



Research to Improve Lives

Beverly Pringle, PhD

Chief, Global Mental Health Research
National Institute of Mental Health

October 25, 2015



National Institute
of Mental Health

National Institute of Mental Health



Transforming the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery, and cure.



HEALTH & EDUCATION

OUTREACH

RESEARCH PRIORITIES

FUNDING

LABS AT NIMH

NEWS

ABOUT US



New US Clinical Data on Mental Disorders

A new clinical study provides national data on past-year prevalence of specific mental disorders in adults.

[Read More](#)



Healthtopics*

Anxiety Disorders

ADHD/ADD

Autism Spectrum Disorder

Bipolar Disorder

Borderline Personality Disorder

Depression

Eating Disorders

Prevention

Research on HIV and AIDS

Schizophrenia

Suicide Prevention

More Topics

Source: <http://www.nimh.nih.gov/index.shtml>



Office for Research on Disparities & Global Mental Health



We envision a world with...

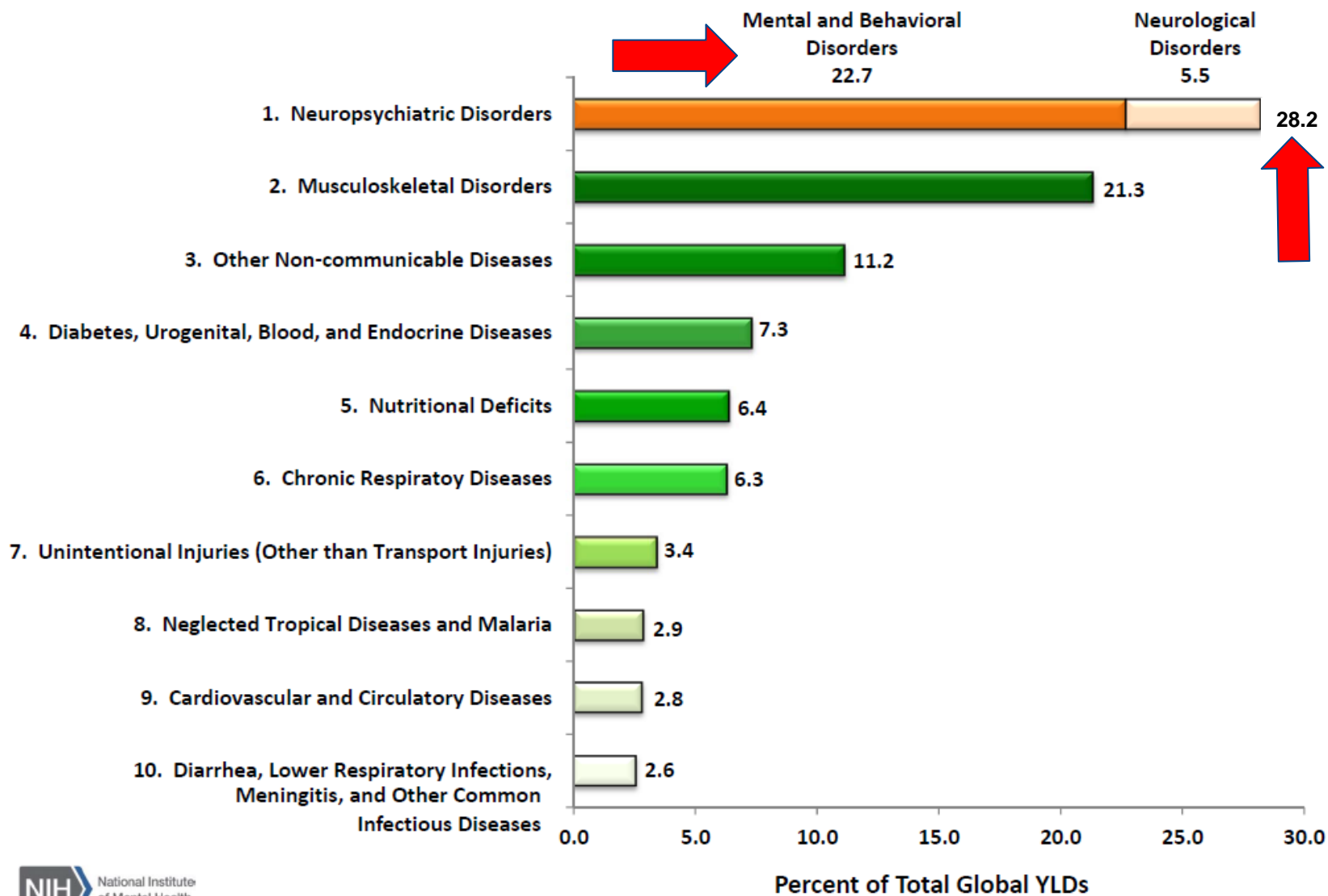
- Equity in mental health care and status regardless of geography, sex, gender, race, ethnicity, or socioeconomic status
- A vibrant, diverse mental health research workforce in the US
- Equitable collaborations for the conduct of mental health research globally



