The Road Ahead:

Research Partnerships to Transform Services

A Report by the National Advisory Mental Health Council's Workgroup on Services and Clinical Epidemiology Research

DEPARTMENT OF HEALTH AND HUMAN SERVICES   NATIONAL INSTITUTES OF HEALTH

NIMH
National Institute
of Mental Health

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NATIONAL ADVISORY MENTAL HEALTH COUNCIL'S
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CLINICAL EPIDEMIOLOGY WORKGROUP

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I. INTRODUCTION

On the road to transforming mental health services, some of the route has already been charted. Research advances and community-level adaptations in recent decades have produced new ways to diagnose and treat mental illness and also have helped to reduce the stigma associated with it. Scientific and clinical advances, along with the efforts of persons living with mental illness, their family members, friends, mental health providers, and advocates have increased public understanding of mental illnesses as treatable medical conditions rather than moral failings or willful choices.[1]

However, much of this road to transform mental heath services has yet to be traveled. Until there are cures or preventive interventions, persons living with mental illness need treatments that will help maximize recovery.[2] Too little is known about which treatments will help whom and how to implement and sustain effective interventions. Thus, persons living with mental illness are faced with making treatment decisions absent an adequate evidence base, as are clinicians and payers.

Furthermore, there is a large gap between what is known about effective treatment and what is practiced, which is one of the reasons that the President's New Freedom Commission on Mental Health report in 2003 called for a transformation of mental health service systems across America. A central goal of this transformation is crafting a fair and high quality system of mental health care, allowing the millions of Americans living with mental disorders access to timely, affordable, and effective mental health services. Currently, too many people cannot obtain, for themselves or someone close to them, appropriate treatment for mental illness.

The mission of the National Institute of Mental Health (NIMH) is to reduce the burden of mental illness and behavioral disorders through research on mind, brain, and behavior. And it is through NIMH's research that this report strives to foster evidence-based interventions that are financially feasible, effective, available, and acceptable to persons living with mental disorders from diverse populations. Such innovative translations from science to service can be achieved through several steps:

1) Conducting mental health services research of the highest quality that incorporates public health significance, practical utility, and acceptability to participants;

2) Facilitating the rigorous study of innovations and policy shifts; and

3) Developing partnerships crucial to bridging science and service.

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[1] This report uses the phrase *persons living with mental illness* rather than alternative terms such as *patients, clients, service recipients,* or *consumers*. In contrast, the term *patient* is used to refer to individuals seeking health care.

[2] *Recovery* has been defined many ways. For the purposes of this report, recovery's definition is its common usage as a *return to health*. In the case of children and adolescents, the return to normal development trajectories is also indicated.

To paraphrase Dr. George Miller's classic statement on psychological research, NIMH must commit to the *giving away of science.*[3] To this end, collaborating strategically with stakeholders can help make the Institute's research available to a broader audience in more meaningful and tangible ways. NIMH's partners include persons living with mental illness and their families, advocates, payers,[4] clinical practitioners, researchers, and research administrators. By learning more about the needs of these diverse partners and their perspectives, NIMH can channel research in directions that are responsive to partners' needs. The recommendations in this report are meant to ensure the success of the Institute in achieving its full mission of research and in sharing the lessons from these findings.

As the call to transform service systems emerged, NIMH was undergoing considerable restructuring. The October 2004 reorganization brought changes in leadership and key positions within NIMH. At the same time, the Institute's research budget has leveled off from earlier, sometimes double-digit increases. Other catalysts for internal change included the Institute's near-completion of its $140 million investment in practical trials, which are:

- [Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE)](#)
- [Treatment for Adolescents with Depression Study (TADS)](#)
- [Sequenced Treatment Alternatives to Relieve Depression (STAR*D)](#)
- [Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD)](#)

Other broad changes include increased attempts to engage in partnerships across the National Institutes of Health (NIH) and other Federal entities. Within NIH, NIMH is part of the effort on "Re-engineering the Clinical Research Enterprise," one of the three major research themes in [the NIH Roadmap for Medical Research](#). Also, as discussed later in this report, NIMH is partnering with the Substance Abuse and Mental Health Services Administration (SAMHSA) to produce an action agenda that responds to the recommendations of the President's New Freedom Commission on Mental Health, as well as expanding opportunities to work with the Department of Veterans Affairs (VA). Strengthening these partnerships, seeking new ones, and ensuring their vibrancy has been a recurrent theme in discussions about the future of mental health services research and clinical epidemiology.

II. SERVICES AND CLINICAL EPIDEMIOLOGY WORKGROUP

To advance a research agenda that is relevant to policy makers and those living with mental illness in this time of flux, Dr. Thomas Insel, Director of NIMH, and the National Advisory Mental Health Council (see Appendix A for roster) charged a workgroup to identify high priority research needs and opportunities in services research and clinical epidemiology. Thus, the Services and Clinical Epidemiology Workgroup (see Appendix B for roster) was established to address the real-world

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[3] Miller, G.A. (1969). Psychology as a means of promoting human welfare. *American Psychologist*, 24, 1063-1075

[4] *Payers* refers not only to entities that purchase mental heath care, but to other complex systems of care that pay and may also deliver services, administer insurance, and support hospitals. Examples of payers include State agencies providing and purchasing care, employers paying for health care for employees and their families, complex integrated service delivery systems such as managed care organizations [MCOs], and other public and private insurers.

questions that persons living with mental illness, their families, providers, and diverse payers face in selecting, delivering, and financing optimal care.

Workgroup members included Council members, researchers, advocates, public and private payers, persons living with mental illness, and State mental health officials whose skills span health services research, psychiatry, child and adolescent services research, health economics, and advocacy. Council member Dr. Susan M. Essock was chosen to chair the Workgroup.

The Workgroup was charged with answering a number of questions, including:

- What mental health services and clinical epidemiology research is NIMH currently supporting and what new areas should be developed?

- What research opportunities exist to affect mental health policy and care that will ultimately reduce the burden of mental illness?

- Where does NIMH have traction to make a difference through research, including collaborative opportunities with other communities and agencies?

Starting with an organizing conference call in October 2005, Workgroup members were briefed on the Institute's full portfolio across all five NIMH funding divisions, and then focused primarily on the Division of Services and Intervention Research (DSIR) and its Services Research and Clinical Epidemiology Branch (SRCEB). In subsequent conference calls and face-to-face meetings, smaller subgroup meetings, interviews with Institute staff, and conference calls throughout the winter, Workgroup members learned about the contents of NIMH's services research portfolio, the challenges and opportunities facing the Institute, and innovative ways to respond to them. Staff members from across the Institute were interviewed about science, responsivity to past Council reports, communication with stakeholders, and outreach efforts.

As directed by its charge from Dr. Insel and Council, the Workgroup analyzed the NIMH portfolio in services and clinical epidemiology. The bulk of this work falls within SRCEB and an overview of both DSIR's and SRCEB's current portfolios, priorities, and activities related to the science-to-service agenda are presented in Appendices C and D, respectively.

The Workgroup reached out to an array of mental health services research stakeholders: persons living with mental illness, advocates, clinicians, and payers. This input included comments from NIMH's Alliance for Research Progress, Outreach Partnership Program, and Professional Coalition for Research Progress. Many useful and creative responses were received from these groups and their individual members, whom the Workgroup gratefully acknowledges in Appendix E. The responses from these stakeholders offered valuable insights into the research questions relevant to each group's work and, in some cases, their lives. Their thoughtful input has firmly shaped the Workgroup's principles and recommendations, specifically the need for NIMH to continue this iterative, ongoing process of communicating and building relationships.

In summary, the Workgroup reviewed the strengths of the current services and clinical epidemiology portfolio, the goals implicit in the stated priorities, program initiatives, and related NIMH staffing patterns. Workgroup members also took the advice of the stakeholder community on how best to advance the NIMH research agenda into the broader and more difficult context of translating science into practice and generating policy-relevant research.

III. FROM RESEARCH TO IMPROVED CARE

As evidenced by NIMH's recently published large, practical clinical trials, along with a number of activities in services research, many of the recommendations of the Council's *Bridging Science and Service* have been implemented and can inform mental health care and policy. However, the next challenge is bringing this science-to-service. Making effective interventions available requires a sustained effort with stakeholders, while balancing shifting demands and budgetary constraints. Despite these challenges, the shared goal remains: a fair mental health system with access to effective high quality care for all in need.

Simply creating an inventory of evidence-based treatments will not result in their broad implementation in practice. In fact, it has been well documented that, for various reasons, health care delivery systems do not implement interventions that have been shown to be effective in a small number of settings and were published in journal articles. A key question the Workgroup grappled with was, "How can NIMH enhance the likelihood that effective interventions are implemented and sustained in real-world settings?"

Further complicating the science-to-service question is the reality that effective treatments are not always effective for everyone. For instance, data from NIMH's large clinical trials (see links above) are showing that a significant percentage of people who take an antipsychotic medication or an antidepressant drug respond well enough to remain on that medication. These same data show how commonly the treatments do not bring full symptom remission for a significant subset of the study population. Even large trials have not always been able to identify whether and to what extent these outcomes may hold for members of particular ethnic, racial, geographic, or age groups. Research must include large enough representations of these populations in order to determine treatment effect with greater accuracy. Until these or other studies can provide results on effective treatments for all, affected individuals and their clinicians must often engage in a long and difficult search for an optimal treatment plan.[5]

In diseases such as mental illness, where the morbidity rate is high, the wait for scientific advances can be painful to those seeking care and their families. Until there are cures, research must refine treatments to minimize illness-induced disability and maximize functioning within the community. In addition, more knowledge is needed on how to make such treatments available and acceptable to all of those in need. Meeting these challenges will take superlative science, creative and innovative designs, and teamwork among stakeholders.

In conceptualizing how various types of NIMH research, from basic to effectiveness, should be brought to bear upon these stakeholder priorities, the Workgroup turned to the conceptual model initially presented in the *Bridging Science and Service* report and developed it further to reflect the

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[5] Some research has shown that the search for optimal treatment can be systematized and thus become more effective than usual practice. In the absence of being able to predict which treatments will be effective for which individuals, models of care that use a 'stepped care approach' to systematically track clinical outcomes and prompt treatment changes if individuals are not improving can be substantially more effective than usual care.

transactional relationships among participants. The model and its elaboration are presented in Appendix F.

Through its analysis of NIMH's overall services and intervention research portfolio, as well as stakeholder comments and the Institute's responsiveness to past Council reports, the Workgroup identified six crosscutting issues that became the prime drivers in developing its recommendations to Council. These issues are: partnerships in research, quality of care, fairness, recovery, communication, and ongoing evaluation, each of which is discussed in turn below.

