A Mission Forgotten

The Failure of the National Institute of Mental Health
To Do Sufficient Research on Severe Mental Illnesses

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Summary

An analysis of the research portfolio of the National Institute of Mental Health (NIMH) was carried out by a five-person professional review committee. A total of 2,277 research grant abstracts for FY1997 were rated. The major findings were:

- Just over one-third (36 percent) of all NIMH research funds supported basic and clinical research on severe mental illnesses.
- Only 12 percent of NIMH research funds were directed to clinical and treatment-related research on severe mental illnesses.
- At least 15 percent of NIMH research funds supported research on diseases that are the primary responsibility of other NIH Institutes.
- NIMH is funding a large number of behavioral research projects on diverse aspects of human behavior but almost no behavioral research that is relevant to severe mental illnesses.
- As basic neuroscience research has multiple sources of alternate funds, the transfer of NIMH funds from basic neuroscience to research on severe mental illnesses would have little effect on the former but a great positive effect on the latter.

It is concluded that NIMH has failed in its primary mission to support research on those illnesses posing the greatest public health burden—severe mental illnesses. Seven recommendations are made to help NIMH return to its originally intended mission.

Introduction

The National Institute of Mental Health (NIMH) was conceived in March 1946, for the specific purpose of doing research on severe mental illnesses. At the initial congressional hearings, Surgeon General Thomas Parran cited the 600,000 patients in state mental hospitals and the 856,000 men who had been rejected for military service in World War II because of severe mental illnesses and said: "This bill would do with the field of mental ill health what the Cancer Institute has been attempting to do and has been doing successfully in connection with the great problem."[1] There was no discussion at that time of NIMH taking responsibility for behavioral or basic research. Indeed, that function was being specifically allocated to the fledgling National Science Foundation, which was intended to coordinate basic "research programs on matters of utmost importance to the national welfare."[2]

More recently, many analysts and policymakers have recognized the need for the National Institutes of Health (NIH), including NIMH, to better match its research investments to the public health needs of the nation. In its 1998 analysis *Scientific Opportunities and Public Needs: Improving Priority Setting and Public Input at the National Institutes of Health,* the Institute of Medicine advised that:

> "In setting priorities, NIH should strengthen its analysis and use of health data, such as burdens and costs of diseases, and of data on the impact of research on the health of the public."[3]

That severe mental illnesses warrant top priority at NIH and NIMH is clear. According to current data compiled by the World Bank and the World Health Organization, major depression, schizophrenia, manic-depressive illness (bipolar disorder), and obsessive-compulsive disorder are four of the top ten most disabling illnesses.[4]

There are currently estimated to be approximately 5.6 million Americans age 9 and over with severe mental illnesses as defined by NIMH's National Advisory Mental Health Council.[5] This definition includes schizophrenia, schizoaffective disorder, manic-depressive illness (bipolar disorder), major depression, obsessive-compulsive disorder, and panic disorder. These severe mental illnesses have been estimated to cost the nation $74 billion per year.[5] These costs include being the single largest category of Federal Supplemental Security Income (SSI) payments (26 percent of the total) and Social Security Disability (SSDI) payments (31 percent of the total),[6] accounting for 13 percent of all Veterans Administration disability benefits and for 15 percent of all Medicaid dollars.[7] Research on the causes and improved treatment of severe mental illnesses

would therefore not only meet the public health needs of the nation but also be extremely cost-effective.

The nonfiscal social costs of severe mental illnesses in the United States are also enormous. At least one-third of all homeless individuals, approximately 150,000 individuals, are severely mentally ill. In addition, according to the Department of Justice, 16 percent of individuals in jails and state prisons—275,900 individuals—are severely mentally ill.[8] The Department of Justice also estimates that severely mentally ill individuals commit approximately 1,000 homicides each year;[9] in almost all cases such individuals were not being treated.

In view of the extremely high costs of severe mental illnesses in the United States, both fiscally and socially, a review of the NIMH research portfolio was undertaken to ascertain the investment of the Institute in research on these diseases.