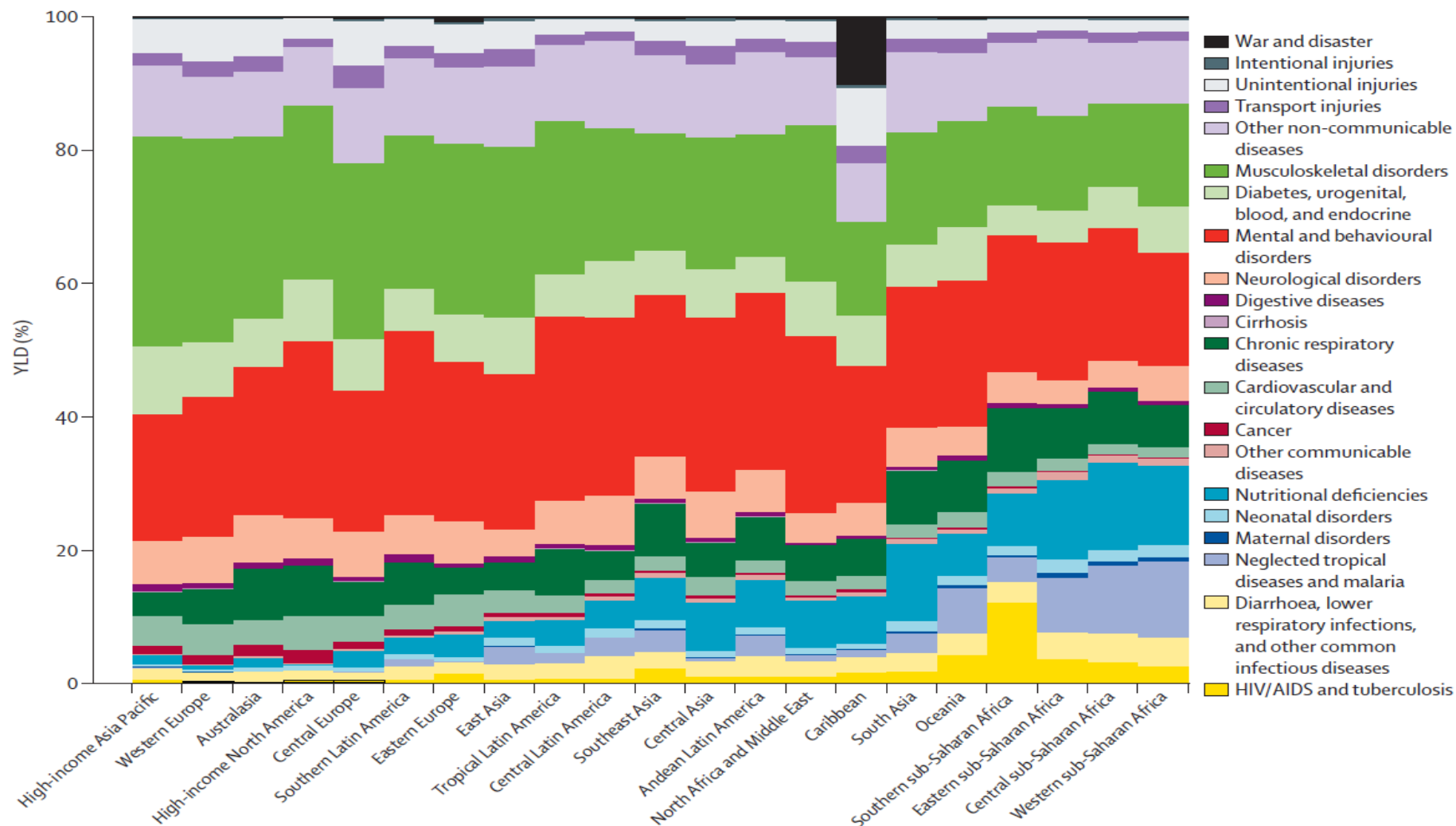


Challenge:
***Reduce the burden of mental illness
worldwide.***

Top 10 Leading Disease/Disorder Categories Contributing to Global YLDs (2010)



Percentage of years lived with disability (YLDs) by 21 major cause groupings and region for 2010



Vos et al. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet 2012; 380: 2163-196





Challenge:

***Deliver mental health care that
is adequate and equitably distributed
worldwide.***



Inequity in Investments and Staffing

Median mental health DALYs and expenditures per capita (USD) by World Bank income group

World bank Income group	Mental health DALYs	Median mental health expenditures per capita
Low	19 999	0.2 
Lower-Middle	69 653	0.59
Upper-Middle	69 609	3.76
High	40 234	44.84 

*2004 figures from World Health Organization [4].