Partnerships in Research

At present, the worlds of science and service are loosely coupled at best, often resulting in policy and practice decisions that are uninformed by science. A core function of DSIR is to make sure that NIMH's investments in services research are policy relevant and have a significant public health impact.

Stakeholder involvement in setting priorities for the services research portfolio was viewed by the Workgroup as a strategy to narrow the gap between research and practice. Multiple perspectives in the formulation of a research agenda, from concept development through implementation, should contribute to enhancing the relevance and impact of the ultimate research projects.

Additionally, progress in advancing public health requires true and sustainable partnerships with diverse stakeholder groups, most notably persons living with mental illness, their families, and the providers and payers of services. Successful partnerships have overlapping priorities that arise from shared goals and common needs. There also needs to be a means for partners to develop projects together, to contribute resources according to their designated roles and respective needs, to benefit from the results of the partnership, and to have a mechanism for successful collaboration. When partners cooperate, then the research and implementation agenda itself becomes more responsive to the priorities of partners. This approach differs from that which usually occurs in developing clinical research. Typically, scientists set the agenda and then search for willing partners. In a true research partnership, all the partners have a voice. Careful tending of these partnerships will ensure that they can support new projects and can withstand staff turnover.

Partnerships also are needed to translate research findings into evidence-based practices (EBPs) that can be implemented and sustained in routine practice settings. One invaluable partner in this regard is SAMHSA. NIMH-funded research can create an evidence base, which SAMHSA both stimulates and promulgates. Similarly, NIMH can partner with SAMHSA to help determine effective ways to implement and sustain EBPs.

Later in this report, the Workgroup offers recommendations for strengthening existing partnerships and for developing new ones that can enhance the vibrancy of the research portfolio and be of mutual benefit to all partners.

Quality of Care

Quality of care research is concerned with describing the care received in clinical settings, establishing and testing standards for measuring the quality of care, and investigating ways to make actual care

closer to the standard. The concept of quality is a broad one, which includes features such as patient-centeredness,[6] cultural and linguistic sensitivity and acceptability, timeliness of care, efficiency, and effectiveness. Numerous studies have already documented a discrepancy between care that is efficacious and care that is actually delivered. The President's New Freedom Commission on Mental Health report and other research show that mental health care systems are simultaneously characterized by "unmet need" and "inefficient care." This suggests that better informed allocation of resources might address much of the unmet need.[7]

Furthermore, the Institute of Medicine's (IOM) *Crossing the Quality Chasm* report in 2001 stated, "In addition to the personal consequences of ineffective, unsafe or no treatment …, consequences are felt directly in the workplace; in the education, welfare and justice systems; and in the nation's economy as a whole."[8] The aims and rules to achieve high quality health care outlined in the IOM report are useful for the NIMH health services research agenda.

As defined above, quality of care research typically assesses the care provided in everyday practice against clinically- or scientifically-derived standards of care. A challenge in assessing quality is the documented variance of practice patterns across clinicians or areas, the causes of which are not known. Traditionally, looking at mental health outcomes in the context of clinician adherence to treatment standards has been the research approach to understanding quality. However, while a single standard or approach to care may be a useful starting point when thinking about quality, the cultural, educational, and socioeconomic diversity of this country's population requires developing personalized care that is tailored to an individual's needs and is cost-effective.

Fairness

Norms of fairness are powerful and legitimate social objectives and have the potential to drive change in mental health service financing and delivery. Much support for parity for mental health services in health insurance and for access to services more generally for persons with serious mental illness derives from the public's conceptions of an equitable society. Recently there has been concern with health care disparities along racial and ethnic lines, one important aspect of fairness. A social consensus has developed that elimination of these disparities should be an important public health goal in this country and is identified in the top ten leading health indicators in *Healthy People 2010*.[9] As outlined by the *Crossing the Quality Chasm* report, one of the six aims of high quality health care is that the provision of care should not vary because of personal characteristics, such as gender, ethnicity, age, geographic location, or socioeconomic status, either of the patient or provider.

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[6] *Patient-centeredness* is a term used in Institute of Medicine (2001) *Crossing the Quality Chasm: A New Health System for the 21st Century*, National Academy Press, Washington, DC.
[7] Alegria, M.A., Frank, R.G., & McGuire, T.G. (2005) Managed Care and Systems Cost-Effectiveness: Treatment for Depression. *Medical Care*, 43(12), 1225-1233.
[8] Institute of Medicine (2006) *Improving the Quality of Health Care for Mental and Substance-Use Conditions: Quality Chasm Series*, National Academy Press, Washington, DC.
[9] U.S. Department of Health and Human Services (2000) *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office.

Fairness in mental health services should be embedded as a principle in all NIMH research. NIMH research should focus on the extent to which disparities and other dimensions of fairness are ameliorated or exacerbated by financing, policy changes, and other changes that affect access to and delivery of services. In order to address questions of fairness, policy makers require knowledge about how changes in the health care system affect which groups of individuals and why.

Recovery

Learning how to maximize recovery from mental illness is central to NIMH's mission. The President's New Freedom Commission on Mental Health defined recovery as, "… the process in which people are able to live, work, learn and participate fully in their communities. For some individuals, recovery is the ability to live a fulfilling and productive life despite a disability. For others, recovery implies the reduction or complete remission of symptoms. Science has shown that having hope plays an integral role in an individual's recovery." Recovery is facilitated by relationships and environments that provide hope, empowerment, choices and opportunities that promote people reaching their full potential as individuals and community members.[10] In the spirit of the President's New Freedom Commission, NIMH research contributes to transforming mental health services by expanding the evidence base on interventions that lead to an individual's re-integration within the community. The goal is to predict what each individual needs and to provide personalized care that will allow a full life in recovery and one of hope, choice, and opportunity.

Communication

Communication, or the interchange of thoughts, opinions, and information, is important for health services research to meet the needs of persons living with mental illness, payers, and providers. Communication is also essential to incorporate the perspectives of multiple stakeholders to move together toward mutual goals.[11] NIMH needs the means by which it can listen to multiple perspectives and establish priorities to ensure that the right questions are being asked and that appropriate methodologies are used to maximize the knowledge gained from NIMH studies.

NIMH must also improve the dissemination of research findings to stakeholders. Empirically tested strategies that improve health information technology, while considering health literacy levels of target populations, may be an important step to bridge research and practice, by allowing the wide distribution of best practices and evidence-based treatments to inform clinical practice with up-to-date and efficient research knowledge.

Ongoing Evaluation

Policy makers need to know if a new program works better or costs less with similar effectiveness than what is currently available, or if it is better than doing nothing at all. In some cases, the important

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[10] Child and adolescent mental health field has not yet developed the term *recovery* within a developmental context, so the ideas here pertain to adults.

[11] Gormley, W.T. Jr. & Balla, S.J. (2003). *Bureaucracy and Democracy: Accountability and Performance*. Washington, DC: CQ Press.

implementation question is: how much better is the new program than care-as-usual and at what cost? This work requires scientifically rigorous methods for a set of complex questions to be answered. It also requires a thoughtful summary of all that is known in an area, giving greater weight to well-documented findings and careful attention to how methodologies limit or enhance the degree to which findings can be generalized to other sites and settings. These findings should help all stakeholders understand where and for whom an intervention works, how it works or does not, when it works, and why.

Evaluation plays another role at NIMH: self-evaluation to enable timely assessment of an initiative's success. NIMH should routinely establish priorities, action plans, and evaluations to determine which initiatives and activities should be developed, sustained, or brought to a close.

IV. RECOMMENDATIONS

NIMH and stakeholder groups would like to see the services research and clinical epidemiology portfolio have an ever greater impact on the quality of services that persons living with mental disorders receive in routine practice. Hence, in addition to developing new interventions to add to the evidence base, NIMH and the field must develop new ways to ensure that EBPs are implemented and sustained. The goal is to provide feasible and cost-effective ways to apply research discoveries to "real world" health service delivery systems throughout the country, enabling people in need to get effective mental health treatments regardless of age, ethnicity, race, culture, language, or gender.

This will require novel approaches to developing research capacity in today's diverse service delivery environments. To do so will also require rigorous science and research initiatives designed to determine how to bridge the gap between what is known to be effective and what is available in communities. Such science-to-service research has unique demands that will necessitate effective use of NIH funding mechanisms and expert NIMH staff support.

Ultimately, such investments have value only if their findings are accepted and taken up by the individuals who purchase, provide, and/or need effective care. Therefore, the Workgroup has recommended strategies likely to ensure that NIMH invests in services research studies that will be highly relevant to stakeholders. In addition, most of the Workgroup's recommendations call for the active engagement of partners (i.e., Federal, State, researchers, advocacy groups, persons living with mental illness and their families) as well as adherence to the principles of quality, fairness, recovery, communication, and ongoing evaluation.

These six crosscutting issues informed the Workgroup's recommendations below, which are presented under the headings of Enhancing the Impact of Mental Health Services Research, Capacity Building, and Knowledge Exchange.

Enhancing the Impact of Mental Health Services Research

Identifying and characterizing high quality, culturally and linguistically sensitive, and sustainable mental health care practices could be a key step toward promoting system-level best practices. As mentioned before, the President's New Freedom Commission on Mental Health report and other research show that, simultaneously, mental health care systems are characterized by "unmet need"

and "inefficient care." Perhaps resources could be moved from where they are ineffective to where they could be more effective.

In practice, however, financing or organizational approaches (e.g., mental health insurance parity, managed behavioral health care) that tend to solve one problem may have unintended negative consequences. How can this trade-off be elucidated for policy makers to inform their decision-making? Can the terms of the trade-off be improved, and if so, how? Are there steps to take that improve matters on both sides of the equation? How do model systems balance competing goals? To answer such questions, there is a need for better understanding of the mechanisms by which systems function and how system-level interventions can improve the quality, efficiency, and outcomes of care. Such information may enable payers to become more prudent purchasers of services and create incentives for systems to implement practices demonstrated to result in high-quality care in other systems.

A focus on characterizing system functioning, particularly that of efficient, fair, and high quality mental health care systems, can serve as a starting point for developing goals for interventions to improve systems. Critical questions include: how do "model systems" operate; what steps are necessary to achieve current operation; and what trade-offs are made in terms of organization, financing, access, and quality control? A critical step in this line of research is the development and testing of tools to measure and monitor system functioning and system change, as well as tools to assess the multiple influences on the purchasing of services. Such systems-level activities are critical components of promoting better mental health outcomes for individuals with mental illness.