Abstracts of all research grants funded by NIMH in FY1997 were obtained from NIMH. These totaled 2,277; an additional 378 NIMH grants did not have abstracts. Each of the 2,277 abstracts was read and independently rated by two members of a five-person review committee.[*] The reviewers were all professionals who have themselves carried out research on severe mental illnesses. Details of the methodology of the study are available from the National Alliance for the Mentally Ill (NAMI) in the report *The Severe Mental Illness Research Crisis: A Review of NIMH's Fiscal Year 1997 Portfolio,* by Laura Lee Hall.[10]

Results

The results of the NIMH research portfolio review can be summarized under five major headings:

1. Just over one-third (36 percent) of all NIMH research funds supported basic and clinical research on severe mental illnesses.

The review committee rated all 2,277 abstracts on whether or not the research had any relationship whatsoever to <u>any</u> disease. It then made a determination of what disease

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the research was targeting. For a total of 248 abstracts, information was insufficient to allow an accurate determination of whether the research was disease-related or not, and these were dropped from the analysis.

Of the remaining 2,029 research abstracts, 1,049 were disease-related and 980 were not disease-related. The total dollar value for the 1,049 disease-related grants was $278.3 million, or 66 percent of the total NIMH rated research budget. However, when the research grants were assigned to specific disease categories, it was found that just over half of the disease-related research grants, or 36 percent of the total NIMH research budget, was targeted to research on severe mental illnesses.

The number of research grants and amount of funding targeted to each severe mental illness are shown in Table 1. It should be noted that research grants were frequently assigned to more than one disease category since they were targeting more than one disease, e.g. schizophrenia and manic-depressive illness. Thus, Table 1 is useful for answering the question of how many individual grants were targeting any specific severe mental illness. Because of the assignment of research grants to multiple disease categories, however, Table 1 does not reveal the total NIMH support for research on severe mental illnesses.

To ascertain the total NIMH support for research on severe mental illnesses, research grants were assigned to the single disease category they primarily targeted. Of the 71 grants targeting manic-depressive illness in Table 1, for example, only 54 (2.7 percent of total grants), valued at $15.1 million (3.6 percent of total), primarily targeted manic-depressive illness. When this calculation was carried out for all severe mental illnesses, it was found that only 589 NIMH grants (29 percent of total NIMH grants), funded for $152 million (36 percent of total NIMH research funds), targeted one or more severe mental illnesses.

2. Only 12 percent of NIMH research funds were directed to clinical and treatment-related research on severe mental illnesses.

For disease-related research grants, the review committee made a further determination of whether the research was primarily clinical (e.g., efficacy, outcomes, and factors influencing treatment), health services (e.g., economics, public policy, care-giver burden), or etiological (e.g., genetics, neuroimaging, animal models). Table 2 shows that 161 of the 589 grants related to severe mental illnesses were primarily targeted to clinical and treatment issues. Thus, clinical studies of severe mental illnesses represented 7.8 percent of all NIMH research grants and 11.9 percent of all NIMH research funds. Clinical studies of manic-depressive illness, obsessive-compulsive disorder, and panic disorder each were allocated 1.1 percent or less of NIMH's total research grant funds.

3. At least 15 percent of NIMH research funds supported research on diseases that are the primary responsibility of other NIH Institutes.

Over the years, NIMH has assumed increasing responsibility for research on diseases that are the primary responsibility of other NIH Institutes. The two outstanding examples in FY1997 were AIDS and Alzheimer's disease. As shown in Table 3, AIDS was allocated $60.2 million, or 14.2 percent of all NIMH research funds, more than the total for all NIMH research on clinical and treatment aspects of all severe mental illnesses (11.9 percent). AIDS also received more NIMH research support than all research on schizophrenia (13.5 percent) and almost three times more than all research on manic-depressive illness (5.2 percent).

Similarly, research on Alzheimer's disease received 3.6 percent of all NIMH research funds, the same amount that panic disorder received (3.6 percent) and substantially more than research on obsessive-compulsive disorder received (2.1 percent).

