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HEALTH FACILITIES &
SERVICES REVIEW BOARD

January 6, 2015

Ms. Courtney Avery, Executive Secretary
Illinois Health Services Review Board
525 W Jefferson Street
Springfield, IL 62761

Re: Project #14-046 Decatur Memorial Hospital Geriatric Psychiatric Unit's "Intent to Deny"

Dear Ms. Avery:

Thank you for the opportunity to provide additional information regarding our proposed project in response to the HFSRB's initial decision on this application. The applicant believes that this is a project which is needed in Decatur to serve the residents who utilize Decatur Memorial Hospital and who are attended by the physicians whose practices serve Decatur Memorial Hospital.

The following information will reply to the issues raised in the State Staff Report, the opposition letters and the questions asked by the Board Members.

First, in response to the letter from St. John's Medical Center located in Springfield, St. John's is located according to map quest at 43 minutes from the applicant facility. The State Board's rules refer to a 45 minute travel time under Criterion 1110.730.c.5.A.v, which impacts only that criterion if the applicant is claiming that there are restrictive admission policies which prevent the applicant's patients from receiving care at another facility. Distance is, however, a factor to be considered. Several studies (Persky 2014, Mojtabi 2009, Bruce, Citters, Bartels, 2005) show that access to transportation is a significant component contributing to older adults not receiving necessary psychiatric treatment- both inpatient and outpatient. For the older adult, driving significant distances has been demonstrated to be an impediment to either accessing or participating in the treatment process for a spouse. The applicant has not claimed that St. John's Hospital has restrictive admission policies, but rather has stated that the Decatur Memorial patients have declined to seek care that is more than 30 minutes from their homes and physicians. Criterion 1110,730,d,1 requires the applicant under the unnecessary duplication of services to consider all facilities within 30 minutes travel time rather than 45 minutes travel time, which leaves only St. Mary's Decatur as a facility to be considered for

unnecessary duplication of services. Decatur Memorial Hospital has had continuing difficulties in trying to admit patients to St. Mary's Hospital with psychiatric diagnoses who also require continuing simultaneous medical care. St. Mary's psychiatrists decline these patients due to their medical conditions. This category of patient makes up the majority of the patients proposed to be served in the new unit. At Decatur Memorial Hospital the patients' normal medical physicians and hospitalists will be available to treat medical conditions while the psychiatrist and psychologists address the psychiatric illness.

The proposed project is not an unnecessary duplication of services but rather the extension of the services now provided by Decatur Memorial Hospital. The patients proposed to be treated in the new unit will be patients who are currently treated at DMH as Medical Surgical Patients, but need the extended care for a secondary psychiatric diagnosis. The patients are above the age of 50 and have dual diagnosis which if treated correctly can avoid the need for long-term care or repeated admission to the hospital to care for their underlying psychiatric diagnosis.

The proposed calculation of bed need differs from the State Board's formula in that it is an incidence based calculation rather than the demand based calculation used by the Board. The applicant's formula tries to be proactive in treating the patient rather than calculating the need solely on the basis of who actually seeks care. The applicant's model will make care more readily available to the patient allowing for earlier treatment and better results. This methodology is supported by the research studies referenced in the original application. This methodology indicates that a substantial number of geriatric patients are not receiving the care that they need in the hospitals and are, as a result, placed in Long-Term Care Facilities rather than being treated and allowed to maintain their independent living status.

The need for the proposed beds is supported by the applicant's historical utilization by patients with a dual diagnosis. If only 25.4% of the 2,774 patients treated at DMH with a dual diagnosis of a medical problem and a psychiatric diagnosis (705 patients) were to be treated in the proposed unit, based upon an average length of stay of 8.8 days, the proposed 20 bed unit would achieve the target occupancy rate of 85%. Based upon these figures, it is clear that the proposed project would not be a maldistribution of services and would not negatively impact any other hospital in the planning area.

The Board discussion of this project also centered on two other issues: the size of the project, and the staffing of the facility.

In regard to the size of the project the applicant agrees that the space proposed will exceed the State Norms, however, this deviation from the State Norm is made necessary by the utilization of existing space rather than constructing new space or even completely gutting and remodeling existing space to accommodate the proposed beds. It would be much more expensive to pursue either of these two options. The hospital currently has underutilized bed space which can accommodate the proposed unit without adding space

or beds to the hospitals bed count. The proposed unit will result in a net zero change in the hospital space and number of beds.

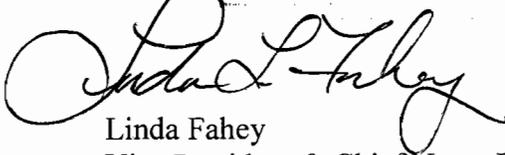
In regard to staffing, the applicant will be working with Diamond Healthcare to recruit the necessary staffing including Psychiatrists and where needed psychologists. The existing psychologists who work with hospital patients currently will remain actively involved in the proposed unit.

The hospital will also work closely with the existing community mental health programs and providers to insure that all of their services are available to our patients upon discharge and when appropriate during their hospital stay.

A question was also raised regarding the applicant's commitment to providing care to Geriatric patients rather than other age groups once the application was approved. We do not have any plans to treat any age group other than the elderly in the proposed unit. This unit will be designed to care for the older adult patient and will not be used to treat other AMI patients.

Thank you for this opportunity to address the Board and staff concerns regarding the proposed project.

Sincerely,

A handwritten signature in black ink, appearing to read "Linda Fahey". The signature is written in a cursive, flowing style with large loops and a long tail.

Linda Fahey
Vice President & Chief Nurse Executive



OVERLOOKED AND UNDERSERVED: ELDERS IN NEED OF MENTAL HEALTH CARE

by: *Trudy Persky, MSW, ACSW*

- **Managed Care**
- **Positive Perspective**

CURRENT CONCERNS

Over the last decade there has been a striking number of articles in professional journals and the public press attesting to the high prevalence of psychiatric disorders in the nation's elderly population. Although adults 60 years of age and older constitute 13 percent of the United States population, their use of inpatient and outpatient mental health services falls far below expectations.

Elders account for only 7 percent of all inpatient psychiatric services, 6 percent of community mental health services, and 9 percent of private psychiatric care. Less than 3 percent of all Medicare reimbursement is for the psychiatric treatment of older patients. It is estimated that 18 to 25 percent of elders are in need of mental health care for depression, anxiety, psychosomatic disorders, adjustment to aging, and schizophrenia. Yet, few seem to receive proper care and treatment for these mental illnesses. It is also a distressing reality that the suicide rate of the elderly stands at an alarming 21 percent, the highest of all age groups in the United States. Every day 17 older individuals kill themselves.

Given such statistics, why are millions of our nation's elderly deprived of adequate mental health care? There are numerous factors accounting for this apparent state of apathy and indifference towards the unmet mental health needs of the elderly.

Stigma

Many elders resist treatment for depression and other disorders, as their association with mental illness is based on images frequently propagated by the mass media and popular culture. Very often, television and movie portrayals of characters labeled mentally ill are frightening and powerful sources of mental illness misinformation. For the older generation, movies like "The Snakepit" and "Psycho" have left lasting negative perceptions of people experiencing psychological distress. The media rarely produces dramas depicting people coping with feelings of depression or anxiety who are not violent, nor do they have any regular programming that provides basic mental health information. It's therefore extremely important to have alternative TV programming that helps to re-educate people about what mental illness is and how it can be effectively treated.

Agism

Myths and misperceptions (ageism) about older people by the media, the public, and professional health and mental health providers have also affected mental health service delivery to elders. For administrators confronted with budgetary restraints, it has too often been the older population that has been cast aside, on the basis that they are too old to benefit from services. It would stand to reason that a society that places such great emphasis on youth and the importance of looking young does not lend enthusiastic support to better mental health care for the geriatric population.

Primary Care Physicians

Generally, the first person elders turn to for help with problems that require mental health treatment is their primary care physician. Many of these physicians have limited training in the care and management of geriatric patients. This makes the current lack of adequate mental health care particularly insidious because neither the elderly person nor the health care provider may recognize the symptoms. In no other age group is the combination and interrelationship of physical, social, and economic problems as significant as with the elderly. Elders tend to assume that complaints such as sleep disturbances, changes in appetite, and mood differences are related to physical problems. This tendency is reinforced by physicians, who often attribute symptoms to the aging process. Medical practice today does not usually allocate time for the detailed medical and social history that would encourage a more accurate diagnosis.

A 1990 study of elderly suicides in the Chicago area found that 20 percent of the suicide victims had seen their primary care physicians within 24 hours of their suicide, 41 percent within seven days, 84 percent within 30 days. This data greatly underscores the importance of early detection by health professionals and caregivers.

Service Delivery

Practices and policies pertaining to the organization of elderly service delivery have not been based on actual experiential data, but on the attitudes and assumed efficiency of planners and funders in the private and public sectors. An illustration of this approach is the assumption that older consumers will self-refer to community mental health centers (CMHCs) for help with psychiatric disorders. In most instances, older adults do not appear at a CMHC unless they are brought by a relative or there is an acute crisis that requires an emergency visit. Even on those visits, few CMHCs have staff members that are responsive or knowledgeable about the special needs of this population.

At the state and local level, there is a question as to which service organization - the county aging agency or the county mental health system - is responsible for the mental health care of the elderly. Conflicting priorities led each system to focus on what they regard as their primary functions rather than addressing collaborative programs and strategies. In recent years, the aging agencies have been more concerned with long-term care while the mental health systems in many states have focused on developing programs for the *seriously and persistently mentally ill*.

A conundrum for advocates requesting additional mental health funding is the response from state funders that there is no point in additional allocations since they believe the elderly

don't take advantage of the services already available. It is difficult to convince the people in control of the purse strings that the reason existing services aren't more frequently used is that the programs are not responsive to the needs of older consumers in the first place.

Service Integration: Is it An Impossible Dream?

The lack of coordinated, comprehensive health care has a negative impact on all age groups in the United States. For older adults who tend to have multiple needs, these health systems are highly fragmented and a bewildering source of patient confusion. Many elders withdraw from service feeling overwhelmed by the long waits and complex procedures.

Connections between primary care and social services are limited as are links with primary care and mental health services for older adults. Although there is unanimous agreement about the value of communication and of streamlined intake procedures, most agencies continue to function in isolation from one other. A big reason for this is the limited and parallel funding the agencies receive, which does not encourage the sharing of resources. As a result, many service organizations are deeply concerned about maintaining their autonomy and their funding - attitudes which do not foster inter-agency collaboration.

CMHCs in most areas of the country have devoted their resources to serving children and seriously mentally ill young populations. These centers have not been well integrated with social service agencies or with the network of primary care providers that are so important to older consumers.

Reimbursement

There is a large disparity in Medicare and Medicaid reimbursement between psychiatric care and medical care. This has deterred many prospective psychiatrists, social workers, and psychologists from considering careers in geriatric mental health. Since its enactment in 1985, Medicare has specifically limited reimbursement to all the disciplines engaged in treating older adults. Not only are professionals reimbursed at lower rates, but co-payments for consumers are higher than for standard medical care. This is another drawback for older persons considering mental health treatment. Despite pressure from national professional organizations, there has been no significant improvement in this area from the Health Care Finance Corporation (HCFA), the agency that administers the Medicare program.

Lack of Organized Support

In contrast to the activities of groups such as the Alliance for the Mentally Ill (AMI), the National Mental Health Association, Disabled Americans, and Developmentally Disabled Children, there has been very little national attention directed to the quality and quantity of mental health services available to the nation's elders. Attempts to organize older people struggling with psychiatric disorders combined with physical impairments have met with minimal success. Local attempts to engage adult sons and daughters have not generated positive results.

