Geriatric Mental Health Services Research: Strategic Plan for an Aging Population

Report of the Health Services Work Group of the American Association for Geriatric Psychiatry

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In November 1999, a working group of the American Association for Geriatric Psychiatry (AAGP) convened to consider strategic recommendations for developing geriatric mental health services research as a scientific discipline. The resulting consensus statement summarizes the principles guiding mental health services research on late-life mental disorders, presents timely and topical priorities for investigation with the potential to benefit the lives of older adults and their families, and articulates a systematic program for expanding the supply of well-trained geriatric mental health services researchers. The agenda presented here is designed to address critical questions in provision of effective mental health care to an aging population and the health policies that govern its delivery. (Am J Geriatr Psychiatry 2001; 9:191–204)

At the dawn of the new century, two seminal reports mark a turning-point in the national agenda for research and mental health services in America: "Bridging Science and Service," from the National Institute of Mental Health,[1] and "Mental Health: A Report of the Surgeon General."[2] A third, the "Consensus Statement on the Growing Crisis in Geriatric Mental Health,"[3] specifically highlights the rising prevalence of mental disorders in older people and proposes a research program to meet this emergent need. All three reports recommend systematic development of a vital program of geriatric mental health services research to ensure the translation of advances in clinical science and therapeutics into better care for older adults.

BACKGROUND

The science of geriatric mental health services research began during the 1960s and '70s with exploration of the impact of mental health reforms on the fate of chronically mentally ill patients discharged from state hospitals into the community.[4,5] In the 1980s, new studies confirmed findings of preliminary studies reporting that prevalent geriatric mental disorders were undertreated in both mental and general health care settings.[6,7] In the last decade, geriatric mental health services research has emerged as a national priority, as scientifically based understanding of the origins and

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treatment of late-life mental disorders have dramatically improved clinicians' ability to diagnose and treat older patients. Patients with the most common mental disorders of late life, including depression, dementia, and emotional and behavioral disorders that cross conventional diagnostic boundaries, as well as those with less common but severe mental disorders such as schizophrenia, can now be reliably identified and treated. However, successful translation of findings from prevalence studies and controlled treatment trials into the diverse settings in which older adults receive their care has lagged far behind. Mental health services research bridges these gaps by identifying barriers to effective dissemination of new knowledge, testing ways to overcome them, and evaluating the effectiveness and costs of interventions and service models in real-world settings.

The Nature of Mental Health Services Research

Mental health services research complements conventional clinical research but differs in emphasis in several important ways (Table 1). Familiar clinical psychiatric research models describe and delineate clinical syndromes, develop new therapies, and assess therapeutic efficacy. Clinical research studies typically use restrictive experimental designs to discover whether a specific treatment works in defined patient samples and/or to compare it with alternative treatments. These studies are typically blinded or otherwise controlled and use limiting inclusion and exclusion criteria. In contrast, mental health services research examines the effectiveness of mental health care in a population and emphasizes the capacity of service systems to deliver care in the heterogeneous populations encountered in actual service settings. It may also include assessment of outcomes defined not only by clinical parameters, but also by function, treatment acceptability, service utilization, and costs. Second, health services research incorporates a variety of methodological approaches to address the organization, financing, and delivery of care in broad populations and diverse settings. It includes randomized services trials comparing the effectiveness of alternative treatment interventions, as well as practice-based studies using the methods of clinical epidemiology, quality improvement, practice- based change strategies, and treatment dissemination. Third, services research includes studies of delivery systems and the effects of differences in organization and financing on outcomes. Hence, services research draws upon widely divergent disciplines and methodologies. Its goals are broader than those of clinical research, and its scientific methods are chosen to inform decisions about health care organization and policy. Multiple stakeholders—providers, patients, policy-makers, purchasers of health care commodities, and insurers—have important interests in decisions regarding access to and effectiveness of treatments for older patients with mental disorders. In this respect, services research is uniquely positioned to bridge science and health policy in response to emerging public health challenges.[1]