Much of the NIMH-supported research on AIDS and Alzheimer's disease is worthwhile research. The problem is that such research commandeers NIMH fiscal, administrative, and manpower resources, with the consequence that there are fewer resources for severe mental illnesses. AIDS is the primary responsibility of the National Institute of Allergy and Infectious Diseases (NIAID) and the Centers for Disease Control (CDC). The $60.2 million in research funds spent by NIMH in FY1997 was only 0.6 percent of all AIDS research in the United States in FY1997 (the total was approximately $9 billion), but it was 14.2 percent of all NIMH research funds. Alzheimer's disease is the primary responsibility of the National Institute on Aging (NIA) and the National Institute of Neurological Disorders and Stroke (NINDS). NIAID, NIA, and NINDS do not conduct research on severe mental illnesses; therefore, insofar as NIMH does research on AIDS and Alzheimer's disease, it effectively shifts research resources away from mental illnesses to other diseases.

AIDS and Alzheimer's disease are merely the two most egregious examples of FY1997 NIMH research funds that went to diseases belonging to other NIH institutes. Additional NIMH research funds went to support research on Parkinson's disease, spinal cord injury, multiple sclerosis, breast cancer, diabetes, heart disease, irritable bowel syndrome, upper respiratory infections, obesity, and infertility. In total, it appears that at least 15 percent of NIMH research funds are spent on research grants for diseases that are the primary responsibility of other NIH institutes.

4. NIMH is funding a large number of behavioral research projects on diverse aspects of human behavior but almost no behavioral research that is relevant to severe mental illnesses.

In FY1997, 980 (48 percent) of all NIMH rated research grants were for basic research unrelated to any disease. A total of $144.2 million, or 34 percent of NIMH's total research funds, were used to fund these research and training grants. By our estimate, 632 of these basic grants, worth $96.1 million, included basic behavioral or social science research.

Behavioral research is very important and should be an integral component of all NIH Institutes. Behavioral research can help elucidate how to get people to eat less, exercise more, smoke less, drink less, practice safe sex, take medication regularly, get regular examinations, drive safely, etc., and thus help control obesity, heart disease, hypertension, diabetes, some cancers, and many other diseases. It was a recognition of the importance of behavioral research that led NIH to create the Office of Behavioral and Social Science Research.

Behavioral research is similarly important for understanding and treating severe mental illnesses. Research on why families do not seek treatment sooner (i.e., duration of untreated illness), research on the precursors and earliest symptoms of severe mental illnesses, research on problems with medication compliance, the use of advanced directives, how to alleviate the family's care-giver burden, the importance of peer support, and studies of the homelessness-jail-hospital cycle experienced by many severely mentally ill patients are only a few of the many behavioral problems that should be funded by NIMH.

These problems, however, are not the problems being funded by NIMH. Instead, NIMH is funding a diverse panoply of behavioral research projects, almost all of which should legitimately be funded by the National Science Foundation, another NIH Institute (e.g., the National Institute of Child Health and Human Development, the National Institute on Aging), another government agency (e.g., the Department of Education), or in some cases probably should not be funded at all with tax-payer dollars.

The Appendix lists 25 examples of behavioral research funded by NIMH in FY1997. It illustrates the extreme diversity of such research, covering virtually every phase of human behavior and development. This diversity of research projects raises the question of whether NIMH conceives of itself primarily as a human behavior research institute. If so, what is the function of the National Science Foundation's Directorate of Social, Behavioral and Economic Sciences? And what organization is supposed to do research on severe mental illnesses, including behavioral aspects of the diseases, if NIMH abdicates its responsibility?

The funding by NIMH of diverse behavioral and social science research projects unrelated to severe mental illnesses effectively shifts funds originally allocated for research on severe mental illnesses to other purposes. A clarification of the fundamental mission of NIMH is needed.

5. As basic neuroscience research has multiple resources of alternate funding, the transfer of NIMH funds from basic neuroscience to research on severe mental illnesses would have little effect on the former but a great positive effect on the latter.

