

**Mental Health (MH) and Substance Abuse (SA) Services:
Prospects for Rural Communities**

Larry Gamm and Linnae Hutchison

**Southwest Rural Health Research Center
School of Rural Public Health, Texas A&M University System Health Science Center
College Station, Texas**

**Submitted to the Institute of Medicine
2-18-04**

Section I. Introduction

Although mental health and substance abuse are often associated with different treatment settings, program and funding mechanisms, and research literatures, there are good reasons to consider them in tandem—especially in rural settings. In contrast to most illnesses, mental illness and substance abuse extract social costs—potentially long term—for families, communities, and legal systems; often require, as chronic illnesses, long-term treatment and maintenance; and are associated with stigma that may create barriers to accessing care (Mechanic et al., 1995). As major sources of disability, both are associated with high costs to employers and, inadequately treated, to potentially much higher medical or other institutional care costs borne by families, insurers, or the state. Also, there is increasing recognition that many people suffer from both mental illness and substance abuse and that effective treatment of either requires attention to the other, as well. These two illnesses are increasingly identified as important contributors to one another and to other serious medical conditions and as significant obstacles to effective treatment of many medical conditions. They share, too, recognition of the legitimacy of behavioral and social-treatment technologies and, as a result, may be even more reliant on cultural competency in treatment approaches. Finally, they are characterized by similar access problems in the form of an undersupply of providers, treatment facilities, and funding.

Nearly all of the aforementioned conditions may be more pronounced in rural settings than in more populated areas. This paper will briefly review some of these disparities in individuals' efforts to access services; availability of professionals and facilities to offer these services; and will examine some barriers to accessing available services and issues in organization and financing of necessary services to effectively address mental illness and substance abuse (Sections I, II, and III). The primary focus, however, is on addressing effective care for these conditions and consideration of models that might enable rural areas to attain greater success as discussed in Sections IV and V. Rural settings might offer the best opportunities to more effectively integrate many of the necessary resources to consider the entire population both as a beneficiary and a contributor to a more effective rural health system.

We approached the topic from two vantage points. First, we wanted to provide information from the research literature directly addressing rural mental health or rural substance abuse, or that at least consider rurality as a variable in their analysis. Second, for a few other critical issues and newer developments in mental health and substance abuse that have not been addressed from a rural perspective, we examined their likely implications for rural mental health and substance abuse, drawing what we do know about differences between rural and urban areas regarding access, populations, and service-system characteristics.

Within the last three or four years, several Surgeon General reports have drawn attention to mental health, suicide, and tobacco (Surgeon General Report, 1999a,b, 2000, 2001). A recent President's Commission report addresses the state of mental health services in the nation, giving significant attention to rural mental health concerns (New Freedom Commission, 2003). The basic theme of the report is that America's mental health services are complex and fragmented, fail to meet important mental health needs, and are in need of a major transformation.

Among the more specific rural issues recognized by the Commission were:

- rural disparities in access to mental health services exist especially in geographically remote areas;
- poor access results in rural people entering care later in the course of their disease, with more serious symptoms, and requiring more intensive and costly treatment;
- higher rates of suicide are associated with rural status;
- minority status, low income, and lack of insurance compound access problems for many rural people;
- lack of skilled professionals in rural areas;
- heavy reliance upon general medical practitioners who may not be reimbursed for mental health treatment;
- non-constructive stigma and attitudes toward mental illness and stigma are particularly evident among elderly, minority, and rural Americans;
- mental health education campaigns should target rural Americans who are viewed as less familiar with the mental health service system;
- health technology, telemedicine, and consultations can help address access problems; and
- mental health policies and practices too often reflect urban conditions without adequate attention to rural realities.

The following major recommendations of the Commission specifically referenced rural or remote populations:

- “Improve access to quality care in rural and geographically remote areas.” (p. 17)
- “Use health technology and telehealth to improve access and coordination of mental health care, especially for Americans in remote areas or in underserved populations.” (p. 18)

In addition, the Commission called for:

- addressing rural mental health workforce issues through collaborative strategies that include greater reliance on mid-level and alternative providers;
- support by federal agencies for increased workforce training and continuing education emphasizing use of evidence-based practice in rural areas;
- creation of a rural mental health plan that, with support of federal agencies, would integrate mental health into rural public health infrastructure and be closely aligned with states’ comprehensive mental health plans;
- ensuring “rural Americans increased access to mental health emergency response, early identification and screening, diagnosis, treatment, and recovery services;” (p. 54)
- enabling individuals and small businesses to pool for purchasing insurance at lower rates; and
- support for use of telehealth in provision of mental health care, patient and professional education, and administration.

The analysis and proposed solutions provided in this paper will address a number of the rural mental health topics identified by the Commission and substance abuse concerns that closely parallel the points raised regarding mental health.

Prevalence, costs, and consequences of mental illness (MI) and substance abuse (SA) for individuals, employers, and society

Mental disorders and substance abuse are arguably the most widespread, chronic, disabling, and thus, most costly conditions in modern society. At the same time, these two conditions may be the least respected or understood in the minds of the public, educators, health professionals, health organization leaders, payers, and policy makers.

Mental illnesses, the leading cause of disability, account for 25 percent of disability in the Western industrialized countries; alcohol and drug use disorders rank second among all causes of disability, accounting for 12 percent (WHO, 2001). According to the 1999 Surgeon General Report, approximately 20 percent of adults and 20 percent of children and adolescents have a mental disorder (Surgeon General Report, 1999a). In 2002, 8.3 percent of American adults (SAMHSA, 2002) and 5 to 9 percent of children suffer from serious mental illness (NAMI, 2004); the respective percentages for substance abuse are 8.9 percent (ages 12-17), 21.7 percent (ages 18-25), and 7.3 percent (ages 26 and older)¹. In 2002, prevalence of tobacco use (any tobacco product) was 15.2 percent among adolescents (ages 12-17), 45.3 percent among those ages 18-25, and 29.9 percent among those older than 26 (SAMHSA, 2002). Estimated costs of mental illness associated with disability and premature death in America in 1997 were 150 billion (CDC, 1998); substance abuse societal costs in America were estimated at \$143.4 billion in 1998 (Economic Costs, 1998)².

While drug abuse leads to an estimated 38,000 deaths annually (Donnermeyer, 1997), tobacco and alcohol are by far the most frequently abused substances across demographic, social, and economic boundaries (Hutchison and Blakely, 2003) and are leading causes of death in the United States. Tobacco use is the leading cause of preventable death (430,000 deaths annually) (Kendell, 2000) and alcohol consumption is the 4th leading cause of death in the U.S. (100,000 deaths/year) (Donnermeyer, 1997).

Mental health and mental disorders and tobacco use and substance abuse were recently identified as the fourth, sixth, and seventh leading health concerns, respectively, in a survey of state and local rural health stakeholders (Gamm et al., 2003). While prevalence of mental illness appears similar in rural and urban areas, rural areas suffer from a higher incidence of suicide and suicide attempts than their urban counterparts (Kessler et al., 1994; Eberhardt et al., 2001). At the same time, rural residents are also less likely to report needing care for mental illness (Fox et al., 1999; Rost et al., 2002). Like mental illness, the prevalence of substance abuse is comparable between rural and urban areas with some notable exceptions (Hartley et al., 1999). Among rural youth, the prevalence of substance abuse for certain substances (alcohol, tobacco, methamphetamines,

¹ These percentages refer to substance abuse of alcohol and illicit drugs.

² Total includes \$14.9 spent in health care costs and \$110.5 billion in lost productivity (includes premature death and associated disability).

and inhalants) may actually be higher than that among urban youth (Donnermeyer and Scheer, 2001; OAS, Jan 3, 2003; Hutchison and Blakely, 2003; Butterfield et al., 2002).

Nature of mental illness, substance abuse, and their treatments

Causes and treatment of mental illness and substance abuse have medical, social-psychological, and environmental dimensions (Hoyt et al., 1997). Both have appropriate medical (pharmacotherapeutic) and social and behavioral treatments. The failure of many laypersons, professionals, and other key stakeholders to recognize these facts is reflected in stigma, interprofessional rivalries, and conflicting policies regarding approaches to treatment, organization, and funding. While urban populations may be able to navigate through a variety of treatments and claims offered by multiple providers to gain the necessary care, rural populations may rely on limited medical and behavioral therapeutic support available to them.

Lack of timely access to appropriate care in rural areas is likely to produce progressively greater suffering and higher costs of treatment or long-term institutionalization. Research on the importance of the brain's neuroplasticity and its regenerative powers in response to medical and behavioral therapies is well documented (Andreasen, 2001; Schwartz and Begley, 2002). Children, having a higher degree of neuroplasticity, offer the opportunity to more effectively treat some mental illness with early diagnosis and intervention. Given the pattern of progression of schizophrenia from an adolescent-young adult onset, timely diagnosis and treatment can be far more effective. Among the elderly, early initiation of medication promises some retardation of the progression of Alzheimer's and other dementias.

Principal Mental Health and Substance Abuse (MH & SA) areas considered

For the purposes of this review, we distinguish between mental illness, mental disorders, and serious mental illness as follows:

Mental illness refers to all diagnosable mental disorders (U.S. DHHS, 2000).

Mental disorders include schizophrenia, affective disorders such as depression, and anxiety disorders such as bipolar disorders (Regier et al., 1993; Robins et al., 1991; NAMHC, 1993).

Serious mental illness (SMI) is a diagnosable mental disorder found in persons aged 18 years and older that is so long lasting and severe that it seriously interferes with a person's ability to take part in major life activities (U.S. DHHS, 2000).

Serious emotional disturbance (SED) is a diagnosable mental disorder found in persons from birth to age 18 years that is so severe and long lasting that it seriously interferes with functioning in family, school, community, or other major life activities (U.S. DHHS, 2000).

Substance abuse, for the purposes of this review, includes alcohol, tobacco, and illicit drug use. Although both alcohol and tobacco are by far the two most prevalently abused substances and are significant causes of morbidity and mortality (Hutchison and Blakely, 2003), alcohol and use

of illicit drugs will be given greater emphasis in this review given their frequent co-occurrence with mental illness (Barry et al., 1996; Coridan and Heffron, 2000).

Section II. Perceived Need and Access

Not all individuals with mental health or substance disorders perceive themselves as needing mental health treatment (Fortney and Booth, 2001). In 1998, 10.9 percent of American adults perceived a need for alcohol, drug, or mental health services during the prior 12 months. About 2 percent of adults with perceived needs reported having no care or insufficient care for mental health and substance abuse problems (Sturm and Sherbourne, 2001). The prevalence of lifetime and recent mental disorders appear to be similar in rural areas and in urban areas (Hartley et al., 1999; Kessler et al., 1994; Wagenfeld et al., 1994; Warner and Polak, 1995). Rural residents with mental illness, however, may be less likely than their urban counterparts to define themselves as needing care (Fox et al., 1999; Rost et al., 2002) and less likely to report having recent mental disorders (Kessler et al., 1994). Lack of knowledge of mental illness among rural individuals and among their social support structure may be an important factor.

A lack of anonymity in rural communities and the perceived social stigma associated with mental illness and substance abuse may prevent seeking of treatment (Booth et al., 2001; Calloway et al., 1999; Fortney and Booth, 2001). Whether considering the general medical sector or specialty mental health sector, rural individuals perceive less anonymity than do urban individuals in such treatment (Rost et al., 1999). The overlap in social settings (religious, professional, and personal) was identified as reasons rural residents may be less likely to disclose information and seek treatment (Booth et al., 2001).

The relative degree to which rural people with mental illness attach stigma to seeking mental health service is not entirely clear. Those with more symptoms of depression are more likely to hold stigmatized views of mental health services (Hoyt et al., 1997). Such stigma associated with seeking mental health treatment is frequently identified as a more serious barrier to care for rural residents than for urban ones (Hoyt et al., 1997; Calloway et al., 1999). However, another study finds no such differences (Rost et al., 1999). Still another study finds rural people with serious SMI less often giving stigma as a reason for not seeking care than urban residents (Kessler et al., 2001). While stigma is less often cited in the latter study, rural residents are more likely than non-rural dwellers to report several reasons (e.g., financial concerns, desire to solve problem on their own) for not seeking treatment for SMI (Kessler et al., 2001). For rural people with SMI, then, a perception of stigma in an absolute sense may be as high, or higher, than for urban people; but low income or a sense of independence may rank higher than stigma as a reason for foregoing treatment.

Limited numbers of providers in rural areas, especially mental health specialists, further constrains utilization of mental health services for rural people (Fortney et al., 2000; Hartley et al., 1998; Rost et al., 1999; Lambert and Agger, 1995). Much greater distance to available providers in rural areas is also a factor in utilization of mental health care (Fortney et al., 2000). Travel distance is a factor for substance abuse treatment as well (Fortney and Booth, 2001). For U.S. male veterans discharged with an outpatient appointment from a Veteran's Administration (VA) inpatient alcohol dependency treatment program, travel distances reduced aftercare

participation, especially for elderly and rural veterans. When travel distances were the same, urban patients were less likely to attend aftercare appointments than rural (Fortney et al., 1995).

These factors and/or others have an impact on access to MH/SA services within certain subpopulations.

Elderly. The elderly pose a unique challenge to the MH/SA system, particularly in rural areas, where they constitute a greater proportion of the total population than in urban settings (Ricketts, 1999). The primary care physician is an important gateway for detection of substance abuse and mental illness. However, rural elderly tend to visit their primary care provider less frequently than urban elderly; consequently, fewer visits may prohibit detection of these problems among the elderly. Compounding the problem are transportation difficulties such as long travel distances and lack of a public transportation system. These barriers may inhibit treatment and maintenance-seeking services among the elderly (Fortney et al., 1995).

The high prevalence of depression among the elderly exacts a high cost not only in terms of diminished quality of life but also on utilization of health services (Crystal et al., 2003). A study of urban and rural African-American elderly men and women in Tennessee found that those with chronic diseases and using four or more prescription medications were more likely to screen positive for symptoms of depression. Rural African Americans were more likely to benefit from a strong social network that, in contrast to isolation among their urban counterparts, offered support in dealing with their depression (Okwumabua et al., 1997). Moreover, there is substantial evidence that some prescription drugs for treatment of chronic medical conditions among the elderly can contribute to depressive symptoms (Ganguli et al., 1997; Johnson et al., 1996).

A study finding a greater tendency of rural elderly with serious and persistent mental illness to rely on primary care physicians, raised questions about the ability of rural primary care providers to manage such complex cases (Lambert and Hartley, 1998). The possible co-existence of depression and dementia with other chronic medical conditions, for example, creates challenges in diagnosis; missed diagnoses are estimated at over 72 percent for dementia and even higher for delirium and depression/anxiety (Bair, 1998). Given the differing degrees of treatability of depression and dementia, the physician's diagnosis is critical to the patient and to the patient's caregiver (Johnson et al., 1996).

Prevention efforts often target the community or only adolescents and young adults. Developing age appropriate substance abuse prevention programs targeting the rural elderly is important in light of the sizable rural elderly populations. Providers may be reluctant to use available screening instruments. Also, it may be difficult with some instruments to differentiate substance abuse related responses from those that might be associated with medical conditions, prescription medications, or normal aging (Benshoff et al., 2003).

Women. Although rural women are at great risk for depression and stress-related disorders, these conditions are less likely to be diagnosed by rural practitioners; women are also likely to underutilize mental health services (Shelton et al., 1995; APA, 1999). Among disadvantaged women, rural women were found twice as likely as rural men to be depressed in a study of a Virginia community health center. For them, factors associated with depression include

motherhood, age, race, single parenting, education, poverty, and unemployment (Hauenstein and Boyd, 1994).

Although the rate of substance abuse is less among females than males, women—especially rural women—may face greater challenges in obtaining care. Rural women experience greater severity of alcohol problems, co-morbidities, and more deleterious consequences of substance abuse than urban women. Social isolation from support of friends and family as well as system barriers such as lack of transportation may contribute to this finding (Booth and McLaughlin, 2000). Lack of employment opportunities for rural women leads to their greater dependence on their male partners. This may negatively influence substance abuse behaviors. One study of rural Kentucky found rural males less likely to understand health consequences of alcohol abuse during pregnancy and more tolerant of continued use—perceptions that influenced the female partner’s use of alcohol during pregnancy (Logan et al., 2003).

Children. Children and adolescents are at risk for substance abuse, mental illness, and dual diagnosis (Glieb and Cuellar, 2003). Drug abuse is highest among those ages 14-25 (Freid et al., 2003). Mental health conditions associated with significant functional impairment affect an estimated 11 percent of children and adolescents in America. They are two to four times more likely among children in poverty, the welfare system, or the juvenile justice system (Garland et al., 2001; Glied et al., 1997; Glied and Cuellar, 2003). At the same time, child mental health has benefited from several trends: three times more physician visits associated with mental health from 1984 to 1999, and Medicaid and State Children’s Health Insurance Program (SCHIP) have increased insurance coverage (Glieb and Cuellar, 2003).

Prevention and early intervention is called for in children as young as age two; as many as 12 percent of two-year olds may benefit from mental health interventions. Those facing four or more risk factors may be 20 times more likely to have mental health problems (Briggs-Gowan et al., 2001; Patterson, 2002).