**2011 figures from World Health Organization Mental Health Atlas [5].

World Bank income group	Psychiatrists	Psychologists	Psychiatric nurses	Social workers
Low	0.05 	0.02	0.42	0.01
Lower-middle	0.54	0.14	2.93	0.13
Upper-middle	2.03	1.47	9.72	0.76
High	8.59 	3.79	29.15	2.16

Median rate of mental health providers per 100,000 people

Grand Challenges in Global Mental Health

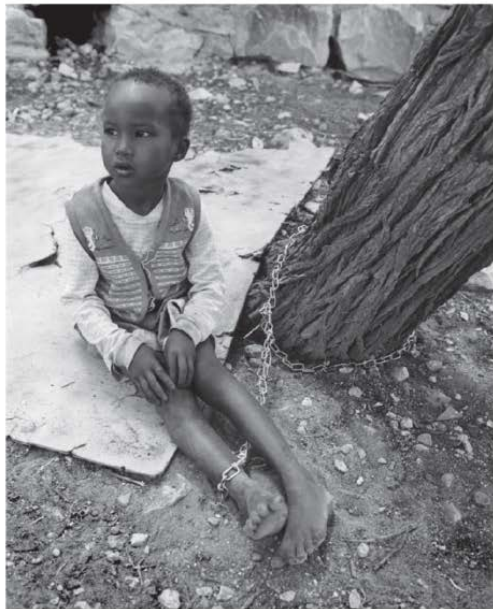
COMMENT

NANOTECHNOLOGY Materials should not be regulated on size alone **p.31**

SUMMER BOOKS Reviewers and editors suggest reading for your holiday **p.32**

CONSERVATION Concern about alien species is scientific and practical **p.36**

EQUALITY Action needed to stop science prizes going primarily to men **p.37**



Improving treatment for children with mental illness, like this girl in Somalia, is an urgent priority.

Grand challenges in global mental health

A consortium of researchers, advocates and clinicians announces here research priorities for improving the lives of people with mental illness around the world, and calls for urgent action and investment.

Schizophrenia, depression, epilepsy, dementia, alcohol dependence and other mental, neurological and substance-use (MNS) disorders constitute 13% of the global burden of disease (Table 1), surpassing both cardiovascular disease and cancer¹. Depression is the third leading contributor to the global disease burden, and alcohol and illicit drug use account for more than 5% (ref. 2). Every seven seconds, someone develops dementia³, costing the world up to US\$609 billion in 2009 (ref. 4). By 2020, an estimated 1.5 million people will die each year by suicide, and between 15 and 30 million will make the attempt⁴.

The absence of cures, and the dearth of preventive interventions for MNS disorders, in part reflects a limited understanding of the brain and its molecular and cellular mechanisms. Where there are effective treatments, they are frequently not available to those in greatest need. In 83% of low-income countries, there are no anti-Parkinsonian treatments in primary care; in 25% there are no anti-epileptic drugs⁵. Unequal distribution of human resources — between and within countries — further weakens access: the World Health Organization's European region has 200 times as many psychiatrists as in Africa⁶. Across all countries, investment in fundamental research into preventing and treating MNS disorders is disproportionately low relative to the disease burden⁷.

To address this state of affairs, the Grand Challenges in Global Mental Health initiative has identified priorities for research in the next 10 years that will make an impact on the lives of people living with MNS disorders. The study was funded by the US National Institute of Mental Health (NIMH) in Bethesda, Maryland, supported by the Global Alliance for Chronic Diseases (GACD), headquartered in London. Answers to the questions posed will require a surge in discovery and delivery science. We use the term 'mental health' as a convenient label for MNS disorders. We exclude conditions with a vascular or infectious aetiology (such as stroke or cerebral malaria), because these fell within the scope of the two previous grand challenges initiatives — in global health and in chronic non-communicable diseases⁸.

This initiative differs from previous priority-setting exercises for mental

Top 5 challenges:

- Screening & core services in primary care
- Affordable & available supply of effective medications
- Effective & affordable community-based care & rehabilitation
- Greater access to evidence-based care for children in LMICs
- Better mental health training for all health-care providers

Collins et al. (2011). Grand challenges in global mental health. *Nature*, 475: 27-30. Collins et al. (2013). Grand challenges in global mental health: Integration in research, policy, & practice. *PLoS*, 10(4): 1-6.