In 1999 the National Alliance for the Mentally Ill (NAMI) undertook a study of funding for neuroscience research in the United States.[11] A total of 66 public and private organizations were surveyed by letter, telephone, or both. Whenever possible the neuroscience research was divided into basic neuroscience (structure and function of the nervous system) and clinical neuroscience (disease-related).

Table 4 lists basic neuroscience funds available for FY1997. For some organizations, it was not possible to make a division into basic and clinical, so they are omitted; the largest such organization was the Veterans Administration. For organizations for which the basic and clinical division is available, a total of $1,652.9 million ($1.65 billion) in basic neuroscience research funds was available. NIMH provided a total of $181.6 million in basic neuroscience research funds, or 11.0 percent of the total neuroscience funds available.

It is instructive to contrast NIMH's FY1997 investment of $181.6 million in basic neuroscience with its $152 million investment in research on severe mental illnesses. Basic neuroscience had multiple alternate sources of funding other than NIMH, totaling $1,471.3 million. Alternate sources of funding for severe mental illnesses, on the other hand, were extremely limited. In addition to NIMH's $152 million, approximately $30 million for research on schizophrenia, manic-depression, and severe depression was available from NARSAD and the Stanley Foundation Research Programs together. An unknown sum was also available from the Veterans Administration, and small amounts from a few private foundations. Thus, NIMH basic and clinical research on severe mental illnesses represented at least 75 percent of the funds available for severe mental illnesses, but NIMH basic and neuroscience research represented only 11 percent of the total funds available for basic neuroscience.

The corollary of this is that every dollar shifted from basic neuroscience to basic and clinical research on severe mental illnesses at NIMH would have a comparatively small effect on basic neuroscience research but a large effect on increasing research on

severe mental illnesses. For example, if NIMH's entire basic neuroscience investment were transferred to research on severe mental illnesses, basic neuroscience funds would decrease only 11 percent but research funds for severe mental illnesses would increase approximately 100 percent.

Discussion

The original legislation authorizing the creation of NIMH specified that its purpose was for "conducting researches, investigations, experiments, and demonstrations relating to the cause, diagnosis, and treatment of neuropsychiatric disorder."[1] In recent years, the enormous fiscal costs and personal burden caused by schizophrenia, manic-depressive illness, and the other severe mental illnesses have become increasingly apparent, and it is clear that NIMH's primary focus must be on these diseases.

As noted by this study, NIMH research on severe mental illnesses in FY1997 was allocated $152 million, just over one-third of NIMH's total research resources. When compared to the enormous costs of these diseases and their impact on such federal programs as SSI, SSDI, Medicaid, Medicare, and VA benefits, this outlay appears insufficient on economic grounds alone. Since the total cost of these diseases was estimated to be $74 billion per year, this means that we are spending approximately $1 in research for every $500 these diseases cost each year.

The failure of NIMH in its 1997 portfolio to adequately fund research on severe mental illnesses is even more egregious when clinical and treatment-related research on these diseases is examined. Manic-depressive illness (bipolar disorder) affects at least 1.2 million Americans at any given time and is a devastating disorder, yet only 1.1 percent of NIMH's research resources are allocated to finding better treatments for this disorder. For obsessive-compulsive disorder and panic disorder, NIMH's investment is even less. NIMH was clearly confused about its priorities in 1997 and would do well to strive to follow the advice offered to NIH by the Institute of Medicine: "In setting priorities, NIH should strengthen its analysis and use of health data, such as burdens and costs of diseases, and of data on the impact of research on the health of the public."[3]

In NIMH's favor, it should be added that since 1997 some efforts have been made by the NIMH Director, Dr. Steven Hyman, to redirect more research resources toward severe mental illnesses, especially manic-depressive illness, and clinical research. This direction needs to be strongly encouraged.