The prevalence of co-occurring disorders among adolescents is comparable to rates among adults; however, there is some evidence that adolescents do not receive treatment consistent with recommended guidelines for co-occurring disorders. In an Iowa study, two-thirds of adolescents with co-occurring disorders did not receive recommended treatment (Anderson, 2003).

Rural children with serious mental health problems are particularly disadvantaged in terms of having their care needs met (Wolff et al., 2001). Children are likely to receive mental health care from a variety of sources; nine out of 10 SED children receive mental health services from two or more systems and 1 in 10 from four or more systems (Hoven et al., 1998). Rural children are less likely to use these services. Typically, rural children with mild mental health problems might be served by a loose network of physicians, school counselors, mental health workers, and child protective caseworkers (Angold et al., 2002; Burns et al., 1995; Wagenfeld et al., 1997). Schools have become the de facto mental health provider for the largest proportion of rural children receiving services (Angold et al., 2002).

The lack of specialized mental health professionals, especially child psychiatrists, and facilities in rural areas is more problematic for children with serious emotional disturbances. Advocates for severely emotionally disturbed children and adolescents have called for a comprehensive, coordinated network of mental health and other necessary services to meet the changing needs of these children (Johnsen et al., 1997).

Minorities. Some minority groups who reside primarily in rural areas, such as Native Americans and Alaskans, exhibit higher prevalence of abuse for certain substances. Amphetamine abuse is particularly problematic for rural Americans, Native Americans, and Hawaiians (Freese et al., 2000). Native Alaskans suffer from disproportionately high alcohol, tobacco, and marijuana use. In fact, Native Alaskan leaders are concerned the alcohol problem has reached “epidemic” proportions. The alcohol-related death rate among Native Alaskans is 33.7/100,000 compared to 14/100,000 in the U.S. overall. Native Alaskan females have an alcohol use twice as high as the general populations and a lower age of onset (10 years of age) compared with 15 to 19 among the general population. Smokeless tobacco use, as well as marijuana use, is also higher among Native Alaskans (Stillner et al., 1999). This group, as well as Native Americans, suffers greater health problems associated with alcohol use and depression than other minority groups (Bushy, 2002).

Section III. The Rural MH & SA Service Infrastructure

What organizations and providers offer MH & SA Services?

Although 20 percent of Americans experience mental disorders during a year, fewer than half of those with severe mental disorders receive treatment for their conditions in a given year (Appelbaum, 2003). The picture for substance abuse is even bleaker. The National Survey on Drug Use and Health (NSDUH) found the 7.7 million persons older than 12 were classified as needing treatment for abuse of *illicit* substances; however, only 18 percent of the 7.7 million needing treatment actually received treatment in the past year. Of the approximately 18.6 million classified as needing treatment for *alcohol* use, only 8 percent of them received treatment (OAS, November 7, 2003).

The mental health and substance abuse services infrastructure is composed of a diverse range of providers and institutions ranging across mental health specialists and substance abuse specialists, primary care providers, hospitals, health centers, and specialized treatment centers. However, access to these services varies widely by population density, with rural residents facing a distinct disparity in scope and availability of services (Donnermeyer, 1997).

Facilities and programs. Twenty percent of non-metro counties lack mental health services; the same is true in only 5 percent of metro counties. Non-metro counties have, on average, less than two specialty mental health organizations, while metro counties report an average in excess of 13 mental health organizations (Goldsmith et al., 1997; Hartley et al., 1999). Moreover, fewer rural hospitals than urban ones offer inpatient psychiatric services (Hartley et al., 1999). Although the effectiveness of inpatient hospital mental health care for children is increasingly questioned (Glied and Cuellar, 2003) and some state mental hospitals may be underutilized, there are widely

published accounts of a lack of needed psychiatric beds as the existing supply is reduced in response to declining reimbursement levels (Appelbaum, 2003).

The substance abuse treatment system is largely community-based and primarily funded through the public sector (Horgan and Levine, 1998). Nearly 90 percent of treatment occurs in the outpatient setting, and 62 percent of treatment facilities are connected to some other organization. The outpatient settings are diverse, ranging from the general hospitals to residential facilities. Hospitals play a comparatively limited role in substance abuse treatment, providing approximately 10 percent of substance abuse treatment services compared to non-hospital residential facilities (19.2 percent), community mental health centers (18.7 percent), and other outpatient settings (44.2 percent) (Horgan and Levine, 1998). Nationally, about one-quarter of metropolitan hospitals provide outpatient substance abuse treatment for alcohol and drug abuse; however, in non-metro areas, only one-tenth offer such services (CASAa, 2000).

Community mental health centers (CMHCs). CMHCs were initially designed for meeting individual community mental health needs in rural settings. Over the past decades, they have suffered from a shift to block grants, subsequent funding cuts, and state and private market decisions that have shifted their focus to the most severely impaired individuals (Wagenfeld et al., 1994). In many rural areas, CMHCs have dissolved, while in others, they remain an important source of mental health services. Rural CMHCs have been found to be more effective than their urban counterparts in reintegrating patients discharged from a state hospital back into the community (Farrell et al., 1996).

CMHC services to the poor may be advanced by regulatory and financing changes promoting ties with primary care providers and health networks (Lambert and Agger, 1995). Similarly, increased availability of non-doctoral level psychologists and social workers, supported by appropriate licensure and reimbursement provisions, could enhance CMHC staffing (Lambert and Agger, 1995). Some Medicaid Managed Behavioral Healthcare (MMBH) arrangements have been creative in including CMHCs in networks of providers, and some CMHCs and primary care providers have been effective in sharing scarce mental health professionals.

Federally Qualified Health Centers (FQHCs). The Bureau of Primary Health Care (BPHC) is expanding the role of FQHCs in mental health and substance abuse services for underserved populations. In 2001, mental health and substance abuse encounters together accounted for more encounters than any other diagnosis in FQHCs. The number of encounters grew by over 50 percent between 1996-2001 (National Roll-up, 2002; Williams, 2003).

Assured of some degree of continuing Federal funding, e.g., FQHCs may be able to increase the amount of mental health services available in rural communities. Although BPHC encourages FQHC's to rely upon their own staff for providing MH/SA services, some FQHCs may have arrangements with local public mental health and/or substance abuse providers to provide such services. FQHCs' primary health services are viewed as appropriate for preventing, screening, diagnosing, treating, and managing all aspects of common mental illness such as depression, anxiety, and Attention Deficit Hyperactivity Disorder (ADHD). However, their role is viewed as limited to treatment and follow-up for more severe mental disorders such as schizophrenia,

bipolar disorder, or psychotic depression once these illness have been diagnosed and stabilized by specialists (BPHC, 2003).

Substance abuse treatment facilities. Overall, substance abuse treatment facilities are located predominantly in metropolitan areas (80 percent), and of those facilities in non-metro areas, most are in counties with urban populations of 2,500 to 19,999. Only 2 percent of treatment centers are located in those areas classified as rural, non-metro (SAMHSA, 2003a).

Rural substance abuse treatment facilities are most often located in community health centers (53 percent). In contrast, only 9 to 21 percent of substance abuse treatment facilities are located in community health centers in metropolitan statistical areas (MSAs) (SAMHSA, 2003a).

Disparities in supply of mental health professionals in rural America

By federal definition of mental health professional shortages, rural areas disproportionately suffer from a shortage of mental health providers and substance abuse providers. In 1999, 87 percent of the 1,669 Mental Health Professional Shortage Areas (MHPSAs) in the United States were in non-metropolitan counties and home to over 30 million people (Bird et al., 2001). According to one report, 17.8 percent of providers of substance abuse services to youth held a specialization in this area compared to only 6.6 percent of providers in rural areas serving this same population group (CASA, 2000a).

Mental health specialists. There are shortages of mental health professionals, nationally, and especially in rural areas (GAO, 2003). Among 1,253 small rural counties with populations of 2,500 to 20,000, nearly three-fourths of these rural counties lack a psychiatrist, and 95 percent lack a child psychiatrist. Only about half of these counties have a master's level or doctoral level psychologist or social worker in health settings who reside within their boundaries (Holzer et al., 1998).

In addition to psychiatrists, child psychiatrists, and master's-level psychologists and social workers, there is a rapidly increasing supply of several other types of clinically trained mental health professionals. Among these are counselors, marriage and family therapists, and school psychologists (Peterson et al., 1998). These professions may play an important role in mental health for adults (e.g., family therapists encountering depression) and children (school psychologists conducting assessments and interventions), especially in the absence of these professionals with more in-depth training in psychiatry or psychology. Absent detailed information on the rural-urban distributions for these professionals, distributions across urban versus rural states suggest that the availability of these professionals, too, may be more limited in rural areas (Peterson et al., 1998).

Primary care practitioners. Primary care practitioners are the principle source of mental health services for a large proportion of Americans, especially for those in rural areas. Although primary care physicians are, on average, as prevalent in rural counties as in urban ones, over one-third of the smallest rural counties—those with less than 2,500 populations—do not have a family practice physician (Holzer et al., 1998). From 10 to 20 percent of rural patients rely on primary care physicians annually for mental health services, and primary care providers see the

majority of patients who seek such services (DeGruy, 1996; Ivey et al., 1998). As many as 65 percent of rural people in frontier areas who receive mental health care rely on primary care physicians (Mohatt et al., 2003). The greater tendency of rural people to rely on primary care physicians in rural and frontier counties can be attributed both to the scarcity of mental health specialists in rural counties (Wagenfeld et al., 1994) and to the stigma-associated reluctance to see a mental health professional (Haley et al., 1998; Rost et al., 1993).

Maine's Medicaid beneficiaries (ages 18 to 64) suffering from depression (rural and urban) were more likely to rely on mental health specialists than upon general health providers, although the latter were relied upon more by rural than urban beneficiaries. Rural residence and a relatively lower supply of mental health specialists were found to account for lower numbers of mental health visits among rural Medicaid beneficiaries suffering from depression (Lambert et al., 1999).

Still another study found that rural physicians' treatment or referral of patients with depression could be attributed to a mix of situational conditions as well as to physician characteristics. That is, the primary care physician's (PCP's) decision against referral to a specialist had to do with long waits for appointments, limited service availability, and patients' reluctance. At the same time, PCPs' knowledge of depression and the importance of treatment affected the decision to treat or refer (Hartley et al., 1998).

Expanding the role of existing professionals. In light of the small number of mental health professionals in rural areas combined with the increased reliance upon psychotropic drugs in the treatment of mental illness, a number of non-physician professionals have sought prescribing privileges. Psychologists were given prescribing powers in New Mexico in 2002, while legislatures in 13 states considered such legislation. Licensed, doctoral-level psychologists are required to have completed an additional training and certification program and successful completion of a national examination in order to exercise scripting privileges. The supporting rationale is that many mental disorders have optimal success when treated through a combination of psychotherapy and medication, and patients can receive this optimal combination of care from the same mental health professional, thus increasing efficiency and decreasing costs (Daw, 2002; Goode, 2002; Scheffler and Kirby, 2003). With regard to essential competencies to support training in psychotropic prescribing, concerns about psychologists' lack of training in physiology of the brain is paralleled by psychologists' concerns about PCPs' lacking knowledge of mental illness (Norfleet, 2002). Some preliminary survey data suggest that not all psychologists are in agreement on desirability of prescription privileges; some believe such privileges will reduce collaboration among psychologists, primary care physicians, and psychiatrists (Bush, 2002).

Advanced practice psychiatric nurses (APPNs) have prescribing privileges in 49 states. A recent survey finds that about one-quarter of APPNs have prescribing privileges and a private practice (Feldman et al., 2003). Although APPNs are promoted as a means of addressing the shortage of psychiatrists, it remains to be seen whether they will have a significant impact on the rural shortage of highly trained mental health specialists. It should be noted, too, that nurse practitioners who are not APPNs, nonetheless, prescribe medications for mental disorders, most frequently depression or anxiety disorders (Ferguson et al., 2003; Shell, 2001).

Many disease management programs assign selected responsibilities for depression management—screening, medications management, and related activities—to nurses and/or other health professionals functioning under the authority of a physician. Such programs, once largely the province of health plans, are becoming more prevalent in large health systems and FQHCs, as well.

More generally, both scope of practice laws in various states governing mental health and substance abuse assessment and treatment and reimbursement provisions within Medicare, Medicaid and private insurance affect provision of behavioral health services. For example, although most states' licensure laws authorize marriage and family therapists and licensed professional counselors to practice independently, Medicare does not currently directly reimburse these professionals. Medicare does include social workers among those professionals it will reimburse; some states, however, do not explicitly grant independent practice authority to social workers. In addition to calling for more consistency across states in licensure and in reimbursement from Medicare and other payers, it has been suggested that additional latitude might be allowed for both treatment reimbursement for professionals and supervision for training and licensure to better meet needs in currently underserved areas (Hartley et al., 2002a).

Other providers. Faith-based counseling services, with pastoral counselors, and other certified professionals and non-professionals are increasing. Initially identified as pastoral counseling centers, many such centers recognized the preferences of some people to seek mental health-related services in a faith-based setting. Such centers or programs may be seen as an extension of the ministry and mission of a congregation and, for some, simply a means for avoiding any stigma associated with seeking mental health services. Today, large percentages of those providing care in these centers are licensed or certified professionals, including many who are not pastors. The centers are affiliated with congregations, and many of them gain efficiency from the use of church facilities for care provision through the week (Samaritan Institute, 2004).

Section IV. Quality and Effectiveness of Programs and Services for MH & SA in Rural Areas

The Institute of Medicine's (IOM's) *Crossing the Quality Chasm* (2002) identifies six aims for improvement in care quality—safety, effectiveness, patient-centered care, timeliness, efficiency, and equity. In combination, they call for attention to needed changes in technical, interpersonal, organizational, community, and system approaches to health care. Each of these aims may be reflected in varying degrees in our consideration of evidence-based practices (EBP) in mental health and substance abuse services in rural areas.

An important element in the provision of quality mental health and substance abuse services is the availability of evidence-based practices and related guidelines that support effective preventive and treatment services. It is beyond the purview of this paper to attempt to classify all types of guidelines-related initiatives associated with the myriad diagnoses associated with mental illness and substance abuse. The focus is primarily upon EBPs that have been examined in rural settings.

A useful differentiation among various guidelines and algorithms has been offered by Mellman and his associates (Mellman et al., 2001). They point to recommendations resulting from comprehensive reviews like those in the Patient Outcomes Research Team (PORT) for schizophrenia (discussed later in this paper) as being based most fully on “substantial evidence of efficacy” and definitive in guidance to providers. Next, comprehensive treatment options is a term used to classify recommended treatment options based on less rigorous, evidence-based requirements and that are less stringent and less proscriptive in guidance to providers; such options or guidelines that are developed and approved by professional organizations such as the American Psychiatric Association fit in this category. A subset of guidelines includes medication algorithms, such as those of the Texas Medication Algorithm Project (TMAP), that are widely used and focus exclusively on medications. Such algorithms are quite detailed in terms of medication strategies according to stage of treatment or degree of responsiveness (Miller et al., 2003; Trivedi et al., 2000). Finally, expert consensus guidelines are based on surveys of experts and supplement other more formal guidelines regarding treatment decisions that may not yet be informed by the research literature (Expert Consensus, 2003).

Mental health specialists have lamented the relative lack of research on the implementation of evidence-based clinical guidelines in the field of mental health and addictions or the impact of such implementation on clinical, financial, and other dimensions of care. Clinical guidelines may have favorable impacts on access to care, symptoms, functional status, and other factors affecting patients, their families, and care providers. Simple availability of guidelines, however, may not affect clinician behavior or outcomes (Stuart et al., 2002; Glied and Cuellar, 2003).

The National Association of State Mental Health Program Directors’ (NASMHPD) Research Institute, Inc. (NRI) has lamented the lack of broad implementation of evidence-based practices across the states and have identified state needs associated with implementing evidence-based practices. Among specific EBP needs identified by NRI are:

- assertive community treatment in rural areas;
- medications provided by primary care physicians;
- guidelines/pathways for schizophrenia, bipolar, major depression, borderline personality; and
- children’s services (NRI, 2002)

Of specific mental disorders, depression and schizophrenia have been major subjects of evidence-based work to date and will be the principal subjects of our treatment of evidence-based care in mental health. Schizophrenia affects fewer people but is often more disabling, often requiring around-the-clock support. For depression, we will principally consider the degree of guideline-compliant care and forms of treatment principally in the primary care practice setting, with a special emphasis on rural settings. For schizophrenia, we will consider effectiveness and fidelity of the Assertive Community Treatment (ACT) program, with a particular emphasis on rural applications.

