DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health

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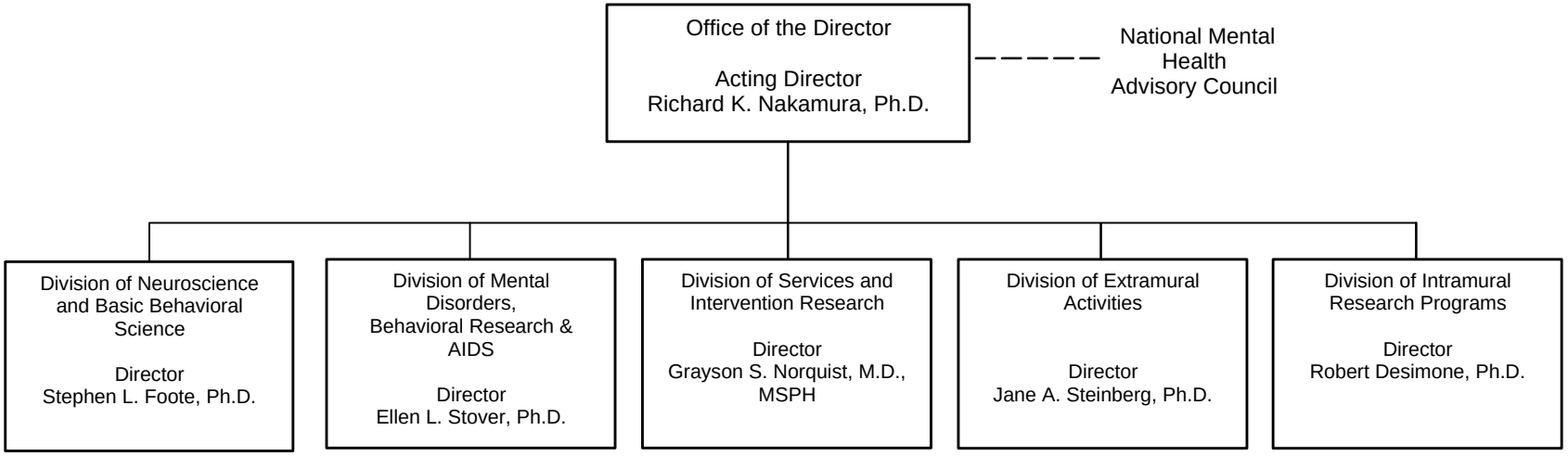


NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health

For carrying out section 301 and title IV of the Public Health Service Act with respect to mental health, [$1,248,626,000] *$1,332,165,000*

[Departments of Labor, Health and Human Services, Education and Related Agencies Appropriations Act for Fiscal Year 2002 (P.L. 107-116)]

National Institutes of Health

National Institute of Mental Health
Amounts Available for Obligation 1/

Source of Funding	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate
Appropriation	$1,107,028,000	$1,248,626,000	$1,326,245,000
Enacted Rescission	(492,000)	(533,000)	---
Subtotal, Adjusted Appropriation	1,106,536,000	1,248,093,000	1,326,245,000
Comparable adjustment for legislative proposal for accrued retirement costs	5,151,000	5,557,000	5,920,000
Real transfer to:			
Other HHS Agencies through Secretary's one-percent transfer authority	(210,000)	---	---
Real transfer to HHS for the Office of Human Research Protection	(231,000)	---	---
Comparative transfer from:			
Office of the Director for the Academic Research Enhancement Award program	424,000	---	
National Cancer Institute for Research Activities	---	---	26,843,000
Comparative transfer to:			
National Institute of Biomedical Imaging and Bioengineering	(3,457,000)	---	
Subtotal	1,108,213,000	1,253,650,000	1,359,008,000
Total obligations	1,108,213,000	1,253,650,000	1,359,008,000

1/ Excludes the following amounts for reimbursable activities carried out by this account:
FY 2001 - $5,549,000; FY 2002 - $5,549,000; FY 2003 - $5,549,000

Excludes $319,214 in FY 2001 and $486,289 in FY 2002 for royalties.

Justification

National Institute of Mental Health

Authorizing Legislation: Section 301 of the Public Health Service Act, as amended. Reauthorizing legislation will be submitted.

Budget Authority:

	2001 Actual	2002 Appropriation	2002 Current Estimate	2003 Estimate	Increase or Decrease
Current Law BA	$1,103,062,000	$1,248,626,000	$1,248,093,000	$1,353,088,000	$104,995,000
Accrued Costs	5,151,000	5,557,000	5,557,000	5,920,000	363,000
Proposed Law BA	1,108,213,000	1,254,183,000	1,253,650,000	1,359,008,000	105,358,000
FTE	737	787	787	785	(2)

This document provides justification for the Fiscal Year 2003 activities of the National Institute of Mental Health (NIMH), including HIV/AIDS activities. A more detailed description of NIH-wide Fiscal Year 2003 HIV/AIDS activities can be found in the NIH section entitled "Office of AIDS Research (OAR)."

The President's appropriation request of $1,359,008,000 for this account includes current law adjusted by assuming Congressional action on the proposed Managerial Flexibility Act of 2001.

INTRODUCTION

Understanding the brain, the ways in which it directs behavior, and the ways in which behavior and environment affect the function and the very structure of the brain are the primary *scientific responsibilities* of the NIMH. The impetus for these scientific activities is the Institute's *public health mission* of reducing the burden of mental disorders through improved treatments and, ultimately, preventive interventions.

Through the past Decade of the Brain and, more recently, with completion of the full draft sequence of the human genome, neuroscience and behavioral science – and, increasingly, genomic research – have amassed an enormous amount of new information about the brain and behavior. Findings from the Human Genome Project will soon make it possible for investigators to identify specific proteins that are expressed in specific brain regions – for example, the prefrontal cortex – known to be critically involved in a given disorder such as schizophrenia. With that information, scientists can develop animal models that can suggest novel molecular targets for medications as well as other interventions.

In an aggressive effort to exploit basic information that continues to accumulate at an unprecedented rate, NIMH is launching a sweeping initiative designed to introduce fundamentally new approaches to the development of treatments for mental disorders. Toward this end, the National Advisory Mental Health Council (NAMHC) has established a Treatment Development Workgroup to examine the Institute's role in this area and explore how federally funded research complements work being conducted in the private sector. With the advice of the Workgroup, NIMH will step up its efforts to generate information needed by private sector entities such as pharmaceutical companies whose business it is to develop and test promising new compounds. As discussed in greater detail later in this document (see "New Initiatives"), a research challenge of immediate importance for NIMH in its national leadership role is to encourage the field to move beyond thinking of new treatments only from the perspective of existing diagnostic entities such as schizophrenia or depression, and to focus down to the component symptoms that combine to form global diagnostic entities. Schizophrenia, for example, is characterized by dimensions such as disorganized thinking, misperception of reality, and cognitive impairment. Depression includes dimensions affecting thinking, neurovegetative features, energy level, and suicidal preoccupations. At present, the Food and Drug Administration (FDA) approves most psychiatric drugs only for diagnoses categorically defined in the Diagnostic and Statistical Manual (DSM) of Mental Disorders. Research on the classification of psychopathology and an appreciation of psychiatric diagnoses as "multi-dimensional" as opposed to categorical entities will position NIMH to partner with FDA and the private sector to achieve consensus on appropriate methods and clinical endpoints other than DSM diagnoses. If specific symptom complexes such as cognitive impairment in schizophrenia were to be recognized by the FDA as legitimate targets for new drug registration, the pharmaceutical industry would be provided with powerful incentives to develop new pharmacologic treatments targeting these specific disabilities.

Somatic and psychological treatments available today for even the most severe mental disorders are incontrovertibly effective for many patients. The NIMH Treatment Development Initiative recognizes, however, that for a large proportion of persons, extant treatments are not effective for the following reasons: too much time often is required for medications to exert therapeutic effect, and many patients do not respond fully to a treatment to achieve full remission from an acute episode of illness or to avoid recurring episodes.

The Treatment Development Initiative will be an Institute-wide enterprise, with a key role to be assumed by the intramural Mood and Anxiety Disorders Program. This newly established program – an outgrowth of a revitalization of the NIMH Intramural Research Program begun in 1996 – has recruited senior investigators from academe and now stands at the leading edge of research aimed at understanding and measuring structural changes in the brain associated with depression, chronic stress, and post-traumatic stress disorder, and at developing brain-based biomarkers to be used in monitoring treatment progress and outcome. Extramural research objectives, including several introduced in this document, will encompass studies of gene expression of proteins that may serve as potential new drug targets, neuroanatomy and neuroimaging studies, development of more informative animal models, preclinical development

of promising new compounds, and efforts to better dissect DSM syndromes into component dimensions that can be targeted for specific treatment.

The Treatment Development Initiative will capitalize on the remarkable progress over the past decade of NIMH-sponsored research, and will help to redefine the meaning of public health-oriented science in the years ahead.

Evidence of the importance that NIMH attaches to treatment development will be seen in the emphasis on clinical science that is reflected in the science advances and stories of discovery selected to be showcased in this year's Congressional Justification. Before reviewing these research highlights, the document will describe recent developments in several key areas: strategic planning process for mood disorders research; autism research; the Institute's contributions – particularly in the areas of communication and education – to the Nation's response to the threat of terrorism; how NIMH is ensuring racial diversity in the mental health-related research disciplines; and child mental health research.

A Strategic Plan for Mood Disorders Research

Depressive disorders, which are the leading cause of disability-adjusted life years in the developed nations, exact an enormous public health burden in the United States. Last year, NIMH embarked on development of a strategic research plan for studies of mood disorders, predominantly major depression and bipolar disorder. Over the course of more than a year now, NIMH staff-working with 130 extramural/ intramural scientists and public representatives-have analyzed the most current knowledge and research on mood disorders in ten broad areas of science ranging from genetics to service delivery. The plan outlines the goals and implementation steps to be taken to advance our understanding of the brain, human behavior, and the specific pathology involved in depression and bipolar disorders, as well as goals for developing new treatments and enhancing access to appropriate and effective treatments. The final draft plan will be presented to the National Advisory Mental Health Council in May 2002 and will be available to the public by July.

Autism: A Multi-Institute Attack on a Complex Disease

In accordance with the mandate of the Children's Health Act of 2000, which assigned NIMH a lead role in coordinating the overall NIH autism research effort and stipulated a new Interagency Autism Coordinating Committee (IACC), NIMH convened the first meeting of the IACC in early FY 2002. Multiple NIH institutes, other HHS agencies, and other Federal departments were represented, along with representatives of key stakeholder groups. NIMH speakers described the status of the Studies to Advance Autism Research and Treatment (STAART) Centers Program, a new network of research centers also called for in the legislation. The Institute has funded six developmental grants to support preparation of full Center applications; it also has received applications for support of the first of at least five full-fledged STAART Centers, with an anticipated award date of June 2002.

Using Research and Communication to Respond to the National Crisis of Terrorism

NIMH has been actively involved on many fronts in the aftermath of the September 11 attacks. Staff members have played key roles in coordinating with other agencies and officials throughout the Government, directly reaching out to individuals involved in the disasters as well as the American people. Research has increased our understanding of the mental health consequences of traumatic events, including natural disasters and human-caused events such as the bombing of the Federal building in Oklahoma City in 1995. Drawing on these and other sources, NIMH has disseminated practical information to parents and practitioners on the potential mental health impact of the attacks and on evidence-based approaches to addressing acute and long-term mental health needs (www.nimh.nih.gov/outline/responseterrorism.cfm). The Institute maintains active engagement with trauma and terrorism experts around the world and in the United States, including New York, Washington, and Pennsylvania, to support needed research; and has developed a research agenda that focuses on preventing complications, improving the Federal response, and better addressing future mental health consequences.

Efforts are also underway to enhance existing epidemiological and clinical research studies by adding questions relevant to the impact of the recent disasters. For example, questions related to terrorist attack exposure and psychological distress were added to the Harvard Medical School's National Comorbidity Survey- Replication (NCS-R) and the RAND study (funded by NIMH and CDC) of 560 adults in the United States, which asked them about their reactions to the terrorist attacks and their perceptions of their children's reactions within days of the September 11 attacks. This research had the special challenge of being conducted in a manner that did not retraumatize those participating through the questioning; researchers used standards of questioning that enhanced the capability to heal the psychological wounds associated with major traumatic events and to prevent long-term or recurring psychological distress.

Investing in America's Future with Racial/Ethnic Diversity in Research Training

Although NIMH ranks first among the NIH institutes in awards of minority supplements and second with respect to investment in training grants, the number of minority investigators who submit grant applications to NIMH and who receive funding is less than what would be projected from minority representation in the population. This fact prompted the NIMH, to request that the NAMHC examine the Institute's minority training and career development initiatives and ascertain whether they are meeting the needs of attracting and retaining underrepresented minority investigators in research fields relevant to mental health and mental illness. Findings from the extensive review resulted in three major recommendations to address the problems: (1) create and support a system to track trainees' career progressions—from education through investigator status—so that training can be optimized based on outcomes; (2) develop a national mental health research mentorship program that utilizes senior minority and non-minority investigators as role models for future researchers; and (3) create stronger partnerships with educational institutions to provide support to minority students both as they enter the school and as post-doctoral students. At these two points, there is the greatest risk of students being detracted from a research career.

NIMH's Blueprint for Changing Research on Child and Adolescent Mental Health

Over the past two years, a Workgroup of the NAMHC has conducted an extensive evaluation of research activities and infrastructure needed to further our understanding of childhood mental health and mental disorders. The Blueprint report notes that NIMH funding for child and adolescent research has nearly tripled since 1990, while the number of active grants has nearly doubled from 460 to 775. Recognizing that growth alone does not necessarily imply progress, the Workgroup documented key milestones in the areas of basic neuroscience, behavioral science, prevention, and clinical treatment services. In recent years, for example, awareness of genetic and environmental interactions and developmental brain plasticity has fundamentally reshaped thinking. Scientists now know that the changes in the levels of expression of various genes mediate stress reactivity which is influenced, in turn, by variations in maternal care levels. Another new research-based insight is that biological changes, such as sculpting of neurocircuits that occurs during a child's preschool years, are associated with behavioral changes. Understanding the reciprocity among these systems has been extremely important for understanding child development. Although evidence-based practices exist for some conditions, treatment regimens for many of the most incapacitating conditions have not been adequately tested and some of those that have been rigorously evaluated have been shown to be ineffective or potentially harmful; one example is peer counseling for adolescents with disruptive behavior problems. Future research foci may include more evidence-based research in school programs, Juvenile Justice systems, and outpatient clinics; and more rigorous testing of treatment regimens for their safety and effectiveness.

The Workgroup report and full listing of recommendations can be obtained from NIMH or online at www.nimh.nih.gov/childhp/councildesc.cfm.

NIMH Web Site Receives Highest Marks

The RAND Corporation reported in the *Journal of the American Medical Association* last spring on a study commissioned by the California Health Care Foundation that the NIMH web site (www.nimh.nih.gov) consistently received the highest marks for accuracy and completeness of its information on depression. It was also ranked as one of the two top high quality, not-for-profit mental health web sites in a study conducted by researchers at the Oregon Health Sciences Center.

SCIENCE ADVANCES & STORIES OF DISCOVERY

The NIMH basic science portfolio has never been more robust, as evident in our contributions to the NIH Report under the Government Performance and Results Act (GPRA) for FY 2001. Yet consistent with the theme of new opportunities for mental disorders treatment development research, science highlights in this document are categorized by clinical problems such as schizophrenia and depression. Within these clusters, a sampling of research findings that extends from basic neuroscience and molecular genetics to clinical trials and studies of public mental health practice (e.g., racial disparities in diagnosis; mental disorders and violence) illustrates the relevance of basic science to the Institute's public health mission, but also the often surprisingly short path from basic knowledge to clinical application.