RECOMMENDATION 1: NIMH should create a means of identifying those policy changes and other trends likely to have the most significant impact on mental health services and seize opportunities to monitor their impact.

NIMH should develop a research agenda oriented around understanding existing model service systems to identify administrative practices that provide fair access to high-quality mental health services. What are these practices and how might they be used as guides for other systems? How do these mental health service systems accommodate the many challenging components of mental health service provision so that others may emulate these best practices and improve care? Answers to these questions can inform behavioral health carve ins and carve outs, integration of financing across multiple agencies or states, and use of competitive procurement for mental health services.

To answer such questions, NIMH should strengthen partnerships with selected agencies and stakeholder groups to ensure that the right questions are being asked, particularly about how to effect positive system change, and that the costs and benefits for different stakeholders are taken into account. NIMH should also support the development of research tools that are valid, simple markers of systems functioning and systems change, as well as quality and efficiency of care. Such tools should be feasible for use by public and private decision makers.

> **Subrecommendation 1 A: NIMH should seek out opportunities to add research components to ongoing efforts and demonstration projects funded by other agencies and departments (e.g., SAMHSA, Department of Education (DoEd), Social Security Administration (SSA), Centers for Medicare and Medicaid Services (CMS) and other NIH Institutes). Such large-scale efforts can identify the**

organizational, financial, and intervention approaches that make for success, and can delineate which components work for whom and under what circumstances.

Some Federal agencies have opportunities to develop large demonstration projects to show whether innovative services can improve the lives of persons with mental illness. SAMHSA's Center for Mental Health Services (CMHS), for example, recently launched a large-scale effort to transform the mental health care delivery in seven states, coordinating services across multiple systems (e.g. primary care, specialty care, education, labor, transportation, etc.). CMS also funds large demonstration projects, as do SSA, DoEd, and many other agencies. NIMH should partner with these agencies to facilitate research capitalizing on these "natural experiments" to generate knowledge about the impact of these projects on mental health outcomes for diverse populations, provider behavior, cost of care, and system performance. Shared methods for collaborative designs, reviews, and funding decisions should be established. NIMH staff should maintain ongoing relationships with these large payer entities so that opportunities can be seized to direct research efforts to questions of policy relevance to these payers.

Subrecommendation 1 B: NIMH should continue to support the development, adaptation, and validation of research tools to measure fairness and quality of care, as well as meaningful mental health outcomes as indicators of recovery and to ensure that these tools are applicable to diverse populations.

There is a continuing need to improve the availability of tools that measure how well real people are functioning in the real world. System administrators need tools to monitor the effectiveness of the strategies through which they implement interventions. Clinicians need tools that will help them track the extent to which the interventions they are using are helpful. In addition, studies are needed to develop and test measures of quality and mental health outcomes for use in routine service systems. NIMH should encourage partnerships among persons living with mental illness, their families, community representatives, providers, payers, and researchers in the development of these tools to ensure that they are valid, appropriate, and sensitive to diverse populations.

These efforts should be in concert with the NIH Roadmap work to Re-engineer the Clinical Research Enterprise on clinical outcomes assessment when possible (see Re-engineering the Clinical Research Enterprise at the NIH Roadmap website).

Subrecommendation 1 C: NIMH should reconsider the Time-Sensitive Program Announcement (PA) through consultation with intervention, services, and clinical epidemiology researchers and use novel approaches to support the research as required.

The review of the portfolio demonstrated that research on rapidly changing policy is unlikely to emerge through NIH's prolonged grant review and award process. Hence, NIMH should create nimble ways to study policy initiatives in a timely fashion so that research can inform practice, and so that as much as possible can be learned about what works for whom and how to get effective interventions implemented and sustained.

In recognition of the need to seize time-sensitive opportunities to conduct policy-relevant research, the Bridging Science and Service report recommended, and NIMH created, the Time-Sensitive PA. Following the report's recommendation, NIMH staff developed a rapid submission, review, and award process for immediate research opportunities in service settings. In the intervening years, the PA has been reissued, but has yet to reach its goal of providing a helpful mechanism to seize these research opportunities. NIMH should revise the mechanism following staff consultation with researchers and public stakeholders about various aspects of the announcement including: the mechanisms of support, the policy regarding resubmission, the process for screening applications to be accepted for review, the review and selection criteria for applications, and the processes by which continued funding can be secured. Any revision should include explicit benchmarks to monitor whether this mechanism is succeeding. The goal is to be able to fund high-risk, high-reward research in a timely fashion with ongoing monitoring and without compromising NIMH's scientific standards. By adapting this potentially powerful mechanism to the special needs of researchers and service settings with time-sensitive projects, NIMH can capture otherwise lost opportunities for novel research of great public health significance.

Subrecommendation 1 D: NIMH should disseminate the findings of the research conducted under this recommendation to provide useful tools and information to decision makers in the field on alternative ways to structure successful mental health systems and the practical criteria by which systems can be measured.

The dissemination of these findings to payers would let them make better decisions about what to initiate or change within their system of care and the tools to monitor implementation. By creating these measurement tools within studies of existing systems, NIMH would be able to offer a tool set that is ready to document the diffusion, uptake, and impact of promising practices. Payers and system administrators could answer questions such as, "Is the intervention being carried out as intended?" and "Is this a good investment of mental health care dollars?" This monitoring can assist in embedding interventions in real-world practice and should continue to have research as well as practical utility.

RECOMMENDATION 2: NIMH, in conjunction with its Federal partners and stakeholders, should determine the mechanisms underlying the successful implementation of evidence-based interventions in varying service settings with culturally and ethnically diverse populations.

Much of the NIMH research portfolio, understandably and appropriately, focuses on creating new and more effective interventions and services. However, interventions that have been shown to be effective commonly do not make their way into practice in real-world service systems. The road between science and service needs to be more heavily traveled. In reality, enormous challenges are borne by service systems to establish a fit between the needs of their populations and the resources and structure in which they operate. Research is needed to determine mechanisms by which EBPs can be incorporated into service systems, as well as how incentives can enhance the likelihood that these practices will be accessible and acceptable to the people who need them. Studies should include implementation in specialty mental health care settings as well as relevant, non-specialty settings, such as primary care, criminal justice, school systems, and social services.

Current candidates for such implementation research would be interventions well-documented as effective, yet challenging to access in routine care. From NIMH's previous investments, there are many evidence-based interventions ready for implementation research. For example:

- Treatments for youth with disruptive disorders or with attention deficit/hyperactivity disorder
- Assertive Community Treatment (ACT) for individuals with serious mental disorders who are frequently hospitalized
- Critical Time Intervention for individuals with serious mental disorders who are cyclically homeless
- Collaborative care models within primary care settings for depression
- Clozapine for individuals with treatment-resistant schizophrenia
- Integrated mental health and substance abuse treatment for individuals with co-occurring disorders
- Diverse interventions for depression such as interpersonal therapy and cognitive behavioral therapy throughout the life span
- Psychosocial interventions to augment medications for persons living with schizophrenia

Subrecommendation 2 A: Foci for implementation studies should be determined in conjunction with payers, providers, and persons living with mental illness and their families, as well as other agencies involved in science-to-service activities.

Subrecommendation 2 B: The knowledge base underlying EBPs continues to grow rapidly. NIMH has an important role in synthesizing this knowledge to establish and update EBPs and their implementation.

NIMH should compete contracts for condition-specific reviews that will document what is known, what is ready for practice guidelines, and what research gaps should be addressed. In addition, in order to successfully implement EBPs, clinical epidemiology research should continue to determine who has access to what services, the cost of services, and what works for whom under what circumstances. Data from real world practice settings should inform studies of the implementation of EBPs across diverse settings and populations.

Subrecommendation 2 C: The results from implementation studies of clinical and administrative practices should be shared effectively with stakeholders.

Measurement and evaluation of clinical and administrative EBPs should go beyond effectiveness to include whether practices are fully disseminated, funded by third-party payers, and delivered by competently trained clinicians/providers. For example, Programs for Assertive Community Treatment (PACT/ACT) for persons living with mental illness who are frequent users of hospitals is effective in reducing crises but not consistently delivered or reimbursed. Stakeholders need empirical information on the best ways to implement and reimburse EBPs.

Subrecommendation 2 D: NIMH and SAMHSA should work with payer, professional, and provider groups to ensure that evidence-based treatments are

integrated into the core curriculum for clinical training across the mental health professions and readily available to individuals seeking treatment.

An issue raised by NIMH Alliance members is that finding clinicians who deliver evidence-based mental health services is very difficult. To bridge science and service together, persons living with mental disorders must have access to services that are shown to be effective. This means that more practitioners need easy and low-cost access to training in evidence-based care. To facilitate the transition of science into practice, NIMH needs to share with the professional disciplines what is known about effective services and work with these groups to ensure that curricula include building fluency in effective treatments. Such partnerships should be extended to explore how best to increase the evidence-based training provided in continuing education for current professionals. Similarly, NIMH should work with provider and payer groups to figure out cost-effective ways to determine whether evidence-based treatments are being provided effectively across diverse populations and geographic locations and ways to create incentives for their provision.

The Workgroup members recognized that the evidence base is not strong enough to allow guidance in all clinical situations and that, in the absence of evidence, treatment must still continue. However, where there is an evidence base, evidence should inform practice. NIMH should systematically track this development, perhaps using a format such as that presented in Appendix G, to ensure the timely translation of findings.

RECOMMENDATION 3: NIMH should support research on all aspects of successfully integrating effective interventions into systems of care and personal treatment decisions.

Subrecommendation 3 A: NIMH should support a robust and broad-ranging research agenda on how decision makers (e.g., persons living with mental illness and their families, providers, and policy makers) evaluate and adopt mental health treatment and program options and preferences in both specialty and non-specialty settings.

Research has provided a rich technology for improving health-related decision-making and improving personal health outcomes in AIDS, cancer prevention, and treatment adherence. As reported in NIMH's *Translating Behavioral Science into Action* report, NIMH must apply more of these basic behavioral principles to mental health care. Research is needed on individual decision-making regarding the establishment of recovery plans and rules for purchasing mental health services. Such decision-making tools will help ensure that services are individualized.

These findings should also inform systematic tests of alternative dissemination and implementation strategies, focusing on the congruence between the knowledge base and actual practice as played out in the variety of service systems where people access care. NIMH should partner with the entities that pay for services (e.g., State mental health agencies, CMS, SAMSHA, employer-based behavioral health systems) or demonstration projects (e.g., SAMSHA, SSA, Centers for Disease Control and Prevention (CDC)) on determining ways to bring EBPs into practice and thereby get better value for the health care dollars spent. In this way, the Institute could both improve public health and leverage relatively small amounts of

research dollars to improve care in vast service settings. Similarly, partnering with the National Association of State Mental Health Program Directors (NASMHPD) as well as with provider and advocacy groups would help ensure that the topics investigated are those that most closely touch the lives of those with mental illness.