Does the absence of organized concern suggest indifference to the mental health needs of elders? There is no one reason why older people with mental health problems have been overlooked and underserved. If funds were available, a public health education campaign to

sensitize legislators and the general public might be a positive initial step.

MANAGED CARE

At this stage in the development of managed care, it is difficult to determine whether Medicare HMOs will be a friend or foe to older members. With strong encouragement from Health Care Finance Corporation (HCFA), Medicare beneficiaries are joining HMOs at the rate of 80,000 members a month. The most common arrangement for all managed mental health care is for HMOs to contract with other behavioral health companies to provide the missing mental health component.

Despite the rapid increase in subscribers, mental health advocates are concerned that with the so-called *carve out* for mental health care, there may be even greater coordination problems for elderly consumers who have complicated physical and mental disorders. To date, HMOs have not demonstrated much interest in developing long term care services - essential for the well being of elders - as such services are more costly than short-term programs. Although preventive health is used as a marketing strategy, reports indicate that few of the 600 plans have made more than token efforts in this direction. Information about the exact number of physicians and other staff with geriatric training that are employed at HMOs is not available at this time.

Despite their glaring weaknesses in this regard, the HMOs remain an attractive option to the elderly because of the elimination of the costs for supplementary Medicare insurance and the various additional benefits - the reimbursement for glasses and prescriptions, for example - that many HMOs offer.

A POSITIVE PERSPECTIVE

While many of these barriers continue to restrict improvement and expansion of elderly mental health services, there are innovative programs that are either currently operational or under consideration in several states. There is still a good deal to be learned about interventions to better ease the psychic distress of older Americans, but there are programs that have used innovative ideas to achieve a level of success. Some of these successful programs have initiated or implemented one or more of the following:

- Outreach efforts to locate and identify older persons who are depressed and provide care relevant to their needs.
- Mobile programs with staffs that treat consumers in their own homes. Treatment in familiar surroundings reduces the fear of stigma.
- Effective treatment for elderly depression. Treating elders has been found to be just as effective as treating young adults and middle-aged people; supportive therapy and drug treatment can be safely administered with beneficial results.
- Coalitions of staff members, statewide and local, associated with mental health and aging networks.
- Meetings with state mental health departments to ask that older people be officially designated as a special population with unique needs.
- Meetings with state legislators or their aides to brief them about the unmet mental health needs of their constituencies.

- Training sessions conducted by staffs of aging and mental health agencies so each can have a better understanding of the services and limitations of organizations serving elders.

Trudy Persky, M.S.W., A.C.S.W., has had a four-decade career in human services, including 12 years as Project Director for Mental Health and Aging in the Philadelphia Office of Mental Health. She is now a consultant on mental health and aging issues.



ABOUT Us

The Mental Health and Aging Advocacy Project is a program of the **Mental Health Association of Southeastern Pennsylvania (MHASP)**. MHASP's executive director, **Joseph A. Rogers**, recognizes the need for MHASP to support local, state and national advocacy efforts by older adult mental health consumers. For this reason the project's director, **Tom Volkert**, in addition to organizing on a local level is also assisting the **Bazelon Center's** efforts at developing a national senior consumer constituency.

The Project brings several already successful programs to MHASP:

- The **Delaware Valley Mental Health Aging Advocacy Committee**, focused on increasing awareness of mental health and aging issues and providing a forum for discussion and exchange of information.
- The **Mental Health and Long-term Care Task Force**, targeted to expanding and improving services in residential facilities - including training nursing home staff members.

And the Project is expanding to include greater **advocacy** and information and **referral** efforts. Also, read more about our **Purpose** and **Background**.

Mental Health/Aging Advocacy Project | a project of the **Mental Health Association of SE PA** | 1211 Chestnut Street | Philadelphia, PA 19107 | 215-751-1800, ext. 266 | mhaging.org

Unmet Need for Treatment of Major Depression in the United States

Ramin Mojtabai, M.D., Ph.D.

Objective: This study examined the extent and correlates of perceived unmet need for treatment among individuals with depression in the U.S. general population. **Methods:** Analyses were based on a representative sample of 6,510 adult participants in the 2005 and 2006 National Surveys on Drug Use and Health who reported a major depressive episode in the past 12 months. **Results:** A total of 3,568 (62.4%) participants had sought mental health treatment in the past 12 months, and 2,942 (37.6%) had not; 34.9% and 26.8% of these groups, respectively, reported unmet need for treatment. In both groups, older age was associated with a lower likelihood of reporting unmet need for treatment, whereas greater distress and impairment and higher education were associated with a greater likelihood of reporting unmet need. Among treatment seekers, treatment from general medical providers was associated with greater likelihood of unmet need, and more outpatient visits and insurance coverage for the full year were associated with a lower likelihood of unmet need. The most common reason for not seeking needed treatment was a concern about costs (cited as a reason by 46.0% of the total sample). **Conclusions:** Even though rates of treatment seeking have increased, many persons with major depression continue to experience unmet need for treatment, which in this study was mainly attributable to concerns about treatment costs. (*Psychiatric Services* 60: 297–305, 2009)

Studies throughout the 1980s and 1990s showed that a large proportion of individuals with major depression do not seek treatment (1–6). Although some studies found that low levels of perceived need for treatment and negative attitudes toward mental health treatments were more significant barriers to treatment seeking than system-level barriers (7–9), others found that characteristics of the health care system in general, and financial barriers in particular, were more prominent in this patient population (10).

More recent data suggest that the rate of treatment of depression in the community has increased (11,12). However, there are indica-

tions that the increased demand for treatment has coincided with a greater perception of financial barriers (13)—a trend that is likely associated with the increased out-of-pocket cost of mental health care in recent years (14–16).

A better understanding of the extent of perceived unmet need for care among individuals with major depression, as well as its predictors and the reasons for unmet need, would have important implications for understanding the barriers to mental health treatment seeking and for designing programs to improve access to mental health care.

The study reported here used data from a large and nationally represen-

tative sample of U.S. adults to examine the extent and correlates of perceived unmet need for treatment among persons with major depression. More specifically, the study used regression models to examine sociodemographic, access, and clinical correlates of perceived unmet need for treatment among depressed adults whether or not they had had any mental health treatment contacts in the past year. The study also explored the reasons for not seeking needed treatment among those who perceived an unmet need for treatment.

Methods

Sample

The sample for the study was drawn from participants in the 2005 and 2006 National Survey on Drug Use and Health (NSDUH) (17,18). Overall, 74,192 adults were interviewed in these two surveys. (The response rates for the 2005 and 2006 survey were 76% and 74%, respectively.) Of the 73,583 participants who completed the questionnaire about major depressive episodes in 2005 or 2006, a total of 6,531 (7.1% weighted) met criteria for a major depressive episode in the past 12 months; 6,510 of these participants also responded to questions about treatment seeking and perceived unmet need and constituted the sample for this study.

Assessment

The presence of a major depressive episode in the past 12 months was assessed by using a structured interview based on *DSM-IV* criteria (19). Questions were adapted from the depression section of the National Comorbidity Survey Replication (20) and administered by using computer-assisted interviewing methods.

Perceived unmet need for mental

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health treatment was assessed with one question: "During the past 12 months, was there any time when you needed mental health treatment or counseling for yourself but didn't get it?" A positive response to this question was rated as perceived unmet need for treatment. This question was asked of all participants whether or not they had sought treatment in the past year. (Respondents were not asked specifically about unmet need for treatment of depression.)

Reasons for not seeking treatment were assessed for those who reported an unmet need. Participants were presented with a series of statements about why they did not get needed mental health treatment or counseling. The reasons included inability to afford the cost, concern about opinions of neighbors or the community, concern about the effect of treatment seeking on the person's job, lack of health insurance coverage, inadequate health insurance coverage, lack of knowledge about where to go for services, concern about confidentiality, fear of being committed to a psychiatric hospital or having to take medicine, the person's belief that he or she could handle the problem without treatment; a belief that treatment would not help, lack of time, a desire not to have others find out, lack of transportation, too great a distance to treatment or inconvenient hours, and other reasons. For these analyses, lack of insurance and inadequate insurance coverage were combined, as were concerns about opinions of neighbors and community and not wanting others to find out.

Treatment seeking was assessed by a series of questions. Participants were asked whether at any time in the past 12 months they had seen or talked to a medical doctor or other professional about their depressive symptoms. Participants who responded positively to this question were presented with a list of professionals and asked to identify the professional or professionals whom they had seen or talked to about their depressive symptoms. The list included nonpsychiatrist physicians, psychiatrists, psychologists, social workers, counselors,

and other health professionals (for example, nurses and occupational therapists). Religious helpers and nontraditional helpers (for example, herbalists, chiropractors, and acupuncturists) were also included.

The extent of outpatient service use was ascertained by asking participants about the number of visits over the past year. Consistent with past research (21,22), the variable was dichotomized into fewer than four visits and four or more visits in the past 12 months.

Participants were asked whether in the past 12 months they had taken any medication that was prescribed for their mood symptoms. Participants were also asked about inpatient hospitalizations for mental health reasons in the past 12 months.

Impairment in role functioning associated with depression was assessed by four questions from the Sheehan Disability Scale (SDS) (20,23), a measure of the impact of depression on a person's daily activities in four domains of life. Participants were asked to think about the time in the past 12 months when problems with mood were the worst and to rate the degree of impairment in "chores at home," "ability to do well at school or work," "ability to get along with family," and "social life" on a scale from 0 to 10 (0, no impairment; 1 to 3, mild impairment; 4 to 6, moderate impairment; 7 to 9, severe impairment; and 10, very severe impairment). An overall role impairment score is defined as the highest level of severity of impairment reported in any of the four domains. In addition, the total number of lifetime depressive episodes was ascertained, and on the basis of the median split, the variable was dichotomized as fewer than five episodes and five or more episodes.

Severity and level of distress were also measured by using K6 (24,25), a six-item screening instrument for nonspecific psychological distress during the worst month in the past 12 months. Possible scores on K6 range from 0 to 24. A score of 13 or higher has been found to correspond to clinician-rated measures of serious mental illness as ascertained by a semistructured interview instrument (25).

In addition, participants' age, gender, family income, insurance type, and the extent of insurance coverage in the past year were ascertained. Coverage was dichotomized as coverage throughout the year and any period without coverage in the past year.

Statistical analyses

Analyses were conducted in two stages. First examined was the association between perceived unmet need for treatment and specific sociodemographic, access, service use, and clinical characteristics among adults who reported a major depressive episode. These analyses used bivariate and multivariate logistic regression models. The analyses were conducted separately for participants who did or did not seek treatment in the past 12 months.

Second, the percentage of participants who reported different reasons for not seeking treatment when they needed it was examined. These analyses were limited to those who reported unmet need for treatment. The analyses were conducted for the entire group of adults with a major depressive episode and then separately for individuals who did or did not seek treatment in the past 12 months.

Analyses were conducted using Stata 10, which adjusts for the complex sampling design of the NSDUH. All percentages were weighted by sampling weights, and only weighted percentages are reported here. A significance level of $<.05$ was used.

Results

Of the 6,510 participants who reported a 12-month major depressive episode in the 2005 and 2006 NSDUH surveys, 3,568 (62.4%) reported seeking mental health treatment in the past 12 months and 2,942 (37.6%) reported that they did not seek treatment. Furthermore, 2,354 (31.9%) reported an unmet need for treatment, and 4,156 (68.1%) did not report an unmet need. Overall, 72.5% of this sample of adults with a major depressive episode either sought treatment, perceived an unmet need for treatment, or both (Figure 1).

Correlates of perceived unmet need

Among the 3,568 adults with a 12-month major depressive episode who sought treatment, 1,432 (34.9%) reported an unmet need for treatment. Among the 2,942 who did not seek treatment, 922 (26.8%) reported an unmet need.