Depression—evidence-based care

Initial results of the Depression Guideline Panel—an early Patient Outcome Research Team—were reported in 1993 (AHCPR, 1993a,b). This work is referenced in subsequent iterations of evidence-based guidelines. Of particular interest here are two volumes directed to primary care—*Depression in Primary Care: Volume 1 – Detection and Diagnosis*, and *Volume 2 – Treatment of Major Depression* and the guidelines they present:

Guidelines on diagnosis and the other on treatment

Mood disorders

Depression co-occurring with other psychiatric conditions

Depression co-occurring with other general medical disorders

Depression associated with medication

Detection of depression

Guidelines on aims for treatment

Strategic planning for acute phase treatment

Acute phase management with medication

Acute phase management with psychotherapy

Acute phase management with medication and psychotherapy

Acute phase management with electroconvulsive therapy (ECT)

Continuation and maintenance treatment options

Most of the development of multiple guidelines or standards related to depression (NGC, 2003a) flows out of the earlier work by the Agency for Health Care Policy and Research (AHCPR), what is now the Agency for Healthcare Research and Quality (AHRQ), Patient Outcomes Research Team on Depression. National Committee for Quality Assurance (NCQA) accreditation standards and its Health Plan and Employer Data Information Sets (HEDIS) reporting for health plans focus principally on three pharmacological treatment measures for assessing health plan performance of treatment for major depression:

- *Optimal practitioner contact for medication management:* percent of those 18 or older with a diagnosis as a new case of major depressive disorder recording at least three outpatient visits (primary or specialty behavioral health care) during three months after.
- *Effective acute phase treatment:* ...a three-month period of antidepressant treatment.
- *Effective Continuation Phase Treatment:* ...a six-month period of antidepressant treatment.

The absence of NCQA requirements for reporting on mental health and substance abuse screening, as well as, lack of NCQA attention to non-pharmacological methods of mental health treatment has been questioned by other providers (Vandivort, 1998).

Many psychiatrists, other mental health specialists, and primary care physicians rely in varying degrees upon depression treatment guidelines growing out of the PORT recommendations, Texas Implementation of Medical Algorithms, or other guidelines. The easy use of the nine item Patient Health Questionnaire (PHQ-9) depression-screening instrument, for example, is widely disseminated (Spitzer et al., 1999). Estimates of the numbers who employ such instruments and guidelines, however, are scarce. Only 14 percent of a large sample of managed care plans

required screening in primary care for any mental health or substance abuse conditions—8.1 percent for mental health screening, 9.1 percent for alcohol abuse, and only 2.1 percent for drug abuse (Garnick et al., 2002). This is so despite the fact that the Preventive Services Task Force now recommends that PCPs screen their adult patients for depression. It based its recommendations upon improved health status that could result and a recognition that between 5 to 9 percent of adult patients suffer from depression that increases health care utilization and accounts for \$17 billion in lost workdays per year (Pignone et al., 2002).

One of the most aggressive implementations of depression screening and treatment guidelines in primary care is the Health Disparities Collaboratives. The partners in this effort are the Health Resources and Services Administration (HRSA), Bureau of Primary Health Care, National Association of Community Health Centers, Institute for Health Disparities, Robert Wood Johnson Foundation's national program on Improving Chronic Illness Care (Health Disparities Collaboratives, 2002).

The Bureau of Primary Health Care is emphasizing adoption of the "health disparities collaborative care model" by Federally Qualified Health Centers, including those centers that are increasingly serving the needs of the rural underserved populations. The model calls for use of effectiveness-based approaches in managing mental illness and substance abuse as chronic conditions. As such, it is drawing upon its collaborative model used effectively by FQHCs in addressing diabetes and congestive heart failure. The strategy applied to mental illness and substance abuse treatment, alone or as co-occurring disorders, calls for integrating care for these conditions into the patient's medical care within a community health center using evidence-based therapies (BPHC, 2003).

A variety of resources from a Depression Management Tool Kit are available to FQHCs via the depression-focused Health Disparities Collaboratives. These are examples of materials that are provided in the Tool Kit to support evidence-based practice:

Patient self-management tools and resources:

- Frequently Asked Questions (FAQ) for Persons Considering Medication Treatment
- FAQ for Persons Considering Psychotherapy Treatment

Recognition and Diagnostic Aids:

- PHQ-9 Patient Questionnaire
- PHQ-9 Patient Assessment (Spanish)

Treatment Tools:

- Supportive Counseling Fact Sheet
- AHCPR Treatment Guidelines
- Anti-depressant Administration Schedule

Among basic depression measures tracked by the collaborative for reporting purposes are timely face-to-face follow-up with patients, provision of patient education materials, and standardized assessment documentation in the chart (Health Disparities Collaboratives, 2001).

Treatment. The standard of care for severe depression recognized by most professional associations is the combination of medical treatment and behavioral treatment. The general pattern of diagnosis, pharmacotherapy for immediate treatment and stabilization, followed by behavioral therapy (oftentimes, cognitive behavioral therapy —or CBT) has been found to prevent relapse and to ameliorate residual symptoms (Fava et al., 1998). Some controlled studies of psychological interventions, particularly CBT, were at least as effective as medication in the treatment of depression, even if severe (Antonuccio et al., 1995). There is also evidence that CBT prevents relapse after the termination of therapy and may have greater preventive effect than antidepressant drugs (Seligman et al., 1999).

One study conducted near the time of PORT's production of its depression recommendation found that rural primary care physicians differed markedly from one another in their preferred approaches to managing depression. Just under half chose medication alone as an initial approach; nearly a third chose medication and a referral for counseling, and about one-quarter prescribed medication and conducted the counseling (Rost et al., 1994). There is evidence of increased prescription rates since the early 90s. A more recent study of primary care visits of patients under age 20 across four regions of Minnesota found prescription rates for central nervous system stimulants (CNSSs) increased 26 percent between 1995 and 1999; prescription rates for selective serotonin reuptake inhibitors (SSRIs) increased 62 percent, and rates for other antidepressants increased 195 percent. The substantial increases in the proportions of pediatricians and family practice physicians prescribing CNSSs and SSRIs led the researchers to underscore the importance of training of primary care physicians in proper use of such medications for children (Shatin and Drinkard, 2002). The evidence base for safe use of these drugs for children has not been established, and prohibitions of the use of some for children has occurred in the United Kingdom; concerns have been raised in the U.S., as well.

PCPs play a major and increasing role in treatment of depression and other mental disorders, especially in rural areas. The adequacy of mental health training for PCPs, the pace of their daily office visits, and other factors have been addressed in discussions about this role (Geller, 1999; Lambert and Agger, 1995). At the same time, patients' preference for PCPs or lack of availability of mental health specialists may be controlling considerations (Hartley et al., 1998; Rost et al., 1994).

In any case, there is ongoing recognition for the need of productive relationships between PCPs and other mental health providers. A study of 53 local settings, wherein special efforts had been made to improve links between rural primary care providers and behavioral health professionals, found such relationships to be very supportive. In such situations, the professionals favored informal methods of patient information transfer, relying on telephone and face-to-face conversations and/or in a few instances case conferences. Primary care physicians in over 85 percent of responding organizations prescribed psychotropic medications; 70 percent had consultations readily available to assist them in prescribing such medications, and many had agreements with psychiatrists for telephone consultation (Bird et al., 1998).

Interventions in primary care treatment of depression have attained some success in outcomes with rural patients. One such intervention was designed to increase complete pharmacotherapy or psychotherapy in a manner consistent with established guidelines (AHCPR, 1993a, 1993b). A

major feature of the Quality Enhancement by Strategic Teaming (QuEST) intervention was additional training given to nurses in the intervention facilities and an increase in nurses' role in contact with patients during visits and between visits. Comparing the intervention primary care offices with those relying on usual care, the intervention was found to have great impact on both rural and urban patients, especially on rural, in completing prescribed visits and treatments over a six-month period (Smith et al., 2000a).

This intervention or secondary and tertiary prevention functions in mental health and substance abuse may well be served by other organizations—a rural health department, an aging agency, or a school. For example, a rural health department's maternity support service program relies upon a social worker within a "care pathway" to assess the psychosocial system and provide education on substance abuse, among other functions (Olds, 1997). The Health Disparities Collaborative for Depression for FQHCs emphasizes such coordination with other community organizations in outreach and support activities, as well.

Schizophrenia and assertive community treatment

The Schizophrenia Patient Outcomes Research Team presented its report in 1998 (Lehman and Steinwachs, 1998a). Its 30 treatment recommendations ranged from antipsychotic medications to co-occurring symptoms, family education and support, and vocational rehabilitation. We treat in more detail here the guidelines supportive of assertive community treatment (ACT) for individuals at risk of rehospitalization.

An accompanying research study found that treatment of rural schizophrenia patients was more likely than treatment of urban patients to conform with a number of the 30 recommendations from the Schizophrenia Patient Outcomes Research Team. Among schizophrenia patients in a large Southern state and in a large Midwestern state, generally, 40 percent or more of these schizophrenia outpatients were receiving recommended medications for side effects, for depression, and for anxiety. Maintenance dosages of antipsychotic medication, in accordance for only 29 percent of patients overall, were more likely to be in accordance among rural patients than among urban. Rural patients were more likely to be among the 45 percent of patients who were prescribed psychotherapy. Rural patients were also more likely to be among the 10 percent of patients to be prescribed family interventions and among the 10 percent who were prescribed services consistent with ACT (Lehman and Steinwachs, 1998b).

The Substance Abuse and Mental Health Services Administration (SAMHSA) and its Center for Mental Health Services (CMHS) make available *Evidence-Based Practice Implementation Resource Kits* to encourage the use of evidence-based practices in mental health. The subjects are:

- Illness Management and Recovery
- Medication Management Approaches in Psychiatry
- Assertive Community Treatment
- Family Psych Education
- Supported Employment
- Co-occurring Disorders: Integrated Dual Diagnosis Treatment

Additional discussion of the tools for state mental health agencies, provider organizations, clinicians, consumers, and families is available, as well as planned phases of the project (Drake et al., 2001; Mueser et al., 2003).

The assertive community treatment model. ACT is selected for additional discussion here both because of its endorsement by leading expert panels and by others representing major constituencies for use with schizophrenia patients, its evaluation in rural settings, and its applicability to support community-based care for the seriously mentally ill who might otherwise be hospitalized. Variants of ACT also hold some promise for caring for those with co-occurring disorders.

The ACT model is based on a highly structured multidisciplinary team approach to providing comprehensive, intensive services in the community for seriously mentally ill people with support offered around the clock. Among ACT program services are case management, assessments, and psychiatric services; employment and housing assistance; family support and education; and other services and supports critical to sustaining the person in the community. There are a host of evaluations and endorsements supporting the evidence-based validity of the ACT model. It has been found to be a highly effective approach for treating people with severe mental illness, especially reducing hospitalizations and improving housing stability (Bond et al., 2001; Latimer, 1999; Mueser et al., 1998; Salyers et al., 2003).

ACT is used in over 40 states as of 2001 (NRI, 2002) and is being strongly promoted in a number of those states. It has been endorsed for nationwide use by the National Alliance for the Mentally Ill in 1996 (Flynn, 1998) and was endorsed by the Schizophrenia Patient Outcomes Research Team for patients with high rehospitalization risk or heavy service use (Lehman and Steinwachs, 1998a). ACT was assured Medicaid funding in 1999 (Salyers et al., 2003).

The ACT model is very detailed and highly structured such that fidelity analysis can differentiate it clearly from related interventions such as intensive case management or brokered case management. Fidelity testing instruments may assist funding agencies and professional groups to assess whether the ACT program has been fully or properly implemented (Salyers et al., 2003).

A manual on the Program for Assertive Community Treatment (PACT) (Allness and Knoedler, 1998) and its 2003 update (Allness and Knoedler, 2003) provide both descriptions of ACT's key elements and support materials for developing and operating a program for ACT (the name commonly used). At the same time, it reviews earlier and more recent evaluations of ACT implementations. The 2003 revision notes that a number of current applications of the ACT program have not attained as much success as some earlier applications, a situation attributed at least in part to fidelity slippage. Although ACT services are intended for individuals with the most severe and persistent psychiatric illnesses such as schizophrenia, other psychotic disorders, and bipolar disorder, they may be helpful for other forms of mental illness, as well (Allness and Knoedler, 1998).

Based upon ACT evaluation research, the authors recognize that some accommodations for rural areas are needed. The regular team staff size of 10 to 12 full-time employee (FTE) clinical and

rehabilitative personnel serving a maximum of 120 patients might be cut to five to seven FTE rehabilitative positions serving a maximum of 80 patients in rural areas. In addition, a program assistant and a psychiatrist are required—16 hours of psychiatrist time per every 50 clients served by an ACT team. The team leader, who is the clinical and administrative supervisor of the team, has at least a master's degree in nursing, social work, psychiatric rehabilitation, or psychology, or is a psychiatrist. While an urban team should include from three to five registered nurses, a rural team should include at least two registered nurses. Teams in either setting should include at least one vocational specialist, with other staff having bachelor's degrees and/or being paraprofessional mental health workers. The ACT team should include a non-professional client peer, as well. The preferred maximum client staff ratio is ten to one (Allness and Knoedler, 1998, 2003).

The smaller staff size in rural areas may prevent ACT staff from covering all evening and weekend time slots; rural PACTs may rely on “on-call” and crisis intervention services of a larger mental health system (Allness and Knoedler, 1998). The client's individual treatment team may normally run from four to five members; in rural areas, the number will seldom exceed three. The three core members are normally the primary case manager, the psychiatrist, and another clinical or rehabilitative staff member. For all ACT programs, daily meetings of all staff are required. Distances and limited professionals in rural areas are likely to present challenges to a number of these features, but program fidelity calls for meeting these requirements.

Evaluations of some rural applications of ACT programs have noted significant successes and also some compromises in fidelity. A rural South Carolina application of ACT was found to decrease inpatient care and annual cost of care (Santos et al., 1993) despite some compromises in fidelity of implementation in order to accommodate rural condition. Team roles were reduced somewhat in favor of using more family and community resources to help carry out the treatment plan, delivering or assisting in administration of daily medications, transporting clients to appointments, or helping during emergencies. Similar lack of residential and vocational alternatives in rural areas reduced ACT team emphasis on independent living in favor of a strong focus on productive and satisfying activities such as hobbies, involvement with family, or volunteer activities (Santos et al., 1993).

A controlled evaluation of an adaptation of ACT to rural sites found mixed support for the effectiveness of the program and identified a number of implementation challenges in maintaining fidelity to the ACT model. It also raised the question of the suitability of ACT for a rural case mix that tends to differ diagnostically and demographically from that in urban areas. That is, the mix of program elements in ACT may be more appropriate for urban areas serving the “...young, ethnically diverse, unmarried, substance-abusing, male, and schizophrenic client” than it is for rural settings “serving clients with affective disorder, later onset of illness, less substance abuse, and who are older, female, and more family-involved” (McDonel et al., 1997, 170). Turnover, professional isolation, access to ongoing training and supervision, acceptance of new services and service professionals are among the challenges facing ACT implementation in rural areas (McDonel et al., 1997).

Nonetheless, many evaluations point to ACT program successes in reduced hospitalizations, increased success with independent housing, and reduced costs for ACT programs that maintain

fidelity (Allness and Knoedler, 1998; Latimer, 1999; McHugo et al., 1999). ACT can contribute to cost reductions for the costliest mental health patients (Chandler and Spicer, 2002).

McGrew et al. (2003) found that ACT teams from both rural and urban areas (mainly from Michigan) tended to rate very similarly the critical ingredients for the ideal ACT team. At the top of the list of ACT ingredients was the importance of having a full-time nurse on staff. While most rated presence of a full-time nurse, a full-time social worker, and psychiatrist involvement (eight or more hours a week) as “very important,” (97 percent, 87 percent, and 83 percent, respectively), fewer attached this high rating to the presence of full-time substance abuse specialist, housing specialists, or vocational specialist—(respectively, 57 percent, 47 percent, and 42 percent). Medication management topped the list of most beneficial clinical activities with ACT (McGrew et al., 2003). Despite this rating, few evaluations of ACT or intensive case management have examined the impact of variations in medication management on outcomes (Mueser et al., 1998).

Often under-implemented elements of ACT were full-time substance abuse specialists, adequate involvement of a psychiatrist, team involvement in hospital discharges, and work with clients’ support systems. The only difference was that urban areas tend to adhere more closely to ACT’s “no discharge policy.” In related earlier work, shared caseloads among team members was found to be the strongest predictor of reduction in hospital days (McGrew et al., 1994) and the strongest predictor of total services to clients, as well (McGrew and Bond, 1997). The potential of ACT, with addition of a substance abuse specialist, to deal with co-occurring disorders may make this approach to care more attractive in rural and urban areas.

ACT funding. ACT is principally a publicly funded program; few private insurers reimburse ACT services (Clark, 1997). Increased funding via prospective payment under Medicaid and private insurers could increase flexibility for improved fidelity to ACT; but payment cutbacks could hamper an organization’s ability to offer ACT except for those patients who are the highest users of services or most likely to be hospitalized (Clark, 1997). Moreover, the long-term nature of treatment with both health and social outcomes poses some difficulties for health plans and policy makers (Clark, 1997).

It is noteworthy for rural areas that a Medicaid-managed behavioral health plan in Iowa is participating with other entities in supporting an evaluation center that will promote outcomes research on effective treatment programs, including the expansion of ACT programs beyond three of Iowa’s small urban centers into the rest of predominantly rural Iowa. The efforts follow upon ACT’s successes in the state in significantly reducing hospitalizations among people with severe and persistent mental illness (Magellan Health Services, Inc, 2003)

Prevention in substance abuse. Prevention, treatment, and maintenance are the key intervention points for combating substance abuse. While prevention of substance abuse ultimately remains the optimal public health goal, there is no single theory, program, or approach that is unilaterally effective for all individuals or communities in combating substance abuse. Instead, drug prevention efforts vary widely based on theories utilized, audiences targeted, and outcomes achieved. As SAMHSA points out, drug prevention is “part science and part art” (Schinke et al., 2002). Implementing a successful drug prevention program may be more difficult in rural areas

in light of fewer professional resources. There is a limited amount of research on the replicability and comparative effectiveness of urban substance abuse prevention programs in rural areas and on the replicability of urban programs into rural areas.

