Project Ecosystem: Mapping the global mental health research funding system

FUNDER DEEP DIVE PROFILES

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This document contains ‘deep dive’ profiles of 32 individual funders of mental health research in Canada, the UK and globally. They were compiled as part of the study ‘Mapping the global mental health research funding system’, which mapped the global funding of mental health research between 2009 and 2014. The study built up a picture of who the major funders are, what kinds of research they support and how they relate to one another. The analysis was based on the funding acknowledgements on more than 220,000 journal papers from the global mental health research field, alongside the funder profiles set out in this document.

The main report, cross-cutting themes emerging from the analysis and other accompanying documents are available from www.randeurope.org/mental-health-ecosystem.

Acknowledgements:

We are grateful to the International Alliance of Mental Health Research Funders and in particular the members of the Alliance who kindly supported the study: the Graham Boeckh Foundation, Alberta Innovates – Health Solutions, the Canadian Institutes of Health Research, the UK National Institute for Health Research, the Wellcome Trust, MQ: Transforming Mental Health, and the Movember Foundation.

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**Mission:** AIHS supports research and innovation activities to improve Albertans’ health and wellbeing and to create, through innovation, health-related social and economic benefits for Albertans.

**General information:** AIHS provides leadership for Alberta's health research and innovation enterprise by directing, coordinating, reviewing, funding and supporting research and innovation. Prior to 2010, AIHS, which was established in 1980, was known as the Alberta Heritage Foundation for Medical Research. All funding decisions are made by the board of directors, based on recommendations made by committees of expert reviewers. AIHS reports up to the provincial Ministry of Health.

**Definition of mental health:** Mental health was classified using MeSH terms and key words. Currently AIHS works with UberResearch and the community to use ‘machine learning’ in classifying investments by burden of disease.

**Area:** Health

**Size:** Approximately Can$75m annual budget, of which Can$7.5-9m allocated to mental health

**Geographical location**

AIHS funds predominantly in Alberta, across major academic institutions including the universities of Alberta, Calgary and Lethbridge, as well as Athabasca University.

Funding acknowledgements 2009–2014: **242**
Funded research areas

All-HeS uses a diverse range of strategies to fund research across the research translation continuum, from basic research to population research. AIHS funds across the four broad Canadian Institutes of Health Research (CIHR) pillars; however, given the interdisciplinary nature of research, these broad categories are not considered mutually exclusive. There is no special call for mental health research; funding to conduct mental health research is available through a diverse range of funding mechanisms, and the decision to fund is made on the criteria of excellence and merit.

Examples of mental health research that AIHS has funded include:

- Mental Health Alberta chairs
- Projects within its Partnership for Research Innovation for the Health System (PRIHS) programme
- Projects within the Collaborative Research and Innovation Opportunities (CRIO)

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

There are two main funding portfolio streams, each with different programmes:

- Health research funding (e.g. CRIO, PRIHS, industry-partnered translational funds, knowledge exchange grants, Translational Health Chairs Program).
- Training and early career development (e.g. at the postdoctoral, graduate, undergraduate or high school levels; clinician researcher training; media fellowships).

Current collaborations

Essentially all AIHS funding is collaborative, leveraging partnerships with other funding agencies, such as CIHR and the Alberta health care system. AIHS’s partnership office has developed criteria and processes for formal and informal collaborations that contribute to shared impact for the province, including with:

- CIHR and Graham Boeckh Foundation, in a research network called Transformational Research in Adolescent Mental Health
- Alberta Health Services (AHS) and AHS Strategic Clinical Networks (SCNs)
- Child, Adolescent and Family Mental Health, a community-focused services provider
- Mental Health Commission of Canada

AIHS has strong ties to neuroscience research through hosting centres of excellence (e.g. Hotchkiss Brain Institute, Campus Alberta). AIHS advises on the impact evaluation of the Mental Health Alberta chairs and contributes to the Consortia Advancing Standards in Research Administration Information (CASRAI).

Training and early career development (e.g. at the postdoctoral, graduate, undergraduate or high school levels; clinician researcher training; media fellowships).

Funders are coloured according to the country in which they are located.