It is also extraordinary that approximately 15 percent of NIMH's research resources go to AIDS, Alzheimer's disease, and additional diseases for which other NIH Institutes have the primary responsibility. The other institutes are not doing NIMH's task, but NIMH is doing their task. Imagine what the outcry would be from the AIDS and the cancer communities if NIAID and NCI were doing large amounts of research on schizophrenia at the expense of AIDS and cancer research. To argue that NIMH has a legitimate interest in these other diseases because there are behavioral aspects to them is illogical. There are behavioral aspects to all diseases, and behavioral research should be an integral part of every NIH Institute.

The founders of NIMH never envisioned the Institute taking responsibility for all aspects of human behavior, and there is no scientific reason to think that it should do so. Yet its research portfolio reads as if it aspires to be exactly that, covering everything from language processing, reading problems, and geometrical reasoning to romantic relationships, infant sleep problems, the parentage of eastern bluebirds, the behavioral endocrinology of prairie voles, and social change in Czechoslovakia. Indeed, it is difficult to think of any social or behavioral problem that could not be funded under NIMH's current all-inclusive policy. Meanwhile, a large proportion of the 5.6 million Americans with severe mental illnesses are going untreated, including the 28 percent of homeless mentally ill individuals who rely on garbage cans for some of their food.[12]

It is an era of fiscal largesse for NIMH and the other NIH Institutes. Congress is in the process of doubling their budget to the sounds of what one journalist called "the NIH Hallelujah Chorus."[13] Rather than simply adding our voices to the chorus, responsible researchers and advocates for persons with severe mental illnesses should take a hard, detailed look at what NIMH is doing and ask why it has failed in its primary mission: conducting research on severe mental illnesses.

Recommendations

1. Severe mental illnesses, as defined by NIMH's National Advisory Mental Health Council, should receive at least two-thirds of NIMH's research resources in any given year. All new funds received from Congress should be invested in these diseases until a more equitable balance is achieved. In the next two years, research investment into manic-depressive illness and obsessive-compulsive disorder should be tripled, and this funding should not draw from research on the other severe mental illnesses.
2. NIMH should markedly increase clinical and treatment-related research on severe mental illnesses.

3. NIMH should not allocate scarce research resources for diseases that are the primary responsibility of other NIH Institutes. Congress should not require NIMH to fund research on AIDS or other diseases unrelated to severe mental illnesses.

4. Behavioral research on diseases should be an integral part of all NIH institutes. Behavioral research on social problems should be funded by the National Science Foundation. Behavioral research that is funded by NIMH should focus on severe mental illnesses and other neuropsychiatric diseases that NIMH is studying.

5. Basic neuroscience research unrelated to any disease should have a more modest role at NIMH since there are so many sources of alternate funding for such research. Fiscal resources for disease-related research should be greater than the fiscal resources for basic neuroscience research by a ratio of at least 2:1; this is a goal that could be achieved over the next three to five years.

6. Congressional hearings to clarify the primary mission of NIMH would be useful.

7. NIMH should be required to issue an annual report to Congress regarding the allocation of its resources to severe mental illnesses in general and to clinical and treatment-related research on severe mental illnesses in particular. Such details for all research impacting public health would guarantee an informed Congress and citizenry.

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Appendix: Examples of Behavioral Research Funded by NIMH in FY 1997
(grants listed alphabetically by title)

1. *Adolescent romantic relationships and their development.* $200,693
   Studies "middle adolescents' romantic relationships" in 147 high school seniors. Wyndol Furman, University of Denver (5R01MH50106-02)

2. *Causes of low birth weight.* $40,860
   "The survey project proposed here is an attempt to evaluate the potential causes for low birth weight in the diverse population of Atlanta, Georgia." Ida Mukenge, Morehouse College (5R24MH47188-080007)

3. *Circadian analysis of selective attention.* $24,420
   Purpose is "to explore how attentional mechanisms respond to the demands of shift-work." Todd Horowitz, Brigham and Women's Hospital, Boston (5F32MH11306-02)

4. *Coping with change in Czechoslovakia.* $115,515
   Studies "the post-communist transformation's effect on the well-being of families and individuals in the Czech Republic." Joseph Hraba, Iowa State University (2R01MH50369-04A1)

