given the data demonstrating the people with serious mental illness are a health disparities population.

▪ Mental health advocates and professionals must work at the national level to promote the value of an accountable medical home so that every individual with mental disability has a clearly identified and trusted medical home.

▪ The public mental health system should employ the Institute for Healthcare Improvement (IHI) model in crafting a national initiative on morbidity and early mortality in people with mental disabilities. This could be an effort lead by SAMHSA and HRSA together with national advocacy groups that would develop an IHI care improvement program for addressing the health of individuals with mental disabilities.

- Stakeholders in the mental health community hold one or more meetings with the HHS, Office of Minority Health to discuss the promotion of health literacy in special and underserved populations.

- Wellness should be tied into the SAMHSA National Consensus Statement on Mental Health Recovery.

---

[1] Morbidity and Mortality in People with Serious Mental Illness, National Association of State Mental Health Program Directors, Medical Directors Council; Editors: Parks, Svendsen, Singer, Foti, Technical Writer: B Mauer. October 2006;Report Available at: www.nasmhpd.org

[2] Get It Together: How to Integrate Physical and Mental Health Care for People with Serious Mental Disorders; Bazelon Center for Mental Health Law, June 2004.

[3] Druss et al, Medical Services for Clients in Community Mental Health Centers: Results from a National Survey. Unpublished draft manuscript.

[4] Public Policy Platform of The National Alliance on Mental Illness (NAMI), Section 3.13 Wellness; this is available on the NAMI Website: www.nami.org

[5] Deaths: Final Data for 2004; Center for Disease Control, National Center for Health Statistics. Website: http://www.cdc.gov/nchs/deaths.htm

[6] Framingham website: http://www.nhlbi.nih.gov/about/framingham

[7] Relative Risk of Cardiovascular and Cancer Mortality in People With Severe Mental Illness From the United Kingdom's General Practice Research Database ; David P. J. Osborn, PhD; Gus Levy, MSc; Irwin Nazareth, PhD; Irene Petersen, PhD; Amir Islam, MBA; Michael B. King, PhD; Arch Gen Psychiatry. 2007;64:242-249.

[8] The Level of Cardiovascular Risk Factors in Bipolar Disorder Equals that of Schizophrenia: a Comparative Study. Birkenaes AB, Opjordsmoen S, Brunborg C, Engh JA, Jonsdottir H, Ringen PA, Simonsen C, Vaskinn A, Birkeland KI, Friis S, Sundet K, Andreassen OA; J Clin Psychiatry. 2007 Jun;68(6):917-23.

[9] Cardiovascular Risk Factors for People with Mental Illness; Davidson S.; Judd F.; Jolley D.; Hocking B.; Thompson S.; Hyland B.; Australian and New Zealand Journal of Psychiatry, Volume 35, Number 2, April 2001 , pp. 196-202(7)

[10] Characteristics of Adults with Serious Psychological Distress as Measured by the K6 Scale: United States, 2001-04. Pratt, Dey, and Cohen; Adv Data. 2007 Mar 30;(382):1-18

[11] Health Status of Individuals With Serious Mental Illness. Dickerson, Brown, Daumit, LiJuan, Goldberg, Wohlheiter and Dixon; Schizophrenia Bulletin, Volume 32, Number 3 Pp. 584-589

[12] Health Literacy and Mortality Among Elderly Persons; Baker, Wolf, Feinglass, Thompson, Gazmararian JA, Huang; Arch intern Med 2007 Jul 23: 167 (14): 1503-9

[13] Inequitable Access for Mentally Ill Patients to Some Medically Necessary Procedures; Kisely S, Smith M, Lawrence D, Cox M, Campbell LA, Maaten S.; CMAJ. 2007 Mar 13;176(6):779-84

[14] Occurrence of Cancer Among People with Mental Health cCaims in an Insured Population.; Carney CP, Woolson RF, Jones L, Noyes R Jr, Doebbeling BN; J Clin Psychiatry. 2007 Jun;68(6):917-23

[15] Cancer Risk Among Parents and Siblings of Patients with Schizophrenia; Levav, Lipshitz, Novikov, Pugachova, Kohn, Barchana, Ponizovsky, Werner; Br J Psychiatry. 2007 Feb;190:156-61

[16] Medical Comorbidity in Women and Men with Bipolar Disorders: A Population-based Controlled Study; Carney and Jones; Psychosom Med. 2006 Sep-Oct;68(5):684-91

[17] Prevention of Recurrent Ischemic Stroke; Dickerson, Carek and Quattlebaum; Amer Fam Physician , August 1, 2007 Vol. 76/No. 3 (August 1, 2007)

[18] Prevalence and Correlates of Diabetes in National Schizophrenia Samples; Dixon, Weiden, Delahant, Goldberg, Postrado, Lucksted and Lehman Schizophr Bull. 2000;26(4):903-12

[19]. Metabolic findings from the CATIE trial and their relation to tolerability; Nasrallah HA;. CNS Spectr. 2006 Jul;11(7 Suppl 7):32-9

[20] Metabolic Considerations in the Use of Antipsychotic Medications: a review of recent evidence; .Newcomer JW.; J Clin Psychiatry. 2007;68 Suppl 1:20-7.