Network of co-acknowledgement for papers acknowledging this funder – each node represents a funder and the connecting lines indicate co-acknowledgement. Node size is proportional to the number of acknowledgements, line thickness to number of co-acknowledgements.
Future

AIHS will continue to fund research intended to impact the health system and to improve health outcomes for patients and for Albertans in general. Strategic thinking may alter slightly due to changes in the province, with potential changes in the CEO, the board of directors or government priorities. AIHS will continue to use a partnered approach to funding in mental health. It plans to use the mental health classification system that it is developing to look at the return on mental health research investment using its mental health data. AIHS wants to conduct evaluations from the perspective of both the funding mechanism and the burden of disease.

Potential for future collaboration

With the right collaborating partner, AIHS could develop mental health–specific CRIO funding calls. AIHS is interested in developing mental health research collaborations with pharmaceutical and biotechnology companies.

Challenges

Attracting the necessary capacity with the required level of excellence is a challenge. Infrastructure is under-resourced, and there is a lack of integration within the mental health ecosystem. However, this is starting to be addressed through such mechanisms as SCNs, which translate research into practice, and by the establishment of continuum-of-care initiatives driven by operational units in the health system. Focussed support is necessary for mental health issues in youth.

Opportunities

Increased integration of research across the continuum of basic research to health services research could be coordinated by developing a centre of excellence hub. More integration with partners, such as the justice system and the education system, and looking at research in the context of an integrated care path would also be beneficial. If mental health classifications and common key performance measures could be agreed upon with the partners in the community, then funders and researchers could more easily align and inform strategic priority areas for the province.
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Alzheimer’s Association

Mission: ‘To eliminate Alzheimer’s disease through the advancement of research; to provide and enhance care and support for all affected; and to reduce the risk of dementia through the promotion of brain health.’¹

Established: 1980

General Information: The Alzheimer’s Association is the world’s largest non-profit funder of Alzheimer’s and dementia research. Alzheimer’s Association–funded research has an extensive remit, from genetics and molecular research all the way to caregiving and awareness tools.

Definition of mental health: The Alzheimer’s Association does not work with a specific definition of mental health.

Area: Focus on a specific mental health condition: Alzheimer’s and related disorders

Size: The overall budget for the science division is approximately US$28m per year, of which $14–15m is directly for research.

Funding acknowledgements 2009–2014: 1636

Geographical location

Research funding is split roughly 70% United States and 30% external. Non-US funding destinations include Europe and Canada and, to a lesser degree, the Middle East, Mexico and Latin America.

Funded research areas

The Alzheimer’s Association sets priority areas for funding, and within those areas it responds to high-quality applications. Funded research ranges from basic science into, for example, genetics, to applied science and translation, such as the enhancement of quality of life. Recent collaborative calls for proposals have been launched around the topics ‘Biomarkers across neurodegenerative diseases’ and ‘Mechanisms of cellular death in neurodegeneration’. In addition, through the ‘Part the Cloud’ programme, the Alzheimer’s Association supports translational research, defined in this programme as translation into early human studies. In addition, the Alzheimer’s Association has several large-scale funding awards to support multiple-prevention initiatives (DIAN-TU, LEARN, API) and longitudinal studies, such as the Alzheimer’s Disease Neuroimaging Initiative (ADNI).

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Research level of funded papers

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The Alzheimer’s Association participates in a number of collaborations with government funders, foundations, universities and research institutes, and industry. It has frequently collaborated with: the National Institute on Aging (USA); the National Institute of Neurological Disorders and Stroke (USA); the Michael J. Fox Foundation for Parkinson’s Research (USA); the Weston Brain Institute (Canada); Alzheimer’s Research UK; the Linda Crnic Centre for Down Syndrome (USA); and the Global Down Syndrome Foundation. In addition, the association leads a group of more than 30 funding organisations from around the world to address challenges and opportunities for collaborations in Alzheimer’s and related dementia science.

Collaborations can take various forms, ranging from structured funding and joint funding to initiatives to educate the public and advocate for Alzheimer’s disease as a public health issue. In addition, the Alzheimer’s Association has initiated or supported a number of global collaborations in which funders and other organisations involved with Alzheimer’s disease are brought together. Examples are the Global Biomarker Standardization Consortium and World Wide Alzheimer’s Disease Neuroimaging Initiative.