5. *Couple relationships in family formations.* $286,189
   Purpose is "to extend our theoretical model of the mechanisms linking family processes and children's adaptation to elementary school." Philip Cowan, University of California at Berkeley (5R01MH31109-17)

6. *Dreams, visions, and person in a Puerto Rican barrio.* $14,490
   Studies dreams and visions "and their role in cultural understandings of personhood" among Puerto Rican Americans. C. Jeffrey Jacobson, Case Western Reserve University (1F31MH11773-01)

7. *Evolution of mating systems.* $83,743
   Studies "how aggression, paternal provisioning, and genetic parentage are related in eastern bluebirds." Patricia Gowaty, University of Georgia (5K02MH00706-07)

8. *Fairness in family work over transition to parenthood.* $39,125
   The "aim is to investigate how married couples make judgments about fairness in the division of housework at approximately 3 months before and 6 and 12 months after the birth of a first child. Nancy Grote, Carnegie-Mellon University (1R03MH57914-01)

9. *Folk ecological cognition.* $30,900
Studies "ecological knowledge and reasoning among study populations inGuatemala, Mexico, and the US." Luisa Maffi, Northwestern University (1F32MH11573-01A1)

10. *Friendship provisions and adaptation in disabled elders.* $138,040
Purpose is "to examine how recently visually impaired, community-dwelling elders utilize friendship support in adapting to chronic impairment over time." Joann Reinhardt, The Lighthouse Inc., New York (5R29MH53285-02)

11. *Mathematical models of cognitive processing.* $24,420
The purpose is "to develop a mathematical model of the mental operations used to solve problems requiring geometrical reasoning." Julie Epelboim, Stanford University (5F32MH11282-02)

12. *Peer rejection of girls—social experiences and causes.* $505,862
Studies "the experience of peer rejection for middle childhood girls." Martha Putallaz, Duke University (5R01MH52843-02)

13. *Perception and production of expressive microstructure.* $210,472
Studies "the expressive microstructure of music—the systematic variations in timing, dynamics, and articulation that make performed music expressive and aesthetically appealing." Bruno Repp, Haskins Laboratories, New Haven (2R01MH51230-04A2)

14. *Perceptual and cognitive processes in reading.* $113,918
Study "investigate[s] perceptual processes in reading." Keith Rayner, University of Massachusetts (5K05MH01255-03)

15. *Personality processes and adjustment during a transition.* $14,496
Purpose is "to elucidate the role of personality in the adjustment of aging women to a significant life transition: community relocation." Kristen Kling, University of Wisconsin (5F31MH11543-02)

16. *Physiology of social behavior.* $99,873
"The purpose of this research is an analysis of the behavioral endocrinology of mammalian social behavior" in a rodent, the prairie vole. C.S. Carter, University of Maryland (5K05MH01050-05)

17. *Regulation of sleep and sleep problems in infancy.* $147,850
Purpose is "to better understand the possible origins" of "infant sleep-wake regulation during the first year of life." Thomas Anders, University of California at Davis (1R01MH50741-01A3)

18. *Sentence processing in Japanese and English.* $68,208
Studies "the interaction between the grammars of particular languages and the mechanisms of human language processing system." Reiko Mazuka, Duke University (5R29MH51655-04)

19. *Sleep home pages on the world wide web.* $100,000
"The Sleep Home Pages will constitute what is called a Web Storefront or Mall that will provide 'one-stop shopping' for all sleep and sleep-related information." Yvonne Tobin, Webscience, Los Angeles (1R43MH56313-01A1)

20. *Social affective development in infancy.* $271,614
Studies the "signaling processes in infancy . . . into the second and third years of life." Robert Emde, University of Colorado (5R37MH22803-24)

21. *Social inference in American and Chinese perceivers.* $60,411
Studies "the mechanisms that produce cross-cultural differences and provide a model of social inference that will incorporate the inference processes of perceivers in both independent and interdependent cultures." Douglas Krull, Northern Kentucky University (5R03MH57216-02)