Schizophrenia

Association of COMT Genotype and Risk for Schizophrenia. Schizophrenia is heritable, but it is likely that, rather than a single gene being responsible, multiple gene-gene and gene-environment interactions increase the risk for this disorder. Through several lines of research in both animals and humans, both the prefrontal cortex - a brain region - and the neurochemical dopamine systems have been implicated in schizophrenia. Now, NIMH intramural scientists have found a common alteration in a gene that controls the amount of dopamine in the prefrontal cortex. Inheritance of one form of this gene correlates with a person's difficulty in performing tasks that use the prefrontal cortex, which is found much more frequently in patients with schizophrenia than in the normal population. Although this is not a "gene for schizophrenia," it appears to alter dopamine function in the brain in a way that increases a person's risk for schizophrenia. After validating this finding, researchers will look at drugs that interact with this gene's function as a potential treatment for schizophrenia.

Brain Changes in Childhood Schizophrenia. Scientists have long searched for brain changes that correlate with psychotic symptoms and that might give insight into the causes of disorders such as schizophrenia. Several studies have shown changes in the volume of various brain structures, correlating with the diagnosis of schizophrenia. Previously, NIMH investigators showed that in the rare form of childhood-onset schizophrenia, total brain volume decreased, along with several other more local changes in brain structures. Using magnetic resonance imaging (MRI) to measure the sizes of different brain structures, this team recently examined a group of children who have psychotic symptoms, but are not diagnosed with schizophrenia, and compared them with the childhood schizophrenic group and with a group of healthy children. The non-schizophrenic psychotic group had brain structural changes similar to those seen in the schizophrenic children but significantly different from the normal children. In a separate study employing MRI technology, the investigators scanned a group of teenagers with schizophrenia during a period of 5 years, comparing these scans with those taken of a group of healthy controls. In the patients, a pattern of gray matter loss began in a small region of the parietal cortex, where gray matter is lost normally in teens. Over the course of the study, however, the images revealed a virtual wildfire of tissue loss spreading across the brains of these teens as the schizophrenia progressed, with the extent of these structural changes reflecting the severity and time-course of patients' symptoms, including hallucinations and depression. These studies provide valuable insight into the differences in the brains of children with schizophrenia and other psychotic disorders as compared to normal children. Identifying these changes and their causes will help researchers to understand the mechanisms of psychotic disorders and, in the long run, develop more effective treatments.

Racial Disparities in the Diagnosis and Treatment of Schizophrenia and Depression. An accumulating research literature suggests racial disparities in the delivery of medical care, particularly in the detection and diagnosis of illness and in receipt of treatment. With respect to psychiatric disorders, studies of persons without schizophrenia have shown that African Americans are less likely to be diagnosed with an affective disorder (e.g., depression) and more likely to be diagnosed with a psychotic disorder (e.g., schizophrenia). These differences could

reflect erroneous diagnoses or true differences in prevalence. The uncertainty is a concern to NIMH, given the significant proportion of people – an estimated 7 to 70 percent – with schizophrenia who have comorbid depression*, which can increase risk for rehospitalization and suicide. To address this question, NIMH-funded researchers examined the consequences of racial differences in the diagnosis and treatment of depression in people with schizophrenia. Psychiatric inpatients diagnosed with schizophrenia (n=123) were assessed for depression and for quality of life. Caucasians were seven times more likely to be diagnosed with depression than were African Americans. Depression was significantly associated with reduced life satisfaction in Caucasians but not in African-Americans. In a separate study, investigators found that African-Americans with schizophrenia were significantly less likely than Caucasians to report a past or current diagnosis or current treatment of depression, mania, or anxiety disorders. With respect to racial differences in services received, a review of Medicare claims for recipients with schizophrenia revealed that among adults under 65, Caucasians were almost one and a half times more likely than African Americans to have received an ambulatory care mental health service, and 1.3 times more likely to have received individual therapy.

*Delahanty J, Ram R, Postrado L, Balis T, Green-Paden L, Dixon L. Differences in rates of depression in schizophrenia by race. Schizophrenia Bulletin 2001; 27(1):29-38.

Improving Chances for Employment: Negative Symptom/Positive Symptom Reductions in Schizophrenia. Seventy to 90 percent of persons with schizophrenia are not employed at any given time*, and a majority of those who are employed work part time or are in non-competitive situations such as sheltered workshops; that is, the illness incurs a massive disability burden. Previous studies with small samples of clinic patients have suggested that negative symptoms – that is, limited speech, flat or unexpressive mood, lack of motivation, and impaired attention – are stronger predictors of employment difficulties and poor social functioning than are such positive symptoms as auditory hallucinations, delusions, and illogical thought. Other problematic symptoms include depression and side effects of antipsychotic medications, which can affect motor function and physical appearance. In an effort to identify improvements in treatment that would ameliorate the most troublesome symptoms and, in turn, enhance employment outcomes, NIMH-funded researchers recently analyzed the relationships among treatment, symptoms, and employment outcomes. Three employment measures were used: not employed, employed in a sheltered or supported job, and employed in a non-supported job. The symptom measures assessed the severity of positive and negative symptoms, comorbid depression, and medication side effects. Analysis of the data showed that a 20 percent reduction in negative symptoms from the median would increase the mean rate of unsupported employment by 2 percentage points to 11.6 percent; compared to a 0.26 percent increase for reducing symptoms of depression, a 0.4 percent increase for reducing positive symptoms, and a 0.27 percent increase from ameliorating the motor side effects of medications. Overall, however, even with treatment improvements that would lead to 40 percent reductions in all categories of symptoms, the rate of non-supported employment among people with schizophrenia would remain quite low, and only one-third of consumers would work for pay.

Expansions of supported employment opportunities and removal of work disincentives in public income-support programs are two additional measures that may help to increase employment participation.

*Slade E, and Salkever D: Symptom effects on employment in a structural model of mental illness and treatment: Analysis of patients with schizophrenia. Journal of Mental Health Policy and Economics (in press 2001).

Parsing PACT: What Are the Critical Components of Holistic Community Care for SMI? Programs of Assertive Community Treatment (PACT) for persons discharged from psychiatric inpatient facilities have been shown to be highly effective in preventing readmissions and improving quality of life. PACT programs include assertive engagement of the client, delivery of services in client-based settings, multidisciplinary teams with shared caseloads, 24/7 team availability, and individualized plans of care. Although the program is cost-effective when implemented as developed, PACT and similar multicomponent, community-based service options are organizationally complex and difficult to implement as designed. Because many communities cannot afford to implement all of the components of the original PACT model, several teams of NIMH-funded investigators working in geographically and culturally diverse locations sought to ascertain which components of PACT were particularly effective. Among elements they identified as key to good outcomes for clients are involved staff, long-term inclusion in services, employment specialists who provide rehabilitation services in actual community settings, good basic physical health care, and residential treatment for dually diagnosed (mental and substance abuse disorder) clients. Findings such as these appear to encourage legislators and policymakers to promote support for assertive community treatment services that communities can afford rather than to dismiss the entire treatment model as unaffordable in certain instances.

How Are Mental Disorders and Violence Related? Much of the stigma attached to mental illness stems from perceptions that persons with a mental illness have an unpredictable and indiscriminate propensity for violent behavior. In fact, the majority of individuals with a mental disorder are not violent or ever convicted of a violent crime; conversely, the vast majority of convicted offenders have no history of a psychiatric disorder. NIMH-funded investigators examined data on 961 young adults born in New Zealand in 1972-73; purposely, the researchers did not predetermine whether persons in the study sample had ever had contact with either the health or justice systems. The data revealed that young adults who met diagnostic criteria for alcohol dependence, marijuana dependence, and schizophrenia-related disorders were 1.9, 3.8, and 2.5 times, respectively, more likely than control subjects to be violent, with violence measured by self-reports of criminal offending and a search of official conviction records. People with at least one of these three disorders constituted one-fifth of the sample, but they accounted for one-half of the sample's violent crimes (10 percent of violence risk was uniquely attributable to schizophrenia-spectrum disorder), and risk for violence increased when two disorders co-occurred. Among individuals with a schizophrenia-related disorder, violence was best explained by excessive perceptions of threat and a history of conduct disorder. Only 8.1 percent of the 389 cohort members with one or more mental disorders were taking psychiatric medications, and only 3.1 percent had been hospitalized in the past year. These findings suggest that a substantial proportion of the burden of violence that alarms and injures the general public

may be attributed to a limited number of young adults who are prone to schizophrenia-spectrum disorders or are dependent on alcohol or other drugs and are untreated. Cognitive therapy or medication that reduces threat perceptions might reduce violence among individuals with schizophrenia-spectrum disorders. More broadly, findings further suggest that the link between adult mental disorders and violence is often rooted in certain aspects of childhood and adolescent conduct problems, and thus may be amenable to primary prevention.

Autism

Identification of Potential Linkage Sites and a Potential Vulnerability Gene for Autism. Autism is a neurodevelopmental disorder that typically begins in infancy and is evident by the age of three. These children suffer from a variety of disturbances such as language disorders, impairment in social interactions, and repetitive stereotyped movements. The genetic, or heritable, component is thought to account for as much as 90 percent of the liability to autism. Evidence to date is most consistent with the involvement of multiple genes, each of small effect, that together with nongenetic factors produces vulnerability. In order to find chromosomal regions, and ultimately genes, that play a role in the development of autism, the International Molecular Genetic Study of Autism Consortium collected and analyzed the DNA from eighty-three sibling pairs, at least one of whom was diagnosed with autism. They identified regions on two chromosomes that seem to be associated with the disorder. The most statistically significant linkage (or DNA region most highly associated with autism) was found on chromosome 2 and the next most significant linkage was on chromosome 7. Another suggestive, but less robust linkage, was identified on chromosome 16. The chromosome 7 linkage was corroborated last year by a separate study that pinpointed a specific gene called *WNT2* on chromosome 7 as a likely "candidate gene" for autism. *WNT2* is known to play a critical role in the development and behavior of many animals, and was also found in a human brain region (the thalamus) important for the integration of information. The corroboration of different groups using different methods is encouraging and will pave the way, ultimately, to earlier diagnosis and more effective treatments for individuals with autistic disorder.

Neurogenesis: New Memories Require New Cells. Building on the rapidly accumulating literature about adult neurogenesis – that is, the production of new brain cells – NIMH-funded researchers have reported that a form of associative learning, called trace conditioning, which depends on the hippocampus, requires newly generated neurons. Treatments that reduced the generation of neurons by approximately 80 percent in the brains of mature rats impaired trace conditioning. Since these studies were done *in vivo*, it was possible to observe the recovery of normal neurogenesis in the same animals. When trace conditioning was performed again, there was a clear recovery of memory function, indicating that some of the new neurons in the hippocampus must participate in the formation of new memories. The evidence of neurogenesis in adults has dramatically changed views about brain plasticity and the potential medical applications of this knowledge. This line of research hopefully will lead eventually to the capability to restore normal function in diseased or damaged brains by introducing healthy neurons into brain circuits that have become dysfunctional. The study also provides insights into

the important role behavior and experience may play throughout the life span in changing the structure and function of the brain itself.

Depression and Anxiety Disorders

Low Growth-Hormone Response to Pharmacological Challenge May Be a Reliable Biological Marker in Childhood Depression. NIMH-funded researchers have examined the stability of growth hormone (GH) response to infusion by growth hormone releasing hormone (GHRH) in depressed children. The research was prompted by findings from animal research that suggest that GH regulation is altered as a result of early stress or adverse social experiences, possibly conferring greater risk of depression. The clinical research entailed a test-retest study in a large sample of 82 depressed children, ages 7 to 15, compared with a matched control group of 55 normal children. A subsample of depressed children also was retested after being taken off all medications following full clinical remission from depression. The GH response to GHRH was found to be significantly lower in the depressed group, compared with normal children, and test-retest reliability of GH response to GHRH was stable. Importantly, GH response to GHRH remained low in children restudied during clinical remission from depression, indicating that it may be a biological trait marker for depression in children and adolescents as well as in adults. These findings may lead to a greater understanding of the mechanisms underlying GH regulation and its association with depression, as well as the development of new pharmacologic treatments.

Specifying Brain Structures Involved in Acute Fear versus Anxious Temperament. Temperamental anxiety, which is characterized by a stable pattern, or a trait, of shyness and inhibited behavior and can be identified in early childhood, places a person at risk to develop anxiety and depressive disorders. Research has shown temperamental anxiety to be associated with stable individual differences in asymmetric right prefrontal brain activity as assessed by EEG. Previous research in non-human primates that entailed lesioning the brain region called the amygdala suggested that it also plays a role in anxious temperament, similar to its role in acute, negative affective states such as sadness and fear. Because the amygdala lesions in these studies were nonspecific, however, and damaged overlying cortical and hippocampal regions, findings were of limited utility. Recently, investigators working with rhesus monkeys used selective fiber-sparing ibotenic acid lesions of the amygdala to identify regions specifically associated with the emotional responses of acute fear and anxious temperament. Behavioral and physiological tests designed to differentiate the two conditions were administered to two groups of monkeys: those that underwent lesion procedures and controls. On two tests of acute fear, the animals with amygdala lesions demonstrated less fear of snakes and less submissive behavior in the presence of a threatening adult monkey as opposed to the controls. Amygdala lesions did not affect measures of anxious temperament, however. No significant differences were shown between lesion and control monkeys on defensive responses to the human intruder paradigm or on asymmetric frontal EEG patterns, and there were significant correlations from before to after surgery for both measures in lesioned monkeys. In further specifying both the distinctive role of the amygdala in emotion and the particular emotional responses with which it is associated, this

research has significant implications for understanding problematic behavior in early childhood as well as the emergence of anxiety and depressive disorders.

Deciphering Brain Molecules Responsible for Learning and Expressing Fear. NIMH-funded investigators recently found that a particular brain region – the lateral nucleus of the amygdala (LA) – is an essential component of the neural circuit underlying Pavlovian fear conditioning. The LA also appears to be a crucial site of plasticity in this circuitry, although the synaptic mechanisms by which it mediates fear conditioning remain controversial. Fear-conditioning experiments enable researchers to study the structure and mechanisms of fear responses in animal models. One particular molecular receptor, the NMDA receptor, is considered critical to many types of learning, including learned fear. Investigators examined whether the drug ifenprodil, which blocks the NR2B subunit of the NMDA receptor, disrupts the acquisition and/or expression of fear conditioning in rats. Animals were trained in one of two testing chambers; one tested *tone memory* and the other *contextual memory*. When animals were given ifenprodil injections before fear conditioning, they exhibited a significant decrease in the normal fear response (freezing behavior) elicited by both the tone and context. When the drug was administered 24 hours after fear conditioning and prior to testing, only the highest dose prevented the expression of fear. Administering ifenprodil directly into the amygdala prior to fear conditioning and measuring fear response 1 hour later indicated that the drug interferes with memory acquisition, as opposed to memory consolidation. Although it is still undetermined whether NR2B is specific for the memory acquisition of fearful events or whether it has a more general role in learning, the study shows that learning processes, at least as associated with fear conditioning, occur very rapidly.