The second element in the continuum of care for substance abuse is treatment. Treatment may include detoxification; outpatient, residential/inpatient, group treatment; self-help; 12-step programs; family therapy; pharmacological treatment (Booth et al., 2001); and behavioral drug therapies. The latter focus on assisting the patient in achieving long-term abstinence by altering patient behavior (NIDA, 1999) constitutes the maintenance element in the continuum. Compliance with long-term care and adherence to follow-up or aftercare protocols are crucial elements in the substance abuse continuum of care (Schinke et al., 2002).

Foremost among a number of theories in substance abuse prevention is risk factor theory, built upon the public health model of host-agent-environment. Risk factor theory contends risk and protective factors exist in each domain in which an individual interacts with others. These domains include individual, family, peer, school, community, and social/environmental conditions that either place the individual at risk or protect the individual from problem behavior—such as substance abuse. Each of the domains may act as a protective or risk factor depending on the influence exerted, positive or negative (Schinke et al., 2002).

IOM categorizes drug prevention programs according to the audience targeted—universal, selective, and indicated. Universal programs cast a wide net and target the general population. Selective programs target those at higher than average risk for substance abuse. Indicated programs target those already using or engaging in high-risk behaviors (Gordon, 1987; IOM, 1994; Schinke et al., 2002). SAMHSA's Center for Substance Abuse Prevention (CSAP) identifies six prevention strategies to develop programs focusing on risk and protective factors including: information dissemination, prevention education, alternatives, problem identification and referral, community-based approaches, and environmental approaches. These prevention methods can be universal, selective, or indicated (CSAP, On-line course).

Research finds that individuals who first try substances as adults rarely abuse substances; therefore, prevention efforts targeting youth are especially critical to controlling the nation's drug abuse problem (Hoyt, 2002). Prevention efforts have increasingly shifted from individually focused to comprehensive community programs (Aguirre-Molina and Gorman, 1996). And, although risk factor theory underlies many prevention activities, substance abuse prevention programs targeting risk or protective factors are rarely implemented in rural communities (Scaramella and Keyes, 2001).

Community prevention. In today's comprehensive community-based programs, there is a shift from reliance on professional change agents to community members including youth, parents, members of the faith community, business sector, local officials, and concerned citizens. These interventions target multiple systems and employ multiple strategies, but the widespread tendency to rely on standardized programs with little community input has been questioned (Aguirre-Molina and Gorman, 1996).

Despite attention given to fostering community-based alcohol, tobacco, and other drug (ATOD) interventions, a shortage of well-designed studies reporting program effects on behavioral outcomes has been noted (Aguirre-Molina and Gorman, 1996). One detailed review of community interventions designed to prevent alcohol and alcohol-related problems identified just eight studies that reported program effects on behavior and used controlled evaluation or time-series analysis to assess program impact (Gorman and Speer, 1996). The research suggests environmental factors that elevate the risk of drug use among residents of impoverished urban neighborhoods such as high rates of unemployment and crime, as well as inadequate social services, might hinder the development of community-based action. These same characteristics, it might be noted, characterize a number of rural and frontier areas.

An important barrier to comprehensive community-based programs for combating substance abuse is community readiness. Stages of community readiness range from no awareness, denial, vague awareness, preplanning, preparation, initiation, stabilization, confirmation, to professionalization. Researchers studied 102 communities under 10,000 people representing three population groups—Mexican American, American Indian, and white American. Rural communities were at a low stage of readiness (vague awareness stage). Only 2 percent of rural communities were at the initiation stage for drug prevention efforts, and none of the minority communities were at a higher stage of readiness; 33 percent of the Anglo communities were at a higher stage of readiness. The researcher suggested that low readiness may reflect residents' views that drug use is not as important as other more pressing issues such as high unemployment, limited opportunity, severe economic stress, and basic survival issues (Plested et al., 1999).

School prevention. In an effort to catalog the most promising school-based prevention programs, SAMHSA and CSAP created a national registry of science-based prevention programs, that identified 44 programs (Schinke et al., 2002). While these programs are usually school and family based, more comprehensive community-based and environmental programs are on the horizon. Programs are evaluated along 15 criteria: theory, intervention fidelity, process evaluation, sample strategy, attrition, outcome measures, missing data, analysis, plausible threats to validity, replications, dissemination capacity, cultural and age appropriateness, integrity, and utility. The vast majority of the 44 programs have been implemented and tested in some urban, suburban, and rural settings. School-based programs emphasizing interactive approaches are more effective than non-interactive and have been equally successful for tobacco, alcohol, marijuana, and other illicit drugs (Black et al., 1998). Although most such interventions studied are from urban schools, success has occurred in rural schools, as well (VanDyke and Riesenber, 2002). For example, an experiment targeting 36 rural schools in Midwestern communities found that classroom based life skills training (LST) combined with strengthening families consistently demonstrated a lower alcohol new-user rate than did those schools who used LST alone or who did neither intervention (Spath et al., 2002). A study of interventions in nearly 100 schools found they worked nearly equally well in rural, suburban, and urban schools (Tobler, 1992)

Other clinical prevention and treatment approaches for rural areas. A number of programs are identified as having proven effectiveness in screening and treatment of alcohol and substance abuse in rural areas. The Alcohol and Use Disorders Identification Test (AUDIT), the Short

Michigan Alcohol Screening Test (SMAST), and serum tests have been shown to be effective at assessing substance abuse in rural settings (Cellucci et al., 2003).

Treatment improvement support. SAMHSA's Center for Substance Abuse Treatment (CSAT) has been moving toward a more refined definition of best practices in addiction treatment. Its treatment improvement protocols (TIPs) set forth what are considered best practices in addictions treatment. The TIPs draw on experience and knowledge of clinical, research, and administrative experts. Examples of the topics included in TIPs include guidelines on the treatment of adolescents (TIP 32) and older adults (TIP 26) with substance use disorders, identification of substance abuse disorders in the primary care setting (TIP 24 PG), screening and assessment of substance use disorders among adolescents (TIP 31), and comprehensive case management for substance abuse treatment (TIP 27) (CSAT, 2003). The Consensus Panel's recommendations for TIPs are based on both research and clinical experience. Those recommendations, supported by scientific evidence, are differentiated from clinically based recommendations and are accompanied by references to the relevant scientific literature.

Among the therapies proven successful in treating drug abuse are cognitive behavioral relapse prevention and contingency management. The former focuses on teaching patients alternative behaviors that assist them in resisting the compulsion to use drugs. The latter is a system of rewards and punishments aimed at making a drug-free lifestyle more desirable than one marked by drug use (NIDA, 1999). Of the 82 guidelines included for substance abuse listed with National Guideline Clearinghouse, 41 are part of guideline-supported treatment for medical conditions (NGC, 2003b). It should be noted that most treatment protocols were developed in urban areas (Clark et al., 2002).

A number of studies have evaluated the treatment disparities between rural and urban residents. In a study of at-risk people out of treatment for crack and drug use, urban subjects were found 2.57 times more likely to have been in drug treatment than rural subjects. The top barriers among rural respondents were listed as financial while urban respondents reported top reasons for not receiving care were no room or long waiting list (Metsch and McCoy, 1999).

In a Minnesota study of rural and urban differences in barriers to chemical dependency treatment, Beebe, Harrison, and McRae (2003) found rural and urban comparable in barriers identified. Slightly over 90 percent of those with a diagnosis of abuse or dependence denied needing help with their problems. The top barriers identified by those who responded that they needed help were financial, too much "red tape," or inability to get desired treatment. Rural residents were, however, more likely to confide in informal support providers such as members of the clergy. Overall, the greatest barriers appear to be attitudinal followed by financial.

Among the reasons cited for failure of treatment services to work for substance abusers is the tendency to treat the disease as an acute condition rather than a chronic one requiring on-going treatment (Coridan and Heffron, 2000). The continuing challenges in sustaining treatment are reflected in the fact that less than one-half complete prescribed out-patient substance abuse treatment. Over one-half of people treated in these facilities are identified with alcohol abuse as a primary substance, and just over one-half of these people complete the outpatient treatment, the highest rate (OAS, December 19, 2003).

Other treatments. Among other effective treatment strategies are behavioral change strategies, focus groups, the Community Reinforcement Approach (now called CRAFT), and recovery groups. The last one, recovery groups, appears to be especially effective in rural areas (Stamm, 2003). Other programs that may be effective in treating rural residents by nature of their ability to address unique cultural barriers and transportation difficulties include motivational interviews, self-help manuals, correspondence courses, and behavioral family and couples treatment.

Tobacco. Given the higher tobacco use in rural areas, treatment for tobacco use is a continuing concern. In 2000, the Surgeon General's office released its tobacco cessation guidelines. This Agency for Healthcare Research and Quality (AHRQ)-supported work focused principally on evidence and interventions for adult tobacco users and called for more research on youth tobacco cessation. It provides physicians with clinical interventions, offers system interventions for health care administrators and purchasers, and a review of the research evidence supporting screening and assessment activities as well as treatment elements and treatment intensity (Fiore, 2000). The following website provides additional quick references to clinicians for advising those who desire to quit and those who refuse to quit:
www.ahrq.gov/clinic/tobacco/systemclin.htm.

A recent article by an evidence review panel offers some guidance on “better practices” in tobacco cessation among youth. Of 20 evaluation studies that met their moderate to high validity standards, the 10 most successful employed social cognitive therapy. Interventions based on social cognitive therapy included development of coping skills, cognitive reframing, counter conditioning and stimulus control, among other techniques (McDonald et al., 2003).

Section V. Policy and Program Proposals

There are a number of program proposals that flow out of a primary focus on gaining adoption of evidence-based practices to improve MH & SA services and outcomes for rural people. There are, of course, several other critically important issues for improving basic access to these services, e.g., increasing the supply of mental health specialists available to rural people, addressing the consequences of the growing population of uninsureds and SCHIP enrollment cuts, stimulating greater progress on mental health parity, and addressing declines in funding and increasing turbulence in organizational arrangements for meeting rural mental health and substance abuse needs. Failure to address these basic issues will severely constrain the ability of other efforts to enhance effectiveness of mental health and substance abuse treatment in rural areas.

Structural measure to promote quality of MH & SA services

In a recent review of the literature on “use, quality, and outcomes” in rural mental health, Rost and her associates note that “only modest progress has been made in estimating the impact of service system attributes on entry into care, quality and outcomes” (Rost et al., 2002, p.250). Some research on the service system has focused on supply of mental health providers and linkages among them that may be essential to support evidence-based practices.

MH & SA professionals. *Evidence-based practices call for the timely contributions of mental health and substance abuse specialists, especially for severe cases.* Both mental health and substance abuse professionals are in short supply in rural areas. With respect to mental health diagnosis and treatment, the ACT model and several other models of care for the seriously mentally ill call for the active participation of psychiatrists, often in concert with several other types of mental health professionals and substance abuse professionals. Rural shortages of mental health specialists, especially child psychiatrists, as well as shortages of psychiatrists, psychologists, social workers, nurses, and substance abuse specialists weaken the ability to provide appropriate care to rural patients.

The few SA providers in rural areas are more often called upon to play a generalist role in contrast to the more specialized roles in urban areas. For example, disproportionately smaller percentages of substance abuse treatment providers serving youth in rural areas indicated a specialization in the areas of alcohol abuse in contrast to those serving urban areas (CASA, 2000a).

Further expansion of managed behavioral health care into rural areas could possibly stimulate or reduce supply of mental health professionals (Rost et al., 2002). That is, managed care organizations could restrict reimbursement for mid-level mental health specialists, and thus, reduce the supply of mental health resources available to patients (Bird et al., 1998). Alternatively, requirements by the state or other purchasers could press the managed care entity to supply psychiatric or other mental health specialists to otherwise underserved rural areas (Oss et al., 1998). Either of these outcomes is constrained by the fact that managed care in a number of states has not penetrated rural counties, particularly with respect to Medicare and private managed care. The more remote rural areas, in any case, are unlikely to have mental health specialists, especially psychiatrists or doctoral prepared clinical psychologists on site.

Two recent occurrences may increase the availability of mental health specialists in rural areas. One is revision in standards for becoming a rural critical access hospital that allows the hospital to retain up to 25 acute care beds (as an alternative to 15 acute care and 10 swing beds) and to retain up to 10 beds as psychiatric and rehabilitation distinct-part units, in addition to the 25 beds (Drug Improvement and Modernization Act of 2003 [DIMA]). The availability of such units will both require and support mental health specialists. The second, the expansion of Federally Qualified Health Centers' services in mental health holds significant promise for mental health care to increasing numbers of the rural underserved. Unless the pool of mental health caregivers is enlarged, however, local rural organizations will still be competing for the same professionals. In any case, reimbursement mechanisms for psychiatric specialty consultations (possibly via telehealth) or for inpatient mental health services would need to be supported.

Primary care providers. *Primary care providers, the principal source of mental health care for rural Americans, must play an expanded role in application of evidence-based mental health and substance abuse care.* Many primary care physicians suffer from lack of training in mental health and, possibly, lack of time to provide detailed diagnosis and provide appropriate therapy, e.g., counseling in some instances (Bird et al., 1998).

An analysis of internists and family physicians and their patients, finds that these physicians are less successful in diagnosing mental health problems among African Americans, Hispanics, patients younger than 35 years, and men; but they are more likely to detect such problems among patients with diabetes or hypertension (Borowsky et al., 2000). The challenge is to develop educational and training approaches that will take advantage of PCPs' knowledge of medical conditions and mental illness co-morbidities and enhance other skills in diagnosing and treating mental illness among minorities, younger patients, and men.

Maybe most critical is to address PCPs' sense of knowledge of and confidence in diagnosis and treatment of mental illness and substance abuse. According to a national survey of PCPs, 82.8 percent felt "very prepared" for identifying hypertension and 82.3 percent for diabetes, in contrast to only 44.1 percent who felt "very prepared" for identifying depression, 30.2 percent for prescription drug abuse, 19.9 percent for alcoholism, and 16.9 percent for illegal drug use. A more marked contrast was reflected in their confidence in treatment of these same illnesses: the percentages judging treatment "very effective" were 85.7 percent for hypertension and 69 percent for diabetes, in contrast to 42.5 percent for depression, 8.2 percent for smoking, 3.6 percent for alcoholism, and 2.1 percent for illegal drug abuse (CASA, 2000b).

The same national survey found that 94 percent of PCPs (excluding pediatricians) failed to identify substance abuse among any of five diagnoses they offered for an adult presenting classic early symptoms of alcohol abuse. Less than one-third of PCPs carefully screen for substance abuse. Physicians from rural areas were similar to those in other settings in careful screening but were slightly less likely to mention substance abuse. Among the characteristics of physicians more likely to screen for substance abuse were female gender, group practices, more training and recent Continuing Medical Education in substance abuse, and experience with a family member with substance abuse (CASA, 2000b).

Nurses. A greater emphasis on training and placing nurses—especially advanced practice psychiatric nurses—in rural settings may be particularly beneficial to rural mental health services. As demonstrated in earlier sections, nurses are highly valued in mental health treatment. At least two nurses are recommended for membership on rural Assertive Community Treatment teams. ACT team members from both rural and urban areas reported that having a full-time nurse on staff was the most valued ingredient of ACT programs (McGrew et al., 2003). Also, the role of nurses, especially that of nurse case managers and/or nurse psychiatric practitioners, were identified as critically important in a number of mental health and substance abuse evidence-based initiatives.

Nurses have been key players in improving mental health treatment among primary care physicians in multi-specialty group practices. In a disease management-related application, emphasizing quality improvement of primary care treatment of patients with depression, a major feature was additional training given to nurses in the intervention and the increased nurses' role in contact with patient during visits and between visits (Smith et al., 2000a). Still others recognize the essential contribution of a nurse case manager or care coordinator in many chronic disease management programs (Bolin et al., 2003; Leveille et al., 1998; Retchin et al., 1997; Rich et al., 1995; Wagner, 2000).

Other professional training issues. *Increased emphasis is needed on modern mental health evidence-based practices in rural-based training of psychiatrists, PCPs, psychologists, and other mental health personnel.* Several studies suggest that it is difficult to attain change in practice patterns of professionals. The introduction of new guidelines for mental health treatment, like those for other conditions, are unlikely to be immediately taken up by primary care physicians.

Maybe most important for rural mental health is that a significant portion of evidence-based training take place at interdisciplinary rural training settings. National Rural Health Association recommendations in May 1999 called for additional funding for interdisciplinary training to foster linkages among rural primary care, mental health professionals, and other rural mental health providers (NRHA, 1999). Much of it should be community-oriented, focused on cultural competency, and provided in rural community settings. A number of states have developed impressive interdisciplinary programs. The Quentin N. Burdick Program for Rural Interdisciplinary Training has been a critically important resource. But more federal and state support is needed to increase the number of multi-disciplinary training programs that bring together physicians, nurses, and mental health professionals in rural settings. Many of the evidence-based practices from ACT to depression treatment emphasize teams of professionals and proper coordination among professionals. Outcomes pursued by such initiatives must include attracting future health professionals to rural areas, increased knowledge and collaborative intent across disciplines around mental health issues, and impact on local “host” communities, their population, and providers.