22. *Supporting self discipline through external structure.* $24,836
"Examines social psychological factors affecting the ways in which people motivate themselves to achieve long-term goals." Bonny Brown, Stanford University (1F31MH11927-01)

23. *Unconscious and implicit cognition.* $102,960
"This research examines the capabilities and limitations of cognition initiated by visual 'subliminal' stimuli . . . presented so as to evade conscious attention." Anthony Greenwald, University of Washington (2R01MH41328-07)

24. *Violence and the longitudinal course of newlywed marriages.* $17,353
Research "is designed to add to existing knowledge on violence and the longitudinal course of newlywed marriage." Erika Lawrence, University of California, Los Angeles (1F31MH11745-01)

25. *Wishful thinking—mechanisms of motivated cognition.* $12,580
Purpose "is to explore the mediating mechanisms underlying motivationally based cognitive distortions." Linda Richter, University of Maryland (5F31MH11240-02)

Table 1. NIMH Funding for Severe Mental Illnesses, FY1997

(Disease categories not mutually exclusive. A single research grant may be counted as many as 3 times in different disease categories.)

Disease category	No. of research grants targeting that disease	% of total NIMH rated research grants (N=2,029)	Total amount of funds (millions) going to grants targeting that disease	% of total NIMH rated research grant funds (total $422.5 million)
Schizophrenia	235	11.6%	$57.1	13.5%
Manic-depressive illness (bipolar disorder)	71	3.5%	$21.9	5.2%
Major depression	279	13.8%	$76.9	18.2%
Obsessive-compulsive disorder	30	1.5%	$8.8	2.1%
Panic disorder	58	2.9%	$15.4	3.6%

Table 2. NIMH Funding for Research on Clinical and Treatment Aspects of Severe Mental Illnesses, FY1997

Disease category	No. of research grants targeting clinical and treatment issues	% of total NIMH rated research grants (N=2,029)	Total amount of funds (millions) going to grants targeting clinical and treatment issues	% of total NIMH rated research grant funds (total $422.5 million)
Schizophrenia	27	1.3%	$11.3	2.7%
Manic-depressive illness (bipolar disorder)	17	0.8%	$4.8	1.1%
Major depression	94	4.6%	$28.1	6.7%
Obsessive-compulsive disorder	11	0.5%	$2.3	0.5%
Panic disorder	12	0.6%	$3.9	0.9%
Total	161	7.8%	$50.4	11.9%

Table 3. NIMH Funding of Diseases That Are the Primary Responsibility of Other NIH Institutes, FY1997

Disease category	No. of research grants targeting that disease	% of total NIMH rated research grants (N=2,029)	Total amount of funds (millions) going to grants targeting that disease	% of total NIMH rated research grant funds (total $422.5 million)
AIDS	184	9.1%	$60.2	14.2%
Alzheimer's disease	65	3.2%	$15.4	3.6%

Table 4. Funding for Basic Neuroscience FY1997 from Survey of Federal and Private Funding of Neuroscience Research*

Organization	Dollars (millions)
Disease-specific organizations	$33.1
Howard Hughes Foundation	52.0
Other private foundations	10.1
National Science Foundation	40.0
NIH	
National Institute of Neurological Diseases and Stroke	420.6
National Eye Institute	202.8
National Institute of Mental Health	181.6
National Institute on Aging	113.5
National Institute on Drug Abuse	103.6
National Heart, Lung, and Blood Institute	83.5
National Institute of Child Health and Human Development	82.9
National Institute on Deafness and Other Communication Disorders	61.8
National Institute on Alcohol Abuse and Alcoholism	57.9
National Institute of Diabetes and Digestive and Kidney Diseases	40.6
National Cancer Institute	31.0
All other NIH Institutes	116.5
Other federal agencies (FDA, EPA, ONR, CDC, etc.)	21.4
Total	$1,652.9

* Snyder, M. *Federal and Private Funding of Neuroscience Research.* Arlington, Va.: National Alliance for the Mentally Ill, 1999.

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