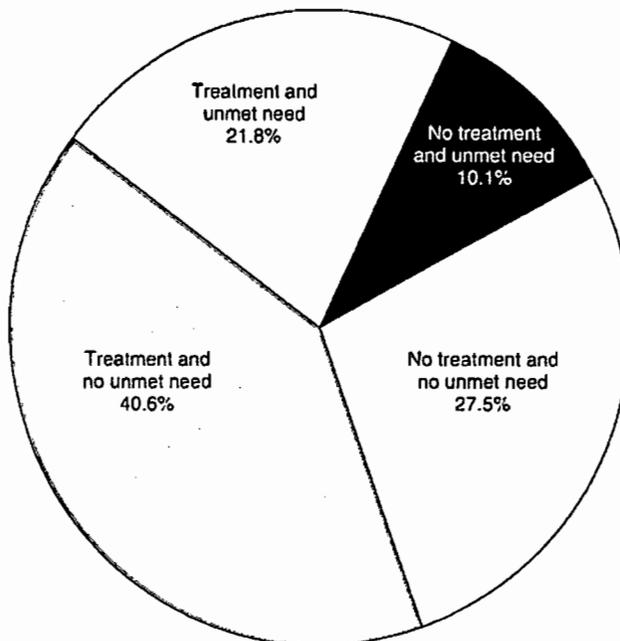
Sociodemographic, access, and clinical variables that were correlated with perceived unmet need among participants who sought treatment are presented in Table 1. Table 2 presents these correlates among participants who did not seek treatment.

The bivariate analyses indicated that among participants who sought treatment in the past 12 months, age, racial-ethnic group, type of insurance, extent of insurance coverage, psychological distress, impairment in role functioning, number of depressive episodes, and type of provider were associated with perceived unmet need (Table 1). Variables that remained significant in the multivariate model were age, racial-ethnic group, the extent of insurance coverage, psychological distress, impairment, number of depressive episodes, and type of provider (Table 1). In addition, education and number of outpatient sessions in the past year became significant in the multivariate model. Participants who were older than 25 years, those with full-year insurance coverage, and those who had had more than four outpatient mental health visits were significantly less likely to report an unmet need, whereas participants from the "other" racial-ethnic group, college graduates, those with more distress or impairment, those with a greater number of depressive episodes, and those who had seen a primary care physician for their mental health problems were more likely than other participants to report an unmet need (Table 1).

Among participants who did not seek treatment, gender, age, type of health insurance, psychological distress, impairment in role functioning, and number of depressive episodes were associated with perceived unmet need in bivariate analyses (Table 2). Variables that remained significant in the multivariate

Figure 1

Treatment seeking and perceived unmet need for mental health treatment among 6,510 adults who reported a major depressive episode in the past 12 months^a



^a Data were from participants in the 2005 and 2006 National Survey on Drug Use and Health.

atic model were age, distress, impairment, and number of depressive episodes. Participants in the 50- to 64-year age group were less likely than those in the 18- to 25-year group to perceive an unmet need, whereas participants with a greater level of distress or impairment in role functioning and those with a greater number of depressive episodes were more likely to perceive an unmet need. In addition, having a college education was significantly associated in the multivariate model with perceiving an unmet need (Table 2).

Reasons for not seeking treatment

Across both groups of participants with a major depressive episode who did and did not seek treatment, concerns about cost were the major reason for perceived unmet need; this reason was reported by 46.0% of the total group (Figure 2). The percentage of participants who reported cost concerns was larger among those who did not seek treatment than among those who did (53.9% compared with

42.4%; design-based $F=12.23$, $df=1$ and 60, $p<.001$).

Participants who did not seek treatment were also more likely than those who did to report concerns about confidentiality (12.2% compared with 8.0%; design-based $F=5.40$, $df=1$ and 60, $p=.024$) and concerns about neighbors or other people finding out (18.7% compared with 13.2%; design-based $F=5.70$, $df=1$ and 60, $p=.020$). Participants who sought treatment were more likely than those who did not to report concerns about transportation or inconvenience (5.8% compared with 2.9%; design-based $F=4.16$, $df=1$ and 60, $p=.046$). The percentages of participants who reported that they believed they could handle the problem on their own were similar in the groups with and without a history of treatment seeking (25.6% and 26.5%, respectively); the percentages reporting that treatment would not help were the same in both groups (9.6%), as were the percentages of participants who reported other reasons for not seeking treatment.

Table 1

Analyses of correlates of perceived unmet need among 3,568 adults who reported a major depressive episode and who also reported seeking treatment in the past 12 months^a

Variable	Weighted %	Bivariate logistic regression			Multivariate logistic regression		
		OR	95% CI	p	Adjusted OR	95% CI	p
Gender							
Female (reference)	70.2						
Male	29.9	.99	.77-1.27	.930	.96	.74-1.28	.760
Age							
18-25	13.8						
26-34	17.7	.82	.66-1.02	.071	.77	.60-.98	.038
35-49	35.4	.61	.49-.75	<.001	.59	.46-.77	<.001
50-64	27.3	.44	.34-.58	<.001	.43	.30-.63	<.001
≥65	5.8	.13	.06-.28	<.001	.12	.05-.31	<.001
Race or ethnicity							
White (reference)	78.9						
Black	9.0	1.23	.80-1.90	.339	1.36	.92-2.01	.121
Hispanic	8.2	1.14	.79-1.65	.479	.97	.66-1.41	.855
Other	4.0	2.46	1.32-4.58	.005	2.32	1.17-4.60	.016
Education							
Less than high school (reference)	14.8						
High school	29.3	.92	.66-1.29	.606	.84	.58-1.22	.363
Some college	32.3	1.18	.86-1.64	.301	1.14	.78-1.66	.501
College graduate	23.7	1.34	.94-1.89	.106	1.79	1.15-2.78	.011
Family income							
<\$20,000 (reference)	27.5						
\$20,000-\$49,999	35.4	1.06	.79-1.42	.704	1.18	.87-1.61	.282
\$50,000-\$74,999	16.5	.72	.51-1.03	.071	.84	.57-1.22	.350
≥\$75,000	20.6	.85	.63-1.14	.263	1.04	.73-1.50	.815
Type of insurance^b							
Private	58.9	.72	.57-.90	.005	1.09	.72-1.65	.671
Medicaid	17.8	1.00	.75-1.32	.984	1.01	.70-1.46	.950
Medicare	16.9	.69	.47-1.02	.060	1.43	.88-2.31	.147
CHAMPUS ^c	6.3	.75	.43-1.32	.317	1.18	.64-2.17	.584
Insurance coverage							
None or only part of the year (reference)	22.9						
Full year	77.2	.43	.34-.55	<.001	.48	.35-.67	<.001

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Discussion

The results of this study should be viewed in the context of its limitations and the limitations of the NSDUH data. First, this study did not examine correlates of treatment seeking for depression per se. Such a study would likely have revealed significant differences in gender, racial-ethnic group, and other sociodemographic characteristics between persons with depression who did and did not seek treatment. These differences have been explored extensively in past research (12,20,26). Instead the study sought to examine the correlates of perceived unmet need for treatment within groups of participants with major depression who had or had not sought mental

health treatment. Second, the study focused on major depression, which is among the most disabling and severe mental health conditions. Barriers to seeking mental health treatment might vary according to severity of mental health conditions. Third, treatment seeking is not equivalent to having received adequate treatment (27). Unfortunately, NSDUH does not provide data beyond number of visits to assess the quality or intensity of mental health treatments received. Fourth, the NSDUH data are cross-sectional and do not cover timing of events. Therefore, causal relationships cannot be established in these data. Thus, for example, the association of number of outpatient visits with perceived

unmet need may be a result of early drop-out from treatment among participants who believed that treatment did not meet their needs, or fewer visits may be a cause of perceived unmet need. Fifth, perceived unmet need is not equivalent to objectively assessed unmet need. However, among persons who seek treatment, perceived unmet need constitutes an important dimension of their views of adequacy and quality of treatments, and among those who have not yet sought treatment, it provides important information about demand for services. Furthermore, perceived unmet need for treatment was strongly correlated with level of distress and impairment in role functioning in this

Table 1

continued from previous page

Variable	Weighted %	Bivariate logistic regression			Multivariate logistic regression		
		OR	95% CI	p	Adjusted OR	95% CI	p
Psychological distress ^d							
<13 (reference)	27.0						
≥13	73.0	3.08	2.31–4.09	<.001	2.67	1.97–3.61	<.001
Impairment							
None or mild (reference)	5.3						
Moderate	24.0	2.91	1.30–6.51	.010	3.01	1.31–6.92	.011
Severe	47.1	5.29	2.41–11.59	<.001	4.04	1.81–9.03	.001
Very severe	23.6	6.97	3.19–15.23	<.001	5.02	2.26–11.12	<.001
Number of depressive episodes							
<5 (reference)	39.9						
≥5	60.1	1.45	1.17–1.80	.001	1.38	1.09–1.74	.007
Type of provider ^e							
Psychologist	25.3	1.30	1.03–1.66	.031	1.23	.93–1.61	.138
Psychiatrist	29.0	1.02	.77–1.36	.870	.82	.61–1.12	.218
Social worker	10.0	1.53	1.04–2.25	.032	1.33	.85–2.07	.210
Primary care physician	61.7	1.15	.93–1.42	.194	1.43	1.13–1.80	.003
Other physician	11.0	.86	.59–1.26	.435	.94	.61–1.46	.790
Counselor	20.7	1.12	.88–1.44	.350	.90	.68–1.19	.456
Number of sessions							
<4 (reference)	69.0						
≥4	31.0	1.01	.79–1.28	.942	.72	.54–.94	.019
Psychotropic medication							
Not prescribed (reference)	25.8						
Prescribed	74.2	1.07	.83–1.36	.607	.91	.65–1.26	.554
Psychiatric hospitalization							
None (reference)	92.5						
≥1	7.5	1.41	.94–2.10	.096	1.28	.80–2.05	.296

^a Data were from participants in the 2005 and 2006 National Survey on Drug Use and Health.

^b Percentages total more than the percentage of individuals with any insurance coverage because some individuals were covered by more than one type of insurance. In bivariate analyses individuals with each type of insurance were compared with all other individuals.

^c Civilian Health and Medical Program of the Uniformed Services

^d As measured with the K6 (24,25). A score of 13 or higher has been found to correspond to a clinician-diagnosed serious mental illness using a semi-structured interview instrument (25).

^e Percentages total more than 100% because some individuals saw more than one type of provider. In bivariate analyses individuals who saw each type of provider were compared with all other individuals.

study, and similar correlations have been found in past research (28).

In the context of these limitations, the data presented provide useful information on correlates of perceived unmet need and barriers to treatment in a sample of persons with a major depressive episode from one of the largest mental health surveys of the U.S. general population. This study had three main findings. First, almost three-fourths of adults who reported a major depressive episode in the past year either sought mental health treatment or perceived an unmet need for such treatment. This rate is higher than those in previous community studies (29,30) and indicates an increase in the perceived need for care and in treatment seeking in

the U.S. population, at least among individuals with depression. This trend is consistent with other time-trend studies of mental health treatment seeking for depression (11) and other common mental health problems (13,31). The trend may be attributable to increased knowledge about mental disorders (32), reduced stigma associated with mental health treatment seeking (33), or increased demand for and supply of psychiatric medications (34). It is notable that among participants with major depressive episodes who reported any mental health treatment seeking, 74.2% reported receipt of a prescription for a psychotropic medication (Table 1).