The Challenge of an Aging Population

The aging of the population presents one of the most significant international challenges to health care in this new century (Figure 1). Within a decade, 13 of every 100 Americans will be over the age of 65, and more than 1 in every 100 will be over age 85. The most rapid growth in the older population, occurring in the oldest-old, demands special attention to this group at high risk for mental disorders because of multiple functional impairments, medical disorders, and vulnerabilities to diverse physiological and psychosocial stressors. This group is also at highest risk for neurodegenerative dementias, with their associated psychiatric morbidity. Research on mental health and aging underscores the special service needs of persons with coexisting medical comorbidity, physical frailty, cognitive changes, and diminished access to care. The Surgeon General's Re-

TABLE 1. Contrasting characteristics of clinical and health services research

	Clinical Research	Health Services Research
Subjects	Patients; may involve families and caregivers	Populations, services, or systems; may involve providers, payers, and policymakers
Focus	Patients and disorders	Models of service delivery
Interventions	Treating disorders	Changing organizational structure, process, or reimbursement method
Outcomes	Efficacy	Effectiveness

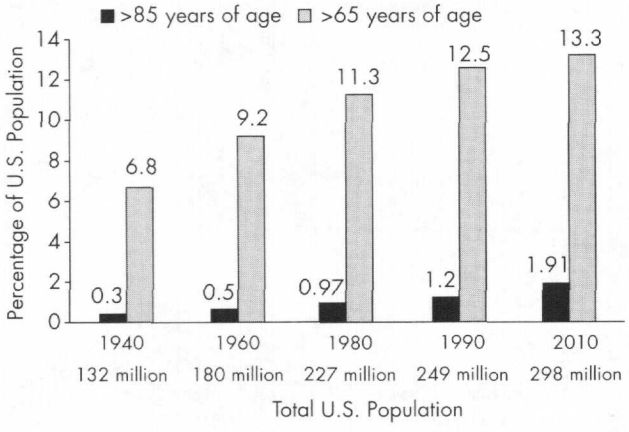
port on Mental Health[2] highlights the explosion in knowledge of effective treatments for late-life mental disorders over the last decade while proposing solutions to problems in implementation of these findings in clinical settings. The escalating need for effective geriatric mental health treatments and services supports a compelling argument for expanding the pool of clinicians and researchers and a research and training agenda that includes health services among its critical components.[3]

The present document proposes such an agenda for mental health services research specific to the geriatric population. It is not intended to provide a comprehensive overview of the broad array of possible research directions in the field of geriatric mental health services research or to highlight those few areas that already benefit from an existing research literature or ongoing broad-based research initiatives. Rather, priority targets are identified that aim to close the existing knowledge gaps in areas that have received inadequate attention to date, yet have high potential to improve the mental health of older adults.

PRIORITIES FOR GERIATRIC MENTAL HEALTH SERVICES RESEARCH

Priorities may be conceptualized from several perspectives within the field of mental health services research (Table 2): 1) high-risk target populations in need of services; 2) key service delivery settings and provider groups; 3) translation of research findings into clinical practice by describing—and changing—provider and consumer behavior; 4) the needs, preferences, and involvement of consumers and families in decision-making and treatment; and 5) service delivery systems, including the effect of organizational and financial factors on access, outcomes, and costs.

FIGURE 1. United States population growth 1940-2010[87]



Priority Populations

Priority populations for geriatric mental health services research are those with high prevalence, risk, chronicity, or costs of mental disorders, for which existing treatment models and services are poorly defined or inadequately implemented. This perspective targets three overlapping groups: 1) older persons with comorbid disorders; 2) the oldest and frail elderly; and 3) older adults with chronic mental disorders.

Comorbidity. Comorbidity, or the coexistence of two or more conditions at least one of which is a psychiatric illness, is the norm among older persons with mental disorders.[8] Chronic medical disorders, cognitive disorders due to neurodegenerative disease or medical factors, and medication or alcohol misuse commonly occur with psychiatric disorders such as depression or anxiety. Chronic medical disease is an established risk factor for mental disorders,[9] and patients with severe long-lasting mental illness, like other aging persons, frequently develop major medical problems (e.g., elderly patients with schizophrenia and diabetes or chronic lung disease).[8] The prevalence of psychosis, depression, or behavioral symptoms or disorders in patients with Alzheimer's disease and other dementias is well known, but a growing number of individuals with severe and persistent mental illness experience worsening cognitive function with age[10] that affects strategies for care. Also, comorbid psychiatric symptoms or disorders are common among individuals with alcohol or prescription, over-the-counter, or street-drug misuse and abuse, although little is known about the characteristics of such "dual disorders" in older adults and what service models may be effective for treating them.[11]

