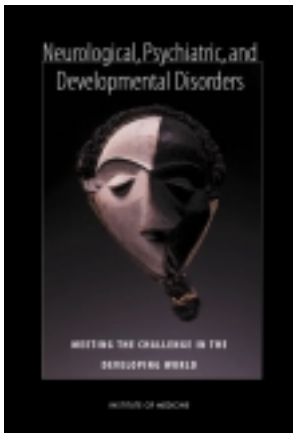
INSTITUTE OF MEDICINE

Shaping the Future for Health

NEUROLOGICAL, PSYCHIATRIC, AND DEVELOPMENTAL DISORDERS

MEETING THE CHALLENGES IN THE DEVELOPING WORLD



Brain disorders—neurological, psychiatric, and developmental—now affect at least 250 million people in the developing world, and this number is expected to increase as more people live to old age.

Brain disorders—neurological, psychiatric, and developmental—now affect at least 250 million people in the developing world, and this number is expected to increase as more people live to old age. Yet public and private health systems in developing countries have paid relatively little attention to brain disorders, concentrating instead on the major communicable diseases. The negative attitudes, prejudice, and stigma that often surround many of these disorders have contributed to this neglect.

Lacking proper diagnosis and treatment, millions of individual lives are lost to disability and, in some cases, death. There are other costs as well, both personal and economic, which are borne by the families of the affected individuals, by their communities, and by their societies at large. Adding to the tragedy is the fact that there are effective and affordable ways to treat or even prevent many brain disorders that remain unexplored in developing country health systems.

A Blueprint for Progress

The Institute of Medicine (IOM), of the National Academy of Sciences, released a report in May 2001 that presents a comprehensive plan to help remedy this problem. The report, entitled *Neurological, Psychiatric, and Developmental Disorders: Meeting the Challenge in the Developing World*, begins by describing the causes and risk factors associated with these disorders. It focuses on six representative brain disorders that are prevalent in developing countries:

Developmental disabilities include conditions like mental retardation, behavioral disorders, and cerebral palsy that result from abnormal development of or injury to the brain and central nervous system during infancy or childhood. These disorders often impose enormous personal, social, and economic costs due to their early onset and frequent lifetime disability. Many of the causes of developmental disabilities—including genetic and nutritional factors, infectious diseases, and traumatic events—are more common in low-income countries than in developed nations.

Epilepsy affects 40 million people in developing countries, roughly 80 percent of all those affected worldwide.

Epilepsy affects 40 million people in developing countries, roughly 80 percent of all those affected worldwide. The disorder commonly attacks young adults in the most productive years of their lives and frequently leads to unemployment. Because of stigma and false beliefs, epilepsy frequently goes unrecognized or untreated in the developing world, and those persons affected, as well as their families, are sometimes shunned by their communities.

Schizophrenia causes severe and chronic disability, due in part to its stigma of "insanity." The disorder affects 33 million people in developing countries. Schizophrenia can be controlled with a variety of treatments that offer significant returns. For reasons that are unclear, treatment has, in some studies, proven to be more effective in developing countries than in developed countries.

Bipolar disorder (also named manic-depressive disorder) accounts for about 11 percent of the neuropsychiatric disease burden in developing countries. The disorder is characterized by alternating episodes of extreme elation (mania) and serious depression. Between 25 percent and 50 percent of patients in developed countries with bipolar disorder attempt suicide, and as many as 15 percent die as a result. Treatments that significantly reduce the debilitating symptoms of the disease are available, yet few are being used in developing countries.

Depression is estimated to be the leading cause of disability worldwide.

Depression is estimated to be the leading cause of disability worldwide. Its risk factors include family history of the disease, chronic social adversity, and poverty. Because depression typically results from a combination of causes, prevention and treatment demand a multifaceted approach. In developing countries, this may translate into a combination of health care, public health awareness, community care, and socioeconomic development.

Stroke and its associated disability are on the rise in developing countries, where it is projected to become the fifth-leading cause of disease burden by 2020. Because of the high risk for death, long-term disability, and recurrence after a first stroke, prevention is key to reducing the public health impacts of cerebrovascular disease.