Although increased rates of mental health treatment seeking are encour-

aging, it is notable that a large majority of persons who sought any treatment made fewer than four outpatient visits in the past year—which is generally considered the minimum number of visits required for adequate management of depression in outpatient settings (21,22). In addition, most sought treatment from primary care physicians. In the analyses, both these factors were associated with higher perceived unmet need for treatment (Table 1).

Past research has generally found that compared with psychiatrists, general medical providers are less accurate in diagnosing mental disorders and tend to provide treatments with lower intensity than required by evidence-based standards (35–37). However, provision of mental health

Table 2

Analyses of correlates of perceived unmet need among 2,942 adults who reported a major depressive episode and who had not sought treatment in the past 12 months^a

Variable	Weighted %	Bivariate logistic regression			Multivariate logistic regression		
		OR	95% CI	p	Adjusted OR	95% CI	p
Gender							
Female (reference)	56.4						
Male	43.7	.75	.57–.99	.043	.76	.56–1.03	.072
Age							
18–25 (reference)	29.4						
26–34	21.8	.94	.71–1.24	.654	.91	.68–1.20	.490
35–49	31.5	.79	.57–1.09	.145	.85	.59–1.21	.357
50–64	13.0	.23	.11–.50	<.001	.23	.10–.49	<.001
≥65	4.3	.22	.07–.69	.010	.46	.09–2.43	.354
Race or ethnicity							
White (reference)	66.3						
Black	11.5	.75	.45–1.27	.281	.65	.39–1.08	.092
Hispanic	16.5	.69	.43–1.10	.118	.68	.44–1.04	.075
Other	5.8	.86	.53–1.40	.542	.70	.40–1.21	.193
Education							
Less than high school (reference)	19.3						
High school	32.7	1.01	.66–1.54	.952	1.03	.70–1.51	.873
Some college	28.8	1.20	.77–1.89	.413	1.40	.87–2.24	.164
College graduate	19.3	1.28	.81–2.02	.285	1.91	1.25–2.92	.003
Family income							
<\$20,000 (reference)	28.8						
\$20,000–\$49,999	37.3	.84	.62–1.13	.236	.96	.70–1.32	.814
\$50,000–\$74,999	13.4	1.06	.74–1.52	.750	1.28	.83–1.97	.255
≥\$75,000	20.4	.74	.49–1.11	.144	.88	.56–1.38	.573
Type of insurance^b							
Private	54.9	.77	.57–1.03	.074	.84	.58–1.19	.317
Medicaid	10.5	2.03	1.22–3.37	.007	1.51	.85–2.69	.160
Medicare	6.5	.43	.21–.88	.022	.83	.27–2.53	.742
CHAMPUS ^c	3.3	.33	.13–.83	.019	.41	.15–1.14	.086
Insurance coverage							
None or only part of the year (reference)	38.8						
Full year	61.2	.84	.64–1.09	.174	1.08	.73–1.60	.701
Psychological distress^d							
<13 (reference)	38.6						
≥13	61.4	3.30	2.50–4.36	<.001	2.37	1.71–3.28	<.001
Impairment							
None or mild (reference)	9.8						
Moderate	36.3	2.08	1.17–3.72	.014	1.88	1.07–3.30	.029
Severe	40.9	4.50	2.60–7.78	<.001	3.35	1.93–5.79	<.001
Very severe	13.0	6.23	3.36–11.58	<.001	4.14	2.13–8.04	<.001
Number of depressive episodes							
<5 (reference)	48.1						
≥5	51.9	2.08	1.69–2.55	<.001	1.83	1.42–2.37	<.001

^a Data were from participants in the 2005 and 2006 National Survey on Drug Use and Health.

^b Percentages total more than the percentage of individuals with any insurance coverage because some individuals were covered by more than one type of insurance. In bivariate analyses individuals with each type of insurance were compared with all other individuals.

^c Civilian Health and Medical Program of the Uniformed Services

^d As measured with the K6 (24,25). A score of 13 or higher has been found to correspond to a clinician-diagnosed serious mental illness using a semi-structured interview instrument (25).

treatment by general medical providers expands available services in the community and increases the number of individuals who receive treatment. Future research should examine the impact of the expansion

of mental health treatments in the general medical sector on outcomes of common psychiatric disorders in the community.

The second finding of the study was that a large percentage of partic-

ipants with a major depressive episode reported an unmet need for mental health treatment, whether they received treatment or not. More than one-fourth of participants who did not seek any treatment and

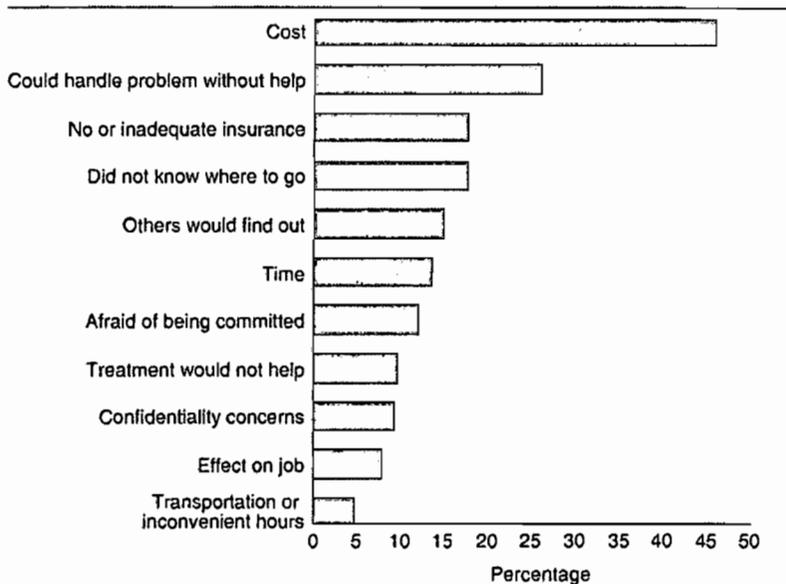
one-third of those who sought treatment reported an unmet need for treatment. In both groups, participants with a college education, more distress and impairment, and a greater number of past depressive episodes were more likely to perceive an unmet need. Although the association with distress, impairment, and number of depressive episodes likely reflects severity of depressive illness, the association with higher education may reflect more favorable attitudes toward receiving treatment and, among participants who sought treatment, a demand for more or better treatments.

There were also differences between the groups who did and did not seek treatment with regard to correlates of perceived unmet need. Among participants who sought treatment, those from the "other" racial-ethnic group were more likely to perceive an unmet need, whereas those with health insurance coverage for the full year were less likely to perceive an unmet need. Most past studies of racial-ethnic differences in receipt of mental health treatment have found differences between blacks and Hispanics compared with the white majority group (38-43). The study reported here found no such differences in the extent of perceived unmet need for treatment. Some studies have also found disparities in quality of and satisfaction with treatment between racial-ethnic groups categorized as "other" and the white majority group (44,45). The heterogeneous composition of the "other" racial-ethnic group in the study reported here further complicates interpretation of the findings. Future studies with even larger samples of persons with depression from "other" minority groups are needed to further explore their treatment experiences.

The association of perceived unmet need with the extent of insurance coverage among participants who sought treatment highlights the impact of financial barriers on the receipt of mental health care. An association between insurance coverage and treatment seeking has been consistently noted over the years (46,47). Health insurance coverage is likely a

Figure 2

Reasons for not seeking treatment cited by 2,354 adults who reported a major depressive episode and perceived unmet need for treatment in the past 12 months^a



^a Data were from participants in the 2005 and 2006 National Survey on Drug Use and Health.

more critical factor in access to appropriate health care among persons with disabilities and persons who are poor because both groups have fewer available resources (48). Furthermore, with the growing cost of mental health care, lack of adequate health insurance coverage will likely feature even more prominently in coming years as a barrier to accessing mental health treatment.

The bivariate analyses also indicated variations across different types of insurance. Among participants who sought any treatment in the past year, those with private insurance were less likely to report an unmet need. Also, among individuals with a major depressive episode who did not seek care, those with Medicaid were more likely to report an unmet need than participants with other types of coverage, and those with Medicare or CHAMPUS were less likely to report an unmet need than others.

Differences in quality of treatments have been noted among individuals with different insurance types. For example, in some studies, persons with depression who had public insurance were less likely than those with private insurance to receive psychotherapy or

continuous medication treatment (49). It is notable, however, that differences in insurance type did not persist in the multivariate analyses in the study reported here. Thus many of the differences between these groups may be attributable to differences in the sociodemographic or clinical characteristics of persons with different insurance types.

The third finding of the study was the prominent place of cost concerns as barriers to seeking mental health treatment among participants who reported an unmet need for such treatment. Cost concerns were reported by about half of all participants and were more prominent among participants who had not sought any mental health treatment. A far greater number of participants cited cost as a barrier than any other barrier. This finding is in contrast with results of some research from the 1990s in which attitudinal barriers to mental health treatment seeking were judged to be more prominent than cost barriers or to be on par (7-9). However, an increase in cost barriers in tandem with increased demand for mental treatments in recent years has been noted

(13). This finding is also consistent with other data on trends in out-of-pocket costs of mental health care in recent years (14). Furthermore, perceived barriers to treatment seeking may vary according to severity of mental health conditions, and attitudinal factors may play a more prominent role among less severely distressed individuals.

If the trends of the recent past continue in the near future, both the demand for mental health treatments and the cost of such treatments will continue to grow. Barring dramatic expansion of mental health insurance coverage and reduction in out-of-pocket costs, the number of individuals with depression who will experience cost as a barrier to receiving needed treatment will likely continue to grow as well. Reducing the impact of cost barriers and improving the quality of mental health treatments in general medical settings remain important challenges for future efforts to reduce the burden of depression in the community.

Conclusions

This study found that despite the increased prevalence of treatment seeking for major depression in recent years, many individuals with this disabling condition continue to experience an unmet need for treatment. Even among individuals who seek treatment, a large percentage report an unmet need for mental health treatment. Concern about treatment costs is the largest single barrier to seeking needed treatment among these individuals.

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References

1. Fawcett J: The morbidity and mortality of clinical depression. *International Journal of Clinical Psychopharmacology* 8:217-220, 1993
2. Goldberg D, Bridges K, Duncan-Jones P, et al: Detecting anxiety and depression in general medical settings. *British Medical Journal* 297:897-899, 1988
3. Regier DA, Burke JD, Burke KC: Comorbidity of affective and anxiety disorders in the NIMH Epidemiologic Catchment Area program, in *Comorbidity of Mood and Anxiety Disorders*. Edited by Master JD,

Cloninger CR. Washington, DC, American Psychiatric Press, 1990

4. Tiemens BG, Ormel J, Simon GE: Occurrence, recognition, and outcome of psychological disorders in primary care. *American Journal of Psychiatry* 153:636-644, 1996
5. Wells KB, Burnam MA, Rogers W, et al: The course of depression in adult outpatients: results from the Medical Outcomes Study. *Archives of General Psychiatry* 49:788-794, 1992
6. Messias E, Eaton W, Nestadt G, et al: Psychiatrists' ascertained treatment needs for mental disorders in a population-based sample. *Psychiatric Services* 58:373-377, 2007
7. Sareen J, Jagdeo A, Cox BJ, et al: Perceived barriers to mental health service utilization in the United States, Ontario, and the Netherlands. *Psychiatric Services* 58:357-364, 2007
8. Goldstein RB, Olsson M, Martens EG, et al: Subjective unmet need for mental health services in depressed children grown up. *Administration and Policy in Mental Health* 33:666-673, 2006
9. Goering P, Liu E, Campbell D, et al: Psychiatric disability in Ontario. *Canadian Journal of Psychiatry* 41:564-571, 1996
10. Simon GE, Fleck M, Lucas R, et al: Prevalence and predictors of depression treatment in an international primary care study. *American Journal of Psychiatry* 161:1626-1634, 2004
11. Olsson M, Marcus SC, Druss B, et al: National trends in the outpatient treatment of depression. *JAMA* 287:203-209, 2002
12. Bristow K, Patten S: Treatment-seeking rates and associated mediating factors among individuals with depression. *Canadian Journal of Psychiatry* 47:660-665, 2002
13. Mojtabai R: Trends in contacts with mental health professionals and cost barriers to mental health care among adults with significant psychological distress in the United States: 1997-2002. *American Journal of Public Health* 95:2009-2014, 2005
14. Tu HT: Rising Health Costs, Medical Debt and Chronic Conditions. Issue brief 88. Washington, DC. Center for Studying Health System Change, Sept 2004
15. McDevitt R, Gabel J, Gandolfo L, et al: Financial protection afforded by employer-sponsored health insurance: current plan designs and high-deductible health plans. *Medical Care Research and Review* 64:212-228, 2007
16. Neuman P, Cubanski J, Desmond KA, et al: How much "skin in the game" do Medicare beneficiaries have? The increasing financial burden of health care spending, 1997-2003. *Health Affairs* 26:1692-1701, 2007
17. Results From the 2005 National Survey on Drug Use and Health: National Findings. NSDUH series H-30, DHHS pub no SMA-06-4194. Rockville, Md, Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2006