A major challenge for dealing effectively with comorbid disorders in older adults derives from fragmentation of services and financing across different health care delivery systems ("vertical fragmentation"). Patients may require services by specialty mental health, primary medical, aging non-mental health, and/or substance abuse treatment providers working in very different locales and settings that lack defined pathways

for integrating care into a coherent whole.[12,13] Research is needed to identify effective service models that address the complexity of clinical needs and providers encountered by older adults.[14] Moreover, the continuity of care over time is also frequently disrupted ("horizontal fragmentation") for older adults with chronic impairments. Research specifically targeting cognitively impaired older adults is required to assess use of mental health services and continuity of care, to define how explicit partnerships between providers and proxy decision-makers (usually family members) affect long-term outcomes, and how impaired elderly persons living alone without family to help can best be identified and cared for. There is evidence that underutilization of mental health services and discontinuities in care contribute to untoward outcomes, such as higher rates of rehospitalization in dementia patients with depression,[15] increased utilization of more expensive emergency and inpatient care resources in depressed medically ill patients,[16,17] and entry into long-term institutional care.[18]

Frailty and the "oldest-old." Frailty results from the combined effects of advanced age, cognitive impairment, diminished physiological and psychological reserve, and identifiable mental and medical disorders in various combinations,[19–21] and it increases risk for unrecognized and/or undertreated psychiatric as well as medical complications.[22,23] Frail elderly persons can be targeted by use of simple tools,[24] and several approaches to improving health outcomes and reducing risks in this population have been tested in randomized controlled trials.[25–28] However, the cognitive, behavioral, and mood components of frailty have been inadequately examined in predictive and intervention research.[29] The oldest-old who need everyday assistance and those with psychiatric symptoms are at high risk for institutionalization.[30,31] A tactical approach to longitudinal research on improving care of frail elderly persons builds on the concept of "sentinel events" that bring an at-risk individual to clinical attention and allow discovery of broader needs at a time when provision of well-targeted interventions can optimize overall outcomes. Sentinel events may be emergency room visits,[32] hospital admissions, falls, fractures, subnutrition, dehydration, or the development of delirium, stroke, or myocardial infarction, anxiety, depression, or aggressive behavior. Neglect of the opportunities provided by recognizing the sentinel nature of these events leads to avoidable chronicity and changes in levels of care and the unmet need for specialized follow-up and care when chronicity is inevitable. Longitudinal research is needed to define the unique contribution of psychiatric components of frailty to risks and outcome of sentinel events and to determine whether early identification and intervention improve clinical and family outcomes, prolong successful adaptation to community living, and lead to more efficient and appropriate use of health and social care. Frail elderly patients, overrepresented among the oldest-old, have been largely neglected in mental health services research and have just begun to be a focus for change in general health care systems.[33–35]

Severe mental illness. Older adults with severe mental illnesses (schizophrenia; delusional disorder; bipolar disorder; and severe, recurrent, or treatment-refractory major depression) comprise a growing population that accounts for disproportionate service use and costs.[36,37] A substantial mental health service research literature documents the effectiveness of specific treatment interventions and services for young adults with severe men-

TABLE 2. Priorities for geriatric mental health services research

Populations	Settings	Issues	Training	Funding
Comorbidity	Spectrum of long-term care	Treatment effectiveness	Supply of investigators	Resources
Frailty in the oldest-old	Primary and specialty care	Provider behavior	Defining core competencies	NIMH
Severe mental illness		Preferences and decision-making	Increasing training opportunities	NIA
		Discontinuities in care	Collaborative funding initiatives	Foundations
		Structure and behavior of health systems		Medicare, HRSA demonstration projects
		Quality of national databases		AHRQ
				SAMHSA

Note: NIMH = National Institute of Mental Health; NIA = National Institute on Aging; HRSA = Health Resources and Services Administration; AHRQ = Agency for Healthcare Research and Quality; SAMHSA = Substance Abuse and Mental Health Services Administration.

tal illness, yet little is known about effective service models for older adults. Such gaps in knowledge underscore the need for research that focuses on this high-risk group.[3,38–40] Addressing the needs of older persons with severe mental illness for rehabilitation and long-term mental health care in the community will require development and testing of innovative service and financing models. These models should adapt successful rehabilitation concepts and services for younger persons, while recognizing that the older population poses unique challenges with respect to horizontal and vertical fragmentation of services, the high prevalence of medical and cognitive comorbidity, and the complex interaction of long-term mental health and general health care needs.[41,42]