NIH National Institute of Mental Health

Mental Health Innovations Underway

Brain Disorders in the Developing World
Mental Health & Poverty Project
Collaborative Hubs
PRIME
EMERALD
Integrated Care
Grand Challenges Canada



Expanding access to mental health care globally ...

Collaborative Hubs for International Research on Mental Health





Challenge:

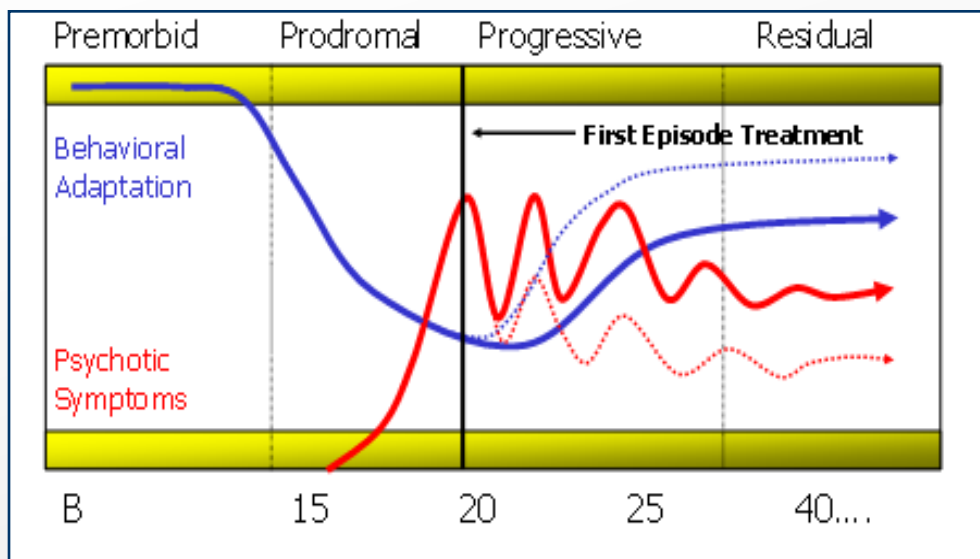
***Develop mental health care that is a lot
— not just a little — more effective.***

Delivering the right care at the right time ...

RAISE

Recovery After an Initial
Schizophrenia Episode

A Research Project of the NIMH



Schizophrenia is Best Treated with Combination of Meds & Psychotherapy

Going against decades of conventional wisdom, new, robust research from the National Institute of Mental Health suggests that schizophrenia ... started the combined treatment after that first episode, the better they did ...

Psych Central • By [John M. Grohol](#) • 10/23/2015

New Approach Advised to Treat Schizophrenia

More than two million people in the United States have a diagnosis of schizophrenia ... The sooner people started the combined treatment after that first episode, the better they did, the study found. The average time ...

New York Times • By [Benedict Carey](#) • 10/20/2015

RAISE Study Reveals More Effective Way To Treat Schizophrenia: How The Treatment Works

Results from the Recovery After an Initial Schizophrenia Episode (RAISE) study, published Tuesday in the American Journal of Psychiatry and spearheaded by the National Institute of Mental Health (NIMH), suggested ...

Tech Times • 10/21/2015

'Game-Changer' Study Says There's A Better Way To Treat Schizophrenia

A groundbreaking new study adds to a growing body of evidence that people with schizophrenia can do much better if they get the right treatment at ... as the name suggests, is to reach patients shortly after they first ...

The Huffington Post • 10/21/20



National Institute
of Mental Health

Delivering the right care at the right time ...

Comprehensive Versus Usual Community Care for First-Episode Psychosis: 2-Year Outcomes From the NIMH RAISE Early Treatment Program

John M. Kane, M.D., Delbert G. Robinson, M.D., Nina R. Schooler, Ph.D., Kim T. Mueser, Ph.D., David L. Penn, Ph.D., Robert A. Rosenheck, M.D., Jean Addington, Ph.D., Mary F. Brunette, M.D., Christoph U. Correll, M.D., Sue E. Estroff, Ph.D., Patricia Marcy, B.S.N., James Robinson, M.Ed., Piper S. Meyer-Kalos, Ph.D., L.P., Jennifer D. Gottlieb, Ph.D., Shirley M. Glynn, Ph.D., David W. Lynde, M.S.W., Ronny Pipes, M.A., L.P.C.-S., Benji T. Kurian, M.D., M.P.H., Alexander L. Miller, M.D., Susan T. Azrin, Ph.D., Amy B. Goldstein, Ph.D., Joanne B. Severe, M.S., Haiqun Lin, M.D., Ph.D., Kyaw J. Sint, M.P.H., Majnu John, Ph.D., Robert K. Heinsen, Ph.D., A.B.P.P.