Subrecommendation 3 B: NIMH should address the need for research on the best models for teaching EBPs for clinicians and other service providers, including studies that investigate the sustainability of such effective clinical practices over time and across diverse populations and the impact of such training programs on recovery.

The ability of systems to offer EBPs and the capacity for clinicians and paraprofessionals to deliver them depends on the effectiveness of clinical training programs to impart knowledge and develop the necessary skills to deliver these practices. Currently, too few mental health graduate training programs devote adequate time to education on evidence-based methods of diagnosis, treatment, or evaluation. Research is needed to document optimal methods of training clinicians. Training initiatives should also address paraprofessionals who deliver many aspects of some evidence-based psychosocial interventions and services. In addition, studies on the maintenance of new skills and the influence of evidence-based clinical training on mental health outcomes are needed. Finally, many individuals living with mental illness have co-occurring medical conditions and/or substance abuse. Studies are needed on how to best train providers to offer coordinated care across diverse systems, populations, and providers. Consideration should also be given to supervisory-, clinic-, and organization-level factors that can facilitate and support coordination of care across a spectrum of services, including medical, mental, and social service systems, and the integration of care for medical and mental conditions.

Subrecommendation 3 C: NIMH should support research on effectively deploying health information technology on the delivery of mental health services, particularly where technology has an opportunity to reach underserved populations.

The growth of technologies to more rapidly and effectively communicate information and deliver interventions continues unabated. Electronic medical records, internet sites, e-mail discussion groups, and other technologies transmit more information more rapidly than previously possible and hold promise for enhancing access to and continuity of care. Linkages between primary and specialty care can be strengthened and documented, which can help provide sensitive measures of enrollment, retention, and services delivered across systems of care. In addition, new technologies offer new media through which interventions can be delivered (e.g., telemedicine, store-and-forward technology), which may improve access to effective treatments by underserved populations. Research is needed to build knowledge on the impact of these technologies for mental health services, particularly where they may increase fairness and cost-effectiveness in care delivery, as well as determine infrastructure needed for under-resourced settings to utilize these technologies.

In addition, research should include strategies for addressing parity issues for under-resourced settings where advanced technology is not available. It is important to know if addressing the quality problem also addresses fairness issues. In other words, are "quality improvements"

themselves distributed in a way that ameliorates disparities and improves services for those receiving less than adequate care? Or, do improvements primarily benefit those receiving better care in the first place? Knowledge of these empirical patterns can help guide policy and research so the benefits of better technologies can improve the mental health of all groups.

Subrecommendation 3 D: NIMH should support research on effective ways to communicate with diverse stakeholders to improve personal decision-making and demand of effective, high quality services, as well as how to communicate information to aid the implementation of effective mental health service delivery models and treatments.

The mental health field is currently missing critical information about how, when, by whom, and under what circumstances research evidence spreads throughout agencies and organizations and across front line workers to become incorporated into practice. As a necessary prerequisite for unpacking how information can lead to treatment or service changes, research is needed to understand how and why information on mental health may or may not reach many different stakeholders. We need to understand what underlies the creation, transmission, reception, and incorporation of information on EBPs.

Successful communication of health information (including information about underutilized interventions and cultural and linguistic appropriateness) may occur quite differently depending on whether the audience consists of persons living with mental illness, caregivers, practitioners, policy makers, employers, administrators, or other stakeholder groups and the cultural backgrounds represented. Moving the field forward will require studies identifying mechanisms and approaches to package and convey the evidence-based information necessary to improve public health and clinical care services, including the use of information systems, the media, and other forms of communication.

Capacity Building

RECOMMENDATION 4: The cadre of researchers trained to conduct policy-relevant research in partnership with mental health service, primary care, community, and administrative settings should be increased through mentored career awards and a new type of administrative supplement.

Learning to conduct meaningful research in real-world service settings requires dyadic work, knowledgeable mentors, and practical experience within mental health specialty, primary care, and other settings in which mental heath services are delivered. Such experience can enable researchers to develop the understanding and collaborations necessary to formulate research questions that are most important to policy makers and administrators in real-world service settings; to understand and integrate cultural and linguistic sensitivity in the provision of services; to develop strategies to surmount the challenges of conducting such research; and to determine how best to blend a service setting's needs with strong methodologies. Experience within these real-life settings should provide both methodological and collaborative research competencies that will enhance the researcher's skill set for a lifetime, enhance the translation of science into practice, and have the most pressing practice issues inform research questions. The goal is to provide early-career experiences that will influence

the career trajectories of service and intervention researchers such that their work will have the greatest possible impact on public mental health.

Accordingly, the Workgroup asks NIMH to also:

> **Subrecommendation 4 A: Ensure the availability of mentored-career awards in services research for highly competitive applicants who offer feasible career plans that focus on policy-relevant research to improve services in real-world settings.**
>
> **Subrecommendation 4 B: Develop a new type of administrative or competitive supplement that may be awarded to a grantee for placing early-career service researchers into a service/administrative setting (e.g., a community mental health center, a State department of mental health, a State department of corrections, a school system with school-based clinics). The services researcher would develop and conduct, in conjunction with the mentors at the service/administrative site and the Principal Investigator (PI), a grant-related research project that addresses a mental health question identified to be of importance to the service/administrative mentors.**

RECOMMENDATION 5: NIMH should enhance DSIR staff to meet the new demands.

The Workgroup convened at a time when the DSIR has an acting director and the services branch has an acting chief. NIMH leadership clearly recognizes the desirability of recruiting a nationally recognized leader in intervention/services research as the DSIR director and a nationally known services researcher as the services branch chief. Ideally, the individuals who fill either or both of these positions will have a keen understanding of the importance of, and challenges associated with, producing policy-relevant mental health services research.

> **Subrecommendation 5 A: In considering the Workgroup's recommendations calling for additional and more active partnerships, communication, outreach, and priority research, the Institute should plan for additional staff as well as investments in staff training and mentorship.**
>
> **Subrecommendation 5 B: Develop the in-house capacity to identify emerging policy issues and to summarize the existing evidence to address these issues.**
>
> New staff should be devoted to expanding NIMH's ability to identify emerging issues and to describe and synthesize the current evidence base bearing upon these questions. This activity mirrors the type of service function that the DSIR's Clinical Trials Operations and Biostatistics Unit provides, and the Workgroup could see portions of these efforts taking place in the extramural or intramural programs.
>
> **Subrecommendation 5 C: As a transition strategy until the enhanced staffing plan is in place, use creative alternatives to supplement the current staff's abilities to identify and stimulate research on emerging issues to inform mental health policy, establish research partnerships with large public payers (e.g., State**

mental heath agencies, CMS, SAMHSA), large employer groups, and MCOs to identify promising practices to be investigated.

The report's recommendations require additional staff time and skills to implement. Adding new staff and putting typical "staff extenders" such as professional service contracts and Interagency Personnel Agreements will take time. In the interim, the Workgroup encourages the use of other alternatives such as:

1) Making use of the ongoing relationships that current grantees and stakeholders have with each other in building stronger partnerships and in extending communication efforts.

2) Providing dissemination supplements to support the transfer of research findings into practice, as well as synthesis supplements to quickly conduct needed analyses.

3) Reconceptualizing the centers program to meet this need. Staff members are encouraged to explore the center models for enabling partnered communication at National Cancer Institute (NCI), the VA, Agency for Healthcare Research and Quality, and the Centers for Disease Control. Such an effort should be systematically developed and evaluated, see Appendix G for a tracking tool.

Knowledge Exchange

RECOMMENDATION 6: SRCEB and the Office of Constituency Relations and Public Liaison (OCRPL) should jointly develop public forums or use existing national meetings to provide public education and allow for public feedback on the NIMH services research portfolio. OCRPL should include the broad range of public stakeholders in sharing the portfolio and its findings: persons living with mental illness and their families, advocates, payers (including Federal, State, and private payers), clinical practitioners, researchers, and research administrators.

Whether NIMH convenes the meetings between researchers and all relevant stakeholder groups or takes advantage of already existing national meetings, the results of the services research portfolio need to be shared more directly with the public, using a culturally sensitive approach. This could include conferences with Federal and State policy makers and mental health services researchers to improve communication and information exchange.

NIMH services research program staff should also develop symposia at national meetings of professional groups, administrators and faculty of minority-serving institutions (e.g., Historically Black Colleges and Universities, Tribal Colleges, Hispanic institutions), advocacy groups, and representative associations of large payers and administrators (e.g., NASMHPD and National Association of State Medicaid Directors) to discuss the latest science advances in services research. Researchers and stakeholders should share in a public discussion of the results, any unexpected consequences of policy changes or interventions, and the directions needed for further research.

Initiatives such as NIMH's Outreach Partners respond to these critical needs, so its recent increase in award size is welcome. Given the large scope of sharing with all stakeholders, especially the public, persons living with mental illness, payers and providers, the size of the award may need to be revisited soon. NIMH researchers and staff should use these meetings to learn from the stakeholders

of the mental health system about pressing policy issues and concerns; system, organizational, and program successes and failures; access for historically underserved populations; and stakeholders' ideas about potentially important new research directions. Minutes detailing the requested types of research should be posted soon after the meeting, along with action plans for addressing these perceived gaps. NIMH and its partner agencies should work with the stakeholder groups to generate their own research agendas for their specific needs.

RECOMMENDATION 7: The Office of Science Policy, Planning, and Communications (OSPPC) should work together with SRCEB and OCRPL to develop more sophisticated and tailored methods of communicating research findings effectively to the various stakeholder audiences.

Drawing on the communications and message development/dissemination literature, and using media and message consultants, in addition to the experience of other NIH Institutes, the NIMH OSPPC should develop new ways to frame the mental health knowledge created by the services research portfolio for specific stakeholder groups. This should include the use of existing and emerging technologies. For example, NCI's Cancer Control Planet provides a Web-based, decision-support tool for public health practitioners to determine the fit between EBPs and local settings, as well as to partner with researchers in relevant areas. This type of technology may be beneficial in expanding dialogues among key stakeholders. In addition, OSPPC should conduct strategic planning with OCRPL and SRCEB to identify key stakeholders, information needs, and potential messages. Following this, focus group testing is recommended to help craft target messages and formats for each group. Also, evaluation plans should be considered for assessing target message impact. OSPPC and SRCEB staff should meet on a routine basis to develop and assess communication plans for the various public audiences and exchange information on up-coming research publications and communication opportunities for workshops and conferences. NIMH is encouraged to develop proactive strategies to work with the PIs of policy-relevant studies and stakeholder groups to identify important implications of the studies and to develop clear messages and effective vehicles for translating results quickly.