Story of Discovery: Understanding What Goes Wrong in PTSD: Pathways to Prevention

People with post-traumatic stress disorder (PTSD) seem haunted by the past, unable to escape the harrowing grip of a traumatic event. It pursues them – for months, years, or even a lifetime – through flashbacks, memories, nightmares, or frightening thoughts that can make routine activities at work, school, home, and with friends nearly impossible. They are often anxious and hypervigilant, trying to avoid potential reminders of the trauma. At the same time, PTSD can also bring emotional numbness, sleep disturbances, depression, irritability, outbursts of anger, and feelings of intense guilt.

Within the past few decades, PTSD, once seen as a hard-to-treat psychological disorder of "shell-shocked" veterans, has taken on a new identity. It is now seen as an increasingly treatable – and potentially preventable – psychobiological disorder that can affect children as well as adults. And it can follow a variety of terrifying events in addition to military combat, including violent personal assaults, disasters, and accidents. As research has advanced, PTSD has become a major focus for understanding how a broad range of traumatic experiences can affect several biological systems important in development and healthy functioning.

PTSD research progressed rapidly during the past decade. Early research established that traumatic stress reactions – especially PTSD – could lead to serious psychiatric symptoms, tended to be chronic in many traumatically stressed victims, and were among the most prevalent of mental health problems. Recent studies have focused more on the sources of very diverse symptoms in traumatized populations and on how symptoms remit or persist over time. Child and family studies of disasters and traumatic events have clarified age-specific psychological, social, and behavioral responses to traumatic stress, as well as approaches to intervention.

Still, predicting which traumatized individuals will go on to develop PTSD remains a challenge, as does finding effective treatments for all who suffer from this debilitating disorder. A number of symptoms are widespread among disaster survivors and are readily treated with appropriate short-term supportive therapy and reassurance, allowing many traumatized people to resume normal and healthy lives. Traumatized people with avoidance and numbing symptoms are more likely to develop PTSD, which requires ongoing treatment. Strong research evidence has shown that cognitive and behavioral therapies, in combination with selected medications, can alleviate symptoms and accompanying depression in many people with PTSD. But for those with persistent or chronic PTSD, treatments are often only partially successful, underscoring the importance of developing preventive interventions that can decrease the chances of developing chronic PTSD.

To aid those at risk for PTSD, researchers are seeking clues in basic research on cognitive processing, arousal, and memory. A particularly promising body of research links the psychological aspects of traumatic stress reactions to the many neurobiologic systems activated under stress that allow individuals to assess and respond appropriately to potential dangers. Traumatic events particularly affect the sympathetic nervous system (SNS) and the hypothalamic-pituitary-adrenal (HPA) axis, which mediates the biologic stress response. The SNS plays a central role in the organism's fight/flight response by increasing blood flow to muscles and vital organs and mobilizing energy for use by large muscle groups. The catecholamines epinephrine and norepinephrine are two key neurotransmitters related to SNS activity. Released from the adrenal gland during periods of high stress, they act upon the brain's hippocampus to aid memory storage, so that emotionally salient or arousing events are more likely to be remembered than emotionally neutral events. NIMH-supported research suggests that in some people at risk for PTSD, the SNS over-responds to stress, which is most evident when these individuals are re-stressed. In particular, recent studies have shown that traumatized individuals who have higher heart rates in the emergency room – indicating greater SNS activation – are more likely to develop PTSD later.

The HPA axis plays a restorative role in stress that can also be disrupted by trauma. The hypothalamus releases corticotropin-releasing factor (CRH), leading eventually to the adrenal gland's release of cortisol, which helps to shut down a variety of neurobiologic reactions set in motion by stressful stimuli – including the catecholamine surge. Cortisol levels normally rise in response to stress. However, several studies have found that initial cortisol responses are lower in trauma victims who later develop PTSD than in those who do not; further, individuals with PTSD often have lower cortisol levels than normal controls. This may indicate abnormalities in the feedback mechanisms regulating cortisol. One hypothesis developed from NIMH-funded research holds that when, in response to trauma, cortisol cannot buffer norepinephrine's effects, the excess of norepinephrine acting on the hippocampus causes traumatic memories to form. In an important study addressing the relationship between catecholamine activation and acquisition of memory, researchers found that persons given propranolol, a drug that blocks adrenergic activation, before being exposed to emotionally disturbing and neutral pictures later recalled less about the disturbing pictures but not the neutral ones. In contrast, persons given a placebo had significantly better memory for the emotional pictures than the neutral ones, suggesting that beta-adrenergic activation is involved in the enhanced memory associated with arousing or emotional experiences. Although enhanced memory for arousing or fearful situations may have significance for survival (leaving one less vulnerable to potentially dangerous situations), these memories, in the form of intrusive recollections and nightmares, also may repetitively haunt the trauma survivor long after the event. Moreover, when the traumatic event is relived through intrusive recollections, flashbacks and nightmares, epinephrine and norepinephrine are again released, leading to an additional strengthening of the memory and an even greater likelihood of subsequent intrusive recollections. This process could help explain the progression from subclinical to clinical PTSD seen in patients with delayed onset PTSD.

Based on this knowledge, new research is examining whether chemicals that block abnormal stress responses after a trauma can prevent or reduce the development of PTSD. One NIMH-funded study is exploring whether propranolol given within hours of a traumatic event can prevent the onset of PTSD. This research stems directly from prior studies of stress and catecholamines. Another ongoing study is comparing the preventive effects of propranolol with another drug, gabapentin, which is normally used to prevent seizures in epilepsy. Gabapentin was chosen to counteract the presumed tendency of repeated episodes of stress to increase activation in brain structures such as the amygdala that organize responses to aversive stimuli. Finally, new NIMH-supported studies are expanding our

ability to predict those who may be at risk for PTSD. In one large-scale prospective study, recruits to police, fire, and emergency medical technician units are given a battery of tests over time. The investigator hypothesizes that recruits who are more responsive to aversive stimuli are more likely to develop PTSD after traumatic events at work.

Converging multi-disciplinary studies have already led to the development and testing of new preventive and treatment interventions for PTSD. While much remains to be clarified – such as the exact causes of lowered cortisol levels in people with PTSD and recently reported neuroanatomical differences in people with PTSD – research directions for the future point to exciting pathways of discovery and improved treatment and prevention.

"Continuation Phase" Psychotherapy Can Help Prevent Recurrence of Depression. Eighty percent of patients who have recovered from major depressive disorder (MDD) relapse in the absence of prophylactic treatment. To reduce this risk, clinicians often prescribe continuation phase antidepressant medication to prevent relapse (should the index episode continue) and maintenance medication to prevent recurrence (i.e., a new episode). Although cognitive therapy (CT) may reduce relapse and recurrence when patients learn to use the associated skills over time, the long-term effects of CT have not been well specified. Investigators have developed an intervention called "continuation-phase CT" (C-CT). Initially, they treated patients with major depression for 20 sessions of CT. Unmedicated responders were randomized to either 8 months of C-CT or control (evaluation without CT). Over the 8-month intervention period, C-CT significantly reduced relapse rates more than in the controls (10 vs. 31 percent). Over 24 months, C-CT significantly reduced relapse and recurrence estimates among patients with early-onset MDD (16 vs. 67 percent in controls) and among those with an unstable remission during the acute treatment phase (37 vs. 62 percent for the control group).

Treating Insomnia with Cognitive Behavioral Therapy, Not Medications. Persistent primary insomnia (PPI) is a disorder of middle-stage sleep maintenance that affects about 5 percent of the general population and 20 percent of patients who present clinically for treatment of sleep-related complaints*. Such insomnia is predictive of the development of clinical depression and associated with increased use of health care services. Though most commonly treated with sedative hypnotic or antidepressant medications, long-term use of these drugs is associated with various adverse side effects and patients typically relapse into prior insomnia patterns after discontinuing their use. Results of behavioral interventions with PPI patients have been mixed. In a recent study, NIMH-funded investigators randomly assigned 75 patients with PPI to 6 weeks of treatment with: (a) a hybrid cognitive-behavioral therapy (CBT) involving sleep education, stimulus control methods, and time-in-bed restrictions; (b) progressive muscle relaxation training; or (c) a quasi-desensitization approach that constituted a behavioral placebo treatment relative to PPI. At 6 months after completion of treatment, results indicated that CBT led to more and well-maintained improvement on most sleep measures, and to a greater normalization of sleep and subjective symptoms. Findings demonstrate a sleep-oriented CBT to be an efficacious intervention for PPI that offers the added benefit of reducing the number of

medications prescribed to many middle-age and older individuals. There is suggestive evidence that this intervention is influencing essential mechanisms involved in the development and persistence of sleep-maintenance difficulties.

*Jarrett RB, Kraft D, Doyle J, Foster BM, Eaves GG, and Silver PC: Preventing recurrent depression using cognitive therapy with and without a continuation phase. Archives of General Psychiatry 58: 381-387, 2001.

Reducing Individual and Societal Burden of Depression: Results from a Community Primary Care Intervention Trial. A randomized trial of practice interventions to improve quality of care for depression showed that typical community-based, primary care practices can implement a structured program, even as different practices vary in their implementation of different components. These range from training expert clinical leaders to education of clinicians and patients and providing resources for ongoing medication management. When practices implement their own structured programs, benefits for depressed patients are evident in clinical status, quality of life, and employment outcomes improvement. A program that includes support for access to effective psychotherapy for depression extends improvements in patients' quality of life to nearly two years, which is an impressively long follow-up time for demonstrating improvement of any kind of treatment program for depression. The effect on employment was also substantial – a 5 percentage point advantage in employment retention for the intervention group has relevant positive implications for employers, given the high prevalence of depressive disorders in community samples.

Making Employers Care about Mental Disorder Related Disability: The Problem of "Presenteeism". When an employee goes to work ill, he or she likely functions at a diminished capacity. This problem, labeled "presenteeism," is of substantial concern to employers. In the case of mental disorders such as depression, the disabling effects of the illness that contribute to presenteeism are exacerbated by the stigma associated with mental disorders that often works against people acknowledging their illness much less seeking help. Analyzing data from a longitudinal survey of more than 6,000 employees from three corporations in 1993 and 1995, researchers examined the link between depression, health care satisfaction, and work outcome. The study revealed that those with depression were twice as likely to miss work in both years as those without depressive symptoms in either year. In addition, depressed employees had seven times the rate of decreased work effectiveness. This research underscores the work-related costs of depression and the importance of treating depression in terms of its potential impact on work productivity.

Disorders Associated with Depression

Cognitive-Behavioral Therapy for Treatment of Bulimia Nervosa. Investigators in two academic medical centers tested the relative efficacy of two forms of psychotherapy in ameliorating symptoms of the eating disorder bulimia nervosa. Cognitive-behavioral therapy (CBT) is an approach that concentrates on defining how a person's behaviors have an impact on problems that contribute to illness, and interpersonal therapy (IPT) is an approach that addresses health problems by focusing strictly on current conflicts and interpersonal problems. Subjects were randomized to receive either CBT or IPT weekly over 20 weeks, and then followed up 1

year post-treatment. Among those completing the full course of treatment, 45 percent of the CBT group versus 8 percent of the IPT group achieved recovery by the end of the acute treatment period. CBT responders also showed quite stable maintenance of their treatment gains, with 40 percent of treatment completers still recovered at the 1-year follow-up point. Although the slower-acting IPT produced delayed improvements that continued to mount subsequent to treatment, analysis of change in different symptom clusters indicated that CBT was superior in altering the primary behavioral symptoms associated with bulimia nervosa. The therapies were equivalent in treating depressive symptoms that are also common in these patients (as measured on such dimensions as weight and shape concerns, self-esteem, and interpersonal functioning). The investigators concluded that CBT is to be considered the preferred treatment for bulimia nervosa because it produces clinical benefits more quickly than IPT and, overall, is efficacious with a larger percentage of patients.

Negative Impact of Parental HIV Illness Can Be Prevented in Their Children. About 80,000 children in the United States have been orphaned by AIDS after living with an ill parent. Loss of a parent can reduce these youngsters' self-esteem and increase depression, anxiety, conduct disturbance, academic difficulty, somatic complaints, and suicidal acts. Recognizing how well HIV-infected parents can take care of their families as well as their illness is likely to influence their children's long-term development and well-being, NIMH-funded investigators assessed an intervention in a population of 307 single Latino and African-American women with AIDS and their 412 adolescent children. Subjects were assigned either to a "standard care" control condition or to an intensive intervention designed to improve behavioral and mental outcomes for both adolescents and their parents. One module of the intervention, for parents alone, focused on coping with illness, fear, anger, sadness, and the meaning of illness, as well as disclosure decisions and planning for the future. Another module, for parents and adolescents, focused on planning a legacy, including making custody arrangements, resolving home conflicts, dealing with drugs, encouraging safer sex, and setting future goals. Control group participants were visited by an interviewer every 3 months and asked about disclosure, custody, and risk behaviors. During the study's 2-year course, 44 percent of the parents in both groups died. Compared to controls, adolescents in the intensive intervention program reported significantly lower levels of emotional distress, multiple problem behaviors, conduct problems, and family-related stressors, as well as higher self-esteem. Parents with AIDS also reported significantly lower levels of emotional distress. The intervention resulted in important, long-term changes that could, if more broadly implemented, reduce the societal costs of AIDS.

Story of Discovery: Enhancing Treatment Adherence in AIDS and Schizophrenia

AIDS and schizophrenia are extremely destructive disorders that until recently elicited fear and fatalism in equal measure. Both, however, have been transformed by increasingly effective treatments over the past decade. Cures remain elusive, but properly administered treatment can vastly improve the quality and duration of life. To fully realize the public health benefits of treatment, however, patients need to be highly engaged in their care and motivated both to keep taking medications that significantly interfere with their perceived quality of life. They also must participate in psychosocial therapies over long periods, especially when symptoms lessen. Moreover, treatment regimens must be designed to reach disenfranchised populations, including the urban poor. Communities lacking

resources and access to high-quality care have suffered the greatest toll from mismanagement of severe mental illness, and continue to be disproportionately affected in the AIDS pandemic.

The efficacy of antiretroviral drug therapy (ART) has dramatically altered the landscape of HIVtreatment. Treatment can inhibit virus replication and reduce virus load to undetectable levels-with much improved clinical outcomes. But not all patients are willing or able to maintain complex medication regimens, and partial or poor adherence can lead to the resumption of rapid viral replication, poorer survival rates, and the mutation of treatment-resistant strains of HIV. The widespread transmission of resistant HIV strains is becoming an increasingly serious public health concern in the United States and throughout the world.

Through the combined efforts of NIH staff and extramural researchers, innovative interventions to strengthen HIV treatment adherence have rapidly evolved to meet the needs of the changing pandemic. Moreover, advances in the HIV/AIDS arena have paralleled increased attention to enhanced models for treatment adherence for severe mental illnesses, such as schizophrenia. Like their counterparts living with HIV, many people with schizophrenia face difficult life circumstances that impede their capacity to benefit from effective medical and psychosocial treatments. As a result, many individuals reject therapy outright, discontinue treatment prematurely, or selectively ignore components of prescribed treatment programs. Non-adherence heightens the likelihood of symptom relapse, collateral behavioral disability, and a downward spiral of chronic impairment.