[21] Second-Generation (atypical) Antipsychotics and Metabolic Effects: a Comprehensive Literature Review; Newcomer JW; CNS Drugs. 2005;19 Suppl 1:1-93.

[22]The Association of Medical Comorbidity in Schizophrenia with Poor Physical and Mental Health; Dixon L, Postrado L, Delahanty J, Fischer PJ, Lehman A. J Nerv Ment Dis. 1999 Aug;187(8):496-502

[23]Congruencies in Increased Mortality Rates, Years of Potential Life Lost, and Causes of Death Among Public Mental Health Clients in Eight States; Colton CW, Manderscheid RW. Prev Chronic Dis. 2006 Apr;3(2):A42. Epub 2006 Mar 15

[24] A Ten-Year Perspective of Mortality Risk Among Mentally Ill Patients in Sheltered Care; Segal and Kotler Hosp Community Psychiatry 42:708-713, July 1991

[25] Mortality and Medical Comorbidity Among Patients with Serious Mental Illness. Miller BJ, Paschall CB 3rd, Svendsen DP; Psychiatr Serv. 2006 Oct;57(10):1482-7

[26] Mortality and Medical Comorbidity Among Psychiatric Patients: a Review; B Felker, JJ Yazel and D Short ; Psychiatr Serv. 1996; 47:1356-1363

[27] Recruitment Data: Demand for Family Physicians Surges; Leslie Champlin in AAFP (American Association of Family Physician) News 9/21/2006

[28] MacArthur Foundation, Depression in Primary Care Initiative Website: http://www.depression-primarycare.org/

[29] Improving Access to Geriatric Mental Health Services: A Randomized Trial Comparing Treatment Engagement With Integrated Versus Enhanced Referral Care for Depression, Anxiety, and At-Risk Alcohol Use; Stephen J. Bartels, M.D., M.S., Eugenie H. Coakley, M.A., M.P.H., Cynthia Zubritsky, Ph.D., James H. Ware, Ph.D., Keith M. Miles, M.P.A., Patricia A. Areán, Ph.D., Hongtu Chen, Ph.D., David W. Oslin, M.D., Maria D. Llorente, M.D., Giuseppe Costantino, Ph.D., Louise Quijano, M.S.W., Jack S. McIntyre, M.D., Karen W. Linkins, Ph.D., Thomas E. Oxman, M.D., James Maxwell, Ph.D. and Sue E. Levkoff, Sc.D., M.S.W., S.M. PRISM-E Investigators; Am J Psychiatry 161:1455-1462, August 2004.

[30] Remarks to the National Association of Community Health Centers' Policy and Issues Forum
by HRSA Administrator Elizabeth M. Duke; March 19, 2007; Washington, D.C.; Availalble through the HRSA Press Office: (301) 443-3376; (http://newsroom.hrsa.gov)
http://newsroom.hrsa.gov/speeches/2007/NACHCmarch19.htm

[31] Integrated Medical Care for Patients With Serious Psychiatric Illness:A Randomized Trial; Benjamin G. Druss, MD, MPH; Robert M. Rohrbaugh, MD; Carolyn M. Levinson, MPH; Robert A. Rosenheck, MD Arch Gen Psychiatry. 2001;58:861-868.

[32] Personal Responsibility and Physician Repsonsibility, West Virginia's Medicaid Plan; Bishop and Brodkey; NEJM Aug 24, 2006; Vol 355:756-758. No.8

[33] Mental Disorders and Quality of Diabetes Care in the Veterans Health Administration.
Desai MM, Rosenheck RA, Druss BG, Perlin JB. Am J Psychiatry. 2002 Sep;159(9):1584-90.

[34] Mental Disorders and Use of Cardiovascular Procedures After Myocardial Infarction; Benjamin G. Druss, MD, MPH; David W. Bradford, PhD; Robert A. Rosenheck, MD; Martha J. Radford, MD; Harlan M. Krumholz, MD ; JAMA. 2000; 283:506-511.