Objective: The primary aim of this study was to compare the impact of NAVIGATE, a comprehensive, multidisciplinary, team-based treatment approach for first-episode psychosis designed for implementation in the U.S. health care system, with community care on quality of life.

Method: Thirty-four clinics in 21 states were randomly assigned to NAVIGATE or community care. Diagnosis, duration of untreated psychosis, and clinical outcomes were assessed via live, two-way video by remote, centralized raters masked to study design and treatment. Participants (mean age, 23) with schizophrenia and related disorders and ≤ 6 months of antipsychotic treatment ($N=404$) were enrolled and followed for ≥ 2 years. The primary outcome was the total score of the Heinrichs-Carpenter Quality of Life Scale, a measure that includes sense of purpose, motivation, emotional and social interactions, role functioning, and engagement in regular activities.

Results: The 223 recipients of NAVIGATE remained in treatment longer, experienced greater improvement in quality of life and psychopathology, and experienced greater involvement in work and school compared with 181 participants in community care. The median duration of untreated psychosis was 74 weeks. NAVIGATE participants with duration of untreated psychosis of < 74 weeks had greater improvement in quality of life and psychopathology compared with those with longer duration of untreated psychosis and those in community care. Rates of hospitalization were relatively low compared with other first-episode psychosis clinical trials and did not differ between groups.

Conclusions: Comprehensive care for first-episode psychosis can be implemented in U.S. community clinics and improves functional and clinical outcomes. Effects are more pronounced for those with shorter duration of untreated psychosis.

Am J Psychiatry 2015; 001-11; doi: 10.1176/appi.ajp.2015.15050632

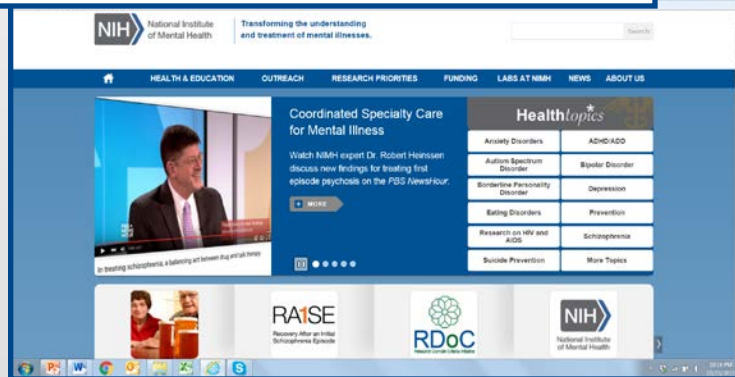
RAISE

Recovery After an Initial
Schizophrenia Episode

A Research Project of the NIMH

On-line Resources for Coordinated Specialty Care:

- Webinars
- Guides, Manuals, Program Resources
- Videos
- Interactive Planning Tool



Integrating mental health and other health care ...

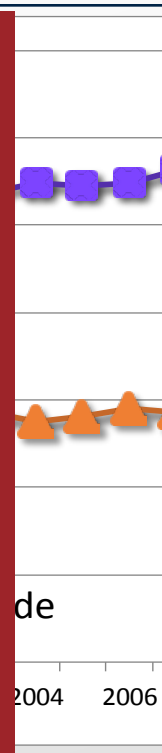
Mental Health and Chronic Disease Care in Low-Resource Settings

- **Tanzania** - *Healthy Options: Group psychotherapy for HIV-positive depressed perinatal women*
- **India** - *Integrated care for co-morbid depression and diabetes in India*
- **China** - *The depression hypertension COACH study*
- **South Africa** - *COBALT: Comorbid Affective Disorders, AIDS/HIV, and Long Term Health*
- **China** - *Integrating depression care for heart patients in low-resource hospitals in China*
- **India** - *Improving mental health through integration with primary care in rural Karnataka*



Building evidence for taking action to prevent suicide ...