Effective psychosocial interventions for HIVadherence have capitalized on factors related to the individual (motivation, self-efficacy, substance use, neuropsychiatric symptoms, treatment of co-occurring depression), characteristics of the treatment environment (access to care, therapists' attitudes and behavior, social reinforcement of change efforts), and features of the natural environment (family support, social networks, stigma related to mental illness and/or HIV/AIDS). For example, in the mid-1990's, NIMH-funded researchers found that with a theoretically grounded behavioral intervention, adequate HIV treatment adherence levels could be reached even among the most difficult of populations: homeless men and women with severe mental illness and substance abuse. There had been debate at that time about whether protease inhibitors (PIs) should be given to people living in streets, shelters, and residential hotels because their residential instability may compromise adherence to treatment. Using three biological and behavioral measures, investigators evaluated adherence in HIV-infected homeless and marginally housed people on PI therapy. Contrary to expectations, adherence was good, with 38% of the population having over 90% adherence. Moreover, adherence was strongly related to viral load; a 90% adherence rate was required to produce 60% undetectability of virus. These findings provided evidence to providers across the country that treatment decisions should not be based solely on age, ethnicity, or socioeconomic status. If the degree of behavioral, social, and systemic intervention matches the patients' needs for support, substantial barriers can be overcome.

Other NIH-supported researchers have examined how health literacy skill among inner-city medical patients affects HIV treatment adherence and how interventions can bridge this gap to reduce disparities in health outcomes. They found that HIV-infected patients who miss taking at least one antiretroviral medication in a 2-day period have greater difficulty comprehending simple medical instructions than do people who are treatment adherent. Further, men and women with higher health literacy had significantly lower viral loads than their less literate counterparts. As AIDS continues to afflict those living in poverty, and as antiretroviral medications become increasingly available in the developing world, treatment and adherence interventions for people with limited literacy skills become more of a public health priority. Behavioral intervention strategies that rely on pictographs and other non-verbal modalities are being developed and evaluated. These kinds of strategies also have enormous potential to compensate for the cognitive deficits found in schizophrenia.

Several research teams have collaborated on cross-cutting interventions grounded in principles of motivational interviewing--a directive, client-centered approach to counseling that can increase patients' motivation to adhere to treatment recommendations. Instead of simply telling patients to follow a prescribed treatment, this intervention attempts to elicit and reinforce their own reasons for adherence (such as avoiding rehospitalization). These

techniques help both psychiatric and HIV-infected patients to recognize discrepancies between their stated goals and current problematic behaviors (e.g., non-adherence with aftercare). They also increase patients' confidence in their ability to remove barriers to adherence (e.g., arranging for medical transportation). A randomized trial was recently conducted to test how well motivational interviewing can increase attendance at aftercare appointments by patients with both psychiatric and substance use disorders. Among patients given standard discharge instructions plus a brief motivational intervention just prior to hospital discharge, the rate of attendance at initial appointments was more than twice that of patients given only standard discharge planning.

The clinical success of ART medications has added urgency to research on treatment adherence and that, in turn, will benefit all of medicine and health care. The conceptual and methodological advances were quickly adopted in cross-cutting efforts among persons with severe mental illness. NIMH-funded projects will continue to focus on particular behaviors and environments that may pose special challenges to a person's adherence to treatment. These projects will target integrated service delivery of both mental health and medical services, staff training, economic and sociocultural barriers, and other structural factors that affect access and adherence to effective treatment of AIDS and schizophrenia.

NEW INITIATIVES

Targeting Cognitive Deficits in Schizophrenia: Cognitive impairment, rather than delusions and hallucinations, may be the major determinant of functional outcome in people with schizophrenia. A significant obstacle to enhancing treatments in this domain is the lack of adequately reliable and valid measurement tools to assess cognition as a clinical treatment target. Without scientific consensus regarding cognitive impairments, the FDA cannot recognize cognition as a valid treatment endpoint for industry-sponsored research and drug registration. Thus, a new NIMH initiative supports the creation of an expert Schizophrenia Cognition Measurement Development Group to: (1) review core cognitive constructs related to schizophrenia disability; (2) evaluate the most promising experimental and clinical measures of these constructs; (3) determine functions that may require additional measurement development; and (4) seek broad scientific consensus to define elements of a standardized NIMH cognitive assessment battery, along with procedures for ensuring reliable administration of cognitive tests in clinical treatment trials. Building on the refinement of tools for assessing cognition, NIMH will support development of a network of clinical research performance sites (The Cognition Treatment Network). The Network will identify, evaluate, and acquire pharmacological agents of potential value in the treatment of cognitive deficits in schizophrenia and related psychoses, and test pharmacological augmentation strategies targeting cognitive impairment. The overall goal of the Network is to conduct phase II clinical trials to evaluate the efficacy of pharmacological augmentation strategies to improve cognition in schizophrenia.

Developing New Measures of Depression: Significant limitations in the methods available to assess depression as a clinical target in treatment trials constrain our ability to develop and test new therapeutic interventions for this common and disabling mental disorder. This NIMH initiative seeks to establish new endpoints for depression treatment assessment through creation of a Depression Measurement Development Group that will address questions similar to those pertinent in studies of schizophrenia. Broad scientific consensus will be sought to define elements of a standardized NIMH depression assessment tool along with procedures for ensuring reliable administration of the tool in clinical treatment trials.

Genome, Transciptome, Protenome: New genomic tools and technology will enable the exploration of neurobiological phenomena on a scale not previously possible (i.e., all genes in a genome, all transcripts in a cell, all metabolic processes in neural tissue). These advances will lead to the accumulation of vast quantities of data. New technologies for assaying gene expression patterns, protein structure, protein-protein interactions, etc., will provide additional data. How to process and interpret these data, and make them accessible to neuroscientists working on a wide variety of problems is a fundamental challenge. Bioinformatics projects supported under this significant expansion will permit the comprehensive study of each protein and its corresponding transcript expressed in the nervous system. This, in turn, will accelerate our understanding of the genetic and molecular basis of mental disorders.

Social Neuroscience: New technologies for studying the human brain are beginning to make it possible to engage in a systematic examination of the neural circuits and mechanisms involved in social, cognitive, and affective information processing, and social behavior. Collectively, these will facilitate the development of theories about the underlying processes that enable the brain to perform its "social functions." Applying the concepts and tools of neuroscience (e.g., brain imaging, lesion methods, neurodegenerative diseases, transcranial magnetic stimulation (TMS), computational modeling) will shed new light on various areas of inquiry in social psychological processes, such as attitude change, stereotyping, person perception, social decision making, empathy and interpersonal relationships, as well as self-perception, self-regulation, and emotion-regulation. Likewise, social and developmental behavioral research has a repertoire of sophisticated paradigms for subtle manipulations of affect, attention, or motivation; these offer considerable promise for linking cognitive neuroscience investigations with social behaviors. Ultimately, this knowledge will contribute to the understanding of the biobehavioral processes involved in social behaviors related to normal development and mental health, and in disorders such as autism, schizophrenia, and various personality disorders. Opportunities for collaboration will be extended to NICHD, NIA, and NINDS.

Identification of Developmental Changes in Adolescent and Maturing Brain: Extensive research in basic developmental neuroscience has focused on the embryonic and early postnatal periods of brain development. In FY 2003 the budget will focus on later developmental periods, which represent critical junctures in the pathophysiology of neuropsychiatric disorders. Developmental transitions during puberty represent a period of profound growth and refinement of existing, yet relatively nascent, neural pathways. Modification of neural circuitry in the adolescent and post-adolescent brain by experiential, environmental, and endogenous factors represents an important area for future research. Maturation-dependent alterations in baseline plasticity and resilience of neural circuitry are also of importance in understanding the physiology of developmental transitions to a fully mature central nervous system. A recent workshop entitled "Future Research Opportunities in Developmental Neuroscience at NIMH" provided the impetus for this initiative. NIMH will develop research programs for obtaining grants on elucidating physiological changes underlying the crucial developmental windows related to adolescence.

Combination Treatments of Mental Disorders in Adults and Older Individuals: Research on treatments for mental disorders traditionally has entailed the use of a single treatment modality in a more narrowly defined sample of patients. In practice settings, however, multiple interventions are typically used in various combinations based as much on convenience, assumption, and educated guesswork as on evidence-based medicine. Several NIMH-supported large-scale clinical trials have begun to explore with greater rigor the use of combination treatments in some subtypes of mental disorders, e.g., bipolar depression. This initiative would extend those efforts to include a range of treatment modalities across the breadth of mental disorders. NIMH will issue request for applications (RFAs) directed at the treatment and preventive interventions of mental disorders, especially mood and anxiety disorders, schizophrenia, and Alzheimer=s disease, utilizing a combination of medication with a second medication, a nonpharmacologic somatic treatment, or a psychosocial intervention. Studies of complementary treatments and augmentation strategies for nonresponding patients will be supported. Additional interventions may be directed at optimizing clinical response, reducing adverse effects, or preventing relapse. Particular emphasis will be placed on random treatment assignment.

Combined Interventions for Child and Adolescent Mental Disorders: Young children, who by definition are in a state of rapid change and growth, are being prescribed psychotropic medications that lack both long-term safety and efficacy data, raising significant public health concerns. With rare exceptions, psychotropic medications have not been tested on children under age 6, and many have not been tested on children under age 16. Even where there has been evidence of the superiority of psychopharmacologic treatment for children, parents and teachers have expressed greater satisfaction when treatments included a psychosocial component. Given these concerns, NIMH has initiated studies to test sequenced treatments for young children (e.g., Treatment of Attention Deficit Hyperactivity Disorder in Preschool and School-Age Children [PATS]). However, there are many other disorders that would benefit from expansion of the portfolio of combined/multi-modal treatment research. The development of strategies within likely treatment contexts (pediatric practices, schools, foster-care) and the involvement of parents as active participants in treatment is needed to better anticipate the translation of effective treatments to communities. This initiative will include workshops and a program announcement for research to consider promising combination and sequenced treatment strategies, and will encourage new investigators to the area (either established adult treatment investigators or junior researchers).

Testing the Efficacy and Safety of Interventions for Children with Autism: The Studies to Advance Autism Research and Treatment (STAART) Centers Program, which is being launched, will be expanded in FY 2003 with issuance of a second RFA for additional centers of excellence in autism research. In addition, the FY01 initiatives to stimulate innovative development of novel treatments of autism will lead to further expansion in FY 2002 and FY03. In FY2001, NIMH, NICHD, NINDS, and NIDCD, awarded seven 3-year grants for development and pilot studies of innovative treatments for autism. Several grants that were not funded will be revised to address reviewers' concerns and resubmitted for funding in FY2002/2003. Treatments with promising results in the pilot phase will be directed toward full clinical trials

over the next several years. NIMH is particularly committed to expanding the portfolio of psychosocial/behavioral treatment research in autism, and will facilitate the growth of this line of research through working meetings for new and potential investigators.

CENTER FOR MENTAL HEALTH RESEARCH ON AIDS

The NIMH AIDS research activities for FY 2003 are in accord with the priorities outlined in the NIH Office of AIDS Research Strategic Plan, and fall into two general categories. The first is the development and implementation of behavioral prevention interventions targeting the spread of HIV infection. Researchers pursue these interventions at different levels, including individuals, couples, families, institutions, and the community, with populations at risk. NIMH is expanding efforts to address the emerging increase in infections among adolescents and heterosexuals, particularly in minority communities. A high priority area includes intervention development and implementation targeted for seropositive adults, adolescents and children to prevent high risk behaviors that put others at risk for HIV infection, to ensure adherence to complex medical regimens, and to help HIV-infected individuals and their families cope with the complexities of living with HIV. In FY 2003, NIMH, in collaboration with the CDC, will conduct effectiveness studies in order to adapt and implement efficacious primary and secondary prevention programs into public health settings. A key component of this activity will be to provide training to increase the proficiency of researchers and service providers to undertake innovative studies and address issues of health disparities in communities of color.

The second general category of research supported by the NIMH AIDS Program addresses the neurological and neuropsychological complications of HIV infection, and the cellular and molecular mechanisms underlying these manifestations. NIMH is studying the long-term effects of current antiretroviral therapies on the neurocognitive and motor dysfunction experienced by many infected individuals. Research is addressing the impact of both viral and cellular genetics on the development of HIV/CNS disease, and the potential for the CNS to serve as a protected reservoir for virus. Most of the antiretrovirals currently in use have limited effect in eliminating virus within this compartment. Accordingly, NIMH is pursuing research aimed at the development of novel therapeutic agents and/or delivery systems that cross the blood brain barrier to prevent or treat HIV/CNS dysfunction. In addition, NIMH is implementing a multi-site study to evaluate the long-term effects of current potent antiretroviral therapy on HIV-induced nervous system disease. Another high priority program supported by NIMH is the National NeuroAIDS tissue network which provides high quality CNS tissue for research obtained from HIV-infected patients who have had standardized clinical and neuropsychological assessments prior to death.

- **Addressing HIV and Hepatitis Co-infection**: This new NIMH initiative is designed to enhance understanding and treatment of HIV and hepatitis C (HCV) co-infection through epidemiologic, behavioral, prevention, and biological research. HCV is one of the most significant co-infections found among HIV-infected individuals; at present, 400,000 Americans are co-infected with HIV and HCV. Co-infection with two or more complicated, potentially fatal illnesses has important effects upon both quality of life and

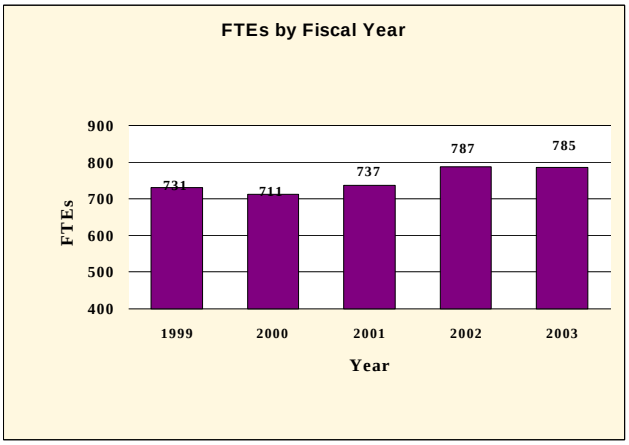
survival. For example, HCV reportedly increases HIV disease progression. People with severe mental illness (SMI), especially those with comorbid substance abuse, are at elevated risk for multiple infections of HIV, HCV, and hepatitis B (HBV). They generally suffer poor health, yet often do not receive consistent or appropriate medical care. There is little professional or public preparation that addresses HIV/HCV co-infection in the public mental health system. This initiative will encourage studies that seek ways to halt the cascading effects of these infections. Research on jointly delivered HCV and HIV prevention messages will be encouraged, as well as studies that examine the crucial psychosocial issues and psychiatric problems facing co-infected individuals, and the development and evaluation of integrated treatment and prevention programs.

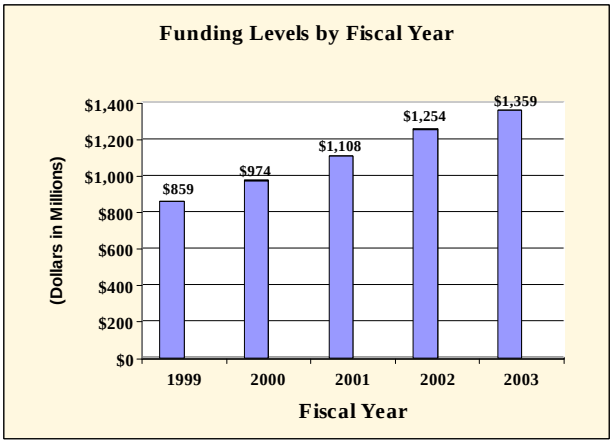
In FY 2003 NIMH will expand its collaboration with the Substance Abuse and Mental Health Services Administration in developing its health services research portfolio to enable a more rapid translation of research findings into the delivery of mental health treatment and prevention services.