18. Results From the 2006 National Survey on Drug Use and Health: National Findings. NSDUH series H-32, DHHS pub no SMA-07-4293. Rockville, Md, Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2007
19. *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. Washington, DC, American Psychiatric Association, 1994
20. Kessler RC, Berglund P, Demler O, et al: The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication (NCS-R). *JAMA* 289:3095-3105, 2003
21. Katz SJ, Kessler RC, Lin E, et al: Medication management of depression in the United States and Ontario. *Journal of General Internal Medicine* 13:77-85, 1998
22. Wang PS, Lane M, Olsson M, et al: Twelve-month use of mental health services in the United States: results from the National Comorbidity Survey Replication. *Archives of General Psychiatry* 62:629-640, 2005
23. Sheehan DV, Harnett-Sheehan K, Raj BA: The measurement of disability. *International Clinical Psychopharmacology* 11 (suppl 3):89-95, 1996
24. Kessler RC, Andrews G, Colpe LJ, et al: Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine* 32:959-976, 2002
25. Kessler RC, Barker PR, Colpe LJ, et al: Screening for serious mental illness in the general population. *Archives of General Psychiatry* 60:184-189, 2003
26. Mojtabai R, Olsson M: Treatment seeking for depression in Canada and the United States. *Psychiatric Services* 57:631-639, 2006
27. Young AS, Klap R, Sherbourne CD, et al: The quality of care for depressive and anxiety disorders in the United States. *Archives of General Psychiatry* 58:55-61, 2001
28. Meadows G, Burgess P, Bobevski I, et al: Perceived need for mental health care: influences of diagnosis, demography and disability. *Psychological Medicine* 32:299-309, 2002
29. Mojtabai R, Olsson M, Mechanic D: Perceived need and help-seeking in adults with mood, anxiety, or substance use disorders. *Archives of General Psychiatry* 59:77-84, 2002
30. Edlund MJ, Unützer J, Curran GM: Perceived need for alcohol, drug, and mental health treatment. *Social Psychiatry and Psychiatric Epidemiology* 41:480-487, 2006
31. Kessler RC, Demler O, Frank RC, et al: Prevalence and treatment of mental disorders, 1990 to 2003. *New England Journal of Medicine* 352:2515-2523, 2005
32. Jorm AF, Christensen H, Griffiths KM: Changes in depression awareness and attitudes in Australia: the impact of beyond-blue: the national depression initiative. *Australian and New Zealand Journal of Psychiatry* 40:42-46, 2006

33. Mojtabai R: Americans' attitudes toward mental health treatment seeking: 1990-2003. *Psychiatric Services* 58:642-651, 2007
34. Mojtabai R: Increase in antidepressant medication in the US adult population between 1990 and 2003. *Psychotherapy and Psychosomatics* 77:83-92, 2008
35. Kerr MP: Antidepressant prescribing: a comparison between general practitioners and psychiatrists. *British Journal of General Practice* 44:275-276, 1994
36. Croghan TW, Melli CA, Dobrez DG, et al: Effect of mental health specialty care on antidepressant length of therapy. *Medical Care* 37(4 suppl Lilly):AS20-AS3, 1999
37. Mojtabai R, Olsson M: National patterns in antidepressant treatment by psychiatrists and general medical providers: results from the National Comorbidity Survey Replication. *Journal of Clinical Psychiatry* 69:1064-1074, 2008
38. Schraufnagel TJ, Wagner AW, Miranda J, et al: Treating minority patients with depression and anxiety: what does the evidence tell us? *General Hospital Psychiatry* 28:27-36, 2006
39. Diala C, Muntaner C, Walrath C, et al: Racial differences in attitudes toward professional mental health care and in the use of services. *American Journal of Orthopsychiatry* 70:455-464, 2000
40. Kilbourne AM, Bauer MS, Han X, et al: Racial differences in the treatment of veterans with bipolar disorder. *Psychiatric Services* 56:1549-1555, 2005
41. Kuno E, Rothbard AB: The effect of income and race on quality of psychiatric care in community mental health centers. *Community Mental Health Journal* 41:613-622, 2005
42. Richardson J, Anderson T, Flaherty J, et al: The quality of mental health care for African Americans. *Culture, Medicine and Psychiatry* 27:487-498, 2003
43. Charbonneau A, Rosen AK, Ash AS, et al: Measuring the quality of depression care in a large integrated health system. *Medical Care* 41:669-680, 2003
44. Anders RL, Olson T, Buder J: Assessment of acutely mentally ill patients' satisfaction of care: there is a difference among ethnic groups. *Issues in Mental Health Nursing* 28:297-308, 2007
45. Ngo-Metzger Q, Legedza AT, Phillips RS: Asian Americans' reports of their health care experiences: results of a national survey. *Journal of General Internal Medicine* 19:111-119, 2004
46. Keeler EB, Wells KB, Manning WG, et al: The Demand for Episodes of Mental Health Services. Santa Monica, Calif, RAND Corp, 1986
47. Sharfstein SS: The role of private insurance in financing treatment for depression. *Social Psychiatry and Psychiatric Epidemiology* 30:236-239, 1995
48. Harman JS, Hall AG, Zhang J: Changes in health care use and costs after a break in Medicaid coverage among persons with depression. *Psychiatric Services* 58:49-54, 2007
49. Melli CA, Croghan TW, Hanna MP: Access to treatment for depression in a Medicaid population. *Journal of Health Care for the Poor and Underserved* 10:201-215, 1999

***Psychiatric Services* Invites Submissions by Residents and Fellows**

Psychiatric Services has introduced a continuing series of articles by trainees in order to highlight the academic work of psychiatric residents and fellows and to encourage research by trainees in psychiatry.

Submissions should address issues in the planning and delivery of psychiatric services in any setting, including those of special interest or concern to trainees. Submission of original research is encouraged. Literature reviews will be considered only if they are mentored or coauthored by a senior scholar in the field.

Joshua L. Roffman, M.D., is the editor of this series. Prospective authors—current residents and fellows—should contact Dr. Roffman to discuss possible submissions. He can be reached at Massachusetts General Hospital, 149 13th St., Room 2656, Charlestown, MA 02129 (e-mail: jroffman@partners.org).

All submissions will be peer reviewed, and accepted papers will be highlighted in the issue in which they appear.

Evidence-Based Mental Health Services for Home and Community

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The articles elsewhere in this issue describe the large evidence base of effective treatments for the mental health problems commonly experienced by older adults. However, despite the availability of pharmacologic and psychotherapeutic interventions with demonstrated efficacy in geriatric patients, mental illness remains undertreated in older adults [1]. As many as one half of older adults with a recognized mental disorder fail to receive any mental health services, and even fewer receive evidence-based treatments [2]. Bridging this gap between the scientific findings and community-based practice is an explicit goal for the National Institute of Mental Health and the Institute of Medicine [3,4]. In some cases, the lack of mental health treatment reflects decisions made by older adults or their clinicians about the need and preferences for mental health treatment. But in many cases, older adults are unable to access mental health treatment because of barriers posed by the health care system, at both the policy and organization levels.

Timely access to evidence-based mental health treatment for older adults is a key goal of recent reports by the Older Adult Subcommittee of the

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President's New Freedom Commission on Mental Health [5], the Administration on Aging [6], and the Surgeon General [7]. The research literature documents widespread costs of not providing timely access. For older adults with a mental illness and for their families, the lack of access prolongs their suffering. Untreated mental illness in older adults also has a significant impact on health, functioning, and health services use and costs. For instance, late-life mental illness contributes to the risk of decline in cognition and medical status [1], increased disability [8], self-neglect [9], and compromised quality of life [7,8]. Mental illness among older adults is also associated with excess use of health care, increased placement in nursing homes, greater burden to medical care providers, and higher annual health care costs [9–13]. Depression specifically worsens the outcomes of many medical disorders and increases the risk for falls [14], suicide [15], and nonsuicide mortality [16–19].

Access to appropriate mental health care can be especially difficult for homebound and other frail, community-dwelling older adults, who are often isolated from mainstream medical settings such as primary care, where most depression screening now takes place. Common barriers to access, such as lack of transportation, difficulties in identifying mental health symptoms in the context of medical burden, and the disconnect between multiple service providers, are magnified for older adults, whose mobility is compromised and whose ability to navigate complex services is impaired. The need is especially great among homebound seniors. Community-based studies, including population-based surveys and studies of home health care patients, home-delivered meal clients, and other homebound populations, confirm the high rates of many types of mental illness in these groups [20–23]. Depression and other mental health problems are especially insidious among frail or homebound [20,21] community-dwelling older adults, who are made vulnerable by encroaching disability, medical illness, and social isolation, factors associated with both the risk for and outcomes of depressive illness in late life [8,24,25]. The risks associated with the lack of care are also magnified because a quintessential feature of frailty is the inability to withstand acute illness, emotional upheaval, or physical dislocation (Activities of Daily Living (ADL) decline, falls, hospitalizations, institutionalization, and death) [25–28].

Evidence that frail and homebound, community-dwelling older adults have special difficulty accessing adequate mental health care has prompted researchers to test novel strategies for providing mental health services to older adults. The common theme to this growing evidence base is the development of interventions that reach out from traditional health care practice to provide care in the settings where older adults reside or spend a significant amount of time. Elements of home-based and community services may include case finding, assessment, referral, treatment, and care management. These services commonly are multidisciplinary and sometimes integrate social and medical services into mental health care. For instance, outreach

programs may offer early intervention, facilitate access to preventive health care services, refer individuals to supportive services, and provide services designed to help keep older adults living longer in the community.

In this article, the growing evidence base surrounding the provision of home and community-based mental health services for homebound and frail older adults is evaluated. Specifically, the focus is whether home-based geriatric mental health services are effective in improving mental health symptoms or outcomes.

Method

To identify relevant articles for this review, the MEDLINE, PsychINFO, CINAHL, and Web-of-Science databases were searched within three topic areas for English language articles indexed through July 2005: community outreach services (keywords outreach, gatekeeper, and consultation and referral), mental illness (keywords mental or “depress” or “psych”), and older adults (keywords geriatric or late-life or elderly). Additional articles were identified through bibliographic review, MEDLINE, and Web-of-Science “related records” searches.

Studies were included that evaluated face-to-face psychiatric outreach and treatment services for older adults (target population age ≥ 65) that provided care in community-based noninstitutional settings such as senior centers, senior housing, and home-based settings. Eligible studies consisted of randomized, controlled trials, quasi-experimental studies, longitudinal outcome studies, and a comparison of two or more interventions.