RECOMMENDATION 8: NIMH should build evaluation milestones into initiatives and finance the evaluation through NIH's 1% evaluation funds when possible.

To ensure that NIMH investments are worthwhile and to minimize the financial risk associated with high-risk, high-reward projects, concurrent evaluations should become part of each large-scale effort. Criteria for success should be established at the outset of a project. By definition, high-risk projects will not always succeed, so, rather than avoiding such projects and eliminating the possibility of successes in high-need areas, NIMH should develop criteria to monitor these new initiatives. Allowing blossoming areas and efforts to be identified quickly, implemented, and monitored — modifying and pruning where necessary — the vibrancy of this area of the research portfolio will be enhanced. As one means of evaluating an initiative's progress, NIMH should compete for NIH 1% evaluation funds to support the evaluation.

RECOMMENDATION 9: NIMH should present the progress made on the Workgroup's recommendations to Council, so that both Council and the public may advise on course corrections and on promoting successes.

The Workgroup believes that Council should be part of the ongoing evaluation process. Council should be the forum for a discussion of the progress on initiatives and for providing advice on what should be sustained, augmented, or brought to a timely end. The Workgroup stresses the importance of such ongoing review. Council and the NIMH Director are best suited to determine the frequency and nature of this progress review in achieving richer partnerships with mutual research priority setting, developing usable intervention and service findings for all stakeholders, and for sharing these findings through effective knowledge exchange.

V. APPENDICES

Appendix A: Council Roster

Department of Health and Human Services
National Institutes of Health
National Institute of Mental Health
National Advisory Mental Health Council

(Terms end 9/30 of designated year)

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Executive Secretary
Jane A. Steinberg, Ph.D.
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Liaison Representative

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Appendix B: Workgroup Roster

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National Advisory Mental Health Council's
Clinical Services and Epidemiology Workgroup

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The asterisks (*) below indicate members of the National Advisory Mental Health Council.

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Appendix C: Summary of DSIR's Programs and Portfolio

Overview of the Current DSIR Portfolio

DSIR supports intervention research across the lifespan to evaluate the effectiveness of pharmacologic, psychosocial (psychotherapeutic and behavioral), somatic, rehabilitative, and combination interventions on mental and behavior disorders. In addition, this Division is responsible for mental health services research on the organization, delivery (i.e., process and receipt of care) and related health economics at the individual, clinical, program, community and systems levels, clinical epidemiology, and the dissemination and implementation of evidence-based interventions into service settings.

Figure 1 (see next page) summarizes the DSIR portfolio. The Division includes three programmatic branches: Adult Treatment and Preventive Interventions Branch; Child and Adolescent Treatment and Preventive Interventions Branch; and SRCEB, as well as the Clinical Trials Operating Unit and offices for small business and training activities.

DSIR's High Priority Areas

- Test the effectiveness and cost-effectiveness of interventions, including combinations from established efficacious interventions, in community and practice settings, with special emphases on practical clinical trials and assessment of multiple outcomes (e.g., functioning, symptoms, and economics).

- Test the effectiveness and cost-effectiveness of treatments and services for people with co-occurring mental, substance use, and/or physical health problems.

- Pinpoint effective dissemination and implementation processes and mechanisms to increase the uptake of scientifically informed treatments and services for mental disorders across all settings and populations.

- Enhance the research capacity and infrastructure to conduct research in diverse mental health service settings through strategic partnerships, community engagement and participation, information technologies, and development of new and innovative methods for designing and conducting effectiveness and services research.

- Improve the detection, assessment, interventions, and services for suicidality in populations of all ages.

- Identify side-effects and adverse events from interventions used in current practice across diverse settings and populations of all ages to improve effective, personalized treatment and prevention strategies to optimize outcomes.

Figure 1

Division of Services and Intervention Research
Fiscal Year 2005 Research and Contract Funding by Branch*
(Dollars in Thousands)

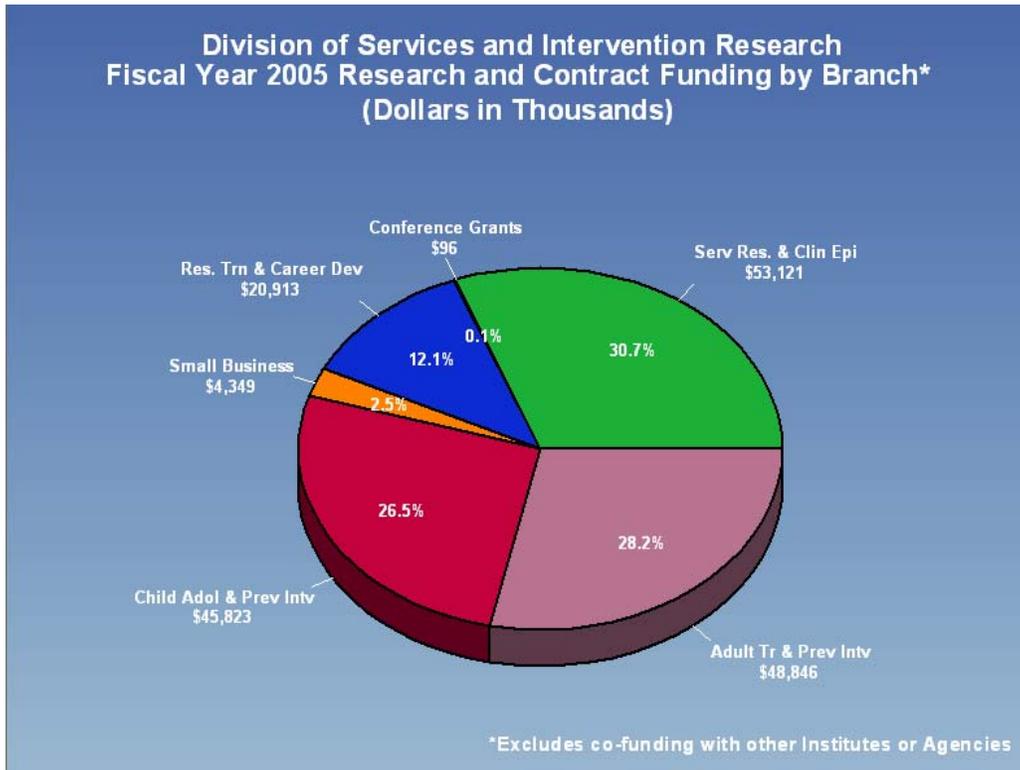*Excludes co-funding with other Institutes or Agencies

Table 1: Research and Contract Funding for DSIR by Branch (FY 2005) — Excludes co-funding with other Institutes or Agencies [included for accessibility].

BRANCH	DOLLARS (THOUSANDS)	PERCENT
Services Research and Clinical Epidemiology	53,121	30.7
Adult Treatment and Preventive Intervention Research Branch	48,846	28.2
Child and Adolescent Treatment and Preventive Intervention Research Branch	45,823	26.5
Research Training and Career Development	20,913	12.1
Small Business	4,349	2.5
Conference Grants	96	0.1

Appendix D: Summary of the SRCEB Portfolio

Overview of SRCEB

Mental health services research has been defined as a "multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and, ultimately, our health and well-being."[12] NIMH services research has adopted this definition and focuses on diverse populations — including individuals living with mental illness, providers, managed care, systems, and States — with the aim of addressing questions that may not be answered by traditional randomized trials.

The strengths of this vision include application to real-world settings, offering a high degree of external validity and generalizability. NIMH services research also encompasses an array of special populations, such as children and adolescents, and issues such as primary care, quality of care and outcomes, health care financing and managed care, sociocultural concerns, health disparities, systems, methods, clinical epidemiology, services dissemination and implementation, rural health care, as well as disablement and functioning. This research pursues the promise of quality care, across all settings, for all persons living with mental illness and their families.

SRCEB's Recent Accomplishments and Program Initiatives

Two broad principles from Council's 1999 Bridging Science and Service report have shaped DSIR's research and that of its SRCEB. First, NIMH research must be useful and practical for persons living with mental illness, clinicians, purchasers, and policy makers. Second, NIMH should consider the domains of efficacy, effectiveness, practice, and service systems research to foster innovation and integration across fields and to expedite implementation. The Branch staff, in conjunction with NIMH leadership, the Nation's top researchers, other Federal and private entities, and the public, has followed these principles in developing SRCEB'S portfolio and in responding to the 49 recommendations from the Bridging Science and Service report. There are many fine activities to report, and those presented below were selected as examples to show the diversity of SRCEB's current research portfolio and its development.

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[12] Lohr, K.N. & Steinwachs, D.M. (2002). Health services research: an evolving definition of the field. *Health Services Research*, 37(1), 15-17.

Collaboration and Utility

Planning with the public

NIMH is committed to maintaining an active dialogue with its stakeholders and to developing a research agenda that is responsive to the needs of its constituents. This can be seen in several ways, including the Alliance for Research Progress, the NIMH Coalition for Research Progress, the series of Dialogue meetings held in recent years, and in the Outreach Partnership Program, a nationwide initiative of NIMH with support from the National Institute on Drug Abuse (NIDA) and SAMHSA's Center for Mental Health Services (CMHS). Members of the SCREB staff have actively participated in planning and conducting these activities. The purpose of each of them has been to bridge the gap between research and clinical practice through interactive communication and dialogue, including solicitation of feedback from a variety of public and professional sources, and by the dissemination of the latest scientific findings to better inform the public about mental disorders, alcoholism, and drug addiction. In addition, it is hoped that these efforts will lead to a reduced level of stigma and discrimination associated with these illnesses. As one example of these overall efforts, OCRPL's Outreach Partnership Program enlists State and national organizations in the effort to increase public awareness about the importance of basic and clinical research in improving treatments for, and ultimately curing, mental illness and addiction disorders through advancing knowledge about the brain and behavior. At its annual meeting and throughout the year, Partners provide essential input into shaping NIMH's research portfolio and informational materials.

The Institute has also followed the recommendations regarding the inclusion of stakeholders in its review process. For the last six years, NIMH has included public reviewers, including State mental health directors, clinicians, and those living with mental disorders and their family members, in its services and intervention review groups. These reviewers comment on applications relevant to their respective areas of expertise, which include public health importance, feasibility, acceptance, and human subjects' protection. With the announcement of NIMH's use of public reviewers, numerous NIMH grant-seekers began to consult with their respective communities, and some even put in place public advisory groups for research projects. Meanwhile, various NIH Institutes have called upon NIMH to discuss its program implementation and orientation process.