NIMH BUDGET POLICY

The Fiscal Year 2003 budget request for the NIMH is $1,359,008,000 including AIDS, an increase of $105,358,000 and 8.4 percent over the FY 2002 level.

A five year history of FTEs and Funding Levels for NIMH are shown in the graphs below. Note that Fiscal Years 2000 and 1999 are not comparable for the Managerial Flexibility Act of 2001 legislative proposal.





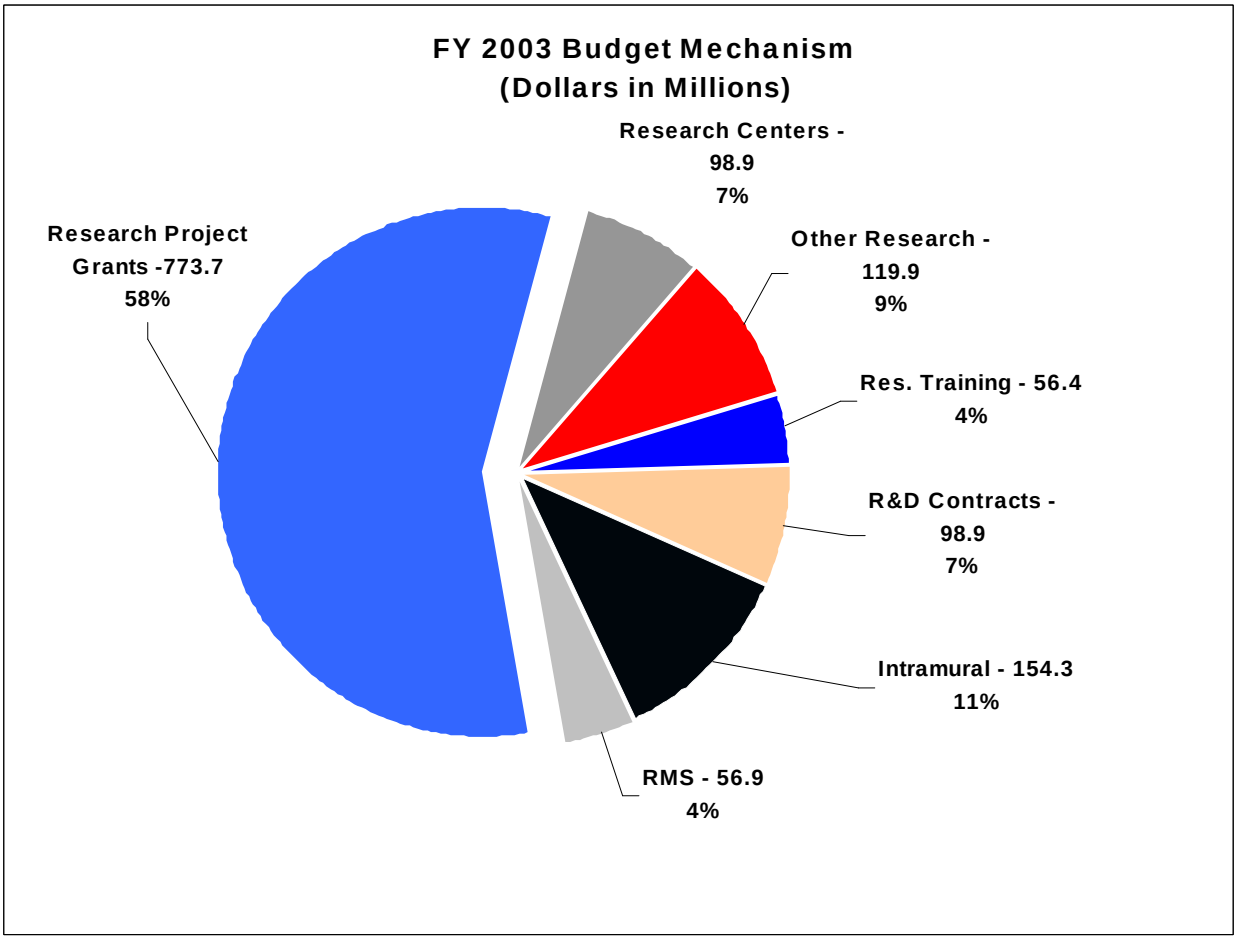
One of NIH's highest priorities is the funding of medical research through research project grants (RPGs). Support for RPGs allows NIH to sustain the scientific momentum of investigator-initiated research while providing new research opportunities. The Fiscal Year 2003 request provides average cost increases for competing RPGs equal to the Biomedical Research and Development Price Index (BRDPI), estimated at 4.0 percent. Noncompeting

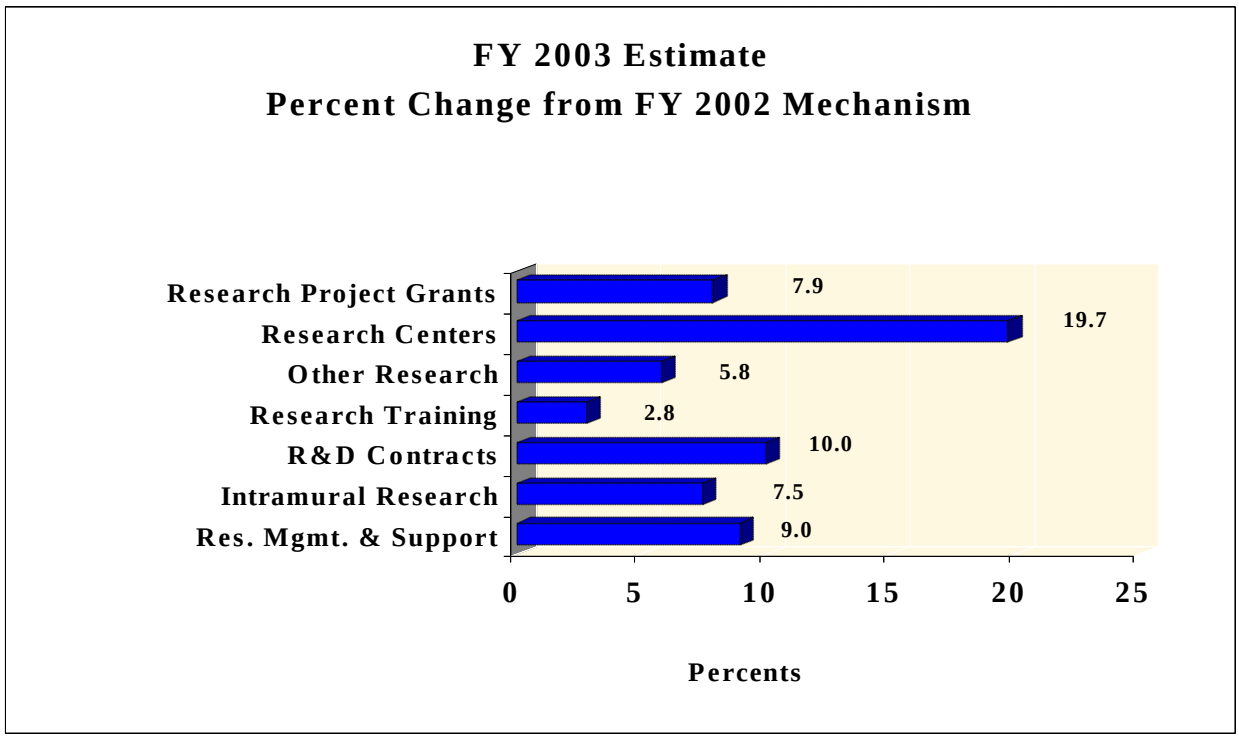
RPGs will be funded at committed levels which include increases of 3 percent on average for recurring direct costs.

Future promises for advancement in medical research rest in part with new investigators with new ideas. In the Fiscal Year 2003 request, NIMH will support 1,624 pre- and postdoctoral trainees in full-time training positions, the same number as in FY 2002. Stipend levels for NRSA trainees will increase by 4 percent over Fiscal Year 2002 levels.

The Fiscal Year 2003 request includes funding for 62 research centers, 587 other research grants, including 87 clinical career awards, and 105 R&D contracts. The R&D contracts mechanism also includes support for 50 contracts for the Extramural Clinical and Pediatric Loan Repayment Programs. Intramural Research and Research Management and Support receive increases of 7.1 percent and 9 percent, respectively, over FY 2002.

The mechanism distribution by dollars and percent change are displayed below:




FY 2003 Estimate
Percent Change from FY 2002 Mechanism
Research Project Grants
Research Centers
Other Research
Research Training
R&D Contracts
Intramural Research
Res. Mgmt. & Support
7.9
19.7
5.8
2.8
10.0
7.5
9.0
0
5
10
15
20
25
Percents

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
TOTAL - Current Law
Budget Mechanism

MECHANISM	FY 2001 Actual		FY 2002 Appropriation		FY 2002 Current Estimate		FY 2003 Estimate	
Research Grants:	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	1339	$432,509,000	1492	$491,437,000	1492	$491,437,000	1581	$533,618,000
Administrative supplements	(60)	4,251,000	(60)	7,945,000	(60)	7,945,000	(60)	8,088,000
Competing:								
Renewal	128	44,695,000	134	48,802,000	134	48,802,000	136	51,512,000
New	468	131,118,000	490	143,168,000	490	143,168,000	499	151,630,000
Supplements	6	1,034,000	6	1,143,000	6	1,143,000	6	1,288,000
Subtotal, competing	602	176,847,000	630	193,113,000	630	193,113,000	641	204,430,000
Subtotal, RPGs	1941	613,607,000	2122	692,495,000	2122	692,495,000	2222	746,136,000
SBIR/STTR	78	20,316,000	88	24,627,000	88	24,627,000	96	27,519,000
Subtotal, RPGs	2019	633,923,000	2210	717,122,000	2210	717,122,000	2318	773,655,000
Research Centers:								
Specialized/comprehensive	51	72,557,000	54	82,639,000	54	82,639,000	62	98,944,000
Clinical research	0	0	0	0	0	0	0	0
Biotechnology	0	0	0	0	0	0	0	0
Comparative medicine	0	0	0	0	0	0	0	0
Research Centers in Minority Institution	0	0	0	0	0	0	0	0
Subtotal, Centers	51	72,557,000	54	82,639,000	54	82,639,000	62	98,944,000
Other Research:								
Research careers	407	53,142,000	430	57,314,000	430	57,314,000	443	60,179,000
Cancer education	0	0	0	0	0	0	0	0
Cooperative clinical research	29	18,211,000	20	15,474,000	20	15,474,000	21	17,593,000
Biomedical research support	0	0	0	0	0	0	0	0
Minority biomedical research support	0	0	0	0	0	0	0	0
Other	118	34,431,000	123	40,464,000	123	40,464,000	123	42,081,000
Subtotal, Other Research	554	105,784,000	573	113,252,000	573	113,252,000	587	119,853,000
Total Research Grants	2624	812,264,000	2837	913,013,000	2837	913,013,000	2967	992,452,000
Training:	FTTPs		FTTPs		FTTPs		FTTPs	
Individual awards	381	10,912,000	381	11,744,000	381	11,744,000	381	12,073,000
Institutional awards	1202	38,757,000	1243	43,142,000	1243	43,142,000	1243	44,350,000
Total, Training	1583	49,669,000	1624	54,886,000	1624	54,886,000	1624	56,423,000
Research & development contracts	72	72,071,000	111	89,877,000	111	89,877,000	105	98,865,000
(SBIR/STTR)	(13)	(1,289,000)	(13)	(1,950,000)	(13)	(1,950,000)	(6)	(1,401,000)
	FTEs		FTEs		FTEs		FTEs	
Intramural research	449	124,566,000	493	140,352,000	493	139,819,000	489	150,305,000
Research management and support	288	44,492,000	294	50,498,000	294	50,498,000	296	55,043,000
Cancer prevention & control	0	0	0	0	0	0	0	0
Construction		0		0		0		0
Total, NIMH	737	1,103,062,000	787	1,248,626,000	787	1,248,093,000	785	1,353,088,000
(Clinical Trials)		(171,238,000)		(193,835,000)		(193,835,000)		(210,052,000)

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
TOTAL - Accrued Costs for Retirement and Health Benefits
Budget Mechanism

MECHANISM	FY 2001 Actual		FY 2002 Appropriation		FY 2002 Current Estimate		FY 2003 Estimate	
Research Grants:	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting								
Administrative supplements								
Competing:								
Renewal								
New								
Supplements								
Subtotal, competing								
Subtotal, RPGs								
SBIR/STTR								
Subtotal, RPGs								
Research Centers:								
Specialized/comprehensive								
Clinical research								
Biotechnology								
Comparative medicine								
Research Centers in Minority Institutions								
Subtotal, Centers								
Other Research:								
Research careers								
Cancer education								
Cooperative clinical research								
Biomedical research support								
Minority biomedical research support								
Other								
Subtotal, Other Research								
Total Research Grants								
Training:	FTTPs		FTTPs		FTTPs		FTTPs	
Individual awards								
Institutional awards								
Total, Training								
Research & development contracts (SBIR/STTR)								
	FTEs		FTEs		FTEs		FTEs	
Intramural research	0	3,458,000	0	3,805,000	0	3,805,000	0	4,028,000
Research management and support	0	1,693,000	0	1,752,000	0	1,752,000	0	1,892,000
Cancer prevention & control	0	0	0	0	0	0	0	0
Construction								
Total, NIMH	0	5,151,000	0	5,557,000	0	5,557,000	0	5,920,000
(Clinical Trials)		(0)		(0)		(0)		(0)

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
TOTAL - Proposed Law
Budget Mechanism

MECHANISM	FY 2001 Actual		FY 2002 Appropriation		FY 2002 Current Estimate		FY 2003 Estimate	
Research Grants:	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	1339	$432,509,000	1492	$491,437,000	1492	$491,437,000	1581	$533,618,000
Administrative supplements	(60)	4,251,000	(60)	7,945,000	(60)	7,945,000	(60)	8,088,000
Competing:								
Renewal	128	44,695,000	134	48,802,000	134	48,802,000	136	51,512,000
New	468	131,118,000	490	143,168,000	490	143,168,000	499	151,630,000
Supplements	6	1,034,000	6	1,143,000	6	1,143,000	6	1,288,000
Subtotal, competing	602	176,847,000	630	193,113,000	630	193,113,000	641	204,430,000
Subtotal, RPGs	1941	613,607,000	2122	692,495,000	2122	692,495,000	2222	746,136,000
SBIR/STTR	78	20,316,000	88	24,627,000	88	24,627,000	96	27,519,000
Subtotal, RPGs	2019	633,923,000	2210	717,122,000	2210	717,122,000	2318	773,655,000
Research Centers:								
Specialized/comprehensive	51	72,557,000	54	82,639,000	54	82,639,000	62	98,944,000
Clinical research	0	0	0	0	0	0	0	0
Biotechnology	0	0	0	0	0	0	0	0
Comparative medicine	0	0	0	0	0	0	0	0
Research Centers in Minority Institutio	0	0	0	0	0	0	0	0
Subtotal, Centers	51	72,557,000	54	82,639,000	54	82,639,000	62	98,944,000
Other Research:								
Research careers	407	53,142,000	430	57,314,000	430	57,314,000	443	60,179,000
Cancer education	0	0	0	0	0	0	0	0
Cooperative clinical research	29	18,211,000	20	15,474,000	20	15,474,000	21	17,593,000
Biomedical research support	0	0	0	0	0	0	0	0
Minority biomedical research support	0	0	0	0	0	0	0	0
Other	118	34,431,000	123	40,464,000	123	40,464,000	123	42,081,000
Subtotal, Other Research	554	105,784,000	573	113,252,000	573	113,252,000	587	119,853,000
Total Research Grants	2624	812,264,000	2837	913,013,000	2837	913,013,000	2967	992,452,000
Training:	FTTPs		FTTPs		FTTPs		FTTPs	
Individual awards	381	10,912,000	381	11,744,000	381	11,744,000	381	12,073,000
Institutional awards	1202	38,757,000	1243	43,142,000	1243	43,142,000	1243	44,350,000
Total, Training	1583	49,669,000	1624	54,886,000	1624	54,886,000	1624	56,423,000
Research & development contracts	72	72,071,000	111	89,877,000	111	89,877,000	105	98,865,000
(SBIR/STTR)	(13)	(1,289,000)	(13)	(1,950,000)	(13)	(1,950,000)	(6)	(1,401,000)
	FTEs		FTEs		FTEs		FTEs	
Intramural research	449	128,024,000	493	144,157,000	493	143,624,000	489	154,333,000
Research management and support	288	46,185,000	294	52,250,000	294	52,250,000	296	56,935,000
Cancer prevention & control	0	0	0	0	0	0	0	0
Construction		0		0		0		0
Total, NIMH	737	1,108,213,000	787	1,254,183,000	787	1,253,650,000	785	1,359,008,000
(Clinical Trials)		(171,238,000)		(193,835,000)		(193,835,000)		(210,052,000)

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
Budget Authority by Activity 1/
(dollars in thousands)

ACTIVITY	FY 2001 Actual		FY 2002 Estimate		FY 2003 Estimate		Change	
	FTEs	Amount	FTEs	Amount	FTEs	Amount	FTEs	Amount
Extramural Research:								
Extramural research and training		$934,004		$1,057,776		$1,147,740		$89,964
Subtotal, Extramural research		934,004		1,057,776		1,147,740		89,964
Intramural research	449	128,024	493	143,624	489	154,333	-4	10,709
Research management and support	288	46,185	294	52,250	296	56,935	2	4,685
Total	737	1,108,213	787	1,253,650	785	1,359,008	-2	105,358

1/ Please see the following tables for the crosswalk from current law to proposed law to reflect the administration's proposal for full accrued retirement and health benefits.