Studies that evaluated services provided in institutional settings (ie, nursing homes or hospitals) were excluded. Because the goal of this review was to determine the effectiveness of outreach services for primary psychiatric disorders, interventions focused explicitly on persons with dementia or on caregivers of persons with dementia were excluded. Finally, duplicate publications with at least one author in common and only minor differences with respect to study samples and efficacy results were excluded.

This article provides an update to a systematic review evaluating the literature published through May 2004 [29]. Although the updated search strategy identified an additional 21 articles, none of these articles met the eligibility criteria for inclusion in this systematic review of home and community-based mental health services for older adults.

Selection of trials

Approximately 164 articles were identified through the literature search. Ninety-six articles were rejected because of sample selection (ie, nongeriatric population), provision of services in an institutional setting, or the lack of face-to-face contact. The remaining 68 articles were reviewed by examining the abstract or content of the article. Bibliographic and related records

searches identified 17 additional articles that were subjected to all review criteria. After these articles were reviewed, an additional 29 were excluded because of sample selection, provision of services in an institutional setting, or a lack of face-to-face contact. Forty articles were excluded based on the quality of data presented; of these, 36 articles contained only model descriptions or descriptive data, and four articles described small case studies. Of the 16 remaining reports, 12 fulfilled all inclusion criteria, but four were published in duplicate. Five studies described results of randomized, controlled trials [30–36]; one reported on a quasi-experimental study [37], four reported on a noncontrolled prospective cohort [38–41], and two reported on a noncontrolled retrospective cohort [42,43].

Data extraction and analysis

Descriptive characteristics and outcome data were abstracted from all of the studies included using a standard data collection form. Data included study type, model description, inclusion and exclusion criteria, sample characteristics, duration, and completeness of follow-up, blinding to intervention and outcome assessment, study measures and outcomes, and strengths and weaknesses. Primary outcomes of interest included the use of mental health services and improvement in psychiatric symptoms. A statistical aggregation of data was not feasible because of the lack of similarity among studies with respect to study design, inclusion criteria, sampling, and outcome measures.

Results

All twelve studies that met full criteria for this review examined the impact of home-based mental health services on improving psychiatric symptoms and community tenure (or reducing the risk of nursing home placement or other institutionalizations). Study designs included five randomized, controlled trials, one quasi-experimental study, and six uncontrolled cohort studies (Table 1). Older adults participating in these studies were predominantly female and between 75 and 85 years old. Three studies focused exclusively on older persons with depression, whereas the other nine studies included individuals with a range of diagnoses. The intervention models generally used a multidisciplinary team of providers to develop a care management protocol, which was implemented in the patient's home. Treatment recommendations varied significantly across individuals and were implemented through a variety of sources.

Four of the five randomized, controlled trials examined the effectiveness of the implementation of a care management protocol developed by a multidisciplinary team, although providers differed across studies. Rabins and colleagues [31] and Waterreus and colleagues [34] used nurses, Banerjee and colleagues [33] used a care manager, and Llewellyn-Jones and

colleagues [32] used physicians and residential staff to implement the intervention. The fifth randomized, controlled trial evaluated the effectiveness of problem-solving therapy provided by social workers under the supervision of a psychiatrist in public senior housing [30]. Relative to usual care, all interventions were associated with a significant improvement in depressive symptoms (Table 2). Of note, Rabins and colleagues [31] also found that outreach services were associated with a decrease in overall symptom severity, as measured by the total Brief Psychiatric Rating Scale score, for individuals with a variety of psychiatric disorders.

A recent quasi-experimental study evaluated a multifaceted education and support program administered in a residential care setting, and compared it with usual care. The target population included older persons who were incapable of living independently because of physical, psychiatric, or psychosocial constraints but did not require extensive nursing home care. The intervention included training for caregivers and other employees of the residential home, informational meetings for residents and their relatives, support groups, and discussion and feedback sessions for care providers. Results indicate that an intervention providing education, support, and feedback to residential care providers can reduce depressive symptoms and maintain health related quality of life for older persons [37].

Findings from the small group of longitudinal cohort studies suggest positive effects of multidisciplinary outreach teams in reducing psychiatric symptoms, relative to baseline levels (Table 3). These studies provided in-home assessment followed by interventions ranging from referral and linkage to outpatient treatment to in-home psychiatric care. However, the specific interventions and outcomes differed, limiting cross-study comparisons or pooling of results. These multidisciplinary geriatric mental health outreach interventions were associated with improved global functioning [38], reduced psychiatric symptoms [40,43], and fewer behavioral disturbances [39], relative to baseline measurements of symptoms and functioning. In addition, these interventions were associated with maintained independence [41,42] and were perceived as helpful to caregivers and referring agents [39]. No difference was found in the degree of being homebound [38].

Discussion

This systematic review of the relatively small but growing literature of randomized, controlled trials, quasi-experimental outcome studies, and cohort studies provides qualified support for the effectiveness of home-based mental health services in improving psychiatric outcomes and, in some cases, for extending the ability of older adults to remain in the community. Any general conclusions drawn from these data are necessarily tempered by the varying quality of the different studies and the methodological limitations of specific studies.

Table 1
 Studies that evaluated home- and community-based treatment for older adults in noninstitutional settings who are aged 65 and older and have mental illness

Study	Model	N	Setting	Diagnoses	Age (mean ± SD y)	Female (%)	Demographic characteristics
Randomized controlled trials ^a							
Ciechanowski et al [30] 2004	Problem-solving therapy delivered by social workers under a psychiatrist's supervision; intervention delivered in coordination with primary care providers (examines the Program to Encourage Active, Rewarding Lives for Seniors [PEARLS])	138	Senior public housing	Dysthymia, 49%; minor depression, 51%	73 ± 8.5	79	11% were married or lived with partner; 72% lived alone; 58% were white; 36% were African American
Rabins et al [31] 2000	Multidisciplinary development of care protocol; nurse-based outreach (examines the Psychogeriatric Assessment and Treatment in City Housing [PATCH])	298	Senior public housing	Variable	75.4 ± 8.5	85 (intervention group; 70 control group)	8% were married; 50% were widowed; 93% lived alone

Llewellyn-Jones et al [32] 1999	Shared care treatment was delivered primarily by the general practitioner	220	Residential facility	Depression	84.3 ± 5.8	85	10% were married; 71% were widowed; 66% lived in a hostel
Banerjee et al [33] 1996	Psychogeriatric team treatment for elderly who receive home care	66	Home	Depression	80.7 ± 6.8	83	16% were married; 64% were widowed; 78% lived alone
Waterreus et al [34] 1994; Blanchard et al [35] 1995	Nurse-based case management; implementation of a care plan that was created by a hospital-based psychogeriatric team	96	Home	Minor depression, 58%; major depression, 23%; dementia, 6%	76 ± 6.8	85	22% were married; 63% were widowed
Quasi-experimental study ^a							
Cuijpers et al [37] 2001	Training for caregivers and other employees of residential home; information meeting for residents and relatives; group interventions offered	424	Residential facility	All residents; targeted on depressive symptoms	23.7% were 71-80 y, 57.8% were 81-90 y, and 16.4% were ≥90 y	79	10.6% were married; 74.3% were widowed; 33.5% lived in a residential home for 1-3 y; 37.7% lived in a residential home for ≥3 y

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Table 1 (continued)

Study	Model	N	Setting	Diagnoses	Age (mean \pm SD y)	Female (%)	Demographic characteristics
Uncontrolled cohort, pre-post study							
Prospective							
Kohn et al [38] 2002	Multidisciplinary outreach team; treatment plan implemented by a social worker	93	Home: study focused on homebound older adults	Affective disorder, 33%; dementia plus depression, 18%; other dementia, 33%	79.7 \pm 7 y	76	19% were married; 56% were widowed; 58% lived alone; 66% were white; 18% were African American; 14% were Hispanic
Seidel et al [39] 1992	Multidisciplinary outreach team; management plan implemented by a case manager	100	Residence: 27% lived in their own home, 40% lived in a nursing home, and 33% lived in a hostel or rest home	Major depression, 14%; Alzheimer's disease, 29%; other dementia, 14%; schizophrenia or delusional disorder, 19%	79.2 \pm 7.6	63	31% were married; 49% were widowed

Author	Study Design	Sample Size	Setting	Variable	Mean age	Age	Demographics
Wasson et al [40] 1984	Multidisciplinary geropsychiatric outreach team; home evaluation and linkage to medical, mental health, and social services	83	Home		77 y; range, 60-94 y	71	63% were white; 35% were African American; 80% were single
Reiffer et al [41] 1982	Multidisciplinary outreach team; home evaluation and treatment	100	Home	Depression, 13%; dementia, 21%; alcohol abuse, 9%; schizophrenia, 4%	Mean age 75 y; 25% were 60-69 y, 36% were 70-79 y, and 28% were 80-89 y	69	82% were white; 5% were black; 18% were married; 40% were widowed
Retrospective							
Brown et al [42] 1996	Multidisciplinary outreach team; case finding followed by home assessment and community support	95	Home	Affective disorder, 42%; organic mental disorder, 40%; schizophrenia, 12%; another diagnosis, 7%	36% were 65-74 y, and 48% were 75-84 y	71	34% lived with their spouse; 44% lived alone
Buckwalter et al [43] 1991	Multidisciplinary rural elderly outreach program; case finding followed by assessment, referral, treatment, follow-up, and coordination	30	Home and community	Depression, 15%; was the most common diagnosis	35% were 65-74 y, and 36% were 75-84 y	71	35% were married; 49% were widowed; 43% lived alone

^a The comparison group consisted of persons who received usual care.

Table 2
Outcomes of randomized, controlled trials examining home- and community-based treatment of late-life mental illness

Study	Intervention sample size (n)	Control sample size (n)	Follow-up		Outcomes and results	Limitations
			Duration (mo)	Completion rate (%)		
Randomized controlled trials ^a						
Ciechanowski et al [30] 2004	72	66	12	93 (intervention group); 91 (control group)	Intervention group had more improvement in depressive symptoms (HSC). Possible scores of the checklist range from 0–4, with lower scores indicating better functioning. The intervention group had a mean \pm SD score of 1.3 ± 0.5 before the intervention and a mean score of 0.8 ± 0.6 after the intervention. The control group had a mean score of 1.2 ± 0.5 before the intervention and a mean score of 1 ± 0.5 after the intervention; 43% of the intervention group showed a reduction in depression symptoms of (at least 50%) compared with 15% of the control group; 36% of the intervention group had remission of depressive symptoms compared with 12% of the control group. The intervention group had more improvement in functional and emotional well-being (FACTS). Possible scores of the scale range from 0–4, with lower scores indicating better functioning. Mean functional change scores were .52 (CI, .29–.74) for the intervention group and .09 (CI, –.14–.33) for the control group. Mean emotional change scores were .33 (CI, .14–.52) for the intervention group and .11 (CI, –.09–.31) for the control group. No difference was found between the groups in service use or social and physical well-being.	Intervention group had a greater proportion of dysthymia than control group

Rabins et al [31] 2000
 131; 393 for weighted sample size
 167; 488 for weighted sample size
 26
 50 (intervention group); 58 (control group)

The intervention group had more improvement in psychiatric symptoms (BPRS). Possible scores of the scale range from 1-140, with lower scores indicating better functioning. The intervention group had a mean score of 29.7 ± 8.4 before the intervention and a mean score of 27.4 ± 7.2 after the intervention. The control group had a mean score of 30.1 ± 11.2 before the intervention and a mean score of 33.9 ± 13.6 after the intervention. The intervention group also had more improvement in depressive symptoms (MADRS). Possible scores of the scale range from 1-60, with lower scores indicating better functioning. The intervention group had a mean score of 13.7 ± 9.5 before the intervention and a mean score of 9.1 ± 6.2 after the intervention. The control group had a mean score of 11.7 ± 5.8 before the intervention and a mean score of 15.2 ± 9.5 after the intervention. No difference was found between the two groups in undesirable moves, including evictions or moves to a nursing home or to a board and care home. (Analyses were based on weighted numbers of psychiatric cases: 62 cases in the intervention group and 69 cases in the control group.)