Service models developed for chronic medical conditions may also hold promise for older adults with severe mental disorders. For example, specialized chronic disease management models designed to streamline service delivery and reduce adverse outcomes for highly prevalent chronic conditions such as diabetes[43] have defined core components of chronic disease care that can be generalized across diagnoses and applied to psychiatric disorders.[44] Explicit behavioral outcomes are the key measures of effectiveness in chronic-care models regardless of diagnosis. Behavioral outcomes appropriate for older adults will require conceptual development and adaptation for those with cognitive and motivational deficits. Finally, any examination of the effectiveness of intensive or supported interventions must consider the associated costs of innovative service designs, while also documenting potential savings accrued through prevention of adverse outcomes and costly institution-based services.

Priority Service Delivery Settings

The spectrum of long-term care settings. Although the great majority of older individuals with mental disorders live in the community, many require varying forms and levels of assistance that are currently being provided by families, advocacy groups, the aging services network, public and private care agencies, and diverse health care systems.[12,13,31] The costs of these disparate components are generally supported by multiple payment mechanisms that are tracked over time by different, often incompatible accounting systems, and their administrative fragmentation makes it difficult to assess outcomes or collect accurate research data. Interdisciplinary models of community-based geriatric mental health care have the potential to provide the full spectrum of services required by frail elderly patients,[45] pointing the way for large-scale trials in at-risk populations. Models of community-based long-term care can provide innovative alternatives to institutional care,[31,46] although cost-effectiveness studies suggest that services must be carefully targeted in order to demonstrate superior efficiency.[47–49] Health services research is needed to test the effectiveness of interventions and service models for older adults with mental disorders who are discharged from hospitals and emergency rooms after treatment for sentinel events and those receiving home health care, social case management, adult daycare, assisted-living services, and long-term nursing home care. The costs of care in the various components of the long-term care spectrum are largely borne by families and public service funds. Moreover, the services provided usually include mental health care as an afterthought, if at all.

In nursing homes, general models for providing mental health services have yet to be tested, and empirical efficacy and cost studies have been limited to specific subpopulations.[50] The assumption that nursing home placement for mentally impaired elderly persons reflects avoidable failures of less-costly services has led to an emphasis on studies of patient placement into less-restrictive settings; most of these studies lack robust clinical-outcome indicators or longitudinal designs.[51] Older adults with mental disorders in nursing homes are a heterogeneous group that includes many individuals unsuited to community placement because of the complexity of their total care needs, as well as other patients who could move into the community but lack access to appropriate support services. A large body of nursing home regulations that require review of psychotropic medication prescriptions, coupled with the high prevalence of psychiatric disturbances in residents,[52] has spawned a major expansion in nursing home mental health consultation services.[53] At the same time, the greatest growth in long-term care is in assisted-living facilities and home- and community-based alternatives where regulations are few and mental health assessments and services are not required. Questions about the adequacy and appropriateness of mental health services in long-term institutional care continue to engender controversy at the health-policy level, and putative fraudulent claims and other abuses[54] have stolen the limelight from serious consideration of how ser-

vices can be targeted, organized, funded, and delivered for improved outcomes. National surveys of nursing home expenditures suggest that specialty mental health providers underserve residents, particularly those with dementia complicated by psychiatric disorders, and clinical studies indicate that unmet needs for psychiatric services are widespread.[55-58]