National Institutes of Health

National Institute of Mental Health

2001 Crosswalk for Accrued Retirement and Health Benefit Costs
(Dollars in thousands)

	2001 Actual Current Law	2001 Additional Accrual Costs	2001 Actual Proposed Law
Extramural Research:			
Extramural research and training	$934,004	$0	$934,004
Subtotal, Extramural research	934,004	0	934,004
Intramural research	124,566	3,458	128,024
Research management and support	44,492	1,693	46,185
Total	1,103,062	5,151	1,108,213

National Institutes of Health

National Institute of Mental Health

2002 Crosswalk for Accrued Retirement and Health Benefit Costs
(Dollars in thousands)

	2002 Current Estimate Current Law	2002 Additional Accrual Costs	2002 Appropriation Proposed Law
Extramural Research:			
Extramural research and training	$1,057,776	$0	$1,057,776
Subtotal, Extramural research	1,057,776	0	1,057,776
Intramural research	139,819	3,805	143,624
Research management and support	50,498	1,752	52,250
Total	1,248,093	5,557	1,253,650

National Institutes of Health

National Institute of Mental Health

2003 Crosswalk for Accrued Retirement and Health Benefit Costs
(Dollars in thousands)

	2003 Estimate Current Law	2003 Additional Accrual Costs	2003 Estimate Proposed Law
Extramural Research:			
Extramural research and training	$1,147,740	$0	$1,147,740
Subtotal, Extramural research	1,147,740	0	1,147,740
Intramural research	150,305	4,028	154,333
Research management and support	55,043	1,892	56,935
Total	1,353,088	5,920	1,359,008

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
Summary of Changes

2002 Estimated budget authority				$1,253,650,000
2003 Estimated budget authority				1,359,008,000
Net change				105,358,000
	2002 Current Estimate Base		Change from Base	
CHANGES	FTEs	Budget Authority	FTEs	Budget Authority
A. Built-in:				
1. Intramural research:				
a. Within grade increase		$50,212,000		$746,000
b. Annualization of January 2002 pay increase		50,212,000		603,000
c. January 2003 pay increase		50,212,000		979,000
d. Payment for centrally furnished services		25,903,000		2,331,000
e. Increased cost of laboratory supplies, materials, and other expenses		63,704,000		3,669,000
f. Accrued costs for retirement and health benefits		3,805,000		223,000
Subtotal				8,551,000
2. Research Management and Support:				
a. Within grade increase		27,221,000		476,000
b. Annualization of January 2002 pay increase		27,221,000		327,000
c. January 2003 pay increase		27,221,000		531,000
d. Payment for centrally furnished services		6,016,000		541,000
e. Increased cost of laboratory supplies, materials, and other expenses		17,261,000		994,000
f. Accrued costs for retirement and health benefits		1,752,000		140,000
Subtotal				3,009,000
Subtotal, Built-in				11,560,000

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
Summary of Changes--continued

CHANGES	2002 Current Estimate Base		Change from Base	
	No.	Amount	No.	Amount
B. Program:				
1. Research project grants:				
a. Noncompeting	1492	499,382,000	89	42,324,000
b. Competing	630	193,113,000	11	11,317,000
c. SBIR/STTR	88	24,627,000	8	2,892,000
Total	2210	717,122,000	108	56,533,000
2. Centers	54	82,639,000	8	16,305,000
3. Other research	573	113,252,000	14	6,601,000
4. Research training	1624	54,886,000	0	1,537,000
5. Research and development contracts	111	89,877,000	(6)	8,988,000
Subtotal, extramural				89,964,000
	FTEs		FTEs	
6. Intramural research	493	143,624,000	(4)	2,158,000
7. Research management and support	294	52,250,000	2	1,676,000
8. Construction		0	0	0
Subtotal, program		1,253,650,000		93,798,000
Total changes	787		(2)	105,358,000

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
Budget Authority by Object

		FY 2002 Appropriation	FY 2002 Current Estimate	FY 2003 Estimate	Increase or Decrease
Total compensable workyears:					
Full-time employment		787	787	785	(2)
Full-time equivalent of overtime and holiday hours		2	2	2	0
Average ES salary		$138,154	$138,154	$138,200	$46
Average GM/GS grade		10.9	10.9	10.9	0.0
Average GM/GS salary		$64,020	$64,020	$65,684	$1,664
Average salary, grades established by act of July 1, 1944 (42 U.S.C. 207)		$79,824	$79,824	$81,900	$2,076
Average salary of ungraded positions		$91,762	$91,762	$94,148	$2,386
	OBJECT CLASSES	FY 2002 Appropriation	FY 2002 Estimate	FY 2003 Estimate	Increase or Decrease
	Personnel Compensation:				
11.1	Full-Time Permanent	$39,799,000	$39,799,000	$41,685,000	$1,886,000
11.3	Other than Full-Time Permanent	16,017,000	16,017,000	16,694,000	677,000
11.5	Other Personnel Compensation	1,725,000	1,725,000	1,804,000	79,000
11.8	Special Personnel Services Payments	5,970,000	5,970,000	6,212,000	242,000
11.9	**Total Personnel Compensation**	**63,511,000**	**63,511,000**	**66,395,000**	**2,884,000**
12.1	Personnel Benefits	13,922,000	13,922,000	14,555,000	633,000
12.1	Personnel Benefits, Accrued Retirement Costs	3,935,000	3,935,000	4,256,000	321,000
13.0	Benefits for Former Personnel	0	0	0	0
	Subtotal, Pay Cost, Current Law	**77,433,000**	**77,433,000**	**80,950,000**	3,517,000
	Subtotal, Pay Cost, Proposed Law	**81,368,000**	**81,368,000**	**85,206,000**	**3,838,000**
21.0	Travel and Transportation of Persons	3,029,000	3,029,000	3,378,000	349,000
22.0	Transportation of Things	254,000	254,000	282,000	28,000
23.1	Rental Payments to GSA	0	0	0	0
23.2	Rental Payments to Others	2,943,000	2,943,000	3,361,000	418,000
23.3	Communications, Utilities and Miscellaneous Charges	2,061,000	2,061,000	2,321,000	260,000
24.0	Printing and Reproduction	1,359,000	1,359,000	1,554,000	195,000
25.1	Consulting Services	1,157,000	1,157,000	1,273,000	116,000
25.2	Other Services	14,758,000	14,758,000	16,420,000	1,662,000
25.3	Purchase of Goods and Services from Government Accounts	94,991,000	94,458,000	101,934,000	7,476,000
25.3	Accrued Retirement Costs	1,622,000	1,622,000	1,664,000	42,000
25.4	Operation and Maintenance of Facilities	3,191,000	3,191,000	3,505,000	314,000
25.5	Research and Development Contracts	61,626,000	61,626,000	69,514,000	7,888,000
25.6	Medical Care	622,000	622,000	682,000	60,000
25.7	Operation and Maintenance of Equipment	932,000	932,000	1,029,000	97,000
25.8	Subsistence and Support of Persons	0	0	0	0
25.0	**Subtotal, Other Contractual Services, Current Law**	**177,277,000**	**176,744,000**	**194,357,000**	**17,613,000**
25.0	**Subtotal, Other Contractual Services, Proposed Law**	**178,899,000**	**178,366,000**	**196,021,000**	**17,655,000**
26.0	Supplies and Materials	6,614,000	6,614,000	7,271,000	657,000
31.0	Equipment	9,753,000	9,753,000	10,735,000	982,000
32.0	Land and Structures	0	0	0	0
33.0	Investments and Loans	0	0	0	0
41.0	Grants, Subsidies and Contributions	967,899,000	967,899,000	1,048,875,000	80,976,000
42.0	Insurance Claims and Indemnities	0	0	0	0
43.0	Interest and Dividends	4,000	4,000	4,000	0
44.0	Refunds	0	0	0	0
	Subtotal, Non-Pay Costs, Current Law	**1,171,193,000**	**1,170,660,000**	**1,272,138,000**	**101,478,000**
	Subtotal, Non-Pay Costs, Proposed Law	**1,172,815,000**	**1,172,282,000**	**1,273,802,000**	**101,520,000**
	Total Budget Authority by Object, Current	**1,248,626,000**	**1,248,093,000**	**1,353,088,000**	**104,995,000**
	Total Budget Authority by Object, Proposed	**1,254,183,000**	**1,253,650,000**	**1,359,008,000**	**105,358,000**
	Total Accrued Retirement Costs	**5,557,000**	**5,557,000**	**5,920,000**	**363,000**

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
Salaries and Expenses

OBJECT CLASSES	FY 2002 Appropriation	FY 2002 Current Estimate	FY 2003 Estimate	Increase or Decrease
Personnel Compensation:				
Full-Time Permanent (11.1)	$39,799,000	$39,799,000	$41,685,000	$1,886,000
Other Than Full-Time Permanent (11.3)	16,017,000	16,017,000	16,694,000	677,000
Other Personnel Compensation (11.5)	1,725,000	1,725,000	1,804,000	79,000
Special Personnel Services Payments (11.8)	5,970,000	5,970,000	6,212,000	242,000
Total Personnel Compensation (11.9)	**63,511,000**	**63,511,000**	**66,395,000**	**2,884,000**
Civilian Personnel Benefits (12.1)	13,922,000	13,922,000	14,555,000	633,000
Accrued Costs of Retirement Benefits (12.1)	3,935,000	3,935,000	4,256,000	321,000
Benefits to Former Personnel (13.0)	0	0	0	0
Subtotal, Pay Costs, Current Law	**77,433,000**	**77,433,000**	**80,950,000**	**3,517,000**
Subtotal, Pay Costs, Proposed Law	**81,368,000**	**81,368,000**	**85,206,000**	**3,838,000**
Travel (21.0)	3,029,000	3,029,000	3,378,000	349,000
Transportation of Things (22.0)	254,000	254,000	282,000	28,000
Rental Payments to Others (23.2)	2,943,000	2,943,000	3,361,000	418,000
Communications, Utilities and Miscellaneous Charges (23.3)	2,061,000	2,061,000	2,321,000	260,000
Printing and Reproduction (24.0)	1,359,000	1,359,000	1,554,000	195,000
Other Contractual Services:				
Advisory and Assistance Services (25.1)	924,000	924,000	1,017,000	93,000
Other Services (25.2)	14,758,000	14,758,000	16,420,000	1,662,000
Purchases from Govt. Accounts (25.3)	61,273,000	60,740,000	66,561,000	5,821,000
Accrued Retirement Costs (25.3)	1,622,000	1,622,000	1,664,000	42,000
Operation & Maintenance of Facilities (25.4)	3,191,000	3,191,000	3,505,000	314,000
Operation & Maintenance of Equipment (25.7)	932,000	932,000	1,029,000	97,000
Subsistence & Support of Persons (25.8)	0	0	0	0
Subtotal, Other Contractual Services, Current Law	**81,078,000**	**80,545,000**	**88,532,000**	**7,987,000**
Subtotal, Other Contractual Services, Proposed Law	**82,700,000**	**82,167,000**	**90,196,000**	**8,029,000**
Supplies and Materials (26.0)	6,613,000	6,613,000	7,270,000	657,000
Subtotal, Non-Pay Costs, Current Law	**87,691,000**	**87,158,000**	**105,448,000**	**18,290,000**
Subtotal, Non-Pay Costs, Proposed Law	**89,313,000**	**88,780,000**	**107,112,000**	**18,332,000**
Total, Administrative Costs, Current Law	**165,124,000**	**164,591,000**	**186,398,000**	**21,807,000**
Total, Accrued Costs	**5,557,000**	**5,557,000**	**5,920,000**	**363,000**
Total, Administrative Costs, Proposed Law	**170,681,000**	**170,148,000**	**192,318,000**	**22,170,000**

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health

SIGNIFICANT ITEMS IN HOUSE, SENATE, AND CONFERENCE APPROPRIATIONS COMMITTEE REPORTS

FY 2002 House Appropriations Committee Report Language (H. Rpt. 107-229)

Item

Alzheimer's Disease – NIMH continues to play an important role in research on the causes of Alzheimer's disease, its clinical course and treatment and services for patients. NIMH research has documented a strong link between depression and physical aggression in Alzheimer's patients suggesting that depression treatment may reduce aggression in patients. The Committee encourages NIMH to make Alzheimer's research a high priority and continue to collaborate with NIA and other Institutes. (P. 74)

Action taken or to be taken

NIMH is breaking ground through the contract "Clinical Antipsychotic Trials of Intervention Effectiveness." This is the largest-scale, multi-site study ever conducted to identify the best medication treatment strategies for the behavioral problems that co-occur in Alzheimer's disease. Enrollment began in 2001 and the project will continue to enlist subjects for the next two years. In a complementary effort, the Institute convened a workgroup of scientists to develop diagnostic criteria to recognize depression in people who have Alzheimer's disease. We anticipate that these criteria will accelerate the development of treatments for the mood symptoms that frequently occur in this disease. In 2001, NIMH's newly formed Aging Workgroup conducted an exhaustive review of the current aging-related research portfolio. The Workgroup is using the review to set priorities for better coordinating the Institute's aging research portfolio and for setting the pace of the research community. Overall, through the efforts of the Aging workgroup, and collaboration with NIA, NIMH expects to take a leadership role in developing effective treatments for reducing the psychiatric burden of Alzheimer's disease.