No single standardized treatment was given. Individuals were randomized into groups after identification of mental illness; 33% dropped out of the study because of death or a move; an additional 13% refused to complete the study.

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Table 2 (continued)

Study	Intervention sample size (n)	Control sample size (n)	Follow-up		Outcomes and results	Limitations
			Duration (mo)	Completion rate (%)		
Llewellyn-Jones et al [32] 1999	109	111	9.5	79 (intervention group); 75 (control group)	The intervention group showed greater improvement in depression symptoms than the control group at follow-up. Depression was measured by the GDS; possible scores range from 1-30, with lower scores indicating better functioning. Before the intervention, 44.2% of the intervention group had scores of 14 or higher, 55.8% had scores ranging from 10-13, and none had scores of 9 or lower. After the intervention, 33.7% of the intervention group had scores of 14 or higher, 32.6% had scores ranging from 10-13, and 33.7% had scores of 9 or lower. Before the intervention, 32.5% of the control group had scores of 14 or higher, 67.5% had scores ranging from 10 to 13, and none had scores of 9 or lower. After the intervention, 44.6% of the control group had scores of 14 or higher, 31.3% had scores ranging from 10-13, and 24.1% had scores of 9 or lower. Factors associated with lower GDS scores included low baseline GDS scores, high baseline basic functioning, low neuroticism, younger age, and intervention participation.	Control and intervention periods were not concurrent. The study was conducted in only 1 large residential facility. At follow-up, 75% of participants completed the GDS, but only 58% completed all measures.
Banerjee et al [33] 1996	33	36	6	88 (intervention group); 89 (control group)	The intervention group tended to recover from depression (58% compared with 25% in the control group). The intervention group also had a greater change in the level of depression, as measured by the mean change in score from baseline to the follow-up on the MADRS. Possible scores range from 1-60, with lower scores indicating better functioning. The intervention group showed a mean 18.3 ± 6.5 point reduction; the control group showed a mean 11.6 ± 6.4 point reduction.	There was a possible nonresponse bias. Results may not generalize to non-home care populations. It was difficult to tell which component of the intervention caused the effect.

Author(s)	Year	Sample Size	Intervention Group	Control Group	Findings	Limitations
Waterreus et al [34] ^b 1994;	47	49	92 (intervention group); 80 (control group)	59 (control group)	The intervention group showed greater improvement in depression symptoms than the control group (SCARE). Possible scores range from 1-18, with lower scores indicating better functioning. The intervention group had mean scores of 8.5 ± 2.5 before the intervention and mean scores of 5.9 ± 2.6 after the intervention. The control group had mean scores of 8.4 ± 2.3 before the intervention and mean scores of 7.2 ± 3.3 after the intervention. No difference was found between the intervention and control group in the number of persons meeting criteria for probable pervasive depression.	There was a lag time between initial assessment and start of intervention. Analyses did not control for baseline factors.
Blanchard et al [35] 1995	47	49	75 (intervention group); 59 (control group)	59 (control group)	In an extension of the previous study [34,35], the control and intervention groups received care management protocols provided by the general physician. Individuals with long-term depression did better in the intervention group than the control group (SCARE). Possible scores range from 1-18, with lower scores indicating better functioning. The intervention group had mean scores of 9.3 ± 2.7 before the intervention and mean scores of 6.3 ± 3.5 after the intervention. The control group had mean scores of 9.1 ± 2.7 before the intervention and mean scores of 9.2 ± 3.4 after the intervention. This finding was the only difference that was found between the control and intervention groups.	The study had a small sample, low power, variable follow-up length, and limited implementation of social and antidepressant treatment. In addition, most analyses showed no difference between the two groups.

Abbreviations: BPRS, Brief Psychiatric Rating Scale; FACTS, Functional Assessment of Cancer Therapy Scale; GDS, Geriatric Depression Scale; HSC, Hopkins Symptoms Checklist; MADRS, Montgomery-Asberg Depression Rating Scale; SCARE, Short Comprehensive Assessment and Referral Evaluation.

^a Comparison group consisted of persons who received usual care.

^b Study provides longer-term follow-up of the participants in the study by Waterreus and colleagues [34]. In the study by Blanchard and colleagues [36] the investigators provided general practice physicians with care management protocols for all participants, and the nurse case management intervention was discontinued.

Table 3
Outcomes of quasi-experimental and uncontrolled cohort studies examining home- and community-based treatment of late-life mental illness

Study	Intervention sample size (n)	Control sample size (n)	Follow-up		Outcomes and results	Limitations
			Duration	Completion rate (%)		
Quasi-experimental study ^a Cuijpers et al [37] 2001	213	211	1 y	59	<p>The intervention group had greater improvement in depression (GDS). Possible scores range from 1–30, with lower scores indicating better functioning. The intervention group had mean scores of 8.1 ± 5.1 before the intervention and mean scores of 7.6 ± 5.2 after the intervention. The control group had mean scores of 9 ± 5.4 before the intervention and mean scores of 9.3 ± 4.2 after the intervention. The intervention group also had greater improvement in health-related quality of life (20-SFHS). Possible scores range from 1–100, with higher scores indicating better functioning. The intervention group had mean scores of 30.4 ± 38.8 before the intervention and mean scores of 29.5 ± 34.9 after the intervention. The control group had mean scores of 37.9 ± 36 before the intervention and mean scores of 21.9 ± 31.5 after the intervention.</p>	<p>The study was not randomized, there was a high dropout rate, and it was unknown which participants received the group therapy component. Also, the change in the GDS score was not clinically significant.</p>

Uncontrolled cohort, pre-post study

Prospective					
Kohn et al [38] 2002	93	NA	Variable	100	<p>Participants had improvement in global functioning (GAFS). Possible scores range from 1-100, with higher scores indicating better functioning. Participants had mean scores of 40.5 ± 18.6 before the intervention and mean scores of 48.2 ± 22.3 after the intervention. Participants received more hours per week of homecare services after the intervention (34.6 h compared with 51.6 h), but they did not differ in their degree of being homebound.</p> <p>The study did not have a control group and had a limited analysis of potential outcomes. The analyses were confounded by unmeasured variables, and there were potential systematic differences between participants who remained in the program.</p>
Seidel et al [39] 1992	100	NA	3 mo	86	<p>Participants had improvement in behavioral disturbances (as measured on a 1 to 4 scale, with higher scores indicating better functioning). Participants had mean scores of 2 ± 0.8 before the intervention and mean scores of 3 ± 0.9 after the intervention; 87% of referring agents and 80% of caregivers perceived the service as helpful or very helpful.</p> <p>The study did not have a control group and did not evaluate behavioral disturbances among individuals residing in their own home because behavioral disturbances were not a significant problem for that group. The analyses did not adjust for severity of psychiatric symptoms. Cell sizes were too small to be able to accurately detect changes within diagnostic groups.</p>
Wasson et al [40] 1984	83	NA	3 mo	80	<p>Direct psychiatric services were recommended for 77% of the participants; 51% improved at follow-up (decreased symptoms, increased well-being, and reduced tension between participant and significant other).</p> <p>The study had selection biases; for example, it excluded hospitalized participants from follow-up. Also, the study did not have independent raters, did not have standardized measures, examined few outcome measures, and did not have a control group.</p>

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Table 3 (continued)

Study	Intervention sample size (n)	Control sample size (n)	Follow-up		Outcomes and results	Limitations
			Duration	Completion rate (%)		
Reifler et al [41] 1982	100	NA	3-4 y	74	Limited data were reported. Most participants maintained independence: 69% of participants owned their own home before the intervention, and 62% owned their own home after the intervention. Only 21% of participants used community services.	The study did not have a control group and did not have statistical evaluation or standardized measures. The study reported outcome data that were obtained by the clinicians who provided the interventions. Investigators attempted to contact 400 persons to identify the 100 persons who were included in the study.
Retrospective Brown et al [42] 1996	95	NA	6, 12, and 18 mo	100	At 12 and 18 mo, respectively, 13% and 19% had died, 75% and 65% remained in the community, and 13% and 14% lived in long-term care facilities.	The study did not have a control group. Participants who were included in the caseload were more likely than those who were referred but not admitted to the caseload to have affective disorders or schizophrenia. The study was unable to link outcomes to intervention. Discharge locations were unknown. No functional or psychiatric outcomes were given.

Buckwaller et al [43] 1991	30	NA	4 mo	100	Improved psychiatric symptoms (GDS, SPMSQ, and SPES).	No data or statistics were provided. The study had a small sample size and no control group. The study was potentially biased because no description was given of the selection process for the 30 clients in the study. Also, sensitivity of the measures was questionable.
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Abbreviations: 20-SPHS, 20-item Short-Form Health Survey; GAFS, Global Assessment of Functioning Scale; GDS, Geriatric Depression Scale; NA, not applicable; SPES, Short Psychiatric Evaluation Schedule; SPMSQ, Short Portable Mental Status Questionnaire.

^a Comparison group consisted of persons who received usual care.

The considerable variation across studies in types of interventions, designs, and outcome measures precludes conducting meta-analyses of pooled data, prohibits the calculation of an overall effect size, and complicates interpretation of data. There were few randomized, controlled trials, and only one of the nine nonrandomized trials adjusted for symptom severity [37]. Follow-up periods ranged from 3 months to 4 years. Participant characteristics also differed across studies. Although most studies had high proportions of female participants aged 70 to 80, ethnicity and diagnoses differed. Several studies targeted individuals with depression, whereas others included a range of diagnoses, depression and dementia being the most common. Moreover, variability in participant characteristics may limit generalizability to younger male populations or to individuals with psychotic, anxious, or other symptom constellations.

The interventions themselves varied across studies, including the case identification method, type, and intensity of treatment provided and the composition of the treatment team. Two of the twelve outcome studies used gatekeepers to make patient referrals [31,43], two used traditional referral mechanisms [38,41], and most studies screened participants from home and residential care settings or senior service agencies [30,32,34,35,37,40,44]. The studies also lacked a common taxonomy for characterizing types of mental health service models and associated outcomes.

The strengths of this review include the use of a broad search strategy and standardized inclusion and evaluation criteria to identify candidate studies. One limitation is that the search strategy was limited to published English language articles. In addition, studies that resulted in negative findings might not have been published, so that this review may overly reflect studies with positive outcomes. Home-based mental health care conducted by video was also excluded. Although geriatric telepsychiatry shows promise for improving access to mental health care in underserved areas, literature on the application of this technology remains limited to a small number of feasibility studies [45].

As a group and despite their limitations, these studies represent a significant step toward surmounting the barriers to providing evidence-based mental health care to frail or homebound community-dwelling older adults. The difficulties in meeting the mental health needs of this population mirror those faced by most geriatric mental health services and include concurrent mental health, cognitive, and medical problems, social losses, disability, cultural and ethnic diversity, variations in family resources and involvement, and competency in decision making. These problems can be particularly challenging in homebound older adults because this group tends to have a greater constellation of these concerns than average community-dwelling elders do. Homebound older adults also often do not have the kinds of clinical and professional support available to residents of nursing homes or other institutions. Moreover the health and social needs of frail and homebound older adults change rapidly over time, necessitating greater coordination of care over time and across providers.