Primary and specialty health care settings. The majority of older persons receiving any mental health care are treated by their general medical providers,[59] a fact that underscores the importance of effective teaching of basic geriatric mental health skills to future primary care physicians.[60] The care of older adults with comorbid psychiatric disorders is more costly, exclusive of mental health services, than is care of older adults with medical problems alone.[61] Integrated models of primary care and mental health services have been proposed as a means to address the mental health needs of primary care patients more effectively.[62,63] Accordingly, several initiatives sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA), the National Institute of Mental Health (NIMH), the Veterans' Administration (VA), and the Hartford Foundation are underway to test the effectiveness of integrating mental health services for depressed older patients into primary care settings. The VA health care system is also testing a model of coordinated care for older persons with mental disorders or substance abuse newly discharged from medical and surgical services (the UPBEAT program). These efforts hold promise for overcoming the major challenges impeding effective mental health service delivery in primary care settings. They also set the stage for developing testable models for management of other disorders, such as dementia with psychiatric morbidity, on a broad scale. Research examining the costs and effectiveness of this second generation of mental health interventions and service models will be a continuing priority. Other studies are also needed to establish effective approaches to ensuring quality general health care for individuals primarily served within the specialty mental health sector, such as older persons with chronic schizophrenia and other severe mental illness who are at high risk for unrecognized and untreated medical comorbidity.[41] Medical populations receiving most of their care from specialty medical providers, such as those with chronic and severe cardiac and respiratory diseases, are similarly at high risk for psychiatric morbidity that has adverse health and service-utilization outcomes,[64] and they require specialized intervention models that can be validated in research. Targeted approaches to test the effectiveness of integrated mental and general health care for frail elderly patients are particularly important for primary care and social-service settings. The limited decision-making capacity, mobility, and ability to advocate for, organize, and monitor their own care make such individuals dependent on others to access the comprehensive care they require.

TRANSLATING RESEARCH INTO CLINICAL PRACTICE: PRIORITIES FOR IMPROVING EFFECTIVENESS IN REAL-WORLD SETTINGS

Changing Provider Behavior

Dissemination and testing of research advances in clinical practice require systematic study of methods for changing how doctors and other health and social- service providers deal with geriatric mental health problems. Mental health services research has largely neglected the settings that care for older adults, including private medical practices, primary care clinics, managed care organizations, nursing homes, and community-based social and health agencies. Clinical care for common chronic or prevalent conditions varies widely and resists change through simple informational strategies and dissemination of authoritative guidelines alone, even when more intensive team approaches, such as academic detailing and continuous quality improvement are used.[65,66] Success rates in changing provider behavior in managing acute, self-limited diseases are typically higher than for chronic diseases. A recent review of empirical studies of provider change strategies applied to psychiatric disorders[67] presents a more optimistic view: success is greater when community-based interventions are used that enable and reinforce practice change and when patient-based interventions are added to amplify gains. The intrinsic appeal of these approaches warrants closer scrutiny for application to improving the care of geriatric patients with mental health problems, particularly in screening for common disorders, managing comorbidity, increasing access, and updating treatment to conform to dynamic change in evidence-based practices. Evaluating the usefulness of these approaches in the treatment of mental disor-

ders in older adults will be facilitated by population studies targeting collaborative care or specialty mental health services, the characteristics of practices most likely to respond to incentives for change, and monitoring of carefully selected therapeutic outcomes appropriate to older adults. For general application in geriatric mental health services research, templates for assessing technologies for information transfer and provider behavior change can be adapted from existing geriatric medical interventions to achieve limited objectives in defined environments and from studies in other patient populations. These include studies of successful academic detailing relevant to mental health care of elderly patients[68,69] and the schizophrenia PORT (Patient Outcomes Research Team) project.[70] Additional targets for research include interventions and processes aimed at changing provider behavior such as decision analysis and support,[32] explicit incentives for adherence to practice guidelines, and system-wide interventions utilizing uniform service protocols and outcomes assessments.

Testing Treatment Effectiveness

Treatments found to be effective in controlled trials of highly selected populations in academic research settings need to be implemented and tested in actual practice. This is a major objective of a geriatric mental health services research agenda. Unique challenges for translational research[71] are posed by frailty, cognitive impairment, knowledge deficits, social isolation, limited financial resources, and high prevalence of medical and psychiatric comorbidities that may alter adherence and response to treatments. Moreover, interventions effective for clinical problems concentrated in geriatric patient populations[18,72,73] often have not been tested in routine outpatient practice settings and do not contain dissemination protocols designed to reach "average" patients in "average" care situations. The challenge for patient-centered health services research is to ensure the inclusion of broad and appropriate subject samples in intervention studies, to demonstrate limits to generalizability where they occur, and to point to modifications required for specific patient populations.