Partnerships with Other Agencies

SRCEB staff members have sustained or begun collaborative relationships with CMS, SAMHSA, SSA, the Interagency Committee on Disability Research, and other Federal agencies whose policies affect the lives of persons living with mental illness. The Workgroup believes that this kind of activity should be significantly elevated and expanded. Given the enormous influence on purchasing and policy exerted by CMS and SSA, for example, NIMH should work to ensure that research findings and expertise are embedded in demonstration projects and other policy initiatives.

The field of mental health services was significantly advanced in the 1990's through Federal demonstration projects, such as evaluations of innovations supported by CMHS — in some cases via randomized controlled trials and others via rigorous quasi-experimental designs. Creating the next generation of well-studied projects that bridge service innovation with research is an essential outcome of the response to this report. It is not necessary that NIMH fund or manage these projects,

rather that NIMH and CMHS show leadership to ensure that innovations occur and are rigorously studied, and that lessons are learned and shared with stakeholders.

One example of this type of inter-agency partnership was the collaboration between NIMH and the Robert Wood Johnson Foundation Program on Chronic Mental Illness and the Agency for Health Care Policy and Research on the Schizophrenia Patient Outcome Research Team during the late 1980s and early 90s. The combined resources allowed for broader evaluation of outcomes, which in turn had actionable implications for policy reform in improving the availability, delivery, and financing of mental health care. Above and beyond the immediate research findings, however, key long-term partnerships were also forged, helping to create an infrastructure for subsequent demonstration programs and collaborative projects.

NIMH has continued this tradition of inter-agency partnership and is currently expanding its relationship with CMHS, the lead mental health services organization in the Federal government within SAMHSA. As CMHS's role in knowledge development studies was redirected, NIMH and CMHS staff have been working together to develop collaborative activities to promote the science-to-service cycle. There are already exciting products from this evolving collaboration. The first step was to issue joint requests for applications (RFAs) and PAs to encourage the research community to conduct studies in these areas. So far, this effort has yielded:

- Fourteen one-year planning grants to State mental health agencies to bridge the communication gap between science and service;

- Research on services delivered to children, adolescents and their families;

- Early interventions for psychotic symptoms as a possible means for arresting the development of psychotic symptoms and functional disability; and

- Exploratory studies to implement effective interventions in State mental health systems.

NIMH, together with the SAMHSA's Center for Mental Health Services and NASMPHD, are sponsoring four regional meetings aimed at enhancing the partnership between Federal (CMHS and NIMH), State, and local mental health research and service agencies. This activity is an effort to continue "Bridging Science to Service." State and local mental health service administrators, providers, and researchers will develop science and service agendas for State and regional implementation. NIMH and CMHS staff will be present and provide technical assistance as needed. These meetings will include:

- Identifying science-to-service priorities unique to individual States

- Delineating the challenges and opportunities for collaboration

- Denoting action items for:
    - States
    - Federal partners
    - Others

NIMH and CMHS will provide funding for these meetings as well as logistical support.

The idea behind convening these meetings emerged as a result of the ongoing efforts to bridge mental health research and real world practice, including a focus on the needs of State mental health systems. Among these efforts were: (a) the April 2001 workshop convened to initiate a dialogue on EBP among researchers and those involved in EBP implementation within States; (b) a subsequent meeting led by NIMH and NASMHPD Research Institute Inc. in February 2002, in which a group of State mental health commissioners and administrative staff, mental health services researchers, Federal agency representatives, and staff from NRI discussed issues related to State efforts to implement evidence-based mental health practices within real-world settings; and (c) a December 2003 meeting of the State mental health commissioners, organized by NASMHPD, NIMH, and CMHS, during which State representatives split into four breakout sessions, by region, to discuss their specific needs and plans.

The first meeting in this series was held in Oklahoma City on April 17-18, 2006 and included representatives from the following mid-western states: Ohio, Indiana, Michigan, Illinois, Wisconsin, Minnesota, Iowa, Missouri, Kansas, Nebraska, South Dakota, North Dakota, and Oklahoma. Researchers, state administrators, advocates, persons living with mental illness, and providers from each of the thirteen states were invited to participate in this meeting.

The Workgroup was also pleased to hear that this necessary and developing partnership has been strengthened with NIMH and CMHS's shared effort in developing evaluation plans for CMHS's seven transformational grants to states. CMHS has funded Connecticut, Maryland, New Mexico, Ohio, Oklahoma, Texas, and Washington to develop comprehensive plans to coordinate multiple State-level agencies to provide better mental health care for their residents. Staff from NIMH and CMHS recently met with the evaluators for each Transformation State Incentive Grant (T-SIG) to discuss plans for the cross-site evaluation. They are considering multiple options to maximize the utility of the planned evaluation, including targeted contracts, supplements, and investigator-initiated studies on components of the comprehensive State plans.

Innovation and Dissemination

SRCEB has published a series of PAs designed to move its researchers into community-based research and to engage special populations. Case in point is the Interventions and Practice Research Infrastructure Program (IP-RISP). This program has expanded the number of partnerships between community-based, clinical/services settings and academic institutions; enhanced the national capacity to provide evidence-based mental health care in community settings that is sensitive to the social and cultural needs of individuals living with mental illness and providers; and helped to address the feasibility concerns of the community organizations involved. Another example is the revision of the NIMH service centers program, which now has a much greater emphasis on community partnerships. As a result, the three projects described below aim to understand the unique needs of underserved populations and how best to serve them:

- Dr. Eugene Brody works with African-American families living in Georgia's rural, impoverished communities. The Center works with community-based organizations through a participatory research process to set its research agenda and participate in all aspects of the research process.

- Dr. Javier Escobar explores underserved African-American and Latino patients in primary care settings presenting with medically unexplained physical symptoms (MUPS) to test a culturally sensitive, collaborative, stepped-care model for treating these individuals.

- Dr. Robert Trestman's grant will provide a foundation for the development of programs focused both on the delivery of interventions (specifically in a corrections setting) and on practice research. It is designed to support the ongoing planning, implementation, review and refinement, and dissemination/translation of findings and protocols from clinical trials and effectiveness studies to better understand approaches to psychiatric and psychosocial detection, diagnosis, treatment and prevention with incarcerated adults.

Larger SRCEB projects focusing on improving care in the community or disseminating best practices do not use traditional randomized clinical trials. Instead, they rely on innovative quasi-experimental approaches that provide the flexibility and practicality needed to understand the effect of service changes in the real world. Two examples are:

- Dr. John Brekke's innovative work on how and why relationships occur between psychobiological factors and functional outcomes, and his attempts to define some of the mechanisms of rehabilitative change. Dr. Brekke and his team are testing new explanatory constructs such as learning potential, social cognition, social competence, problem solving, coping, and insight that are proposed to be key mediators of the impact of psychobiological factors on functional outcomes.

- Dr. Philip Wang's evaluation, in partnership with United Behavioral Health, of the impact of a depression outreach-treatment on work-related behaviors within Fortune 500 companies. Dr. Wang's study will address a key question of employers: Will outreach and guideline-concordant treatment of depressed workers using realistic levels of quality assurance reduce the workplace costs of depression enough to be cost-effective for the employer?

The Branch's dissemination and implementation research portfolio also includes a series of studies seeking to understand and foster change in clinical practice at the individual, provider, organizational, and State levels. Two examples are the work of Drs. Donald Steinwachs and Armando Rotondi who study the use of Web-based technologies to enhance knowledge and to meet the demand for high-quality services for persons living with schizophrenia. Several other R01 grants are testing the use of behavioral and technological interventions to improve the uptake of clinical guidelines in real-time psychiatric practice.

The DSIR portfolio has also documented significant areas where adequately effective treatments have yet to be established. One such area is demonstrated by the roughly 70% all-cause discontinuation rate from antipsychotic medications documented in Phase I of CATIE. Such results indicate that, for most persons living with schizophrenia, none of the five commonly prescribed agents used in that trial fit most people well enough that they would opt to keep taking it rather than trying yet another medication.

Basic and clinical research to develop treatments and cures is extremely important. At the same time, NIMH must do a much better job at ensuring that effectiveness (how treatments are adopted and play out in the real world) keeps up with efficacy. The Institute has seen how difficult it has been to implement some of the recommendations of the Bridging Science and Service report and must redouble its efforts to create adequate, evidence-informed translation and implementation programs.

The portfolio's key grant mechanisms are aimed at setting new standards for rigor and relevance and include:

- [The Interventions and Practice Research and Infrastructure Development announcement (IP-RISP)](#)
- The 2005 centers announcements that require the integration of science with community partnerships
    - [PAR-05-161](#)
    - [PAR-05-144](#)
- [Time-sensitive opportunities PA](#)
- [An exploratory/developmental R34](#)
- [Dissemination and Implementation Research in Health (R01)](#)
- With NIDA, [Enhancing Practice Improvement in Community-Based Care for Prevention and Treatment of Drug Abuse or Co-occurring Drug Abuse and Mental Disorders](#)
- Two State implementation RFAs:
    - [State Implementation of Evidence-Based Practices — Bridging Science and Service](#)
    - [State Implementation of Evidence-Based Practices II — Bridging Science and Service](#)

SRCEB Goals

- Services organization, delivery (process and receipt of care), and related health economics at the individual, clinical, program, community and systems levels in specialty mental health, general health, and other delivery settings (such as the workplace)

- Interventions to improve the quality and outcomes of care, including diagnostic, treatment, preventive, and rehabilitation services

- Enhanced capacity for conducting services research

- Clinical epidemiology of mental disorders across all clinical and service settings

- Dissemination and implementation of evidence-based interventions into service settings

SRCEB Programs

Figure 2 (see next page) gives an overview of the Branch's investments, which included eight centers, 136 research project grants, 51 mentored K grants, 16 fellowships, 20 T32 grants, and four R25 grants in Fiscal Year 2005 (FY05).