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Portfolio evaluation practices

Grants receive an ongoing evaluation and are tracked after they end for five-plus years to collect data on publications, additional grants and other developments. Data used to evaluate includes the number of publications, the number of additional grants and the number of presentations.

Strategy development

The strategy of the Alzheimer’s Association for the coming years is set out in the 2015–2017 fiscal years strategic plan. It contains actions and objectives, one of which is the acceleration of research. Priority activities in relation to research are to: ‘Accelerate research funding through the Alzheimer’s Association International Research Program’; ‘Expand the Alzheimer’s Association international leadership role as convener to collaborate and coordinate Alzheimer’s research activities’; ‘Grow nationwide clinical studies recruitment efforts’; and ‘Explore international fundraising efforts to support the International Research Program’.2

Future

The Alzheimer’s Association did not feel able to comment on likely future developments.

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beyondblue
(http://www.beyondblue.org.au)

Mission: ‘We promote good mental health. We create change to protect everyone’s mental health and improve the lives of individuals, families and communities affected by depression, anxiety and suicide.’

Established: 2000

General information: beyondblue is an initiative of the federal, state and territory governments in Australia, which is further supported by the contributions of individuals, corporations and such philanthropic groups as the Movember Foundation. Originally established to promote awareness and understanding of depression, beyondblue now also includes a focus on anxiety conditions and suicide prevention. The beyondblue strategic plan 2015–2020 commits the organisation to achieve four key goals:

● Reduce the impact of depression, anxiety and suicide by supporting people to protect their mental health and to recover when they are unwell
● Reduce people’s experiences of stigma and discrimination

Funding acknowledgements 2009–2014: 194

Geographical areas of work

beyondblue is a national public health organisation and therefore supports research across Australia. Its research is conducted in Australia.

Definition of mental health: beyondblue acknowledges that there are a variety of ways in which people use and define the term mental health. It views mental health as a positive concept and a state of wellbeing, as defined by the World Health Organization.

Area: Focus on a specific mental health issues: depression, anxiety conditions and suicide prevention

Size: Confidential

Funded research areas

Originally the focus of beyondblue was on depression; anxiety and suicide have been added in recent years. Its 2015–2020 strategic plan indicates that these will remain the main topics of beyondblue for the next five years. beyondblue will continue to prioritise people affected by depression, anxiety and suicide but will place a greater emphasis on the prevention of these conditions in the first place. beyondblue does not fund pharmaceuticals or biomedical therapies, but it has funded a wide range of mental health research – including research into awareness; mental health literacy; stigma and discrimination; pathways to care; help-seeking; the special needs of men, older people, lesbian, gay, bisexual, transgender and intersex communities; Aboriginal and Torres Strait Islander mental health; cancer and mental health; cardiovascular disease and mental health – as well as psychological and e-therapies.

In addition, beyondblue manages and allocates funds for other funders, such as the Movember Foundation and the Australian government. In such cases the focus of the funding is often predetermined by the funder and beyondblue follows that focus.

beyondblue does not have specific funds earmarked for knowledge translation; however, expected dissemination activities are incorporated into its agreements with researchers. Most of the research is conducted at the applied end and includes research projects trialling interventions and programmes. The programmes delivered by beyondblue are also evaluated to understand best practice around the treatment and prevention of depression, anxiety and suicide.

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Research level of funded papers
Types of Funding

Historically, beyondblue has funded projects and programmes rather than people. This means beyondblue does not fund PhD scholarships or fellowships. In the past, beyondblue has relied on open calls for proposals, but beyondblue now adopts a mix of funding mechanisms, which include competitive grants as well as strategic grants that involve a more targeted approach to engaging appropriate researchers/research groups. Furthermore, beyondblue has defined priority research areas aligned to its strategic plan that inform funding decisions.

Current collaborations

There are existing collaborations with the Australian government and the Movember Foundation. Previous collaborations have included the Victorian government (beyondblue Victorian Centre of Excellence in Depression and Anxiety), the National Heart Foundation of Australia and Cancer Australia. For government, beyondblue mainly acts as an agency through which funding is managed and distributed. With the Heart Foundation and Cancer Australia, beyondblue organises joint calls for proposals. In those calls, both parties settle on the topic and focus of the call, and both provided funding. The collaboration with the Movember Foundation is long-standing and includes the running of programmes funded by Movember.