Examining Treatment Preferences and Mental Health Care Decision-Making

Many questions about treatment preferences and medical decision-making by patients, their families, and physicians remain unstudied for most geriatric mental health problems and are important issues for external validation of interventions. Factors that facilitate (or obstruct) acceptance of effective treatments by patients and providers need to be identified and addressed. Negative outcomes—poor adherence, poor clinical results, deteriorating general health, and declining quality of life—are consequences of neglecting these dimensions. Also, factors that impede effective collaboration between patient/family and provider must be examined with a particular focus on late-life mental disorders associated with comorbid illnesses, where appropriate decision-support mechanisms for both mental and medical disorders are more complex to design and implement in treatment settings. This type of health services research marries the widely diverse elements of technology assessment and quality-assurance methodologies with clinician/patient reasoning, health care utilities, and decision-making. Studies in this area should identify, explain, and build on practice variations from established recommendations and guidelines; test the impact of geropsychiatric care managers on initiation, adherence, and continuity of care across care settings; and evaluate the costs of ensuring guideline-level care in health care systems.

Using Qualitative Research Designs

Qualitative methods that call upon the expertise of disciplines distant from the clinical arena and health services research per se, such as medical sociology and anthropology, have been neglected in geriatric mental health research. Experiences and values that affect help-seeking, acceptance of and adherence to treatment, provider behavior, and payer policies for geriatric mental health care may have clinical, attitudinal, financial, geographic, and/or social and cultural sources. Qualitative research aims to understand these sources of health care disparities to improve the design of incentives and practical strategies for change. Qualitative studies are time- and labor-intensive and usually limited to small samples, but they can provide useful pilot data for the design of intervention trials. Such exploratory methods may be required in order to find successful ways of overcoming barriers to effective treatment, including cognitive biases among providers, patients, and families; these exploratory methods may include mental health utilities that examine the relative values of alternative outcomes; clinical decision trees that incorporate

the real probability of specific treatment outcomes; and focus groups with targeted community and provider groups.

Identifying and Overcoming Discontinuities in Care

Barriers to access and utilization of appropriate mental health services may be more difficult to surmount for older than for younger adults,[74] and there is evidence that ethnicity is a factor.[75] Segregation of types of care into different treatment sites and settings accentuates problems of stigma and access, impedes acceptance of mental health care as a component of general health care, and may reduce adherence with referrals to mental health service providers;[12] older persons are most vulnerable to the effects of such discontinuities in care. Moreover, communities differ in the complement and organization of systems of care available for older adults and in how effectively information is disseminated into the communities these systems serve. The development and dissemination of mental health outcome measures and quality indicators that are specifically designed for older patients, their providers, and other caregivers, and that are capable of spanning divergent systems of care, is an important focus for new health services research.

Understanding the Structure and Behavior of Health Systems

Analysis of existing structural, organizational, and financial arrangements for the delivery of mental health services for elderly patients is a necessary step toward testing the effectiveness of treatments validated in efficacy research.[1] We must understand how patients enter a given treatment setting and access mental health services, what service components are offered, and how they are paid for if proposed best practices are to be implemented where they can do the most good. Conceptually, research in this area examines questions at the interface of health systems organization and clinical care and may address the effect of changing financial arrangements on access or outcomes for targeted populations.

Knowledge is sparse regarding the outcomes achieved by different models of financing and delivering mental health services to older adults under different enrollment and payment schemes,[56] and available studies often raise more questions than they answer. For example, a recent report on more than 80,000 older enrollees in a managed Medicare plan found that rates of diagnosed dementia were far lower (<1%) than in epidemiological studies and that dementia increased the cost of inpatient but not outpatient care.[76] The data permitted no conclusions as to whether this low dementia prevalence was the result of enrollment exclusion or perverse incentives favoring nondiagnosis or nonreporting, but suggested that outpatient care was probably inadequate. Preliminary program and payment standards for managed Medicare plans enrolling frail elderly patients have been published.[77] For the majority of older adults not currently enrolled in managed-care plans, little is known about the impact of site of service, availability of supplemental insurance (including prescription drug benefits),[78] and accessibility of mental health services within the context of general health care and social services.