Increasingly, professionals from multiple disciplines are asked to work with one another, and in some instances, with paraprofessionals, patients, and patient family members in addressing chronic diseases (Wagner, 2000). The same is true for a variety of mental health treatment approaches, e.g., ACT programs. This need to “work together” with people across divergent backgrounds and training may be even more critical in rural and frontier areas where there is a shortage of professionals.

Community health workers (CHWs). *Additional work is needed in identifying important roles and competencies for CHWs and supporting their work with individuals and groups whose needs are underserved. Additional trained, locally based CHWs offer important contributions to addressing outreach concerns, stigma issues, and ongoing support for mental health and substance abuse clients.* Various called peer workers, community workers, health advisors, and promotores, CHWs play significant roles in relationship to professionals and to individuals needing care.

From the professional case manager’s perspective, for example, case workers can be trained to use screening tools. They can be lay workers—retired teachers, ministers, college interns, or even those who have suffered from mental illness or addiction. The ACT model and a number of drug treatment models, for example, call for case workers or peer workers who have experienced the disorder being treated. The role of this person is, at times, to give specialists a perspective on reaching the patient that the specialist could not otherwise accomplish. And, in some instances, the peer may be essential to translating the work of the professional to the client.

The community health worker may play a similar role in terms of outreach, intervention, and ongoing support with particular cultures in need of mental health and substance abuse treatment. Perceptions of stigma and spirituality among African Americans (Cooper-Patrick et al., 1997), rural Mexican Americans' greater reliance upon primary care and informal caregivers (Vega et al., 1999), and simply the hundreds of languages found among Native American communities and Asian-Pacific Islanders might well call for CHWs who know the culture and language of the people who may need MH/SA services. The same set of attributes and skills may well be needed in community health workers to support and sustain mental health and substance abuse treatment. The roles of CHWs under various names are gaining more attention in the research literature (Swider, 2002) and have a positive legacy in community mental health traditions (Wagenfeld, 2000).

A recent report of a survey focused on rural mental health outreach emphasized the importance of meeting the needs of the consumers as perceived by consumers. It addresses, as well, the importance of initiating outreach efforts and gaining continuing funding support of outreach work by professionals and paraprofessionals, the latter akin to our CHWs. Such support would include, for example, transportation, training, and continuing education. Medicaid programs in some states have supported some of these CHW activities. Recognized, too, were varying outreach needs across different regions and populations (Lambert et al., 2003a).

Given their many important roles in improving the linkage between target population groups (socially defined or illness defined) and the health and human services system, additional clarity and structure regarding appropriate preparation and positions are called for. Proposals have been made to provide more education to managed care organizations and state Medicaid agencies about possible roles of CHWs and to seek public funding and support from the private sector for these paraprofessionals (University of Arizona Health Sciences Center, 1998).

PCP—mental health professional linkages. *Both payers and regulatory organizations should support policies and programs that improve the link between primary care providers and mental health specialists.* Such strong connections are important to maximizing impact of limited rural mental health resources and critical to maintaining referral and coordination implicit in numerous clinical guidelines (Bray and Rogers, 1995; Haley et al., 1998; Lambert and Agger, 1995; Mohatt, 1995; Pruitt et al., 1998). Four models linking primary care providers and mental professionals have been identified based upon the examination of 53 primary care organizations in 22 states (Bird et al., 1998):

- diversification – primary care organization or physician hires mental health personnel to offer services at the primary care site;
- linkage – primary care organization enables MH personnel independent of the primary care organization to offer services at the primary care site;
- referral – arrangements for patients of primary care providers to use off-site mental health providers; and
- enhancement – additional training for primary care providers to diagnose and treat mental health patients.

Lambert and his associates (2003b) have recommended that states need to offer additional specification and support for improving integration between primary care and behavior health services at the provider-patient level. For example:

“Primary care providers may screen and diagnose behavioral health problems, refer to behavioral health providers regarding appropriate treatment, and manage medication for behavioral health problems. In turn, behavioral health providers can identify physical health needs among their clients, communicate treatment issues to patient’s primary care provider, and make appropriate referrals to primary care services. Policy makers must decide how to give managed care organizations and providers the flexibility and incentives to pursue integration at the provider-patient level while maintaining sufficient oversight” (Lambert et al., 2003b, p. 30–31).

Managed care organizations. *Managed care organizations, “carve-in” or “carve-out,” should ensure that their behavioral health care approaches in rural areas support arrangements among providers that can offer evidence-based practices.* Managed behavioral healthcare organizations (MBHOs), for example, might benefit from allowing for variation across regions in delivery system arrangements, including those comprised of a mix of county and other public and nonprofit provider organizations and professionals in the delivery of rural mental health services (Lambert et al., 2001; Mohatt, 1997). In some settings, a local managed behavioral healthcare organization (LMBHO), a partnership of public sector entities—such as the county government and local mental health authority—could contract with public and private payers to provide behavioral health care. Such local multi-provider arrangements may be better able than MBHOs to recruit and leverage local resources. At the same time, they would need to develop management and contracting capacities found in most managed care organizations (Lambert et al., 2003b).

In contrast, it is possible that some large rural regional mental health provider organizations that contract with MBHOs may be more effective than LMBHOs in working with local medical providers who meet the medical or other services needs of the mentally ill population. Such large regional provider organizations may rely on strong staffing and information infrastructure that can support, monitor, and report systematic coordination of their mental health professionals with primary care and other related services and professionals at community levels. Additional research may illuminate these choices.

Policy makers tend to believe that “carve-in” models of managed care rather than “carve-out” model MBHOs promote better integration between primary care and mental health providers (Lambert et al., 2003b). Health plan and provider attention to both physical health and mental health is deemed desirable, supported in part by the increasingly recognized interdependence of effective treatment of physical disease and effective treatment of depression, or any other serious medical disorder (Hurley and Draper, 2002). Increasingly, depression screening and treatment are included in the guidelines addressing other medical conditions. Of the 185 guidelines listed in the National Guideline Clearinghouse that contain references to depression treatment, 162 are related to addressing depression as part of guideline-supported treatment for medical conditions (NGC, 2003a).

Primary care case management (PCCM) remains a popular alternative to full-risk model plans for Medicaid managed care, especially in rural areas. Although state Medicaid plans continue to rely on traditional fee-for-service physician practices, a number of states have added other elements to PCCM including telenurse advice systems and care management support personnel to enhance the quality of care (Smith et al., 2000b). These programs are beginning to address screening and treatment for depression as part of such care coordination efforts and the extension of evidence-based practices into practices associated with disease management and care coordination.

Substance abuse and mental health services systems have developed separately in most states, with oversight provided by separate agencies with their own funding streams. Medicaid managed behavioral health (MMBH) may exacerbate this separation either by establishing different reimbursement and coverage policies for those two services or by positioning coverage for substance abuse services in their physical health programs. The wide variation in how states administer their mental health and substance abuse programs, especially in relation to the MMBH program, may well retard the growth and adoption of evidence-base practices or their widespread adoption. It would appear to run counter to gaining the widely encouraged demand for improved practices in meeting the needs of dual-diagnosed persons with mental health and substance abuse problems.

As of January 2003, 35 states had implemented MMBH programs in rural counties. The mosaic of alternative patterns of substance abuse coverage across the states underscores the difficulty of implementing guidelines for care of MH, SA, or dual-diagnosis patients. Many states offered substance abuse treatment but limited coverage. Four states provided no substance abuse services coverage through their MMBHs. Two states limited substance abuse coverage through their MMBHs to persons dually diagnosed with mental health and substance abuse problems. Six states integrated substance abuse with their physical health plan; seven states included substance abuse services within the mental health “carve-out.” One state (Missouri) operated a separate substance abuse services “carve-out” (Lambert et al., 2003b).

Other features of Medicaid programs reduce access to substance abuse services. Rehabilitation services for mental health and substance abuse is a covered Medicaid benefit for 44 states. However, detailed review of coverage limitations found that nine of the 44 states do not cover substance abuse treatment, and an additional eight of the 44 states place serious restrictions on substance abuse services, such as limiting treatment to pregnant women only, not covering ambulatory detox, and other limitations (Kaiser Family Foundation, 2003).

Community-based treatment for the seriously mentally ill. *Community mental health centers, regional behavior health agencies, and/or managed behavioral health organizations should expand availability of Assertive Community Treatment or related intensive case management for the seriously mentally ill.* CMHCs can continue to play an important role in many states and locales (Hartley et al., 2002b). With sufficient state support, such organizations serving rural regions could support evidence-based ACT programs, retain the seriously ill client in the community, and prevent costlier hospitalization. As noted earlier, MBHOs might also support ACT services in rural settings. In hybrid arrangements, the support of CHMCs in community

settings may work in tandem with MBHOs to support services that parallel a number of key elements of ACT.

Local schools. *Expanded support to local schools for evidence-based prevention and early intervention in children and youth mental illness and substance abuse is of critical importance.* Not only are schools the major source of children's mental health services in most communities (Hartley et al., 2002b), they may be virtually the only source in some rural settings. There are evidence-based prevention programs, especially those based on social cognitive behavioral theory, that have attained some success in tobacco cessation among youth. Although there are fewer interventions and studies in rural settings, several studies demonstrate that school-based prevention programs can work as well in rural areas as in urban. Similarly, there is evidence that substance abuse prevention efforts targeting multiple facets of risk and protection offer the best prospect of prevention of adolescent substance abuse (Kumpfer et al., 2002).

Given that children with emotional disturbances have the lowest graduation rate for any disability group (Goldman, 2003), the Individuals with Disabilities Education Act (IDEA) may offer additional support for school mental health services. Children with mental illness are included within the categories of disabled children. Although implementation of IDEA has been both delayed and uneven across the states (GAO, 2003), special attention might be given to the needs of rural schools and rural children as the program is instituted.

Disease management and illness management. *Growing interest in integration, or closer coordination, of mental health and substance abuse with medical care should be encouraged through disease management programs.* Such programs can primarily target mental illness and/or substance abuse as the principal diagnosis or a critically important co-morbidity to a medical ailment. Given frequent barriers to care in rural areas—the shortage of providers, travel distances, stigma—such programs may be even more critical to rural populations than to urban populations.

Disease management is defined here as providing effective health care to chronically ill populations across the continuum of care through ongoing patient education, support, and engagement; effectively linking providers and other supporting professionals to ensure guideline-supported practice; and ongoing information exchange, feedback, and analysis to adjust care as necessary, improve quality processes, and elevate outcomes.

Disease management can focus on a single disease or multiple diseases. A multi-illness perspective is proposed here. The relationship between diabetes and depression, both frequent targets of disease management programs, underscores the importance of the primary care practitioner or team of caregivers in effectively treating the whole patient. Improved care of depressed patients who also suffer from medical illnesses such as diabetes, arthritis, severe headaches, or paralysis can benefit from quality improvements in primary care use of antidepressant medications and psychotherapy (Koike et al., 2002). Diabetic adults are more likely than non-diabetics to have a major depressive disorder, but diabetics, with worsening health status, are nearly six times more likely to develop a major depressive disorder (Egede and Zheng, 2003). Diabetics with depression report poor physical and mental health, use more outpatient care, and fill more prescriptions. Those with this combination of illnesses tally 4.5

times greater total health care expenditures than for individuals without depression (Egede et al., 2002).

The Bureau of Primary Health Care is emphasizing adoption by Federally Qualified Health Centers of the “health disparities collaborative care model,” which stresses adoption of effectiveness-based approaches in managing mental illness and substance abuse as chronic conditions. As such, it is drawing upon its collaborative model used effectively in addressing diabetes and congestive heart failure. The strategy applied to mental illness and substance abuse treatment calls for integrating care for these conditions into the patient’s medical care within a community health center using evidence-based therapies (BPHC, 2003). The use of consistent mental health screening and disease registries (ideally based on electronic medical records) promises to provide a strong base for building effective disease management.

A number of multi-specialty group practice-based integrated delivery systems serving significant rural populations have adopted disease management programs (Bolin et al., 2003). Several include depression screening and management as part of their disease management efforts. Within these systems, there are variations in sponsorship and incentives for engaging in such disease-management activities.

A major quality improvement effort relying on a “care coordination” approach to advancing use of evidence-based care for depressed patients served by managed primary care practices surfaced a number of challenges to do the same elsewhere. These served as the basis for a call for policy changes that provide financial incentives for organizations implementing such interventions, funding support of collaboration of health service researchers and health care organizations on such efforts, and educating the public on seeking quality depression care or publishing information on detection, treatment, and outcomes (Rubenstein et al., 1999).

Illness management in mental health parallels disease management concerns as applied to behavioral health, with a greater emphasis on the active engagement of people being treated. Illness management has been defined as: “professional-based interventions designed to help people collaborate with professionals in the treatment of their mental illness, reduce their susceptibility to relapses, and cope more effectively with their symptoms” (Mueser et al., 2002, p. 1273). Another related approach looks to employing relationships between the person who is ill and peers who are suffering or have suffered from the same illness. It has been proposed that peer-based interventions along these lines be referred to as “illness self-management” (Mueser et al., 2002). The illness management concept and illness self-management concepts are important in their own right for mental illness treatment; they play “hinge” roles, as well, with illness management being closely akin to chronic disease management and illness self-management having an important overlap with substance abuse treatment (management).

Illness management programs are promoted as a core capacity of a service system supported by policies and with programs supported by state Medicaid plans. Such program should also include support for relevant curriculum and training efforts by mental health program directors integrating psychosocial and medical dimensions of illness management (Mueser et al., 2002).

Dual diagnosis. *Progress in evidence-based screening for dual diagnoses, co-occurring substance abuse and mental disorders, should be continued. Additional research and development is needed in the treatment arena.* Such work is important both because of the frequency of “dual diagnoses” and the difficulty of treating one without treating the other. Thirty percent of those with substance abuse diagnoses suffer from mental illness, while 50 percent of those with mental illness have abused drugs (Agencies, 2002).

A body of research on the subject is developing, but the search for evidence-based effective treatment is still in its infancy. A review of 36 research studies on the effectiveness of integrated treatment for dually diagnosed patients suggested, at best, mixed results in the treatment of the co-occurring mental health and substance abuse disorders. Of those, 10 recent studies of comprehensive, integrated outpatient treatment programs suggested such programs help these patients participate in activities for dually diagnosed patients and reduce substance abuse and attain remission. The programs’ impact on hospital use and relief of psychiatric symptoms were not consistent across studies. Among program features associated with effectiveness are: “assertive outreach, case management, and a longitudinal, stage-wise, motivational approach to substance abuse treatment” (Drake et al., 1998).

A study of the treatment of dual-diagnosis patients suggests that those being treated vary markedly from rural to urban settings (Mueser et al., 2001). Patients from either predominantly rural New Hampshire or Connecticut cities suffered from schizophrenia-spectrum or bipolar disorders and co-occurring substance-use disorders. Treatment of urban patients faced more challenges than the rural patients on both mental health conditions and substance abuse: more patients with schizophrenia with more severe symptoms, more cocaine use rather than alcohol abuse, greater homelessness, and more involvement in the criminal justice system. Although the urban patients were more likely to be from minority backgrounds, cocaine use rather than race was more associated with homelessness and criminal involvement. The greater severity of the patients from the urban area suggested greater needs for residential treatment, use of assertive community treatment, and additional supportive services than might be true for rural patients (Mueser et al., 2001).

Another rural/urban study underscores the importance of community-based services for the dually diagnosed patient. A study of 160 rural and urban Arkansans with schizophrenia was conducted to test hypothesis that rural residents would have worse outcomes than urban residents due to lack of access to mental health services. It found that those who received community-based services, particularly rural subjects, were less likely to be re-hospitalized than those who were not receiving community-based services for mental health treatment. Dually diagnosed rural residents (schizophrenia and substance abuse) and those residents with no contact with community-based services were at the greatest risk of worsening at six month follow-up (Fischer et al., 1996).

SAMHSA (2003b) has integrated a number of resources to assist the states in developing programs to address the needs of those with co-occurring diagnoses. An important step in beginning to treat those with dual diagnoses appropriately is to “cross-train” current mental health specialists and substance abuse specialists to detect both conditions (SAMHSA, 2003b).

Technology and information systems

Telehealth. *Telehealth (TH) is another means of bringing evidence-based mental health services to remote underserved rural populations, both through the work of distant providers and continuing education of local rural providers.* The telehealth term is used here rather than the more restrictive terms of telepsychiatry or telemedicine in order to denote that TH may be applied by a variety of mental health or substance abuse treatment and support activities in addition to medicine or other health-related activities.

TH services contribute to clinic-based mental health performance—diagnosis, medications, involvement of other agencies, and client satisfaction. Quality and effectiveness of TH is comparable to on-site services (Ermer, 1999). Continued evaluation in this arena should attend to implementation of existing evidence-based practices in MH/SA; at the same time, such work should be attentive to developing “evidence-based practices” in effective uses of various modes of telehealth for different diagnoses and for different types of populations (e.g., age, ethnicity, degree of isolation).

At the same time, TH is important to supporting mental health in rural and frontier settings on many different fronts. These include emergency intervention in jails, nursing centers, and schools; mental health/substance abuse-focused continuing education for physicians, nurses, psychologists, social workers, counselors, and para-professionals; distant-psychiatrist participation in ACT teams; and support of prevention and screening activities undertaken in schools, worksites, church groups, and the like.