Figure 2

Division of Services and Intervention Research
Services Research and Clinical Epidemiology Branch
Fiscal Year 2005 Research Funding by Program*
(Dollars in Thousands)

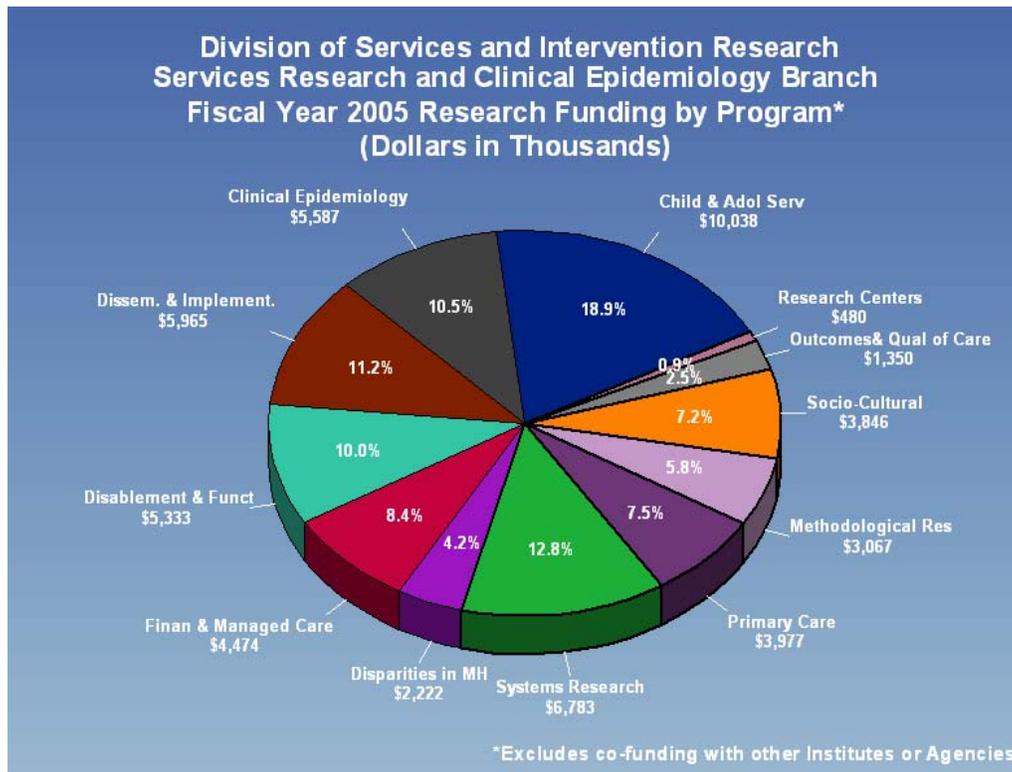*Excludes co-funding with other Institutes or Agencies

Table 2: Research Funding for the Clinical Epidemiology Branch, DSIR, by Program (FY 2005) — Excludes co-funding with other Institutes of Agencies [included for accessibility].

PROGRAM	DOLLARS (THOUSANDS)	PERCENT
Child and Adolescent Services	10,038	18.9
Systems Research	6,783	12.8
Dissemination and Implementation	5,965	11.2
Clinical Epidemiology	5,587	10.5
Disablement and Functioning	5,333	10.0
Financing and Managed Care	4,474	8.4
Primary Care	3,977	7.5
Socio-Cultural	3,846	7.2
Methodological Research	3,067	5.8
Disparities in Mental Health Services	2,222	4.2
Outcomes and Quality of Care	1,350	2.5
Research Centers	480	0.9

SRCEB strives to meet the goal of improving care for all those living with mental disorders through administering research, training, and infrastructure development grants, contracts, workshops, and conferences in its 11 programs, which are:

Child & Adolescent Services Research Program: Directed by Dr. Heather Ringeisen, the portfolio had 23 grants totaling $10.2 million in FY05. This program encourages: studying the implementation process as EBPs are moved into community-based child service delivery settings; enhancing the understanding of contextual influences (individual, provider, organizational, environmental) of explicit child service delivery systems upon the provision of high-quality mental health child service delivery system; developing innovative child service delivery models for high need target populations (such as youth); conducting practice research to facilitate knowledge of poorly understood but key child service delivery settings (e.g., juvenile justice and schools); and advancing current concepts of child and family functioning (both impairment and resilience).

Systems Research Program: Directed by Ms. Denise Juliano-Bult, the portfolio had 16 grants totaling $6.8 million in FY05. This program aims at moving research into other service system areas that have not been studied or well-studied. These include criminal justice, domestic violence shelters and other trauma-related sites, adult autism, social services, and the new generation of housing programs and homeless services.

Clinical Epidemiology Research Program: Directed by Dr. Karen Anderson Oliver, this program consisted of 14 grants totaling $5.6 million in FY05 and aims to encourage applicants to apply innovative conceptual models in clinical epidemiology and ensure that analysis plans are linked to the model and/or theory; and to move research to increase the link between clinical epidemiology and quality improvement, dissemination, and interventions.

Outcomes and Quality of Care Research Program: Also directed by Dr. Oliver, the program had two grants totaling $1.4 million in FY05 and aims to encourage applications that yield significant findings and can be implemented in real-world settings to improve quality of care, advance techniques and methods for measuring quality, and determine the utility and reliability of measures that are now widely used. In addition, this program oversees six career development grants.

Primary Care Research Program: Directed by Dr. Carmen Moten, the program had 12 grants totaling $4.5 million in FY05. The research seeks to show how multiple levels of competing demands in primary care — and their interactions — affect the appropriate recognition and management of mental health problems, and to make clear the decision-making process of providers and persons living with mental illness that lead to appropriate care processes and improved outcomes in general health care settings.

Disparities in Mental Health Services Research Program: Also directed by Dr. Moten, this program consisted of eight grants totaling $2.2 million in FY05 that were directed at exploring the complex factors that influence disparities in mental health services, including racial and ethnic groups, women and children, and persons living in rural and frontier areas. The program also focuses on showing how innovative services interventions (such as faith- and community-based interventions) overcome mental health disparities related to mental health service delivery and use.

Financing and Managed Care Research Program: Directed by Dr. Agnes Rupp, this program had 10 grants totaling $4.5 million in FY05. The program has developed a research infrastructure in pharmacoeconomics which is able to address research questions concerning the potential impact of the new Part D prescription drug health insurance benefit of the Medicare Modernization Act on 42 million seniors and 2.2 million severely mentally ill beneficiaries. The overall purpose of the program is to support policy relevant scientific research to improve the financing of mental health care.

Disablement and Functioning Research Program: Directed by Dr. Ann Hohmann, the program had 11 grants totaling $5.3 million in FY05 that were aimed at changing the focus of research from testing fidelity of programs and implementing evidence-based practice to tailoring strategies to improve functioning including early interventions in the community for psychotic disorders.

Methodological Research Program: This program, also directed by Dr. Hohmann, consisted of 14 grants totaling $3.1 million in FY05 aimed at moving assessment as rapidly as possible to computerized adaptive testing, together with the NIMH Roadmap Dynamic Assessment efforts, and encouraging the development of innovative statistical approaches to subject-centered research designs and longitudinal data.

Socio-Cultural Research Program: Also directed by Dr. Hohmann, this program had seven grants totaling $3.8 million in FY05 aimed at expanding research that incorporates theoretical perspectives which will make clear the behavioral and social mechanisms of action in individual behavior, clinical relationships, and organizational systems.

Dissemination and Implementation Research Program: Directed by Dr. David Chambers, this program had 24 grants totaling $6 million in FY05 that were investigating theory-based and empirically supported models of dissemination and implementation.

List of Scientific Research Meetings, Conferences, Workshops

2005

NIMH Research Coordination Roundtable on the MMA (Medicare Modernization Act)
Bethesda, MD
Facilitators: Agnes Rupp, Ph.D., and Karen Oliver, Ph.D.

Enhancing Practice Improvement in Community-Based Care for Prevention and Treatment of Drug
Abuse and Co-Occurring Drub Abuse and Mental Disorders: Technical Assistance Meeting
Co-sponsored by NIDA
Rockville, MD
Facilitators: Beverly Pringle, Ph.D., NIDA, and Carmen Moten, Ph.D., NIMH

Innovation in Mental Health Research: What? How? How Much?
Co-sponsored by the Division of Extramural Activities (DEA), NIMH
Potomac, MD
Facilitators: Samia Noursi, Ph.D., DSIR, Marina Broitman, Ph.D., and David Sommers, Ph.D., DEA

Enhancing Collaboration in the Next Generation of Child and Adolescent Interventions and Services
Research
Co-sponsored by the Child and Adolescent Treatment and Preventive Intervention Research Branch,
DSIR
Rockville, MD
Facilitators: Heather Ringeisen, Ph.D., and Joel Sherrill, Ph.D.

Broadening the Scope of Scientific Investigation: The Eighteenth NIMH Conference on Mental Health
Services Research (MHSR)
Bethesda, MD
Facilitators: Carmen Moten, Ph.D., and Heather Ringeisen, Ph.D.

Third NIMH Pharmacoeconomics Workshop: MMA03 and Psychotropic Medications
Bethesda, MD
Facilitator: Agnes Rupp, Ph.D.

2004

Advancing the Science of Implementation
Washington, DC
Facilitator: David Chambers, Ph.D.

Enhancing the Impact of Mental Health Services: Economic Incentives and Research: The Twelfth
NIMH Biennial Research Conference on the Economics of Mental Health
Washington, DC
Facilitator: Agnes Rupp, Ph.D.

Planning Science and Services: A Technical Assistance Workshop for State Mental Health Agencies
Rockville, MD
Facilitator: David Chambers, Ph.D.

NIH Summer Institute: The Design and Conduct of Qualitative and Mixed-Method Research in Social Work and Other Health Professionals
Co-sponsored by OBSSR, NIAAA, NIDA, NCI and NINR/NIH
Bethesda, MD
Facilitator: Denise Juliano-Bult

Complexities of Co-Occurring Conditions: Harnessing Services Research to Improve Care for Mental, Substance Use, and Medical/Physical Disorders
Co-sponsored by NIDA, NIAAA, SAMHSA, HRSA and AHRQ
Washington, DC
Facilitators: Junius Gonzales, MD, NIMH, and Jack B. Stein, Ph.D., NIDA

Second NIMH Pharmacoeconomics Research Directions Workshop
Washington, DC
Facilitator: Agnes Rupp, Ph.D.

Cognitive Perspectives on Mental Health Practice
Co-sponsored by DSIR and DNBBS
Rockville, MD
Co-chairs: Junius Gonzales, MD, Howard Kurtzman Ph.D.

Enhancing Critical Capacity in Mental Health Research and Training
Co-sponsored by Howard University Graduate School
Washington, DC, and Rockville, MD
Facilitator: Carmen Moten, Ph.D.

Preventing Child and Adolescent Mental Disorders: Research Roundtable on Economic Burden and Cost-Effectiveness
Co-sponsored by Child and Adolescent Treatment and Prevention Intervention Research Branch, DSIR
Rockville, MD
Facilitators: Belinda Sims, Ph.D., Jane Pearson, Ph.D., and Agnes Rupp, Ph.D.