Rate Per 100,000



A Prioritized Research Agenda for Suicide Prevention:

An Action Plan to Save Lives

Research Prioritization Task Force

www.suicide-research-agenda.org



The Public-Private Partnership Advancing the National Strategy for Suicide Prevention

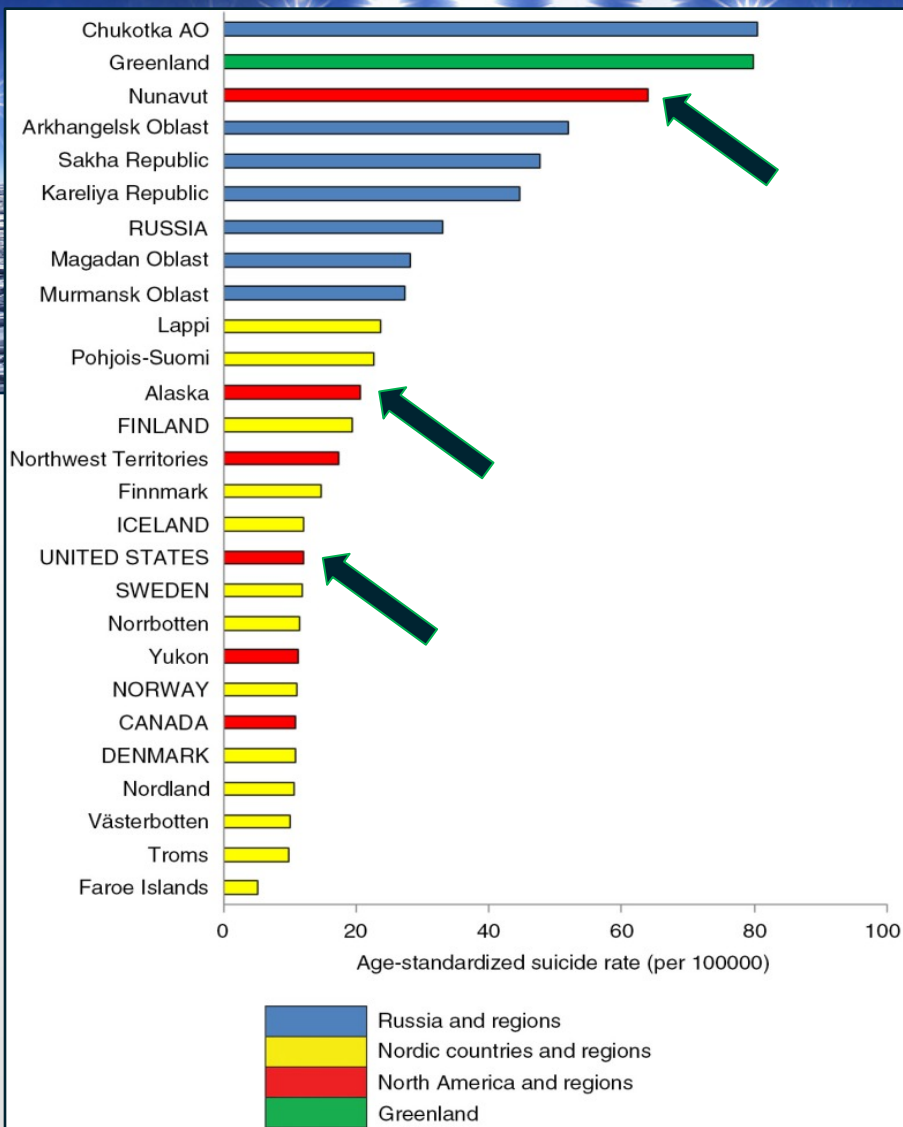


SOURCES: Bureau of Justice Statistics (homicide data); Centers for Disease Control and Prevention (suicide data); National Action Alliance: <http://actionallianceforsuicideprevention.org/>



NIH National Institute of Mental Health

Reducing suicide in circumpolar communities ...



RISING SUN

Reducing the Incidence of Suicide
in Indigenous Groups –
Strengths United through Networks

Sources: National statistical agencies including the National Center of Health Statistics (USA), Statistics Canada, Statistics Iceland, Statistics Norway, Socialstyrelsen (Sweden), Statistics Finland and Rosstat (Russia); and international databases (NOMESCO, Eurostat).

Cited in Young et al. (2015) Int J Circumpolar Health.
74: 10.3402/ijch.v74.27349.



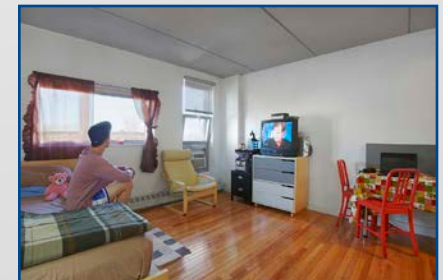


Challenge:

Improve the health and longevity of people with severe mental illness.

Improving health for people with severe mental illnesses ...