For the elderly, telepsychiatry consultations to a rural nursing facility frequently focused on depression or dementia-related behavior. TH supported prompt response to patients’ needs, more frequent consultation, and less travel time for consultations (Johnston and Jones, 2001).

Telepsychiatry services to rural jails are still another significant application of TH (Zaylor et al., 2000). The relevance of this telehealth application is underscored by two conditions. Local law enforcement in rural communities is frequently drawn into mental health emergencies. Mentally ill young men in rural areas, moreover, have been more likely than their urban counterparts to experience contact with law enforcement (Cuffel, 1994).

Telehealth remains an important option, too, for providing training, consultation, and support to rural primary care providers in the face of continued rural shortages of mental health specialty providers (Rost et al., 1998) and for more specialized training for other professionals and paraprofessionals. Despite the high costs in rural areas, pursuit of telemental health options are likely to continue as a response to the severe rural shortages of mental health specialty providers (LaMendola, 2000). It is likely, too, in light of costs and prevalence of common co-morbidities, that more telehealth networks will follow the example of one linking hospitals, FQHCs, dental clinics, and behavioral health services across multiple counties (Dimmick et al., 2003).

The efficacy of TM in the substance-abuse arena is less clear. Use of telecommunication to connect a case manager with a client to encourage the client to use more substance-abuse treatment and medical services did not appear to be as effective as meeting the client face-to-face

at the treatment facility (Vaughan-Sarrazin et al., 2000). However, interactive television and telecommunications can decrease travel barriers and improve behavioral training in this field (Booth et al., 2001).

There are continuing challenges facing telehealth, such as ongoing evidence of effectiveness, reimbursement (especially by private insurance), restricted licensure and regulatory issues, and access to technology in rural and frontier settings (Sandberg, 1999; Stamm, 2003). Rural frontier access to affordable telephone technology (not to mention higher speed internet access) remains a significant challenge with major companies divestiture of unprofitable rural service lines and much higher than normal costs to create and maintain the telecommunication systems essential for telemental health (LaMendola, 2000). New developments in WiFi wireless internet access technology extending the effective range to over 150 miles may help bring hi-speed access to many additional rural, if not frontier, areas.

Clinical and administrative information systems. *Clinical and administrative information systems can contribute to improved delivery, monitoring, and evaluation of effectiveness of mental health treatment.* Some important information on continuity of care, at least for clients of public mental health systems, can be relatively easily captured using administrative data: “(1) the frequency of encounters, (2) the quantity of encounters, (3) variant of types of services received during encounters, (4) the locational consistency of encounters across facilities, and (5) receipt of case management services” (Fortney et al., 2003). Other information related to continuity that may be less easy to capture might include: transition from inpatient to outpatient care (presence of a follow-up outpatient visit within 30 days of discharge), communication of clinical information across services systems and providers, the fit of a client’s service use pattern with the individualized treatment plan, and mutual support among providers to pinch hit and troubleshoot clients’ problems before they happen (Fortney et al., 2003). Reliance upon claims data in many private and public systems, especially in light of inconsistencies across primary care providers in identifying depression as the diagnosis of record, can result in errors in identifying depression cases among a patient population. Problems have to do with relying on a specific diagnosis of depression and/or prescription for an anti-depressant in identifying all, or only, patients with depression (Spettell et al., 2003).

Some research suggests that electronic medical records may contribute to PCPs responding to one-time events such as flu vaccination or mammogram, but they may contribute less to the ongoing management of a chronic condition, such as depression. Placing the results of a computerized screening of primary care patients for depression into the EMR influenced PCPs’ initial diagnosis and management of the depressed patient, e.g., treatment and/or referrals (Rollman et al., 2001). However, those PCPs who received guide-based advice for depression treatment and patient-specific advisory messages via the EMR did not demonstrate better patient outcomes than those PCPs without the same degree of EMR information (Rollman et al., 2002).

The power of a dedicated mental health EMR to affect practice may be best presented in the context of a large multi-county, non-profit behavioral health organization with multiple sites. Most dramatic is the impact that it has had on mobile crisis teams, especially those responding to crises on weekends or after business hours. Every client’s record is available to several hundred staff members on-line. Instead of “flying blind,” the team can find out immediately via remote

connection to the EMR system all pertinent information about the patient in crisis—his diagnosis, medications, treatment plan, and primary treatment team, going as far back as they want. Based on this information, the crisis team can take remedial action, documenting an admission or alternative treatment and final disposition at the conclusion of the contact. All of this action is immediately recorded in the record on-line, and communication is forwarded to the professional responsible for the patient and (with prior permission of the client) the client's primary care practitioner is notified of this event.

The same system, which includes up-to-date data, is reviewed before each contact with a client, serves as the basis for documenting essential reporting data (to an MBHO) regarding patient billing status, pharmaceutical use, post-hospitalization care, and the like. It helps ensure attention to HIPAA concerns by documenting any use of the record for any purpose (Personal communication, Jerold Greer, Frontier Health, January 15, 2004).

Finally, the reliance on EMRs and/or registries by FQHCs in its health disparities collaboratives is an important feature for maintaining continuity of care and evaluating outcomes. It can be used to support care planning, preparation for patient visits, generate reminders, share information across a team, and assess outcomes among other functions (Health Disparities Collaboratives, 2002).

A Closing Note

The expanded use of evidence-based MH & SA services, as demonstrated here, is heavily affected by a number of characteristics of rural health service systems. Chief among these are the undersupply of substance abuse and mental health specialists and facilities in rural settings and the need to rely on expanded roles for other facilities and professionals to help address unmet needs. Other important challenges to adoption of evidence-based practices in rural settings include the continued under funding of these services and ongoing complexities in workforce training, licensing, reimbursement, and effectiveness..

Given these challenges, it may be all the more important that MH & SA policies for rural areas to target efforts that can better meet service needs now and support longer-term development of a MH&SA workforce in rural areas. Such efforts should emphasize the retention and expansion of the scarce resources that exist in rural settings and the application of technology that can immediately bring to bear distant MH & SA expertise to support the essential work of locally available counselors, primary care physicians, nurses, and other professionals and paraprofessionals in rural communities who offer needed services. Additional uses of the same types of technology might support training of additional rural based professionals and paraprofessionals to support MH & SA services for rural populations.

Finally, greater attention to dealing with medical and MH & SA co-morbidities with other medical illnesses and with co-occurring MH & SA disorders. Identification of MH&SA conditions in the context of other diagnoses and treatments can help to overcome stigma and other barriers to accessing behavior health care. Moreover, it has tremendous potential for effective secondary and tertiary prevention efforts as well as for effective treatment of both behavioral and medical conditions. The increasing calls for cross-training of behavioral health

professionals for screening and, for some, treatment of mental disorders and substance abuse is even more critical for rural areas where professionals are in short supply. Addressing these needs for advanced services as well as needs for community-based prevention efforts calls for greater attention to discovering or designing models that are appropriate to the needs of a variety of rural and frontier communities and settings.

- Agencies, states moving toward dual-diagnosis competency. 2002. *Mental Health Weekly* 12(13).
- AHCPR (Agency for Health Care Policy and Research Depression Guideline Panel). 1993a. *Depression in Primary Care: Volume 1. Detection and Diagnosis* (AHCPR Pub. No. 93-0550). Rockville, MD: AHCPR.
- AHCPR. 1993b. *Depression in Primary Care: Volume 2. Treatment of Depression* (AHCPR Pub. No. 93-0551). Rockville, MD: AHCPR.
- Aguirre-Molina M, Gorman DM. 1996. Community-based approaches for the prevention of alcohol, tobacco, and other drug use. *Annual Review of Public Health* 17:337–358.
- Allness DJ, Knoedler WH. 1998. *The PACT Model of Community-based Treatment for Persons with Severe and Persistent Mental Illnesses: A Manual for PACT Start-up*. Arlington, VA: NAMI (National Alliance for the Mentally Ill).
- Allness, DJ, Knoedler, WH. 2003. *National Program Standards for ACT Teams*. Iowa City, IA: The Iowa Consortium for Mental Health, University of Iowa College of Medicine [Online]. Available: <http://psych.iupui.edu/ACTCenter/NationalPACTStandards.pdf> [accessed November 18, 2003].
- Anderson R. 2003. Use of community-based services by rural adolescents with mental health and substance use disorders. *Child and Adolescent Psychiatry* 54(10):1339–1341.
- Andreasen NC. 2001. *Brave New Brain: Conquering Mental Illness in the Era of the Genome*. New York: Oxford University Press.
- Angold A, Erkanli A, Farmer EM, Fairbank JA, Burns BJ, Keeler G, Costello E J. 2002. Psychiatric disorder, impairment, and service use in rural African American and White youth. *Archives of General Psychiatry* 59(10):893–901.
- Antonuccio DO, Danton WG, DeNelsky GY. 1995. Psychotherapy versus medication for depression: Challenging the conventional wisdom with data professional psychology. *Research and Practice* 26(6):574–585.
- APA (American Psychiatric Association). 1999. *APA Office of Rural Health: APA rural health initiative 1999 year in review*. APA Directorate.
- Appelbaum PS. 2003. The 'quiet' crisis in mental health services. *Health Affairs* 22(5):110–116.
- Bair BD. 1998. Frequently missed diagnosis in geriatric psychiatry. *Psychiatric Clinician North America* 21(4):941–971, viii.
- Barry KL, Fleming MF, Greenley JR, Kropp S, Widlak P. 1996. Characteristics of persons with severe mental illness and substance abuse in rural areas. *Psychiatric Services* 47(1):88–90.
- Beebe TJ, Harrison PA, McRae JA, Jr., Asche SE. 2003. Evaluating behavioral health services in Minnesota's Medicaid population using the Experience of Care and Health Outcomes (ECHO) Survey. *Journal of Health Care for the Poor and Underserved* 14(4):608–621.
- Benshoff JJ, Harrawood LK, Koch, DS. 2003. Substance abuse and the elderly: Unique issues and concerns. *Journal of Rehabilitation* (April-June 2003).
- Bird DC, Dempsey P, Hartley D. 2001. *Addressing Mental Health Workforce Needs in Underserved Rural Areas: Accomplishments and Challenges*. Edmund S. Muskie School of Public Service, Maine Rural Health Research Center, 1–52.
- Bird DC, Lambert D, Hartley D, Beeson PG, Coburn AF. 1998. Rural models for integrating primary care and mental health services. *Administration & Policy in Mental Health*, 25(3):287–308.

- Black DR, Tobler NS, Sciacca JP. 1998. Peer helping/involvement: An efficacious way to meet the challenge of reducing alcohol, tobacco, and other drug use among youth? *Journal of School Health* 68(3):87–93.
- Bolin JN, Gamm LD, Zuniga MA, Berger E, Kash B. 2003. *Chronic Disease Management in Rural and Underserved Areas: Patient Responses and Outcomes*. College Station, Texas: Southwest Rural Health Research Center, School of Rural Public Health, Texas A&M University System Health Science Center (submitted).
- Bond GR, Becker DR, Drake RE, Rapp CA, Meisler N, Lehman AF, Bell MD, Blyler CR. 2001. Implementing supported employment as an evidence-based practice. *Psychiatric Services* 52(3):313–322.
- Booth BM, McLaughlin YS. 2000. Barriers to and need for alcohol services for women in rural populations. *Alcoholism: Clinical & Experimental Research* 24(8):1267–1275.
- Booth K, Bildner C, Bozzo R, Macro O. 2001. *Substance Abuse and Welfare Recipients in the Rural Setting*. Administration for Children and Families.
- Borowsky SJ, Rubenstein LV, Meredith LS, Camp P, Jackson-Triche M, Wells KB. 2000. Who is at risk of nondetection of mental health problems in primary care? *Journal of General Internal Medicine* 15(6):381–388.
- BPHC (Bureau of Primary Health Care). 2003. *Opportunities for Health Centers to Expand/Improve Access to Mental Health and Substance Abuse, Oral Health, Pharmacy Services, and Quality Care Management Services During Fiscal Year 2003* [Online]. Available: <ftp://ftp.hrsa.gov/bphc/docs/2003pins/2003-03.pdf> [accessed January 8, 2004].
- Bray JH, Rogers JC. 1995. Linking psychologists and family physicians for collaborative practice. *Professional Psychology: Research and Practice* 26:132–138.
- Briggs-Gowan MJ, Carter AS, Skuban EM, Horwitz SM. 2001. Prevalence of social-emotional and behavioral problems in a community sample of 1- and 2-year-old children. *Journal of the American Academy of Child Adolescent Psychiatry* 40(7):811–819.
- Bull CN, Bane SD. 2001. Program development and innovation. *Journal of Applied Gerontology* 20(2):184–194.
- Burns BJ, Costello EJ, Angold A, Tweed D, Stangl D, Farmer EM, Erkanli A. 1995. Children's mental health service use across service sectors. *Health Affairs* 14(3):147–159.
- Bush JW. 2002. Prescribing privileges: Grail for some practitioners, potential calamity for interprofessional collaboration in mental health. *Journal of Clinical Psychology* 58(6):681–696.
- Bushy A. 2002. *Rural Minority Health Resource Book*. Kansas City, MO: NRHA (National Rural Health Association).
- Butterfield P, Malliarakis K, Dotson JA. 2002. Billings' methamphetamine epidemic. Nursing leaders frame a public health and environmental health problem. *Nursing Leadership Forum* 7(1):8–11.
- Calloway M, Fried B, Johnsen M, Morrissey J. 1999. Characterization of rural mental health service systems. *Journal of Rural Health* 15(3):296–307.
- CASA (National Center on Addiction and Substance Abuse). 2000a. *CASA Whitepaper: No Place to Hide: Substance Abuse in Mid-Size Cities and Rural America*. Report commissioned by the United States Conference of Mayors. Funded by DEA and NIDA.
- CASA. 2000b. *Missed Opportunity: National Survey of Primary Care Physicians and Patients on Substance Abuse*. University of Illinois: Survey Research Laboratory.

- CDC (Centers for Disease Control and Prevention). 1998. Self-reported frequent mental distress among adults-United States, 1993-1996. *Morbidity and Mortality Weekly Report* 47: 326–331.
- Cellucci T, Vik P, Nirenberg T. 2003. Substance abuse in the rural community. In: Stamm BH, ed. *Rural Behavioral Health Care: An Interdisciplinary Guide*. 1st ed. Washington, DC: American Psychological Association. Pp. 53-65.
- Chandler D, Spicer G. 2002. Capitated assertive community treatment program savings: System implications. *Administration and Policy in Mental Health* 30(1):3–19.
- Clark JJ, Leukefeld C, Godlaski T, Brown C, Garrity J, Hays L. 2002. Developing, implementing, and evaluating a treatment protocol for rural substance abusers. *Journal of Rural Health* 18(3):396–406.
- Clark RE. 1997. Financing assertive community treatment. *Administration and Policy in Mental Health* 25(2):209–220.
- Cooper-Patrick L, Powe NR, Jenckes MW, Gonzales JJ, Levine DM, Ford DE. 1997. Identification of patient attitudes and preferences regarding treatment of depression. *Journal of General Internal Medicine* 12(7):431–438.
- Coridan C, Heffron J. 2000 (Updated Spring 2002). *Substance Abuse Parity, A Guide for Advocates* [Online]. Available: www.nmha.org/state/parity/SAParity.pdf [accessed December 7, 2004].
- Crystal S, Sambamoorthi U, Walkup, JT, Akincigil A. 2003. Diagnosis and treatment of depression in the elderly Medicare population: Predictors, disparities, and trends. *Journal of the American Geriatric Society* 51(12):1718–1728.
- CSAP (Center for Substance Abuse Prevention). *Foundations of Prevention: An Online Course in the Core Knowledge of Substance Abuse Prevention* [Online]. Available: <http://prevtech.samhsa.gov/fop> [accessed December 4, 2003].
- CSAT (Center for Substance Abuse Treatment). 2003. *CSAT TIPS* [Online]. Available: <http://www.treatment.org/Externals/tips.html> [accessed January 10, 2004].
- Cuffel BJ. 1994. Violent and destructive behavior among the severely mentally ill in rural areas: Evidence from Arkansas' community mental health system. *Community Mental Health Journal* 30(5):495–504.
- Daw J. 2002. New Mexico becomes first state to gain prescription privileges. *Monitor on Psychology* 33(4).
- DeGruy F. 1996. Mental health care in the primary care setting. In: *Primary Care: America's Health in a New Era*. Washington, DC: National Academy. Pp. 285–311.
- Dimmick SL, Burgiss SG, Robbins S, Black D, Jarnagin B, Anders M. 2003. Outcomes of an integrated telehealth network demonstration project. *Telemedicine Journal and E-Health* 9(1):13–23.
- Donnermeyer JF. 1997. The economic and social costs of drug abuse among the rural population. *NIDA Research Monograph* 168:220–245.
- Donnermeyer JF, Scheer SD. 2001. An analysis of substance use among adolescents from smaller places. *Journal of Rural Health* 17(2):105–113.
- Drake RE, Goldman HH, Leff HS, Lehman AF, Dixon L, Mueser KT, Torrey WC. 2001. Implementing evidence-based practices in routine mental health service settings. *Psychiatric Services* 52(2):179–182.