[35]Quality of medical care and excess mortality in older patients with mental disorders: Druss BG, Bradford WD, Rosenheck RA, Radford MJ, Krumholz HM; Arch Gen Psychiatry. 2001 Jun;58(6):565-72

[36] Quality of preventive medical care for patients with mental disorders; Druss BG, Rosenheck RA, Desai MM, Perlin JB; Med Care. 2002 Feb;40(2):129-36

[37]Adverse events during medical and surgical hospitalizations for persons with schizophrenia; Daumit GL, Pronovost PJ, Anthony CB, Guallar E, Steinwachs DM, Ford DE. Arch Gen Psychiatry. 2006 Mar;63(3):267-72

[38] Healthy people 2010. 2nd ed. Washington (DC): Department of Health and Human Services (US); 2000 Nov. 2 Vols.

[39] Internet Health Resources: Health Searches and Email have become more Commonplace, but there is Room for Improvement in Searches and overall Internet Access. Susannah Fox, Deborah Fallows 7/16/2003, Available at the Pew Internet and American Life Site: **http://www.pewinternet.org**

[40] Wired for Health, How Californians compare to the Rest of the Nation: A case study Sponsored by the California Healthcare Foundation. Susannah Fox; This was done in collaboration with the Pew Foundation, Internet and American Life project and is available at: http://www.pewinternet.org/PPF/r/105/report_display.asp

[41] Access to and satisfaction with care comparing patients with and without serious mental illness; Kilbourne AM, McCarthy JF, Post EP, Welsh D, Pincus HA, Bauer MS, Blow FC; Int J Psychiatry Med. 2006;36(4):383-99

[42]Socio-economic pathways to diet: modelling the association between socio-economic position and food purchasing behaviour; Turrell G, Kavanagh AM.; Public Health Nutr. 2006 May;9(3):375-83

[43] Sleep as A Mediator of the relationship between Socioeconomic Status and Health: A hypotheses. Cauter and Speigel; Ann N Y Acad Sci, 1999;896:254-61

[44] Barriers to Primary Medical Care Among Patients at a Community Mental Health Center; Carolyn Levinson Miller, M.P.H., Benjamin G. Druss, M.D., M.P.H., Elizabeth A. Dombrowski, M.A. and Robert A. Rosenheck, M.D. **Psychiatr Serv 54:1158-1160, August 2003**

[45] Robert Wood Johnson Foundation, Smoking Cessation Leadership Center at: http://smokingcessationleadership.ucsf.edu/MentalHealth.html

[46] Benefits of smoking cessation for longevity; Taylor DH Jr Hasselblad V, Henley SJ, Thun MJ, Sloan FA. In Am J Public Health. 2002 Jun;92(6):990-6

[47] Prospective Predictors of Quit Attempts and Smoking Cessation in Young Adults; Rose, Chassin, Presson, and Sherman; Health Psychology, Vol. 15, No. 4, pp 261-268.

[48] Psychiatric Disorders, Familial Factors, and Cigarette Smoking: III. Associations with Cessation by Young Adulthood among Daily Smokers; Rohde, Kahler, Lewinsohn and Brown; Nicotine & Tobacco Research, Volume 6, Issue 3 June 2004 , pages 509 - 522

[49]Smoking and quitting: a qualitative study with community-living psychiatric clients; Lawn SJ, Pols RG, Barber JG. Soc Sci Med. 2002 Jan;54(1):93-104

[50]Short-term naturalistic treatment outcomes in cigarette smokers with substance abuse and/or mental illness; Gershon Grand RB, Hwang S, Han J, George T, Brody AL. J Clin Psychiatry. 2007 Jun;68(6):892-8; quiz 980-1

[51] Nicotine withdrawal and psychiatric symptoms in cigarette smokers with schizophrenia; Dalack GW, Becks L, Hill E, Pomerleau OF, Meador-Woodruff JH. Neuropsychopharmacology. 1999 Aug;21(2):195-202

[52] Acute feasibility and safety of a smoking reduction strategy for smokers with schizophrenia. Dalack GW, Meador-Woodruff JH. Nicotine Tob Res. 1999 Mar;1(1):53-7.

[53] Nicotine transdermal patch and atypical antipsychotic medications for smoking cessation in schizophrenia.; George TP, Ziedonis DM, Feingold A, Pepper WT, Satterburg CA, Winkel J, Rounsaville BJ, Kosten TR. Am J Psychiatry. 2000 Nov;157(11):1835-42.