- Self-Management Training and Automated Telehealth to Improve SMI Health Outcomes
- Extended Care for Smoking Cessation Following Psychiatric Hospitalization
- Trial of Integrated Smoking Cessation, Exercise, and Weight Management in SMI
- Peer-Led Healthy Lifestyle Program in Supportive Housing
- Fixed Dose Intervention Trial of New England Enhancing Survival in SMI Patients





Challenge:

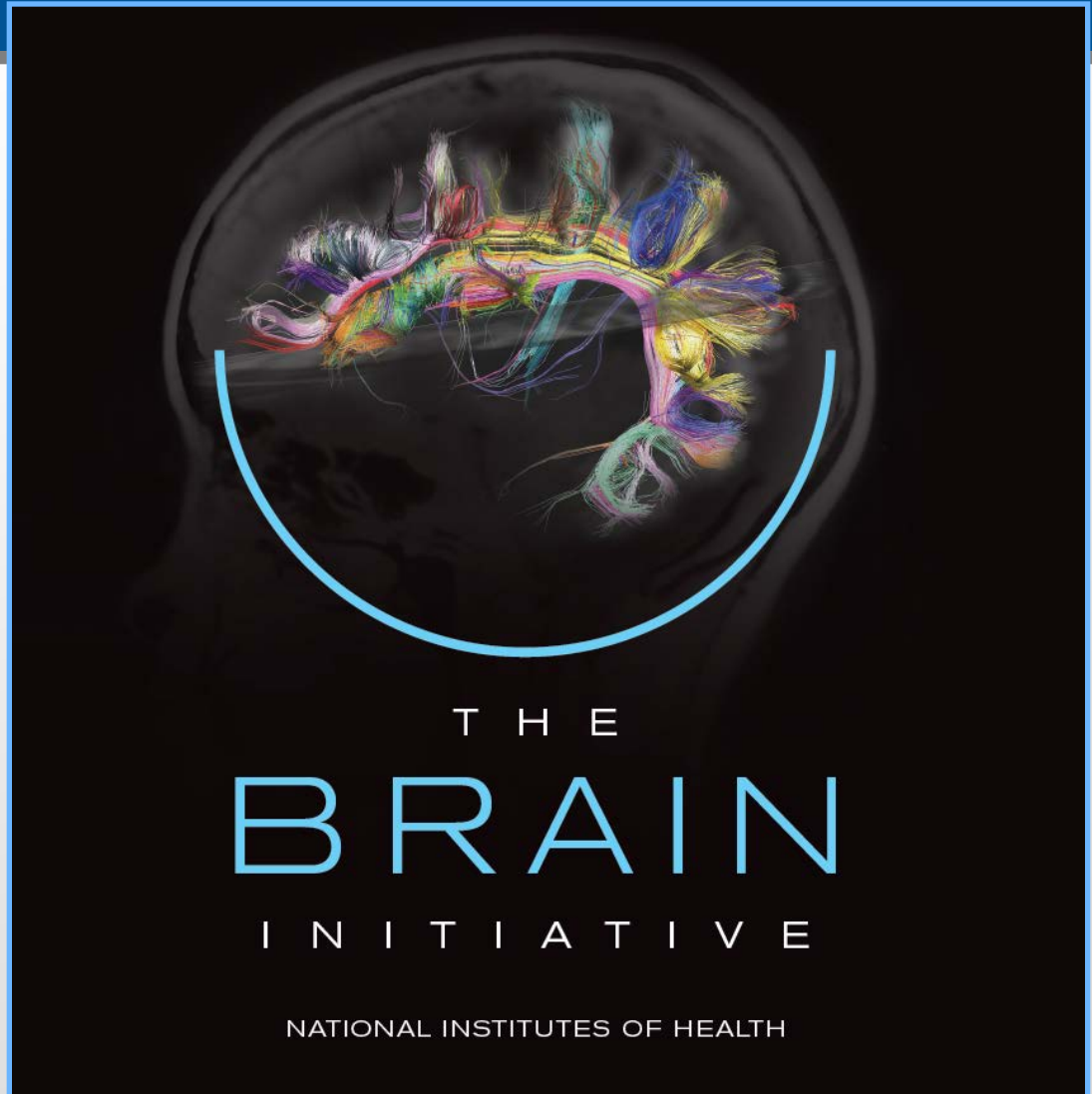
Collaborate to find better solutions faster.



Mapping the circuits of the brain ...



THE HUMAN BRAIN
HAS 86 BILLION
NEURONS ALONG
WITH OTHER CELLS
THAT MAKE MORE
THAN 100 TRILLION
CONNECTIONS.



http://www.braininitiative.nih.gov/pdf/BRAIN2025_508C.pdf

http://www.braininitiative.nih.gov/pdf/BRAIN_brochure_508C.pdf



National Institute
of Mental Health

Building precision medicine ...