- Drake RE, Mercer-McFadden C, Mueser KT, McHugo GJ, Bond GR. 1998. Review of integrated mental health and substance abuse treatment for patients with dual disorders. *Schizophrenia Bulletin* 24(4):589–608.
- Eberhardt M, Ingram D, Makuc D, et al. 2001. *Urban and rural health chartbook. Health, United States, 2001*. Hyattsville, MD: National Center for Health Statistics.
- The Economic Costs of Drug Abuse in the United States 1992-1998* (Pub. No. NCJ-190636). Washington, DC: Office of National Drug Control Policy, Executive Office of the President.
- Egede LE, Zheng D. 2003. Independent factors associated with major depressive disorder in a national sample of individuals with diabetes. *Diabetes Care* 26(1):104–111.
- Egede LE, Zheng D, Simpson K. 2002. Comorbid depression is associated with increased health care use and expenditures in individuals with diabetes. *Diabetes Care* 25(3):464–470.
- Ermer DJ. 1999. Experience with a rural telepsychiatry clinic for children and adolescents. *Psychiatric Services* 50(2):260–261.
- Expert Consensus Guideline Series*. 2003. [Online]. Available: <http://www.psychguides.com> [accessed December 12, 2003].
- Farrell SP, Koch JR, Blank M. 1996. Rural and urban differences in continuity of care after state hospital discharge. *Psychiatric Services* 47(6):652–654.
- Fava GA, Rafanelli C, Grandi S, Conti S, Belluardo P. 1998. Prevention of recurrent depression with cognitive behavioral therapy: Preliminary findings. *Archives of General Psychiatry* 55(9):816–820.
- Feldman S, Bachman J, Cuffel B, Friesen B, McCabe J. 2003. Advanced practice psychiatric nurses as a treatment resource: Survey and analysis. *Administration and Policy in Mental Health* 30(6):479–494.
- Ferguson L, Ries R, Russo J. 2003. Barriers to identification and treatment of hazardous drinkers as assessed by urban/rural primary care doctors. *Journal of Addictive Diseases* 22(2):79–90.
- Fiore MC. 2000. Treating tobacco use and dependence: An introduction to the U.S. Public Health Service Clinical Practice Guideline. *Respiratory Care* 45(10):1196–1199.
- Fischer EP, Owen RR, Cuffel BJ. 1996. Substance abuse, community service use, and symptom severity of urban and rural residents with schizophrenia. *Psychiatric Services* 47(9):980–984.
- Flynn LM. 1998. Patterns of usual care for schizophrenia: Initial results from the Schizophrenia Patient Outcomes Research Team (PORT) client survey. Commentary. *Schizophrenia Bulletin* 24:30–32.
- Fortney JC, Booth BM. 2001. Access to substance abuse services in rural areas. *Recent Developments in Alcoholism* 15:177–97.
- Fortney JC, Booth BM, Blow FC, Bunn JY. 1995. The effects of travel barriers and age on the utilization of alcoholism treatment aftercare. *American Journal of Drug and Alcohol Abuse* 21(3):391–406.
- Fortney JC, Booth BM, Kirchner JE, Han X. 2003. Rural-urban differences in health care benefits of a community-based sample of at-risk drinkers. *Journal of Rural Health* 19(3):292–298.
- Fortney JC, Rost K, Warren, J. 2000. Comparing alternative methods of measuring geographic access to health services. *Health Services and Outcomes Research Methodology* 1:173–184.

- Fox JC, Berman J, Blank M, Rovnyak VG. 1999. Mental disorders and help seeking in a rural impoverished population. *International Journal of Psychiatry in Medicine* 29(2):181–195.
- Freese TE, Obert J, Dickow A, Cohen J, Lord RH. 2000. Methamphetamine abuse: Issues for special populations. *Journal of Psychoactive Drugs* 32(2):177–182.
- Freid VM, Prager K, MacKay AP, Xia H. 2003. *Health, United States, 2003, with chartbook on trends in the health of Americans*. Hyattsville, MD: National Center for Health Statistics.
- Gamm LG, Hutchison LL, Dabney BJ, Dorsey AM. 2003. *Rural Healthy People 2010: A companion document to healthy people 2010*. Vol. 1. College Station, Texas: Texas A&M University System Health Science Center, Southwest Rural Health Research Center, School of Rural Public Health.
- Ganguli M, Mulsant B, Richards S, Stoehr G, Mendelsohn A. 1997. Antidepressant use over time in a rural older adult population: The movies project. *Journal of the American Geriatrics Society* 45(12):1501–1503.
- GAO (General Accounting Office). 2003. *Child Welfare and Juvenile Justice: Federal Agencies Could Play a Stronger Role in Helping States Reduce the Number of Children Placed Solely to Obtain Mental Health Services* (GAO-03-397).
- Garland AF, Hough, RL, McCabe KM, Yeh M, Wood PA, Aarons GA. (2001). Prevalence of psychiatric disorders in youths across five sectors of care. *Journal of the American Academy of Child and Adolescent Psychiatry* 40(4):409–418.
- Garnick DW, Horgan CM, Merrick EL, Hodgkin D, Faulkner D, Bryson S. 2002. Managed care plans' requirements for screening for alcohol, drug, and mental health problems in primary care. *American Journal of Managed Care* 8(10):879–888.
- Geller JM. 1999. Rural primary care providers' perceptions of their roles in the provision of mental health services: Voices from the plains. *Journal of Rural Health* 5(3):326–334.
- Glied S, Cuellar AE. 2003. Trends and issues in child and adolescent mental health. *Health Affairs* 22(5):39–50.
- Glied S, Hoven CW, Moore RE, Garrett AB, Regier DA. 1997. Children's access to mental health care: Does insurance matter? *Health Affairs* 16(1):67–174.
- Goldman HH. 2003. 'How do you pay your rent?' Social policies and the President's Mental Health Commission. *Health Affairs* 22(5):65–72.
- Goldsmith HF, Wagenfeld MO, Manderscheid RW, Stiles D. 1997. Specialty mental health services in metropolitan and nonmetropolitan areas: 1983 and 1990. *Administration and Policy in Mental Health* 24(6):475–488.
- Goode E. March 26, 2002. Psychologists get prescription pads and furor erupts. *The New York Times*.
- Gordon R. 1987. An operational classification of disease prevention. In: Steinberg JA, Silverman MM, eds. *Preventing Mental Disorders*. Rockville, MD: U.S. DHHS. Pp. 20–26.
- Gorman DM, Speer PW. 1996. Preventing alcohol abuse and alcohol-related problems through community interventions: A review of evaluation studies. *Psychology and Health* 11:95–131.
- Haley WE, McDaniel SH, Bray JH, Frank RG, Heldring M, Bennett-Johnson S, Go Lu E, Reed GM, Wiggins JG. 1998. Psychological practice in primary care settings: Practical tips for clinicians. *Professional Psychology: Research and Practice* 29(3):237–244.

- Hartley D, Agger MS, Miller M. 1998. *Effects of managed mental health care on service use in rural areas*. University of Southern Maine: Edmund S. Muskie School of Public Service, Maine Rural Health Research Center.
- Hartley D, Bird D, Dempsey P. 1999. Rural mental health and substance abuse. In: Ricketts TC, ed. *Rural Health in the United States*. Oxford University Press, New York:159–178.
- Hartley D, Ziller EC, Lambert D, Loux S, Bird D. 2002a. *State Licensure Laws and The Mental Health Professions: Implications for the Rural Mental Health Workforce*. University of Southern Maine: Edmund S. Muskie School of Public Service, Maine Rural Health Research Center.
- Hartley D, Britain C, Sulzbacher S. 2002b. *Behavioral Health: Setting the Rural Health Research Agenda*. University of Southern Maine: Edmund S. Muskie School of Public Service, Maine Rural Health Research Center.
- Hauenstein EJ, Boyd MR. 1994. Depressive symptoms in young women of the Piedmont: Prevalence in rural women. *Women and Health* 21:105–123.
- Health Disparities Collaboratives. 2001. *Training Manuals and Tools* [Online]. Available: http://www.healthdisparities.net/training_manuals_and_tools.html [accessed November 13, 2003].
- Health Disparities Collaboratives. 2002. *Depression* [Online]. Available: http://www.healthdisparities.net/Depression_Apr2002.pdf [accessed November 12, 2003].
- Holzer CE, Goldsmith HF, Ciarlo JA. 1998. Chapter 16: Effects of rural-urban county type on the availability of health and mental health care providers. In *Mental Health, United States, 1998*. DHHS Pub. No. (SMA)99-3285. Washington, DC: U.S. Government Printing Office: 204–213.
- Horgan C, Levine H. 1998. The substance abuse treatment system: What does it look like and whom does it serve? Appendix E. In: Lamb S, Greenlick MR, McCarty D, eds. *Bridging the Gap Between Practice and Research: Forging Partnerships with Community-Based Drug and Alcohol Treatment (1998)*. Institute of Medicine.
- Hoven CW, Cohen P, Moore RE, et al. 1998 (November 15–19). *Mental Health Service Use by Disturbed Youth: Five Service Systems Vs. The Community*. Paper presented at the 126th Annual Meeting of the American Public Health Association, Washington, DC.
- Hoyt A. 2002. Delivering primary substance abuse prevention in primary care. *Clinical Excellence for Nurse Practitioners* 6(3):31–37.
- Hoyt DR, Conger RD, Valde JG, Weihs K. 1997. Psychological distress and help seeking in rural America. *American Journal of Community Psychology* 25:449–470.
- Hurley RE, Draper DA. 2002. Medicaid confronts a changing managed care marketplace. *Health Care Financing Review* 24(1):11–25.
- Hutchison L, Blakely C. 2003. Substance abuse-trends in rural areas: A literature review. In: Gamm L, Hutchison L, Dabney BD, Dorsey AM, eds. *Rural Healthy People 2010: A companion document to Healthy People 2010*. Vol. 2. College Station, Texas: The Texas A&M University System Health Science Center, School of Rural Public Health, Southwest Rural Health Research Center.
- IOM (Institute of Medicine). 1994. *Reducing Risks for Mental Disorders: Frontiers for Prevention Intervention Research*. Washington, DC: National Academy Press.
- IOM. Committee on Quality Health Care in America. 2001. *Crossing the Quality Chasm: A New Health Care System for the 21st Century*. Washington, DC: National Academy Press.

- Ivey SL, Scheffler R, Zazzali JL. 1998. Supply dynamics of the mental health workforce: Implications for health policy. *The Milbank Quarterly* 76(1):25–58.
- Johnsen MC, Morrissey JP, Calloway MO, Fried BJ, Blank M, Starrett BE. 1997. Rural mental health leaders' perceptions of stigma and community issues. *Journal of Rural Health* 13:59–70.
- Johnson SK, DeLuca J, Natelson BH. 1996. Depression in fatiguing illness: Comparing patients with chronic fatigue syndrome, multiple sclerosis and depression. *Journal of Affective Disorders* 39(1):21–30.
- Johnston D, Jones BN. 2001. Telepsychiatry consultations to a rural nursing facility: A 2- year experience. *Journal of Geriatric Psychiatry and Neurology* 14(2):72–75.
- Kaiser Family Foundation. 2003. *Rehabilitation Services: Mental Health and Substance Abuse* [Online]. Available: www.kff.org/medicaidbenefits/rehabilitation.cfm [accessed December 15, 2003].
- Kendell N. 2000. Medicaid and indigent care issue brief: Youth access to tobacco. *Issue Brief Health Policy Tracking Services*, 1–32.
- Kessler RC, Berglund PA, Bruce ML, Koch JR, Laska EM, Leaf PJ, Manderscheid R, Rosenheck RA, Walters EE, Wang PS. 2001. The prevalence of correlates of untreated serious mental illness. *Health Services Research* 36(6):Part 1.
- Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eschleman S, Wittchen HU, Kendler KS. 1994. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: Results from the national comorbidity survey. *Archives of General Psychiatry* 51:8–19.
- Koike AK, Unutzer J, Wells KB. 2002. Improving the care for depression in patients with comorbid medical illness. *American Journal of Psychiatry* 159(10):1738–1745.
- Kumpfer KL, Alvarado R, Tait C, Turner C. 2002. Effectiveness of school-based family and children's skills training for substance abuse prevention among 6-8-year-old rural children. *Psychology of Addictive Behaviors* 16(4 Suppl):S65–S71.
- Lambert D, Agger MS. 1995. Access of rural AFDC Medicaid beneficiaries to mental health services. *Health Care Financing Review* 17(1):133–145.
- Lambert D, Agger MS, Hartley D. 1999. Service use of rural and urban Medicaid beneficiaries suffering from depression: The role of supply. *Journal of Rural Health* 15(3):344–355.
- Lambert D, Donahue A, Mitchell M, Strauss R. 2003a. *Mental Health Outreach: Promising Practices in Rural Areas*. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services.
- Lambert D, Gale J, Bird D, Hartley D. 2003b. Medicaid managed behavioral health in rural areas. *Journal of Rural Health* 19(1):22–32.
- Lambert D, Gale J, Bird D, Hartley D. 2001. *Medicaid Managed Behavioral Health in Rural Areas: Working Paper #24* (working paper). University of Southern Maine: Edmund S. Muskie School of Public Service, Maine Rural Health Research Center.
- Lambert D, Hartley D. 1998. Linking primary care and rural psychiatry: Where have we been and where are we going? *Psychiatric Services* 49(7):965–967.
- LaMendola WF. 2000. Telemental health services in frontier areas: Provider and consumer perspectives. *Journal of Washington Academy of Sciences* 86:197–203.
- Latimer EA. 1999. Economic impacts of assertive community treatment: A review of the literature. *Canadian Journal of Psychiatry* 44(5):443–454.

- Lehman A, Steinwachs D. 1998a. Translating research into practice: The Schizophrenia Patient Outcomes Research Team (PORT) treatment recommendations. *Schizophrenia Bulletin* 24(1):1–10.
- Lehman AF, Steinwachs DM. 1998b. Patterns of usual care for schizophrenia: Initial results from the Schizophrenia Patient Outcomes Research Team (PORT) Client Survey. *Schizophrenia Bulletin* 24(1):11–20; discussion 20–32.
- Leveille SG, Wagner EH, Davis C, Grothaus L, Wallace J, LoGerfo M, Kent D. 1998. Preventing disability and managing chronic illness in frail older adults: A randomized trial of a community-based partnership with primary care. *Journal of the American Geriatrics Society* 46(10):1191–1198.
- Logan TK, Walker R, Nagle L, Lewis J, Wiesenbahn D. 2003. Rural and small-town attitudes about alcohol use during pregnancy: A community and provider sample. *Journal of Rural Health* 19(4):497–505.
- Magellan Health Services Inc. 2003 (September 29). Magellan collaborates to promote evidence-based practices. *Mental Health Weekly*.
- McDonald P, Colwell B, Backinger CL, Husten C, Maule CO. 2003. Better practices for youth tobacco cessation: Evidence of review panel. *American Journal of Health Behaviors* 27 Suppl 2:S144–S158.
- McDonel EC, Bond GR, Salyers M, Fekete D, Chen A, McGrew JH, Miller L. 1997. Implementing assertive community treatment programs in rural settings. *Administration and Policy in Mental Health* 25(2):153–173.
- McGrew JH, Bond GR. 1997. The association between program characteristics and service delivery in assertive community treatment. *Administration and Policy in Mental Health* 25(2):175–189.
- McGrew JH, Bond GR, Dietzen L, Salyers M. 1994. Measuring the fidelity of implementation of a mental health program model. *Journal of Consulting and Clinical Psychology* 62(4):670–678.
- McGrew JH, Pescosolido B, Wright E. 2003. Case managers' perspectives on critical ingredients of assertive community treatment and on its implementation. *Psychiatric Services* 54(3):370–376.
- McHugo GJ, Drake RE, Teague GB, Xie H. 1999. Fidelity to assertive community treatment and client outcomes in the New Hampshire dual disorders study. *Psychiatric Services* 50(6):818–824.
- Mechanic D, Schlesinger M, McAlpine DD. 1995. Management of mental health and substance abuse services: State of the art and early results. *Milbank Quarterly* 73(1):19–55.
- Mellman TA, Miller AL, Weissman EM, Crismon ML, Essock SM, Marder SR. 2001. Evidence-based pharmacologic treatment for people with severe mental illness: A focus on guidelines and algorithms. *Psychiatric Services* 52(5):619–625.
- Metsch LR, McCoy CB. 1999. Drug treatment experiences: Rural and urban comparisons. *Substance Use and Misuse* 34(4–5):763–784.
- Miller AL, Hall CS, Crismon ML, Chiles JA. 2003. *Tima Procedural Manual: Schizophrenia Module* [Online]. Available: <http://www.mhmr.state.tx.us/CentralOffice/MedicalDirector/timasczman.pdf> [accessed January 10, 2004].