An important methodological consideration in further developing this evidence base is the choice of outcome measures, especially in the context of multiple patient needs. Studies need to ensure that their outcomes and specific measures are relevant to age and culture. A similar consideration is the method used to assess outcomes. In the studies reviewed here, outcome measures varied substantially, and many studies failed to use standardized assessment measures [39–42]. Some of the studies reported only outcome data obtained by the same clinicians who provided the interventions, which might have led to biased outcome measures. Among the fourteen studies, nine used independent outcome raters [30–34,37–39,43], two documented inter-rater reliability [32,39], and seven used an intent-to-treat analysis [30–34,37,42]. Generally, uncontrolled cohort studies failed to qualify their conclusions by discussing the possibility that symptom improvement could represent regression to the mean.

Conducting intervention research in the home environment holds its own set of challenges. Difficult aspects include gaining access to potential research subjects, obtaining support from family members, involving appropriate personal clinicians, monitoring intervention fidelity, and ensuring subject safety while respecting individual autonomy, especially when research and services are provided in a person's home. The complexity and time demands of conducting randomized trials in this setting may help to explain the large number of studies in this review that reported qualitative and observational outcome data (as evidenced by 36 descriptive and four case study reports). Although experimental designs offer more support for the association of a causal relationship, there is an inherent difficulty in executing and evaluating randomized, controlled trials in the field of mental health services. As such, the contribution from lower tiers of evidence should not be ignored, especially in an area with potential for improving access and quality of mental health care.

Finally, despite promising evidence in support of interventions that integrate or coordinate care, a potential weakness of many of these models is their lack of sustainability. Only two of the studies reviewed in this analysis included information on the cost of the intervention [30,43], limiting the capacity of policy makers or providers to assess practical considerations associated with implementing and sustaining these treatment models in routine clinical settings. Particularly problematic are models that integrate home-based care by providers from multiple organizations. One hurdle to integrated models is that, to be most effective and sustainable, the intervention must be embraced at the levels of the organization and the frontline practitioner [46].

In summary, the current evidence provides promising support for home-based mental health services for older adults whose access to traditional practice-based models of care is limited. Observational, uncontrolled studies report that mental health outreach services may be associated with greater access for mentally ill older people. More rigorous studies report that

home- and community-based treatment is associated with a reduction in psychiatric symptoms. However, additional studies are needed using rigorous, standardized approaches to measure mental health outcomes and to characterize the intervention. Well-designed, controlled studies may help to identify effective and sustainable approaches to providing evidence-based mental health treatment to frail or homebound older adults.

References

- [1] Charney DS, Reynolds CF III, Lewis L, et al. Depression and Bipolar Support Alliance consensus statement on the unmet needs in diagnosis and treatment of mood disorders in late life. *Arch Gen Psychiatry* 2003;60(7):664–72.
- [2] Klap R, Tschantz K, Unutzer J. Caring for mental disorders in the United States: a focus on older adults. *Am J Geriatr Psychiatry* 2003;11(5):517–24.
- [3] Report of the National Advisory Mental Health Council's Clinical Treatment and Services Research Workgroup. Bridging science and service. Bethesda, MD: National Institute of Mental Health; 1998. Available at: <http://www.nimh.nih.gov/publicat/nimhbridge.pdf>. Accessed October 12, 2005.
- [4] Institute of Medicine. Crossing the quality chasm: a new health system for the 21st century. Washington, DC: Institute of Medicine; March 2001.
- [5] Bartels SJ. Improving the United States' system of care for older adults with mental illness: findings and recommendations for the President's New Freedom Commission on Mental Health. *Am J Geriatr Psychiatry* 2003;11(5):486–97.
- [6] Administration on Aging. Older adults and mental health: issues and opportunities (2001). Washington, DC: Department of Health and Human Services. Available at: <http://www.aoa.gov/press/publications/Older-Adults-and-Mental-Health-2001.pdf>. Accessed October 12, 2005.
- [7] US Department of Health and Human Services. Mental Health: A Report of the Surgeon General, Executive Summary. Rockville, MD: US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health, 1999. Available at: <http://www.mentalhealth.samhsa.gov/features/surgeongeneralreport/home.asp>. Accessed October 12, 2005.
- [8] Bruce ML, Seeman TE, Merrill SS, et al. The impact of depressive symptomatology on physical disability: MacArthur Studies of successful aging. *Am J Public Health* 1994;84:1796–9.
- [9] Abrams RC, Lachs M, McAvay G, et al. Predictors of self-neglect in community-dwelling elders. *Am J Psychiatry* 2002;159(10):1724–30.
- [10] Sheline YI. High prevalence of physical illness in a geriatric psychiatric inpatient population. *Gen Hosp Psychiatry* 1990;12:396–400.
- [11] Unutzer J, Patrick DL, Simon G, et al. Depressive symptoms and the cost of health services in HMO patients aged 65 years and older. *JAMA* 1997;277(20):1618–23.
- [12] Druss BG, Rohrbaugh RM, Rosenheck RA. Depressive symptoms and health costs in older medical patients. *Am J Psychiatry* 1999;156:477–9.
- [13] Luber MP, Meyers BS, Williams-Russo PG, et al. Depression and service utilization in elderly primary care patients. *Am J Geriatr Psychiatry* 2001;9(2):169–76.
- [14] Sheeran T, Brown EL, Nassisi P, et al. Does depression predict falls among home health patients? using a clinical-research partnership to improve the quality of geriatric care. *Home Healthc Nurse* 2004;22(6):384–9.
- [15] Blazer DG. Depression in late life: review and commentary. *J Gerontol A Biol Sci Med Sci* 2003;58(3):M249–65.

- [16] Unützer J, Simon G, Belin TR, et al. Care for depression in HMO patients aged 65 and older. *J Am Geriatr Soc* 2000;48(8):871–8.
- [17] Bruce ML, Leaf PJ. Psychiatric disorders and 15-month mortality in a community sample of older adults. *Am J Public Health* 1989;79(6):727–30.
- [18] Gallo JJ, Bogner HR, Morales KH, et al. Depression, cardiovascular disease, diabetes, and 2-year mortality among older primary care patients. *Am J Geriatr Psychiatry* 2005; 13(9):748–55.
- [19] Bruce ML, Leaf PJ, Rozal GPM, et al. Psychiatric status and 9-year mortality in the New Haven Epidemiologic Catchment Area study. *Am J Psychiatry* 1994;151(5):716–21.
- [20] Bruce ML, McNamara R. Psychiatric status among the homebound elderly: an epidemiologic perspective. *J Am Geriatr Soc* 1992;40(6):561–6.
- [21] Ganguli M, Fox A, Gilby J, Belle S. Characteristics of rural homebound older adults: a community-based study. *J Am Geriatr Soc* 1996;44(4):363–70.
- [22] Bruce ML, McAvay GJ, Raue PJ, et al. Major depression in elderly home health care patients. *Am J Psychiatry* 2002;159(8):1367–74.
- [23] Sirey J, Bruce ML. Prevalence of depression in home delivered meals clients. Poster presented at the 18th National Institutes of Mental Health Services Conference on Mental Health Research (MHSR). Bethesda, MD, July 18–19, 2005.
- [24] Bruce ML, Takeuchi DT, Leaf PJ. Poverty and psychiatric status: longitudinal evidence from the New Haven Epidemiologic Catchment Area Study. *Arch Gen Psychiatry* 1991; 48:470–4.
- [25] Bruce ML, Hoff RA. Social and physical health risk factors for first-onset major depressive disorder in a community sample. *Soc Psychiatry Psychiatr Epidemiol* 1994;29(4): 165–71.
- [26] Rockwood K, Howlett SE, MacKnight C, et al. Prevalence, attributes, and outcomes of fitness and frailty in community-dwelling older adults: report from the Canadian study of health and aging. *J Gerontol A Biol Sci Med Sci* 2004;59(12):1310–7.
- [27] Gillick M. Pinning down frailty. *J Gerontol A Biol Sci Med Sci* 2001;56(3):M134–5.
- [28] Rigler SK, Perera S, Jachna C, et al. Comparison of the association between disease burden and inappropriate medication use across three cohorts of older adults. *Am J Geriatr Pharmacother* 2004;2(4):239–47.
- [29] Van Citters AD, Bartels SJ. A systematic review of the effectiveness of community-based mental health outreach services for older adults. *Psychiatr Serv* 2004;55(11):1237–49.
- [30] Cicchanowski P, Wagner E, Schmaling K, et al. Community-integrated home-based depression treatment in older adults: a randomized controlled trial. *JAMA* 2004;291(13): 1569–77.
- [31] Rabins PV, Black BS, Roca R, et al. Effectiveness of a nurse-based outreach program for identifying and treating psychiatric illness in the elderly. *JAMA* 2000;283(21): 2802–9.
- [32] Llewellyn-Jones RH, Baikie KA, Smithers H, et al. Multifaceted shared care intervention for late life depression in residential care: randomised controlled trial. *BMJ* 1999;319(7211): 676–82.
- [33] Banerjee S, Shamash K, Macdonald AJ, et al. Randomised controlled trial of effect of intervention by psychogeriatric team on depression in frail elderly people at home. *BMJ* 1996; 313(7064):1058–61.
- [34] Waterreus A, Blanchard M, Mann A. Community psychiatric nurses for the elderly: well tolerated, few side-effects and effective in the treatment of depression. *J Clin Nurs* 1994;3(5): 299–306.
- [35] Blanchard MR, Waterreus A, Mann AH. The effect of primary care nurse intervention upon older people screened as depressed. *Int J Geriatr Psychiatry* 1995;10:289–98.
- [36] Blanchard MR, Waterreus A, Mann AH. Can a brief intervention have a longer-term benefit? the case of the research nurse and depressed older people in the community. *Int J Geriatr Psychiatry* 1999;14(9):733–8.

- [37] Cuijpers P, van Lammeren P. Secondary prevention of depressive symptoms in elderly inhabitants of residential homes. *Int J Geriatr Psychiatry* 2001;16(7):702-8.
- [38] Kohn R, Goldsmith E, Sedgwick TW. Treatment of homebound mentally ill elderly patients: the multidisciplinary psychiatric mobile team [special issue: Suicidal behaviors in older adults]. *Am J Geriatr Psychiatry* 2002;10(4):469-75.
- [39] Seidel G, Smith C, Hafner RJ, et al. A psychogeriatric community outreach service: description and evaluation. *Int J Geriatr Psychiatry* 1992;7(5):347-50.
- [40] Wasson W, Ripeckyj A, Lazarus LW, et al. Home evaluation of psychiatrically impaired elderly: process and outcome. *Gerontologist* 1984;24(3):238-42.
- [41] Reifler BV, Kethley A, O'Neill P, et al. Five-year experience of a community outreach program for the elderly. *Am J Psychiatry* 1982;139(2):220-3.
- [42] Brown P, Challis D, von Abendorff R. The work of a community mental health team for the elderly: referrals, caseloads, contact history and outcomes. *Int J Geriatr Psychiatry* 1996; 11(1):29-39.
- [43] Buckwalter KC, Smith M, Zevenbergen P, Russell D. Mental health services of the rural elderly outreach program. *Gerontologist* 1991;31(3):408-12.
- [44] Banerjee S, Shamash K, Macdonald AJ, et al. Randomised controlled trial of effect of intervention by psychogeriatric team on depression in frail elderly people at home. *BMJ* 1996; 313(7064):1058-61.
- [45] Jones BN, Ruskin PE. Telemedicine and geriatric psychiatry: directions for future research and policy. *J Geriatr Psychiatry Neurol* 2001;14(2):59-62.
- [46] Rees G, Huby G, McDade L, et al. Joint working in community mental health teams: implementation of an integrated care pathway. *Health Soc Care Community* 2004;12(6):527-36.