The IOM report makes detailed recommendations of ways to reduce the toll exacted by these six disorders. In broader strokes, the report also proposes six strategies toward reducing the overall burden of brain disorders in the developing world. The first three strategies describe actions that can be undertaken now, while the final three outline the creation of better options for the future.

To Reduce the Burden of Brain Disorders Now

- *Increase public and professional awareness and understanding of brain disorders in developing countries, and intervene to reduce stigma and ease the burden of discrimination often associated with these disorders.*

The public and even health professionals are often unaware that effective, affordable treatments are available for many brain disorders. Thus, educational programs should be tailored to the needs of local communities, and messages adapted in the context of local

cultural beliefs. Advocacy groups, educators, religious leaders, and traditional healers can be effective at delivering this information.

- *Extend and strengthen existing systems of primary care to deliver health services for brain disorders.*

Many countries have specific care programs for infectious diseases and maternal and child health, and these programs should be expanded to include prevention, identification, treatment, and rehabilitation of brain disorders. Integration of care for brain disorders into the primary health care system should occur as part of a national policy to provide comprehensive health care in which secondary and tertiary facilities train and oversee primary care staff, provide referral capacity and ongoing supervision, and support primary care facilities.

Integration of care for brain disorders into the primary health care system should occur as part of a national policy to provide comprehensive health care.

- *Make cost-effective interventions available to patients who will benefit.*

Financial and institutional constraints require selectivity and sequencing in setting goals and priorities. Treatment programs for brain disorders should, to the extent possible, follow "best-practice" guidelines that reflect up-to-date medical information and techniques. However, where professional capacity and resources are limited, implementation of component practices is likely to be cost-effective, relative to inaction.

To Create Options for the Future

- *Conduct operational research to assess the cost–effectiveness of specific treatments and health services in local settings, along with research to monitor the incidence, prevalence, and burden of brain disorders in developing countries.*

The integration of care for brain disorders into existing health systems in developing countries must be accompanied by rigorous evaluation. Health care delivery systems and therapies should be tested and compared for cost-effectiveness in a variety of settings, and they should be refined through an iterative process. Involving non-health sectors—particularly education, industry, and environment—in the development of intervention and research programs can help advance progress.

- *Create national centers for training and research on brain disorders. Link these centers with institutions in high-income countries through multicenter research projects, staff exchanges and training, and Internet communication.*

The national centers would support secondary care centers in their capacity of overseeing primary care centers, train staff for primary and secondary care centers, and conduct research on the delivery of cost-effective care for brain disorders. To further their research capacity, these centers should collaborate with similar centers in both developing and industrialized countries

- *Create a program to facilitate competitive funding for research and for the development of new or enhanced institutions devoted to brain disorders in developing countries.*

Substantial and long-term funding will be essential in creating a worldwide network of national centers for training and research, and in ensuring significant participation by researchers in developing countries. Developing such a program will require a global effort. The sponsors of this IOM study—the Global Forum for Health Research, the U.S. National Institutes of Health, and the U.S. Centers for Disease Control and Prevention—should spearhead this effort, along with research centers in other developed countries. To create the basis for a sustained program, initial investments must be committed by major

donors—such as the World Bank, foundations, and governmental and nongovernmental aid organizations—to this international effort, and longer term annual budget targets must be established.

ꕥ ꕥ ꕥ

For More Information…

Copies of *Neurological, Psychiatric, and Developmental Disorders: Meeting the Challenge in the Developing World* are available for sale from the National Academy Press; call (800) 624-6242 or (202) 334-3313 (in the Washington metropolitan area), or visit the NAP home page at **www.nap.edu.**

This study was funded by the Centers for Disease Control and Prevention, the Fogarty International Center, the Global Forum for Health Research, the National Institute of Child Health and Human Development, the National Institute of Mental Health, and the National Institute of Neurological Disease and Stroke.

The Institute of Medicine is a private, nonprofit organization that provides health policy advice under a congressional charter granted to the National Academy of Sciences. For more information about the Institute of Medicine, visit the IOM home page at **www.iom.edu.**