BIOMEDICINE

NIH opens precision medicine study to nation

Panel's plan would allow anyone living in the United States to join million-strong effort

By Jocelyn Kaiser

Uncle Sam wants you—or at least your DNA and medical records. Next year, assuming Congress approves an initial budget request of \$130 million, the National Institutes of Health (NIH) expects to begin recruiting at least 1 million people for what may become the world's largest study of how genes influence disease risks and drug responses. Plans for the study came into focus last week with the release of a blueprint from a panel of human geneticists, medical researchers, and other experts. It urges that NIH recruit participants not only through academic medical centers and health care organizations, but also by issuing an open invitation to anyone living in the United States.

For NIH Director Francis Collins, the project, known as the Precision Medicine Initiative (PMI) Cohort Program, brings to fruition an idea he first proposed 11 years ago. "I am so excited to see this dream come to life," Collins said in a statement released after he accepted the recommendations. Outside researchers also approve. "I think the working group really came through with this concept that every American could volunteer," says pharmacogenomics researcher Dan Roden of Vanderbilt University in Nashville, Tennessee. But whether NIH can design and effectively manage such a massive endeavor remains an open question—it recently scuttled a long-planned, costly study of 100,000 children after much debate (*Science*, 19 December 2014, p. 1441).

President Obama gave Collins's idea a boost in January when he called for a large national research study as part of a broader effort to tailor medical care to individuals. Several other countries have already launched similar efforts to collect DNA and health information from large groups of people, or cohorts. But designing such a massive research effort in the United States, which lacks a centralized health care system, has been difficult until recently, when electronic health records made it more feasible.

Indeed, the working group had "unanimous enthusiasm" that the time has come for a large U.S. cohort study, says co-chair Richard Lifton of Yale University. Initially the working group considered knitting together existing cohort studies, such as the long-running Framingham Heart Study in Massachusetts and a Kaiser Permanente biobank that has already recruited 245,000 of the health care organization's members. But such studies often limit data access to the sponsor's own researchers and collect patient samples and data in disparate ways, the panel found. Instead, to build a consistent and nationally accessible dataset, it recom-

other health data, at least from tests done by certified labs that have met regulatory standards for reliability.

Although understanding the interplay between health and a person's DNA is one of the study's main objectives, the advisers found that sequencing the full genome of every participant would be too expensive. Instead, the project will start by testing participants' DNA for single nucleotide polymorphisms, common mutations scattered along the genome that can point to disease risk genes. That can now be done for less than \$50 per sample, whereas sequencing a whole genome still costs at least \$1000.

One challenge is to assemble a cohort that represents the diversity within the United States. NIH Deputy Director for Science, Outreach, and Policy Kathy Hudson, who co-chaired the working group, says the project hopes to recruit some participants through federally funded health clinics that serve low income minority populations. But the open call



NIH now has a plan for carrying out the study of more than 1 million people. President Obama called for in January as part of his Precision Medicine Initiative.



The NEW ENGLAND JOURNAL of MEDICINE

"Precision medicine ...takes into account individual differences in people's genes, environments, and lifestyles. It gives medical professionals the resources they need to target the specific treatments of illnesses..."

"White House Precision Medicine Initiative

Perspective

FEBRUARY 26, 2015

A New Initiative on Precision Medicine

Francis S. Collins, M.D., Ph.D., and Harold Varmus, M.D.



The Precision Medicine Initiative Cohort Program – Building a Research Foundation for 21st Century Medicine

Group Report to the

SCIENCE sciencemag.org



Developing better treatments ...

Research Domain Criteria

v. 5.1, 07/15/2012

RESEARCH DOMAIN CRITERIA MATRIX

Challenges and opportunities for drug discovery in psychiatric disorders: the drug hunters' perspective

Erik H. F. Wong¹, Frank Yocca¹, Mark A. Smith² and Chi-Ming Lee³

¹CNS & Pain Discovery Research, AstraZeneca Pharmaceuticals, Wilmington, DE, USA

²Early Clinical Development, AstraZeneca Pharmaceuticals, Wilmington, DE, USA

³Translational Science, AstraZeneca Pharmaceuticals, Wilmington, DE, USA

[Symptoms]

Cognitive Systems

Attention
Perception
Working memory
Declarative memory
Language behavior
Cognitive (effortful) control

Systems for Social

Affiliation/attachment
Social Communication
Perception/Understanding of S
Perception/Understanding of C

Arousal/Modulatory Systems

Arousal
Biological rhythms
Sleep-wake

On average, a psychiatric drug works for about half the people who take it. One reason is the artificial grouping of different syndromes with different pathophysiology into one disorder, such as "depression."

No health without
mental health



Thank You