[54] Lifespan Health Information on Hypertension, Reviewed by: Harvey Simon, MD, Associate Professor of Medicine, Harvard Medical School; Physician, Massachusetts General Hospital. Review Date: 4/12/2007 This is Health information that is accredited by American Accreditation HealthCare Commission http://www.lifespan.org/adam/indepthreports/10/000014.html

[55] Hypertension-Related Mortality Among Hispanic Subpopulations --- United States, 1995—2002; C Ayala, PhD, MR Moreno, MPH, JA Minaya, MPH, JB Croft, PhD, GA Mensah, MD, Div of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion; RN Anderson, PhD, National Center for Health Statistics, CDC; in MMWR February 24, 2006 / 55(07);177-180

[56] Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults. Executive Summary of the Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). JAMA. 2001; 285:2486-2497.

[57] Methods of Calculating Deaths Attributable to Obesity; Katherine M. Flegal, Barry I. Graubard and David F. Williamson; American Journal of Epidemiology 2004 160(4):331-338;

[58] Annual Deaths Attributable to Obesity in the United States; David B. Allison, PhD; Kevin R. Fontaine, PhD; JoAnn E. Manson, MD, DrPH; June Stevens, PhD; Theodore B. VanItallie, MD; *JAMA*. 1999;282:1530-1538.

[59] Assessment of Excess Mortality in Obesity; Ralf Bender, Christoph Trautner, Maximilian Spraul and Michael Berger; American Journal of Epidemiology Vol. 147, No. 1: 42-48

[60] Behavioral therapy for weight loss in patients with schizophrenia. Ganguli R. J Clin Psychiatry. 2007;68 Suppl 4:19-25.

[61] A pilot study of a weight management program with food provision in schizophrenia Michel Jean-Baptiste , Cenk Tek , Ellen Liskov , Umesh Rao Chakunta , Sarah Nicholls , Akm Q. Hassan , Kelly D. Brownell , Bruce E. Wexler; Schizophr Res. 2007 Jul 10;

[62] Cardiorespiratory fitness is inversely associated with the incidence of metabolic syndrome: a prospective study of men and women; LaMonte MJ, Barlow CE, Jurca R, Kampert JB, Church TS, Blair SN; Circulation. 2005 Jul 26;112(4):505-12. Epub 2005 Jul 1

[63] Cardiorespiratory fitness and body mass index as predictors of cardiovascular disease mortality among men with diabetes.; Church TS, LaMonte MJ, Barlow CE, Blair SN. Arch Intern Med. 2005 Oct 10;165(18):2114-20

[64] Inverse association between physical inactivity and mental health in men and women; Galper DI, Trivedi MH, Barlow CE, Dunn AL, Kampert JB. Med Sci Sports Exerc. 2006 Jan;38(1):173-8.

[65]. Receipt of Nutrition and Exercise Counseling Among Medical Outpatients with Psychiatric and Substance Use Disorders; Desai MM, Rosenheck RA, Druss BG, Perlin JB; J Gen Intern Med. 2002 Jul;17(7):556-60

[66]Quality of Preventive Medical Care for Patients with Mental Disorders; Druss BG, Rosenheck RA, Desai MM, Perlin JB. Med Care. 2002 Feb;40(2):129-36.

[67] Quality of Diabetes Care among Adults with Serious Mental Illness; Goldberg RW, Kreyenbuhl JA, Medoff DR, Dickerson FB, Wohlheiter K, Fang LJ, Brown CH, Dixon LB.; Psychiatr Serv. 2007 Apr;58(4):536-43.

[68]Diabetes treatment among VA patients with comorbid serious mental illness; Krein SL, Bingham CR, McCarthy JF, Mitchinson A, Payes J, Valenstein M.; Psychiatr Serv. 2006 Jul;57(7):1016-21

[69] Mauer, BJ, Druss, BG. *Mind and Body Reunited: Improving Care at the Behavioral and Primary Healthcare Interface*. Prepared for: American College of Mental Health Administration Summit, March 2007

[70] Primary Care Outcomes in Patients Treated by Nurse Practitioners or Physicians, A Randomized Trial; Mary O. Mundinger, DrPH; Robert L. Kane, MD; Elizabeth R. Lenz, PhD; Annette M. Totten, MPA; Wei-Yann Tsai, PhD; Paul D. Cleary, PhD; William T. Friedewald, MD; Albert L. Siu, MD, MSPH; Michael L. Shelanski, MD, PhD; JAMA. 2000;283:59-68.

[71] Joint Principles of the Patient-Centered Medical Home, February 2007. http://www.futurefamilymed.org

[72] Goroll et al, *Fundamental Reform of Payment for Adult Primary Care: Comprehensive Payment for Comprehensive Care*, Journal of General Internal Medicine, Mar. 2007.