- Mohatt DF. 1995. Chapter One: Primary care and mental health service integration: The Bay Area Service Extension (BASE) Project. In: *Meeting the Challenge: Model Programs in Rural Mental Health*. Marinette, Wisconsin: Four Corners Institute. Pp. 1–8.
- Mohatt DF. 1997. Rural issues in public sector managed behavioral healthcare. In: Minkoff K, Pollack D, eds. *Managed Mental Health Care in the Public Sector: A Survival Manual*. Vol. 4. Amsterdam, Netherlands: Harwood Academic Publishers. Pp. 119–126.
- Mohatt DF, Mock J, Adams SJ, Shaw, J. 2003 (September 19-20). *Rural Mental Health in the WICHE West: Meeting Workforce Demands through Regional Partnership*. Frontier Mental Health Workforce Roundtable. Reno, Nevada.[Online]. Available:http://www.wiche.edu/MentalHealth/frontier/reno_workforce_roundtable.pdf [accessed February 2004]. Boulder, CO: WICHE. Funded by ORHP, HRSA.
- Mueser KT, Bond GR, Drake RE, Resnick SG. 1998. Models of community care for severe mental illness: A review of research on case management. *Schizophrenia Bulletin* 24(1):37–74.
- Mueser KT, Corrigan PW, Hilton DW, Tanzman B, Schaub A, Gingerich S, Essock SM, Tarrrier N, Morey B, Vogel-Scibilia S, Herz MI. 2002. Illness management and recovery: A review of the research. *Psychiatric Services* 53(10):1272–1284.
- Mueser KT, Essock SM, Drake RE, Wolfe RS, Frisman L. 2001. Rural and urban differences in patients with a dual diagnosis. *Schizophrenia Research* 48(1):93–107.
- Mueser KT, Torrey WC, Lynde D, Singer P, Drake RE. 2003. Implementing evidence-based practices for people with severe mental illness. *Behavior Modification* 27(3):387–411.
- NAMHC (National Advisory Mental Health Council). 1993. Health care reform for Americans with severe mental illnesses: Report of the national advisory mental health council. *American Journal of Psychiatry* 150:1447–1465.
- NAMI (National Alliance for the Mentally Ill). 2004. *About Mental Illness*. [Online]. Available: http://www.nami.org/Content/NavigationMenu/Inform_Yourself/About_Mental_Illness/About_Mental_Illness.htm [accessed January 20, 2004].
- National Roll-up on 2002 Data for FQHCs*. 2002. [Online]. Available: <http://bphc.hrsa.gov/uds/data.htm> [accessed December 2003].
- New Freedom Commission on Mental Health. 2003. *Achieving the Promise: Transforming Mental Health Care in America. Final report* (Pub. No. SMA-03-3832). Rockville, MD: DHHS.
- NGC (National Guideline Clearinghouse). 2003a. *Guideline Summary: Depression* [Online]. Available: <http://www.guideline.gov> [accessed December 29, 2003].
- NGC. 2003b. *Guideline Summary: Substance Abuse* [Online]. Available: <http://www.guideline.gov> [accessed December 29, 2003].
- NIDA (National Institute on Drug Abuse). 1999. *Behavioral Change through Treatment* [Online]. Available: www.nida.nih.gov/Infobox/behavchange.html [accessed December 15, 2003].
- Norfleet MA. 2002. Responding to society's needs: Prescription privileges for psychologists. *Journal of Clinical Psychology* 58(6):599–610.
- NRHA (National Rural Health Association). 1999 (May). *Mental Health in Rural America*. An Issue Paper prepared by the NRHA [Online]. Available: <http://www.nrharural.org/dc/issuepapers/ipaper14.html> [accessed December 2003].
- NRI (National Association of State Mental Health Program Directors Research Institute). 2002. *Implementation of evidence-based services by state mental health agencies: 2001*.

- OAS (Office of Applied Studies). 2003 (January 3). *The NHSDA Report: Substance Abuse or Dependence in Metropolitan and Non-Metropolitan Areas*. Rockville, MD: OAS.
- OAS. 2003 (November 7). *The NSDUH Report: Reasons for Not Receiving Substance Abuse Treatment*. Rockville, MD: OAS.
- OAS. 2003 (December 19). *The DASIS Report: Discharge from Intensive Outpatient Treatment: 2000*: SAMHSA, DASIS.
- Okwumabua JO, Baker FM, Wong SP, Pilgram BO. 1997. Characteristics of depressive symptoms in elderly urban and rural African Americans. *Journal of Gerontology: Medical Sciences* 52A:M241–M246.
- Olds S. 1997. Designing a care pathway for a maternity support service program in a rural health department. *Public Health Nursing* 14(6):332–338.
- Oss M, Mackie JJ, Birch S, Hartley D. 1998. *Best Practices in Rural Medicaid Managed Behavioral Health: Measuring and Monitoring Access* [Online]. Available: <http://www.muskie.usm.maine.edu/bestpractice> [accessed December 4, 2003].
- Patterson JM. 2002. Risk and protective factors associated with children's mental health. *Healthy Generations* 2(3).
- Peterson BD, West J, Tanielian TL, Pincus HA, Kohout J, Pion GM, Wicherski MM, Vandivort-Warren RE, Palmiter ML, Merwin EI, Fox JC, Clawson TW, Smith SC, Stockton R, Nitza AG, Ambrose JP, Blankertz L, Sullivan LD, Dwyer KP, Fleischer MS, Goldsmith, HF, Witkin MJ, Atay JE, Mandersheid RW. 1998. Chapter 17: Mental health practitioners and trainees. In: *Mental Health, United States*. DHHS Pub. No.(SMA) 99-3285. Washington, DC: U.S. Government Printing Office, 214–246.
- Pignone MP, Gaynes BN, Rushton JL, Burchell CM, Orleans CT, Mulrow CD, Lohr KN. 2002. Screening for depression in adults: A summary of the evidence for the U.S. Preventive Services Task Force. *Annals of Internal Medicine* 136(10):765–776.
- Plested B, Smitham DM, Jumper-Thurman P, Oetting ER, Edwards RW. 1999. Readiness for drug use prevention in rural minority communities. *Substance Use and Misuse* 34(4-5):521–544.
- Pruitt SD, Klapow JC, Epping-Jordan JE, Dresselhaus TR. 1998. Moving behavioral medicine to the front line: A model for the integration of behavioral and medical sciences in primary care. *Professional Psychology: Research and Practice* 29(3):230–236.
- Regier DA, Narrow WE, Rae DS, et al. 1993. The de facto U.S. mental and addictive disorders service system. Epidemiologic catchment area prospective 1-year prevalence rates of disorders and services. *Archives of General Psychiatry* 50:85–94.
- Retchin SM, Brown RS, Yeh SC, Chu D, Moreno L. 1997. Outcomes of stroke patients in Medicare fee for service and managed care. *Journal of the American Medical Association* 278(2):119–124.
- Rich MW, Beckham V, Wittenberg C, Leven CL, Freedland KE, Carney RM. 1995. A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *New England Journal of Medicine* 333(18):1190–1195.
- Ricketts TC, Johnson-Webb KD, Randolph RK. 1999. Populations and places in rural America. In: Ricketts TC, ed. *Rural Health in the United States*. Oxford University Press, New York:7–24.
- Robins LN, Locke BZ, Regier DA. 1991. An overview of psychiatric disorders in America. *Psychiatric Disorders in America: The Epidemiologic Catchment Area Study*. New York: Free Press.

- Rollman BL, Hanusa BH, Gilbert T, Lowe HJ, Kapoor WN, Schulberg HC. 2001. The electronic medical record. A randomized trial of its impact on primary care physicians' initial management of major depression [corrected]. *Archives of Internal Medicine* 161(2):189–197.
- Rollman BL, Hanusa BH, Lowe HJ, Gilbert T, Kapoor WN, Schulberg HC. 2002. A randomized trial using computerized decision support to improve treatment of major depression in primary care. *Journal of General Internal Medicine* 17(7):493–503.
- Rost K, Fortney J, Fischer E, Smith J. 2002. Use, quality, and outcomes of care for mental health: The rural perspective. *Medical Care Research and Review* 59(3):231–265.
- Rost K, Fortney J, Zhang M, Smith J, Smith GR, Jr. 1999. Treatment of depression in rural Arkansas: Policy implications for improving care. *Journal of Rural Health* 15(3):308–315.
- Rost K, Humphrey J, Kelleher K. 1994. Physician management preferences and barriers to care for rural patients with depression. *Archives of Family Medicine* 3(5):409–414.
- Rost K, Owen RR, Smith J, Smith GR. 1998. Rural-urban differences in service use and course of illness in bipolar disorder. *Journal of Rural Health* 14(1):36–43.
- Rost K, Smith GR, Taylor JL. 1993. Rural-urban differences in stigma and the use of care for depressive disorders. *Journal of Rural Health* 9(1):57–62.
- Rubenstein LV, Jackson-Triche M, Unutzer J, Miranda J, Minnium K, Pearson ML, Wells KB. 1999. Evidence-based care for depression in managed primary care practices. *Health Affairs* 18(5):89–105.
- Salyers MP, Bond GR, Teague GB, Cox JF, Smith ME, Hicks ML, Koop JI. 2003. Is it ACT yet? Real-world examples of evaluating the degree of implementation for assertive community treatment. *Journal of Behavioral Health Services and Research* 30(3):304–320.
- Samaritan Institute. 2004. [Online]. Available: <http://www.samaritan-institute.org> [accessed January 9, 2004].
- SAMHSA (Substance Abuse and Mental Health Services Administration). 2002. *National Survey on Drug Use and Health*. Rockville, MD: SAMHSA, OAS.
- SAMHSA. 2003a. *Alcohol and Drug Services Study (ADSS): The National Substance Abuse Treatment System: Facilities, Clients, Services, and Staffing*. Rockville, MD: SAMHSA, OAS.
- SAMHSA. 2003b. *Strategies for Developing Treatment Programs for People with Co-Occurring Substance Abuse and Mental Disorders* (SAMHSA Pub. No. 3782). Rockville, MD: SAMHSA.
- Sandberg LA. 1999. Telemedicine continues to wrestle wicked problems: Reimbursement, licensure, and bandwidth rules (or is it compliance?). *Health Management Technology* 20(1):134, 133.
- Santos AB, Deci PA, Lachance KR, Dias JK, Sloop TB, Hiers TG, Bevilacqua JJ. 1993. Providing assertive community treatment for severely mentally ill patients in a rural area. *Hospital and Community Psychiatry* 44:34–39.
- Scaramella LV, Keyes AW. 2001. The social contextual approach and rural adolescent substance use: Implications for prevention in rural settings. *Clinical Child and Family Psychology Review* 4(3):231–251.
- Scheffler, RM, Kirby PB. 2003. The occupational transformation of the mental health system. *Health Affairs* 22(5):177–188.

- Schinke S, Brounstein P, Gardner S. 2002. *Science-Based Prevention Programs and Principles, 2002* (DHHS Pub No. (SMA) 03-3764). Rockville, MD: CSAP, SAMHSA.
- Schwartz J, Begley S. 2002. *The Mind and the Brain : Neuroplasticity and the Power of Mental Force*. 1st ed. New York: Regan Books.
- Seligman MEP, Schulman P, DeRubeis RJ, Hollon SD. 1999. The prevention of depression and anxiety. *Prevention & Treatment 2*:Article 8.
- Shatin D, Drinkard CR. 2002. Ambulatory use of psychotropics by employer-insured children and adolescents in a national managed care organization. *Ambulatory Pediatrics 2*(2):111–119.
- Shell RC. 2001. Antidepressant prescribing practices of nurse practitioners. *Nurse Practitioner 26*(7 Pt 1):42–47.
- Shelton DA, Merwin EI, Fox JC. 1995. Implications of health care reform for rural mental health services. *Administration and Policy in Mental Health 23*:59–69.
- Smith JL, Rost KM, Nutting PA, Elliot CE, Duan N. 2000a. A primary care intervention for depression. *Journal of Rural Health 16*(4):313–323.
- Smith V, Des Jardins T, Peterson K. 2000b. *Exemplary Practices in Primary Care Case Management Programs*. Princeton, NJ: Center for Health Care Strategies.
- Spettell CM, Wall TC, Allison J, Calhoun J, Kobylynski R, Fargason R, Kiefe CI. 2003. Identifying physician-recognized depression from administrative data: Consequences for quality measurement. *Health Services Research 38*(4):1081–1102.
- Spitzer RL, Kroenke K, Williams JB. 1999. Validation and utility of a self-report version of PRIME-MD: The PHQ primary care study. Primary Care Evaluation of Mental Disorders. Patient Health Questionnaire. *Journal of the American Medical Association 282*(18):1737–1744.
- Spoth RL, Redmond C, Trudeau L, Shin C. 2002. Longitudinal substance initiation outcomes for a universal preventive intervention combining family and school programs. *Psychology of Addictive Behaviors 16*(2):129–134.
- Stamm BH. 2003. Bridging the rural-urban divide with telehealth and telemedicine. In: Stamm BH, ed. *Rural Behavioral Health Care: An Interdisciplinary Guide*. 1st ed. Washington, DC: American Psychological Association. Pp. 145–155.
- Stillner V, Kraus RF, Leukefeld CG, Hardenbergh D. 1999. Drug use in very rural Alaska villages. *Substance Use and Misuse 34*(4-5):579–593.
- Stuart GW, Rush AJ, Morris JA. 2002. Practice guidelines in mental health and addiction services: Contributions from the American College of Mental Health Administration. *Administration and Policy in Mental Health 30*(1):21–33.
- Sturm R, Sherbourne CD. 2001. Are barriers to mental health and substance abuse care still rising? *Journal of Behavioral Health Services Research 28*(1):81–88.
- Surgeon General Report. 1999a. *Mental Health: A Report of the Surgeon General*. Rockville, MD: U.S. DHHS, SAMHSA, Center for Mental Health Services, National Institute of Mental Health.
- Surgeon General Report. 1999b. *The Surgeon General's Call to Action to Prevent Suicide*. Washington, DC: U.S. Public Health Service.
- Surgeon General Report. 2000. *Reducing Tobacco Use: A Report of the Surgeon General*. Atlanta, Georgia: U.S. DHHS, CDC, National Center for Chronic Disease Prevention and Health Promotion, Office of Smoking and Health.

- Surgeon General Report. 2001. *Culture, Race, and Ethnicity - A Supplement to Mental Health: A Report of the Surgeon General*. Rockville, MD: U. S. DHHS, Office of the Surgeon General.
- Swider SM. 2002. Outcome effectiveness of community health workers: An integrative literature review. *Public Health Nursing* 19(1):11–20.
- Tobler NS. 1992. Drug prevention programs can work: Research findings. *Journal of Addictive Disease* 11(3):1–28.
- Trivedi MH, Shon S, Crismon ML, Key T. 2000. *Texas Implementation of Medication Algorithms (Tima): Guidelines for Treating Major Depressive Disorder* (Procedural Manual) [Online]. Available: <http://www.mhmr.state.tx.us/centraloffice/medicaldirector/timaMDDman.pdf> [accessed February 12, 2004].
- University of Arizona Health Sciences Center. 1998. *A Summary of the National Community Health Advisor Study: Weaving the Future. Policy Research Project*: Funded by the Annie E. Casey Foundation.
- U.S. DHHS (U.S. Department of Health and Human Services). 2000. *Healthy People 2010: Understanding and Improving Health*. Washington, DC: U.S. DHHS.
- Vandivort R. 1998. *NASW Comments on NCQA's Draft HEDIS*. In Thompson J, ed. Washington, DC.
- VanDyke EM, Riesenbergs LA. 2002. Effectiveness of a school-based intervention at changing preadolescents' tobacco use and attitudes. *Journal of School Health* 72(6):221–225.
- Vaughan-Sarrazin MS, Hall JA, Rick GS. 2000. Impact of case management on use of health services by rural clients in substance abuse treatment. *Journal of Drug Issues* 30(2):435–463.
- Vega WA, Kolody B, Aguilar-Gaxiola S, Catalano R. 1999. Gaps in service utilization by Mexican Americans with mental health problems. *American Journal of Psychiatry* 156(6):928–934.
- Wagenfeld MO. 2000. Delivering mental health services to the persistently and seriously mentally ill in frontier areas. *Journal of Rural Health* 16(1):91–96.
- Wagenfeld MO, Murray JD, Mohatt DF, DeBruyn JC. 1994. Mental health and rural America: 1980-1993. *An Overview and Annotated Bibliography*. NIH Pub. No. 94-3500, ORHP, U.S. DHHS. Pp. 1–116.
- Wagenfeld MO, Murray JD, Mohatt DF, DeBruyn JC. 1997. Mental health service delivery in rural areas: Organizational and clinical issues. *NIDA Research Monograph* 168: 418–437.
- Wagner EH. 2000. The role of patient care teams in chronic disease management. *British Medical Journal* 320(7234):569–572.
- Warner R, Polak P. 1995. The economic advancement of the mentally ill in the community: Economic choices and disincentives. *Community Mental Health Journal* 31(5):477–498.
- WHO (World Health Organization). 2001. *The World Health Report 2001 - Mental Health: New Understanding, New Hope*. Geneva: WHO.
- Williams, D. 2003 (June 6). *Remarks to the National Mental Health Association*. HRSA Newsroom. [Online]. Available: <http://newsroom.hrsa.gov/speeches/2003speeches/NMHA.htm> [accessed December 2003].

- Wolff TL, Dewar J, Tudiver F. 2001. Chapter 12: Rural mental health. In: *Textbook of Rural Medicine*. New York: McGraw-Hill Medical Publishing Division. Pp. 181–194.
- Zaylor C, Whitten P, Kingsley C. 2000. Telemedicine services to a county jail. *Journal of Telemedicine and Telecare* 6(Suppl 1):S93–S95.