Crucial issues relevant to all forms of practice, including fee-for-service as well as managed care, have been raised by the growing pressures toward increasing "management" of geriatric care. Particularly important questions include whether mental health services are best organized and administered via "carve-in" vs. "carve-out" payment designs or via integrated vs. segregated mental and general health services.[79] Managed-care approaches highlight the need to define the meaning of "medically necessary" mental health care for older adults and how access to necessary care can be ensured for complex, long-term mental disorders such as schizophrenia or chronic depression[12] and dementia.[80] Other important targets are the impact of cost-containment strategies on clinical and functional outcomes and the role of financial-incentive structures in facilitating or impeding care. Also, opportunities for improving care through research on mental health service needs and delivery models in managed long-term care (such as social HMOs, PACE programs, and managed Medicaid) are both timely and likely to make significant contributions to conceptualizing care for older persons in general.[12,46] Models of financing and delivering services to older adults that have been adopted abroad, particularly those that combine medical and social models in a single continuum of care,[45] offer useful information for health policy in the United States. Finally, satisfaction with care is an important dimension of research on the effectiveness of alternative organizational and financing schemes. This has been approached

through comparative study of managed-care enrollees, those who have left a managed-care plan, and recipients of fee-for-service care.[81]

Improving Established Health and Administrative Databases

Administrative databases offer unique opportunities for research on geriatric mental health care.[82-84] However, most do not contain adequate mental health measures in a form or depth that can be interpreted using contemporary concepts of mental disorders. Minimal mental health measures have been incorporated into the National Nursing Home Study, and Medicare claims data do not provide reliable estimates of the prevalence and treatment of some mental disorders, in part because of financial and other disincentives for reporting.[76,85] On the other hand, the Minimum Data Set for nursing homes may be a reasonably reliable indicator of cognitive and behavioral problems in residents.[86] Policy initiatives are needed to incorporate robust mental health indicators into all large databases that deal with the health care of older adults, and claims-coding and storage requirements must be revised to include all diagnoses and all forms of mental health services regardless of provider type or setting. These changes will greatly enhance the usefulness of administrative databases for geriatric mental health research by bringing coding of diagnoses and services into register with actual clinical practice.

MECHANISMS FOR IMPLEMENTING A GERIATRIC MENTAL HEALTH SERVICE RESEARCH AGENDA

Leveraging Existing Human and Data Resources for Rapid Progress

Despite their current limitations for mental health services research, large databases maintained by Medicare, Medicaid, pharmaceutical and nursing home consortia, and managed-care organizations offer opportunities for rapid progress in the generation of new knowledge, provided access and use are supported by the necessary technical and human infrastructure. Moreover, the emergence of a small cadre of experienced senior investigators as mentors for the next generation now makes geriatric mental health services research a viable career path for young investigators. New programs are needed to train junior investigators in research methods and to facilitate transitions of clinical research programs into resources capable of studying services questions. Nontraditional funding mechanisms will be required to support the interdisciplinary, cross-program collaboration that is essential to the conduct of geriatric mental health services research, to attract the expertise needed to carry out specific projects, and to expand investigative capacity beyond those few centers having their own on-site experts.

Increasing Research Funding for Geriatric Mental Health Services Within NIH

About 8 percent of the current NIMH extramural budget supports research on geriatric mental health disorders and problems (B. Lebowitz, personal communication), a disproportionately small percentage relative to that of population aging trends and health care costs (Figure 1). Although tracking systems do not currently identify mental health services as distinct from clinical research grants, it appears that very few funded grants in geriatric mental health explicitly address services research dimensions. Enhancing the aging focus of the health services branch of NIMH should be a priority for cross-branch and cross-institute collaborative efforts.

Increasing the Supply of New Investigators

Systematic development of a pool of investigators well trained for mental health services research in elderly populations is a sine qua non for evolving an effective geriatric mental health policy for the coming decades. The numbers of new investigators needed to meet the challenge of the growing crisis in mental health care for the elderly population cannot be determined with precision, but can be framed in geographic terms. National variations in practice and reimbursement patterns highlight the need for regional centers of excellence in mental health services research and training. Such centers have the potential for individualizing the focus of research and training to the needs of the population; local practice styles; and unique sociopolitical, cultural, and economic environments. However, the fundamental competencies required to translate advances in detection, differential diagnosis, and treatment into practice in health care systems are not restricted by locale, nor are the skills needed to apply

findings from health services research to new clinical questions. These skills are not found in conventional clinical research training programs and must be nurtured through a national plan spearheaded by NIMH.