2003

The Science of Public Messages for Suicide Prevention
Co-sponsored by SAMHSA, CDC and the Annenberg Sunnyland's Trust
Washington, DC
Facilitators: David Chambers, Ph.D., and Jane Pearson, Ph.D.

Pharmacoeconomics Research Workshop: Public Health Perspectives
Bethesda, MD
Facilitator: Agnes Rupp, Ph.D.

Answering Your Questions: A Technical Assistance Workshop for Services Research K Awards
Rockville, MD
Facilitators: David Chambers, Ph.D., and Denise Juliano-Bult, MSW

Beyond the Clinic Walls: Expanding Mental Health, Drug and Alcohol Services Research Outside the Specialty Care System
Co-sponsored by NIAAA and NIDA
Facilitator: Junius Gonzales, MD

2002

Treatment as Usual: Measurement, Design and Ethics
Co-sponsored by the Child and Adolescent Treatment and Preventive Intervention Research Branch and the Adult Treatment and Preventive Intervention Research Branch, DSIR
Rockville, MD
Facilitators: Heather Ringeisen, Ph.D., Joel Sherrill, Ph.D., and Linda Street, Ph.D.

Planning Science to Service: A Technical Assistance Workshop for State Mental Health Agencies
Co-sponsored by CMHS/SAMHSA
Rockville, MD
Facilitator: David Chambers, Ph.D.

Advancing Mental Health Care Financing: The Eleventh NIMH Biennial Research Conference on the Economics of Mental Health
Bethesda, MD
Facilitator: Agnes Rupp, Ph.D.

Social Work Research at NIMH: Moving Forward—Building on Social Work Contributions to Mental Health Research
Co-sponsored by the Institute for the Advancement of Social Work Research
Rockville, MD
Facilitator: Denise Juliano-Bult, MSW

Evidence in Mental Health Services Research: What Types? How Much? And Then What?: The 15th Biennial International Conference on Mental Health Services Research
Washington, DC
Facilitator: Junius Gonzales, MD

Research on the Impact of Socio Cultural Factors on Access and Use of Mental Health Services in Rural Population
Rockville, MD
Facilitators: Carmen Moten, Ph.D., and Anthony Pollitt, Ph.D.

What Do We Know About Implementing Evidence-Based Practices (EBPs) and Where Can We Go From Here?
Baltimore, MD
Facilitators: Karen Oliver, Ph.D., and David Chambers, Ph.D.

Dissemination and Implementation in Children's Mental Health Services Workshop
Rockville, MD
Facilitators: David Chambers, Ph.D., and Heather Ringeisen, Ph.D.

2001

New Directions in Research on Homelessness Among People with Mental Illness
Rockville, MD
Facilitator: Denise Juliano-Bult, MSW

Future Research on Mental Health Courts and Other Jail Diversion Strategies: Setting an
Agenda/Building Partnerships
Co-sponsored by The John D. and Catherine T. MacArthur Foundation
Washington, DC
Facilitator: Denise Juliano-Bult, MSW

Methodological Issues in Analyzing National Survey Data on Child Mental Health
Bethesda, MD
Co-sponsored by AHRQ
Facilitator: Heather Ringeisen, Ph.D., and Lisa Colpe, Ph.D.

2000

Economics of Parity for Mental Health: The Tenth NIMH Biennial Research Conference on the
Economics of Mental Health
Rockville, MD
Facilitator: Agnes Rupp, Ph.D.

Challenges for the 21st Century: Mental Health Services Research
Washington, DC
Facilitator: Junius Gonzales, MD

Appendix E: Consultants

The Workgroup appreciates the contribution of the consultants in developing this report; however, inclusion in the listing does not necessarily indicate endorsement of the Workgroup's recommendations.

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Appendix F: Conceptual Framework for Health Services and Intervention Research in the 21st Century
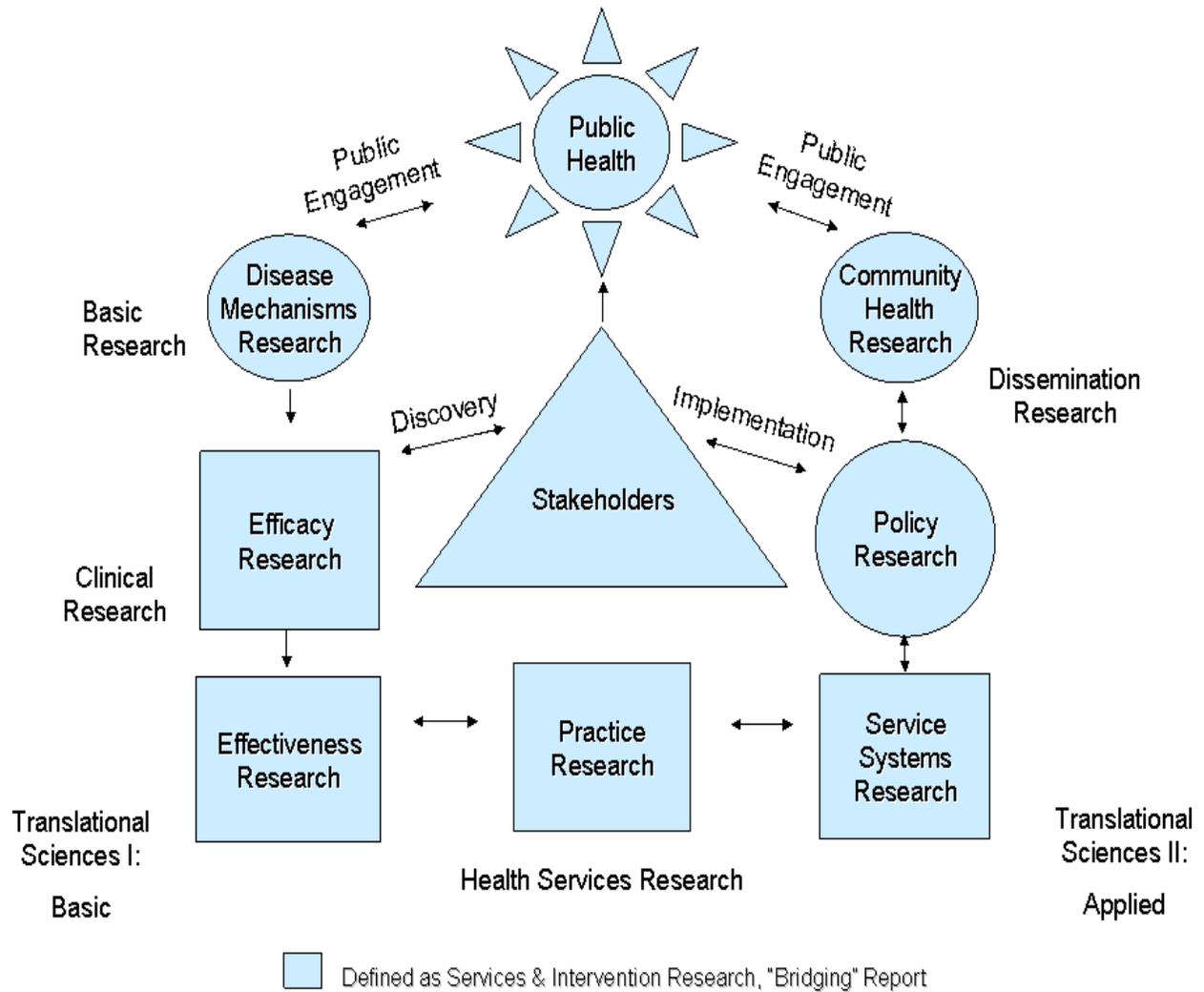**Figure 3**

Table 3: Data for Conceptual Framework for Health Services and Intervention Research in the 21st Century [included for accessibility].

NODE	NODE TYPE / NODE CATEGORY	NODE OUTPUTS	OUTPUT VECTOR
Public Health		Disease Mechanisms Research	Public Engagement
		Community Health Research	Public Engagement
Stakeholders		Public Health	
		Efficacy Research	Discovery
		Policy Research	Implementation
Disease Mechanisms Research	Basic Research	Public Health	Public Engagement
		Efficacy Research	
Community Health Research	Dissemination Research	Public Health	Public Engagement
		Policy Research	
Efficacy Research	Clinical Research	Stakeholders	Discovery
		Effectiveness Research	
Policy Research	Dissemination Research	Stakeholders	Implementation
		Community Health Research	
		Service Systems Research	
Effectiveness Research	Translational Sciences I: Basic	Practice Research	
Service Systems Research	Translational Sciences II: Applied	Policy Research	
		Practice Research	
Practice Research	Health Services Research	Effectiveness Research	
		Service Systems Research	

The squares represent the four domains of health services and intervention research as defined by the *Bridging Science and Service* report. In that report, the framework for such research was the interaction of these four domains with various stakeholders in the environment (purchasers, insurers, providers, persons living with mental illness, and policy makers). The right half of the figure illustrates that services and intervention research has evolved, and has the potential to evolve further, to include policy research and community health research — that is, research on how to create effective services for specific communities and individuals — as part of the broad field of dissemination research.

The left half of the figure shows that the basic and applied research relate to treatment discovery and efficacy research and there is also an important connection with public health, at the "top" of the figure. Human basic and applied research increasingly requires broader, more representative samples and may yield products — such as behavioral interventions to mitigate genetic risk factors before they are expressed — that will be delivered broadly to the public through a more tailored form of services outreach and delivery. Achieving this potential in the future will require not only interdisciplinary interactions, but broad development of public engagement strategies in research for both basic sciences and the community side of dissemination and implementation research, for example, in the area of health disparities.

At the center of the figure, multiple stakeholders stimulate new research and use the products of research. It is through this use and the identification of new problems that public health ultimately improves. In short, improving today's mental health care is both about the generation of policy-relevant research and about the effective use of research findings through the constant interplay among those needing quality care, those providing care, and those paying for care.

Appendix G: Planning/Tracking Tool

	Intramural Research Synthesis Planning	Advisory Groups	Conferences, Workshops	External, Centers with Supplements)	Focused Contracts	Multi-site Network	Investigator-Initiated Grants	*Training Grants*
Research Synthesis								
Reality Testing of Recommendation								
Population Description (Risks + Impacts)								
Intervention Description and Usual Care								
Describe and Evaluate Implementation Process								
Evaluate Multi-site Implementation								
Evaluate/Test Specific Incentives + Policies								
Knowledge Transfer Dissemination-Implementation								
Training								