Item

Fragile X – Fragile X is the most common single-gene neuropsychiatric disease known. The Committee urges NIMH to support research on the neurobiological basis of Fragile X through all available mechanisms, as appropriate, including studies on specific neural circuits and molecules. The Committee also urges NIMH to characterize the mental health symptoms of Fragile X, investigate effective treatments and promising new psychopharmacologic interventions that target these symptoms and include Fragile X in studies of related neuropsychiatric disorders through all available mechanisms, as appropriate. NIMH is

encouraged to work with NICHD and NINDS to develop cooperative research in this area. (p. 74)

Action taken or to be taken

Discovery of the genetic basis of Fragile X through research funded by the NICHD in the late 1980's added impetus to NIH's support of vigorous, state-of-the-art basic and clinical neuroscience research programs directly relevant to Fragile X. NIMH, for example, presently is funding a large-scale longitudinal study that is collecting and analyzing cognitive, behavioral, neuroendocrine, genetic, and neuroimaging data from children with Fragile X, to elucidate the developmental changes in brain structure and function that occur over time. In addition to supporting investigator-initiated research for the past decade, the NIH recently intensified its efforts in fostering research in Fragile X, with NIMH, NICHD, and NINDS collaboratively providing support for equests for Applications (RFAs) for a) studies on neurobiology and genetics, and b) gene discovery in Fragile X and other neurobehavioral disorders. New projects being supported include work in animal models that focus on the function in the brain of the Fragile X Mental Retardation Protein (FMRP) s well as the function of other proteins with which FMRP interacts. These studies provide powerful methodologies to allow analyses of protein function and gene expression in neural circuits, nd are expected to generate important new insights into the underlying molecules and neural circuits that are disturbed in the syndrome. NIMH and NICHD are jointly supporting a series of workshops that bring together a broad range of basic scientists and clinicians to exchange data and discuss state-of-the-art research focusing on the genetic and molecular basis of Fragile X. In future cooperative activities, NIMH, NINDS, and NICHD will seek to identify other genes that produce vulnerability to Fragile X and to analyze the complex relationship between genes, their products, and environmental events. Proteins and neural circuits identified in these studies will be targets for new pharmacologic compounds, thus setting the stage for the development of new therapeutic interventions. Other planned activities involve the coordination of clinical studies on Fragile X, autism and Rett Syndrome, in order to accelerate common neurobiological pathways that appear to be affected across these related conditions.

Item

Senior Citizen Mental Health – Older Americans are at greater risk of mental disorders and their complications than younger people. However, depression does not have to be an inevitable part of the aging process and many of these illnesses can be accurately diagnosed and successfully treated. The Committee is pleased that NIMH has renewed and strengthened its emphasis in this area and notes the launch of an intra-NIMH consortium of scientists concerned with mental disorders in the aging population with a goal of increasing coordinated research efforts, expanding recognition of disorders in the elderly, developing new treatments and reducing stigma. The Committee urges NIMH to expand research in this area extramurally through all available mechanisms, as appropriate. (p. 74)

Action taken or to be taken

Depression and its treatment in late-life remain Institute priorities. The NIMH Aging Workgroup will continue to coordinate this aspect of aging research and is seeking grant proposals in this area through all available mechanisms. In early 2002, NIMH will issue its Strategic Plan for Research on Mood Disorders that will include research priorities specifically focused on depression and bipolar disorder in Aging and Medical Comorbidity. In addition, NIMH convened in March 2001, a workshop, "Depression: The Unwanted Cotraveler," which included a series of presentations on the relationship between depression and cardiovascular disease, diabetes, cancer and other medical diseases that have high prevalence in older adults.

FY 2002 Senate Appropriations Committee Report Language (S. Rpt. 107-84)

Item

Alzheimer's disease –A clinical study already underway has documented a strong link between depression and physical aggression in Alzheimer's patients, suggesting that depression treatment may reduce aggression in patients. The Committee encourages NIMH to assign a high priority to Alzheimer's research and to continue to collaborate with NIA and other institutes. (p.165)

Action taken or to be taken

Please refer to page NIMH-39 of this document for NIMH's response to this significant item regarding Alzheimer's disease.

Item

Children's mental health – The Committee is aware that NIMH's National Advisory Mental Health Council established a Workgroup on Child and Adolescent Mental Health that is charged with charting a new, more rational course for the future of child and adolescent mental health research. The Committee supports this effort in light of the continuing evidence of high prevalence of mental illnesses in children and adolescents, and the difficulty many children encounter in accessing effective treatments, preventive strategies, and services. The Committee endorses the further direction of targeted research programs specifically for children and adolescents. (p.166)

Action taken or to be taken

The *ad hoc* Workgroup on Child and Adolescent Mental Health of the National Advisory Mental Health Council recently released a report entitled *Blueprint for Change: Research on Child and Adolescent Mental Health*. This report recommends directions for future child mental health research endeavors. In response to the report, NIMH issued, on November 26, 2001, the Request for Applications (RFA) 'Child and Adolescent Interdisciplinary Research Networks.' The aim is to create interdisciplinary networks to foster innovative approaches to research in child and

adolescent mental health. Research collaborations on the following topics are of particular interest: childhood disorders of mood regulation (e.g., bipolar disorder); the core processes involved in treatments for childhood disorders; functional impairments in childhood mental disorders; and dissemination or implementation of effective interventions. An expansion of the research infrastructure for studying the effects of mental health treatments in youths is being sought via the cooperative agreement 'Research Units on Pediatric Psychopharmacology and Psychosocial Interventions" (RFA released on August 31, 2001), for which applications are due in early 2002. A third area currently being expanded is research in autism. An RFA for Autism Research Centers of Excellence was released in August 2001 and applications will be reviewed in early 2002.

Item

Clinical trials – The Committee commends NIMH on its launch of four large clinical trials to investigate real world effectiveness of mental health research. The Committee recognizes the efforts of NIMH to study treatments in everyday settings by enrolling a representative sample of typical clinic patients who may have co-occurring diseases and come from diverse backgrounds. The Committee urges a balanced approach in this endeavor, integrating clinical approaches to disease and intervention efforts that address social and behavioral determinants of disease. (p.166)

Action taken or to be taken

NIMH has incorporated information and research findings on the social and behavioral determinants of disease in the design of the four large clinical trials described by the Committee. Psychological interventions and psychosocial treatments are being used in each of the trials, either as stand-alone treatments or as adjuncts to medication.

Item

Emergency medical services – The Committee commends the work supported by NIMH on mental health issues related to emergency medical services for children through the University of Tennessee, and also the collaboration of NIMH with HRSA in funding the National Congress on EMSC in 1998. The Committee encourages NIMH to enhance its support of EMSC-related projects and to continue to work with HRSA in educational programs on EMSC such as national conferences. (p. 166)

Action taken or to be taken

NIMH is participating in a multi-agency (HRSA, AHRQ, CDC, NICHD, NIDA, and NINDR) program announcement designed to stimulate research in emergency medical services for children. Through this announcement NIMH hopes to specifically encourage research on the quality and appropriateness of services for children and adolescents with mental health problems who are seen for emergency medical care. NIMH further plans to coordinate with HRSA in

organizing and providing logistic support for the April 15-17, 2002 national conference on emergency medical services for children in Dallas, Texas. The NIMH Division of Services and Intervention Research is currently supporting a research project at Children's National Medical Center in Washington D.C. to examine the rate of psychiatric symptoms and service use among adolescents traumatized by intentional violence or unintentional injury who have sought emergency room services. Results from this study will be used to form the basis for intervention development.

Item

Extramural aging research – The Committee is concerned that, despite substantial funding increases for NIMH in recent years, the Institute's sponsorship of extramural research on the mental health of the elderly has not kept pace with its funding of research for other populations. The Committee strongly encourages NIMH to devote additional resources to extramural aging research and urges the Director of NIMH to designate an individual within the Office of the Director to oversee the Institute's aging research agenda and initiatives. The Committee also encourages the Director to ensure that reviewers of research proposals include members with specialized expertise in geriatrics. (p.166)

Action taken or to be taken

NIMH distributes aging-related grants throughout the Institute to ensure cross-fertilization with cutting-edge research in numerous basic and clinical areas. Recognizing the need to provide focus for this substantial but diverse portfolio, the Institute has established an Aging Workgroup to coordinate research across the Institute's extramural and intramural divisions. This Workgroup has conducted an exhaustive review of the current aging-related portfolio to develop recommendations for a strategic plan in aging research; the group will also serve as a point of contact for interested scientists, assigning special emphasis to fostering a cadre of junior investigators who will achieve seniority in this field. The Institute's ongoing strategic planning effort in mood disorders prominently includes depression of late life and its comorbidity with other medical conditions. Recognizing that late-life mental disorders seldom occur in isolation, NIMH is collaborating with the NIA and the NINDS to conduct "The Healthy Brain," a comprehensive review of the literature on aging, cognitive functioning, mental health, and vascular status. Highlighted by a large workshop held in the summer, 2001, this review will suggest directions for additional longitudinal studies of health and disease in aging. NIMH interest in and support of research on the depression subtype known as "vascular depression" (in which small lesions of the brain's vasculature play a primary role), culminated recently in a grant to create a major neuroscience research center dedicated to the study of vascular depression. The Institute has recognized the need to address real-world treatment issues with the CATIE ("Clinical Antipsychotic Trials of Intervention Effectiveness") trial of medication to control psychosis in Alzheimer's patients, and the PROSPECT study of suicide prevention. To encourage growth of research in this area, NIMH program staff have worked proactively to increase the number of appropriate members of peer review committees, an effort enhanced by

the recent hiring at the NIH Center for Scientific Review of a scientist with expertise in aging to lead a major review committee on adult psychopathology.

Item

Families and School Together Track program – The Committee commends NIMH for building science-based programs, such as the Families and School Together (FAST) Track program, designed to improve school based mental health delivery systems. The Committee encourages NIMH to continue to support research on multi-year, multi-component interventions at the family, school, and community levels. The Committee also urges NIMH to further develop research on early interventions in children, with a particular emphasis on problems of mood, anxiety and conduct, taking into account informational deficits, attitudinal factors, and cultural barriers that inhibit use of these services. (p.166)

Action taken or to be taken

NIMH continues to fund follow-up studies of FAST Track and a number of other multi-component, multi-level interventions to assess their long-term effects. In addition, during FY 2000 and 2001, NIMH issued new announcements to stimulate child and adolescent early-intervention research. These included: "Research on Depression Co-morbid with Externalizing Problems in Children"; "Research on Developing, Testing and Implementing Interventions for ADHD"; and "Implementation of Intervention Strategies for Children with Disruptive Behaviors." NIMH also launched a treatment study involving youth with co-morbid ADHD and anxiety disorders. Collaborative announcements involving other NIH and DHHS components included "Research on Child Neglect", "Interventions for Suicidal Youth", and "Research on the Development of Interventions for Youth Violence." In the area of services research, NIMH has funded several projects examining pathways into and through service use with the goal of identifying barriers as well as predictors of type of care received and outcomes. Other projects are attempting to reduce barriers through active engagement of key constituents and formation of partnerships between parents, service settings, and service providers. NIMH-supported studies are assessing culturally specific intervention strategies in both African American and Latino populations. Plans are underway to convene a working group to consider cross-project analyses to help identify the most potent and cost-effective interventions across multi-problem outcomes, and to identify effective community collaboration efforts to improve the implementation and sustainability of evidence-based interventions.

Item

Fragile X – Fragile X is the most common single-gene neuropsychiatric disease known, affecting 1 in 2,000 males and 1 in 4,000 females with cognitive impairment and mental disorders such as obsessive-compulsive disorder and extreme anxiety. The Committee urges NIMH to conduct research on the neurobiological basis of Fragile X, including studies on specific neural circuits and molecules. The Committee encourages NIMH to use its unique expertise to characterize the mental health symptoms of Fragile X and to investigate effective

treatments and promising new psychopharmacologic interventions that target those symptoms. The Committee also urges NIMH to include Fragile X in its studies of related neuropsychiatric disorders and to work with other Institutes such as NICHD and NINDS to develop cooperative research support mechanisms in this area. (p.167)

Action taken or to be taken

Please refer to page NIMH-40 of this document for NIMH's response to this significant item regarding Fragile X.

Item

Frontier mental health needs – The Committee is pleased that NIMH continued its series of conferences on the mental health needs of remote rural and frontier communities with a "Mental Health at the Frontier" conference in Alaska in August 1999 and commends NIMH on its outreach efforts to determine the differences in mental health needs which may exist in remote frontier communities. The Committee encourages NIMH to expand its research efforts into these communities, which are often ignored in research projects, but which continue to suffer from high incidences of mental health problems including depression, suicide and co-occurring disorders with substance abuse. (p.167)

Action taken or to be taken

The NIMH is continuing efforts to foster research studies in rural and frontier areas utilizing a variety of funding mechanisms. Program staff at NIMH have worked with academic institutions, providers, and consumers in rural and frontier areas to develop new grant proposals. In FY2002 NIMH will convene several workshops to determine what can be done to increase research on finding solutions to some of the unique problems faced by rural and frontier areas.

Item

Health disparities – The Committee commends NIMH's efforts to investigate the causes for the disproportionate impact of mental disorders on racial and ethnic minority groups, as well as methods of addressing and alleviating these health disparities. The Committee is concerned that within and among minority populations of Hawaii, access to health services and treatment is uneven and at times nonexistent, and that prevention of illness, recovery and treatment have often been poorer in minority populations. The Committee strongly supports NIMH's strategic plan to address problems and develop solutions in the area of health disparities, and particularly supports the following strategic goals: to achieve a more ethnic and racially diverse pool of mental health investigators; to ensure inclusion of minority groups in clinical trials funded by NIMH; to obtain an accurate measurement of the extent of mental health disparities; and to use basic behavioral science to determine cultural differences in stress, coping and resilience. The Committee also notes that NIMH has established a Workgroup on Initiatives on Racial/Ethnic Diversity in Training and Health Disparities Research. The Committee endorses such efforts to

increase racial/ethnic diversity among research scientists as a means to reduce the severe disparities that exist in the burden that mental illnesses place on minority groups. (p.167)

Action taken or to be taken

NIMH continues to vigorously pursue multifaceted research and research training efforts designed to study, measure, explain and control those factors that cause the disproportionate impact of mental disorders on racial and ethnic minority groups. The Institute has received the National Advisory Mental Health Council Workgroup report "Racial/Ethnic Diversity in Mental Health Research Careers", and a Special Expert has been appointed to implement the action plan. The NIMH Five-Year Strategic Plan for Reducing Health Disparities in Mental Health has been updated and special attention has been directed toward developing a new short term training grant to bring together leaders in clinical interventions, services, and cultural/health disparities research. The new grant will focus on networking, enhancing local capacity, improving the potential submission of ancillary studies, or site participation. This training grant is an excellent mechanism for use among minority populations such as those of Hawaii, where as in many other communities, access to mental health services and treatment are uneven and at times nonexistent. In a more focused effort, NIMH currently is supporting research in Hawaii that is strengthening the local research infrastructure and training of investigators needed to both produce a competitive center application and sustain a meritorious center of excellence that would study current and new aspects of native Hawaiian mental health. NIMH recognizes that eliminating health disparities and increasing racial/ethnic diversity among mental health research scientists would help in reducing the mental health burden that affects all Americans.