Core competencies. Core competencies for health services research are developed through a set of linked career-development activities that extend beyond the confines of the academic medical center. Investigators need formal experience at the interface between mental health care and primary and specialty medical care and nonclinical service settings—in policy and economic institutes, public health and community agencies, state-sponsored programs on aging and mental health, large health care organizations, nursing home consortia, or networks of senior centers and adult daycare programs. Research training should stress the acquisition of technical skills for designing, implementing, and evaluating alternative models of care that include family- and consumer-based interventions as well as large-scale descriptive studies of health care systems. Training includes special methods for conducting randomized services trials, testing the impact of service designs on patient and system outcomes, practice-based or dissemination research, and large-scale studies of service systems. It is important to attain familiarity with alternative payment systems and the ethical and practical dimensions of distributing costs across multiple payer sources. Finally, exposure to methods and pathways by which the findings of population-based outcome studies can be translated into testable treatment guidelines and health care policies may require special training opportunities. These may reach outside the field of academic geriatric mental health to national organizations dedicated to this policy dimension, such as the Association of Health Services Researchers (AHSR).

ORGANIZING AND FUNDING A FUNCTIONAL GERIATRIC MENTAL HEALTH SERVICES RESEARCH AND TRAINING PROGRAM

The number of new young investigators intending to prepare or currently training for careers in geriatric mental health services research is not known, nor is the number of capable senior investigators who could become resources in the field through development of new competencies. Approaches to enhancing the pool of scientists qualified in geriatric mental health services research should include alternative and complementary mechanisms that recognize the need for dual competency in a clinical geriatric mental health discipline and mental health services research methods. Funding mechanisms that could integrate geriatric clinical and mental health services research may include supplemental support for currently funded research centers to carry out pilot services studies, transitional grants to enable established clinical or services centers to integrate investigators with expertise in the other discipline, infrastructure grants to enable programs to develop a critical mass of mental health services investigators, and training grants to foster the development of investigators with expertise in both geriatric clinical and mental health services research. Specific mechanisms that should be considered include

- Geriatric mental health research supplements for existing centers of excellence in general mental health services research
- Mental health services research supplements for centers of excellence in geriatric clinical investigation to support the development of interdisciplinary training programs
- Request for proposals (RFPs) jointly sponsored by NIMH and the National Institute on Aging (NIA) to create developmental cores in mental health services research and training in Alzheimer's disease research centers
- RFPs for T-32 and other training grant mechanisms to support postdoctoral fellowships in geriatric mental health services research
- Very early career preparation through enhanced funding for interdisciplinary research training, during the psychiatry and psychology residency years and predoctoral years, in public and community health, health care economics, and health care administration
- Interdisciplinary, inter-institute research training grants cosponsored by NIMH, NIA, and the specialty institutes (e.g., the National Institute of Neurological Diseases and Stroke [NINDS], the National Heart, Lung, and Blood Institute [NHLBI], the National Institute of Diabetes and Digestive and Kidney Disease [NIDDK], and the National Institute of Nursing Research [NINR]) and federal administrations and agencies (e.g., SAMHSA, the Agency for Healthcare

Research and Quality [AHRQ], the Health Resources and Services Administration [HRSA], and the Health Care Financing Administration [HCFA]) for the development of multidisciplinary collaborative models of care
- Partnerships between federal research funding agencies and national foundations (e.g., the Alzheimer's Association, MacArthur Foundation, and Hartford Foundation) for support of research training at the junior and senior levels
- Creation of Collaborative Infrastructure Support Programs (CISPs) that facilitate the development of cross-center "virtual" research programs, to maximize opportunities for developing a critical mass of investigators and data

SUMMARY

A pressing need exists for consolidating a mental health services research agenda designed specifically for an aging population. Priority content areas in this services research agenda include a focus on high-risk elderly people (older persons with comorbid disorders, the oldest and frail elderly population, and older adults with chronic mental disorders); horizontally and vertically integrated models of mental health services across the spectrum of long-term care and primary and specialty care; translation of research findings and evidence-based practices into clinical settings; research on decision-making; and systems-based health services research. This paper elaborates upon the rationale and presents a detailed proposal for strategic development of the field. It highlights research and training targets and proposes new funding mechanisms to support such development. Novel interdisciplinary and interinstitutional mechanisms for promoting collaboration are proposed as a means of building upon existing national mental health research resources. This multifaceted strategy will create the intellectual and organizational infrastructure necessary to meet the growing mental health service needs of older adults in the decades to come.

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