

## MENTAL HEALTH

# Trillion-dollar brain drain

Enormous costs of mental health problems in Europe not matched by research investment.

BY KERRI SMITH

Brain disorders cost Europe almost €800 billion (US\$1 trillion) a year — more than cancer, cardiovascular disease and diabetes put together. That's the conclusion of a report<sup>1</sup> commissioned by the European Brain Council that provides the most comprehensive assessment of the financial consequences of mental ailments so far.

The report's authors argue that these enormous costs — which exceed the entire gross domestic product of the Netherlands — mean that research into brain disorders receives disproportionately little funding compared with other diseases. They call on politicians and funders to step up support for basic research on these conditions, which are so costly because they often require long-term care and erode the productivity of those affected for years or decades.

The report is an update of a similar survey in 2005, which found that brain disorders were costing Europe €386 billion<sup>2</sup>. Since then, Bulgaria and Romania have joined the European Union and seven more categories of disorder have been added to the assessment, including eating disorders, sleep disorders, mental retardation, and childhood and developmental disorders such as autism. The authors say that their new estimate, although double the 2005 figure, is likely to be “very conservative”.

Mood disorders top the cost estimates, consuming €113.4 billion a year, following closely by dementia, at €105.2 billion (see ‘Heavy burden’). On average, the annual cost per citizen is €1,550, with Luxembourg and the United Kingdom spending the most per head of population.

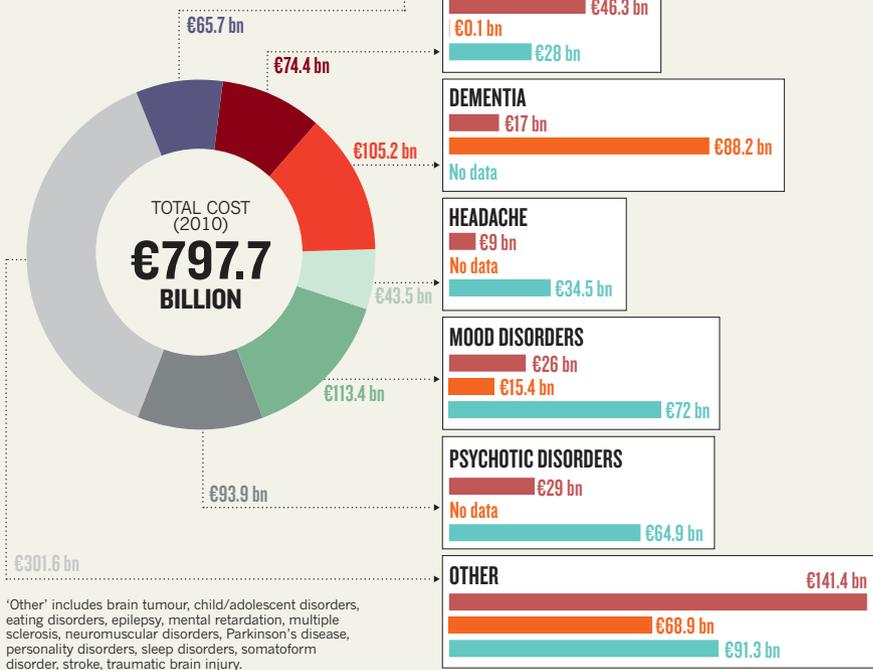
Drugs, visits to doctors and hospitalizations — the direct health-care costs — make up 37% of the bill. A further 23% is spent on direct non-medical costs, including informal care, social services and nursing homes. The remainder (40%) is sucked away by indirect costs, such as lost productivity as a result of time off work or early retirement. One reason for the high indirect costs is that “people don't tend to die quickly from brain disorders”, says Jes Olesen, the neurologist at the University of Copenhagen who headed the survey team. “People live for years in a disabled condition.”

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More than 100 scientists and health economists in Europe were involved in collecting data for the report. For

## HEAVY BURDEN

Six categories of illness account for more than half of the costs of brain disorders in Europe. Indirect costs — such as working time lost to illness — are responsible for about 40% of the total financial burden.



each country, the team found out how many people had a particular condition, estimated the financial costs, and then calculated Europe-wide figures. Where data weren't available, the prevalence and costs of disorders were estimated from figures from other countries. “They are of course imputations, but they are the best available,” says Olesen.

No directly comparable reports exist elsewhere in the world, but several studies have looked at the costs of individual conditions, such as bipolar disorder, attention deficit hyperactivity disorder and schizophrenia, in both Europe and the United States. Overall, health-care costs per person are similar in both regions, but the direct costs — doctors and drugs — are higher in America.

The drug industry, however, is increasingly shying away from these disorders. “The basic science is such that it's quite difficult to identify a new target, so you start with your hands tied behind your back,” says Patrick Vallance, head of medicines discovery and development for London-based drug giant GlaxoSmithKline, which last year stopped funding

drug-development programmes in psychiatry, pain and cognitive neuroscience. Vallance also cites problems with unrealistic animal models, unpredictable results from early trials and difficulties in diagnosing and allocating patients to trials. “At every stage of the process your risk is very much higher” for brain disorders than for other conditions, he says.

A report produced by the European Brain Council in 2006 (ref. 3) estimated that Europe spent about the same amount on brain research as on cancer research (about €4 billion each), despite the much higher cost of brain disorders.

Olesen says that the report presents clear evidence that greater scientific effort is required to tackle brain disorders. “The only way is to increase research and understand these disorders better,” says Olesen. Focusing on preventing these disorders in the first place would have the greatest cost benefit, he adds. ■

1. Gustavsson, A. *et al.* *Eur. Neuropsychopharmacol.* **21**, 718–779 (2011).
2. Andlin-Sobocki, P. *et al.* (eds) *Eur. J. Neurol.* **12**, Suppl. 1, 1–90 (2005).
3. Sobocki, P. *et al.* *Eur. J. Neurosci.* **24**, 2691–2693 (2006).

SOURCE: REF. 1