Item

HIV/AIDS prevention for individuals at high risk – The Committee commends NIMH for developing research knowledge essential for understanding and preventing HIV transmission, particularly among people at high risk for infection (such as the mentally ill, women of color, youth, and rural populations) where the epidemic is spreading most rapidly. NIMH should continue to support studies seeking to develop more effective ways to prevent infections and strategies to deliver cost-effective services. (p.167-168)

Action taken or to be taken

In controlled trials, NIMH has demonstrated the effectiveness of individually-focused HIV/STD prevention models that target at-risk populations and are tailored to varying socio-cultural risk patterns. The active components are: (1) teaching accurate risk perception; (2) increasing motivation to practice safer HIV/STD behaviors; (3) identifying triggers for risk behavior; and (4) practicing negotiation skills that are essential for safer behavior. These interventions are cost-effective and can be incorporated into public health settings, but are not sufficient to stop the HIV epidemic. Therefore, NIMH also supports intervention trials for couples, families, and communities, to reinforce and sustain individual level change as well as create community norms for healthy behavior. These efforts include a recently published book to help families

prevent and adapt to HIV - it is designed to help public health agencies easily adapt these programs. In addition, NIMH staff are participating in a community-level intervention trial to adapt a prevention program for five countries with high HIV prevalence, and have also initiated a request for proposals to develop effective school-based interventions for adolescents. At the societal level, several interventions were recently funded that use a broader, social marketing approach for prevention through the internet and other mass media; another new project will test structural interventions to change the context and settings where risk behaviors occur. Finally, NIMH has collaborated with the CDC and the HRSA on several efforts to package and disseminate user-friendly programs, including the test of a user-friendly version of *Project Light*, and the publication of risk-reduction intervention guidelines for HIV treatment providers to incorporate into practice.

Item

Learning disabilities in infants and children – The Committee commends NIMH for the work conducted to explore the neurological and behavioral aspects of learning disabilities. The Committee encourages the Institute to continue to coordinate with other Institutes to work on related activities. (p.168)

Action taken or to be taken

Effective treatment of learning disabilities (LD) ultimately rests on a firm understanding of brain mechanisms of cognition, learning, and memory. NIMH has invested significantly in basic behavioral and brain research aimed at establishing the fundamental mechanisms of neural plasticity in a wide variety of animal models and in humans. NIMH currently is sponsoring state-of-the-art brain imaging techniques to study the development of memory mechanisms and cognitive control – fundamental building blocks of learning – in children. Because normative data on the development of the human brain has not been available, NIMH is participating with NICHD and NINDS in a joint effort to establish a normative imaging data base of brain development in children. The NICHD supports four multidisciplinary LD research centers, multidisciplinary program projects, and 36 individual research program grants that address the etiology, developmental course, and treatment response characteristics of children with LD. The NICHD also currently supports 11 clinical intervention trials to determine which treatment approaches are most efficacious for children with carefully defined LD. NIMH collaborates with NICHD in co-sponsoring and co-funding research centers studying children who display LD and ADHD problems. In addition, NIMH participates on the Federal Steering committee for the Head Start Mental Health Research Consortium. NIMH also is an active member of a NICHD-led consortium of federal agencies and public/private institutions called the *Science and Ecology of Early Development* (SEED) that is working to establish an integrated research agenda that focuses on the normative development of children from low-income families.

Item

Native Hawaiian center of excellence – The Committee remains very supportive of NIMH's efforts to develop a cadre of native Hawaiian mental health researchers. Native Hawaiians have historically experienced a disproportionate incidence of various mental health problems, including depression. In order to effectively address these issues in the long run, NIMH should consider establishing a native Hawaiian center of excellence in mental health. (p.168)

Action taken or to be taken

NIMH continues to support the development of a mental health research infrastructure in Hawaii with the expectation that it will culminate in the establishment of a native Hawaiian center of excellence in mental health. The NIMH will continue to invest in and provide technical assistance for the local research infrastructure and training of investigators needed to produce a competitive center application. The goal is to develop a meritorious center of excellence that studies current and new aspects of native Hawaiian mental health.

Item

Review of mood disorders research – NIMH recently conducted a major review of its research portfolio on mood disorders, such as major depression and bipolar disorder. To do this, NIMH brought together almost 100 of the country's leading researchers in this area to evaluate the state of the field of research and to make recommendations for future directions for research. Participants were also asked to offer their views and ideas for shaping the Institute's research agenda, as well as informing educational and communication efforts for improving health care. The Committee looks forward to hearing more from NIMH about how this process is succeeding, and how it has influenced the conduct of research in this area. (p.168)

Action taken or to be taken

Depressive disorders, which are the leading cause of disability-adjusted life years in the world's developed nations, constitute an enormous public health burden in the United States. Last year, NIMH embarked on development of a Research Strategic Plan for studies of mood disorders, predominantly major depression and bipolar disorder. Over the course of more than a year now, NIMH staff working with 130 extramural/ intramural scientists and public representatives have analyzed the most current knowledge and research on mood disorders in ten broad areas of science ranging from genetics to service delivery. The Plan outlines the goals and implementation steps to be taken to advance our understanding of the brain, human behavior, and the specific pathology involved in depression and bipolar disorder. The Plan also sets goals for developing new treatments and enhancing access to appropriate and effective treatments. The Plan was reviewed by the National Advisory Mental Health Council in January, 2002.

Item

Social work research – The Committee commends NIMH for its continued recognition of the importance of social work research in the delivery of disease prevention and treatment services. The Committee urges NIH to explore ways to further involve social workers in research efforts and to report back to Congress on the involvement of social work in promoting effective prevention and treatment outcomes throughout all NIH Institutes and programs. The Committee continues to support the NIMH's efforts to expand the number of social work research development centers in light of the important work the centers do to inform the delivery of mental health services by social workers and other providers. (p.168)

Action taken or to be taken

Because social workers are the largest group of service providers for people with severe mental disorders and – especially in rural areas of the country – often are the only mental health service providers for wide geographic locales, NIMH views social work research as important to the overall scientific mission of the Institute. NIMH currently funds six Social Work Research Development Centers and recently introduced a new Developing Center mechanism designed for schools of social work with an interest in developmental support in research. NIMH funds four research training grants to social work schools or institutions to support pre- and post doctoral fellowships, with additional research training of social workers supported in other research training programs. At present, NIMH provides research support to at least 83 social work researchers who either listed a graduate degree in social work or were at schools or departments of social work. Social work research and research development efforts enjoy an increasingly wide base of support across NIH, with support and various forms of technical assistance currently provided or scheduled by NIDA, NIAAA, NCI, and OBSSR. NIDA, for example, has awarded program grants to schools of social work at Washington University in St. Louis; Columbia University in New York; and the University of Texas at Austin. NIDA also has awarded two technical assistance contracts to the Institute for the Advancement of Social Work Research to develop summer research training institutes. NIAAA is working with the National Association of Social Workers and the Council of Social Work Education to develop an education module for social workers who treat alcohol-related conditions; researchers and faculty from 24 schools of social work throughout the U.S. have been involved in the development and pilot testing of the material, which will be published in 2002. Joint interests of the social work community and the NCI include 1) bringing more social work investigators into Cancer Control Research and 2) better diffusing and disseminating research findings to practitioners in oncological social work. NCI sponsors and, in Summer 2002, will convene a Social Work and Cancer Research Working Group to develop and monitor a plan to accomplish these goals. Recognizing that social work research both illuminates the behavioral and social determinants of wellness and disease and develops effective interventions for improving a variety of health outcomes, OBSSR facilitates broad NIH support of social work research. The Office recently released Program Announcement (PA), "Social and Cultural Dimensions of Health", http://grants.nih.gov/grants/guide/pa-files/PA-02-043.html, that provides an opportunity for social work researchers to pinpoint environmental contexts, social relationships,

interpersonal processes, and cultural factors that lead people to engage in healthy behaviors, seek health services before disease symptoms worsen, and participate with medical professionals in treating illness. A forthcoming PA on methodology calling for the development of improved research methods in the behavioral and social sciences will provide an opportunity for social work researchers to enhance the methods in their discipline as they relate to health outcomes. Finally, NIMH continues to nurture the field through technical assistance workshops, including one held at the joint annual meeting of the Institute for Advancement for Social Work Research and the Society for Social Work and Research in January 2002 and a conference on services research, in which social worker researchers will participate, in April 2002.

Item

Suicide risk and protective factors – The Committee urges that NIMH and the CDC continue their collaboration to develop and implement a consensus agenda of key questions on suicide risk and protective factors. The NIMH should consider supporting additional research on protective factors to better understand phenomena such as why African American women have among the lowest suicide rates but have mental disorders at rates comparable to those experienced by white women. The Committee requests that the NIMH and the CDC submit an updated consensus agenda on key research questions on suicide to the Committee along with the administration's fiscal year 2003 budget proposal. (p.169)

Action taken or to be taken

The National Center for Injury Prevention and Control at the CDC and NIMH have collaborated in a number of activities related to developing a suicide prevention research agenda. (1) Each agency has representatives to the National Suicide Prevention Strategy Steering Group, which succeeded in producing the National Strategy for Suicide Prevention (NSSP, issued in May 2001) with public input. Objective 10.1 of the NSSP is to promote a national suicide research agenda. (2) Contributing to the development of a consensus research agenda is the cofunding of several activities: a) a conference grant to the University of Rochester that holds five national consensus meetings around what is known about suicide risk and protective factors for various segments of the population; b) a contract to the Institute of Medicine to develop a report (due March 2002) on research priorities for suicide prevention; c) staffing to update Recommendations to the Media (released in August 2001) on how to report on suicides in ways that increase understanding of suicide and its risk factors, and reduce suicide contagion; d) a study of an emergency department-based intervention focused on reducing repeated suicide attempts among primarily African Americans.

Key research questions on suicide that are likely to be consensus areas are those included in the NSSP, those anticipated from the IOM report, and several included in CDC's suicidal behavior prevention research agenda (to be released spring 2002). They include, but are not limited to: 1) examination of whether current youth prevention efforts aimed at reducing depression, substance use, aggressive behavior through the promotion of protective factors (enhancing school achievement, social skills, coping, conflict-management), also work to reduce suicide risk in

youth and young adulthood; and 2) identification of the protective factors contributing to certain communities' (including ethnic minority groups) low rates of suicide, including the effect of the social and individual perceptions of life events and suicide, and contextual factors such as social support.

Item

Tourette syndrome – The Committee recognizes that public misunderstanding of the neurobiological disorder Tourette syndrome frequently results in ridicule, denied learning accommodations and lost employment opportunities for children and adults who have this disorder. The Committee is concerned that lack of knowledge about and treatment for this disorder may be particularly onerous in traditionally underserved communities. The Committee is pleased that NIH has initiated research into the genetic basis of this little-known disorder. Consistent with the Children's Health Act of 2000, the NIMH is urged to develop a public education program that would reach parents, educators, pediatricians, family physicians, and other health care workers. (p.169)

Action taken or to be taken

The NIMH and the NINDS are supporting research into the etiology, symptoms, diagnosis and treatment of Tourette syndrome as called for by the Child Health Act of 2000. As of December 2001, NIH has 12 active clinical trials involving Tourette Disorder and related conditions. Extensive information, including public information pamphlets, about the latest research findings regarding Tourette syndrome, ongoing clinical trials, the diagnosis and treatment of Tourette syndrome, and patient advocacy resources is available through the NIMH, NINDS and National Library of Medicine's MEDLINE plus websites.

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2001 Amount Authorized	2002 Estimate	2003 Amount Authorized	2003 Budget Estimate c/
Research and Investigation	Section 301	42§241	Indefinite	$1,198,764,000	Indefinite	$1,302,585,000
National Institute of Mental Health	Section 417B	42§285	Indefinite		Indefinite	
National Research Service Awards	Section 487(d)	42§288	a/	54,886,000	b/	56,423,000
Total, Budget Authority				1,253,650,000		1,359,008,000

a/ Funding provided under the Departments of Labor, Health and Human Services, Education, and Related Agencies Appropriations Act, 2002 (P.L. 107-116).
b/ Reauthorizing legislation will be submitted.
c/ Reflects proposed transfer from the National Cancer Institute

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
Appropriation History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation 1/
1994	$576,015,000	$613,444,000	$613,444,000	$613,444,000
1995 2/	545,223,000	541,687,000	543,687,000	542,989,000 3/
Rescission				(789,000)
1996	558,580,000 2/	661,328,000	550,632,000 2/	661,328,000
Rescission				(706,000)
1997	578,149,000 2/	701,247,000	589,187,000 2/	701,107,000 4/
1998	628,739,000 2/	744,235,000	759,956,000	750,241,000
1999	699,679,000 2/5/	815,707,000	861,208,000	861,208,000
Rescission				(570,000)
2000	758,892,000 2/	930,436,000	969,494,000	978,360,000
Rescission				(5,214,000)
2001	896,059,000 2/	1,114,638,000	1,117,928,000	1,107,028,000
Rescission				(492,000)
2002	1,238,305,000	1,228,780,000	1,279,383,000	1,248,626,000
Rescission				(533,000)
2003	1,359,008,000			

1/ Reflects enacted supplementals, rescissions and reappropriations.
2/ Excludes funds for HIV/AIDS research activities consolidated in the NIH Office of AIDS Research.
3/ Excludes enacted administrative reductions of $561,000.
4/ Excludes enacted administrative reductions of $478,000.
5/ Reflects a decrease of $2,111,000 for the budget amended for bioterrorism.

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
Detail of Full-Time Equivalent Employment (FTEs)

OFFICE/DIVISION	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate
Office of the Director	124	125	125
Division of Neuroscience and Basic Behavioral Science	37	38	38
Division of Mental Disorders, Behavioral Research & AIDS	45	45	45
Division of Services and Intervention Research	36	37	38
Division of Extramural Activities	46	49	50
Division of Intramural Research Programs	449	493	489
Total, NIMH	737	787	785
Statutorily-ceiling exempt FTEs not included above	(0)	(0)	(0)
Funds to support these FTEs are provided by Cooperative Research and Development			

FISCAL YEAR	Average GM/GS Grade
1999	10.6
2000	10.6
2001	10.9
2002	10.9
2003	10.9

NATIONAL INSTITUTES OF HEALTH

National Institute of Mental Health
Detail of Positions

GRADE	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate
ES-6	1	1	1
ES-5	2	2	2
ES-4	8	8	8
ES-3	2	2	2
ES-2	0	0	0
ES-1	0	0	0
Subtotal	**13**	**13**	**13**
Total - ES Salary	$1,733,930	$1,796,002	$1,796,600
GM/GS-15	56	60	60
GM/GS-14	75	80	80
GM/GS-13	69	74	74
GS-12	80	85	85
GS-11	92	98	98
GS-10	1	1	1
GS-9	72	77	77
GS-8	54	58	58
GS-7	56	60	60
GS-6	15	16	16
GS-5	6	6	6
GS-4	7	7	7
GS-3	3	3	3
GS-2	0	0	0
GS-1	0	0	0
Subtotal	**586**	**625**	**625**
Grades established by Act of July 1, 1944 (42 U.S.C. 207):			
Assistant Surgeon General	0	0	0
Director Grade	13	13	13
Senior Grade	4	4	4
Full Grade	0	0	0
Senior Assistant Grade	0	0	0
Subtotal	17	17	17
Ungraded	157	168	168
Total permanent positions	595	635	633
Total positions, end of year	776	829	827
Total full-time equivalent (FTE) employment,end of year	737	787	785
Average ES level	ES-4	ES-4	ES-4
Average ES salary	$133,379	$138,154	$138,200
Average GM/GS grade	10.9	10.9	10.9
Average GM/GS salary	$61,195	$64,020	$65,684