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Portfolio evaluation practices

*Beyondblue* actively published overviews of the programmes and research funded and has in the past conducted portfolio reviews of the funded research. This has included a large-scale evaluation and impact assessment using interviews, a survey of researchers and a bibliometric study of the publications resulting from research funded by *Beyondblue*. The review showed that *Beyondblue* has contributed to increased knowledge and research capacity by conducting research into previously under-researched areas and by supporting early career researchers.

At the moment a similar assessment is not planned. *Beyondblue* is currently working on a new research strategy that will run for five years, in line with its new strategic plan, and perhaps another evaluation will be planned at the end of that period.

Future

There are two main developments in the future for *Beyondblue*. First, *Beyondblue* will be moving towards a balanced relationship with researchers through co-design of the research project. In the past, *Beyondblue* has relied on open calls for proposals on particular topics to select research to fund. In the future, *Beyondblue* will more strictly define the scope of calls and is planning to work closer with researchers in the design of the research. The idea is to better specify the research questions of the open calls and to then mutually co-design the research with successful applicants. This will ensure that the scientific rigour is maintained, but that the research is also relevant to *Beyondblue*’s campaigns and programmes.

Second, *Beyondblue* will continue to move towards research and action on the prevention of depression, anxiety and suicide, in addition to focussing on improving the lives of individuals, families and communities affected by depression and anxiety. Through such a shift upstream, *Beyondblue* aims to help people early, rather than wait until people require treatment.
Mission: ‘The Brain & Behaviour Research Foundation is committed to alleviating the suffering caused by mental illness by awarding grants that will lead to advances and breakthroughs in scientific research.’

Vision: ‘To bring the joy of living to those affected by mental illness – those who are ill and their loved ones.’

Established: 1985. The organisation that would eventually become the Brain & Behaviour Research Foundation (BBRF) was originally incorporated in 1981. The first grants were awarded in 1987.

General information: Called the National Alliance for Research on Schizophrenia and Depression (NARSAD) until 2011, the organisation was renamed because the name Brain & Behavior Research Foundation was seen to be more understandable for people outside the research community and to better reflect the wide scope of its funding (which is not restricted to schizophrenia and depression). Throughout its history, the BBRF has been guided by a scientific council with around 150 voluntary members. In addition to making decisions about which grant applications to fund, council members mentor Young Investigator grantees and advise on BBRF policies and programmes. In addition to funding research, the BBRF runs symposia and monthly webinars for the general public on mental health research. The foundation raises at least 95% of its annual funds from individuals and family foundations.

Definition of mental health: No specific definition – the BBRF funds a range of areas, and decisions about what to fund are made by its scientific council.

Area: Mental health

Size: US$18m per year (FY 2014) in research funding (all of which goes to mental health research).

Funding acknowledgements 2009–2014: 3281

Geographical areas

The BBRF does not have geographic restrictions on funding eligibility. It has funded research in 34 countries. The top five are:

1 United States
2 Canada
3 United Kingdom
4 Israel
5 Australia

1 BBRF (2015). ‘Who We Are’. As of 22 December 15: https://bbrfoundation.org/about
Funded research areas

The BBRF is a responsive-mode funder that has supported a wide range of fields with three priorities: basic research, new technologies and next generation therapies. It is ‘dedicated to research across all brain and behavior disorders’.2

Topics funded include Alzheimer’s disease, autism, bipolar disorder, depression, obsessive-compulsive disorder, post-traumatic stress disorder and schizophrenia.

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Funding mechanisms

The BBRF awards a total of 255 new NARSAD grants per year in addition to several scientific prizes, which are cash awards.

There are three types of grants:

- **Young investigator awards**: For researchers at the advanced postdoctoral or assistant professor level (or equivalent). These are worth up to $35,000 per year for two years, and 200 of these grants are awarded annually.

- **Independent investigator awards**: For researchers at the associate professor level (or equivalent). These are worth up to $50,000 per year for two years, and 40 of these grants are awarded annually.

- **Distinguished investigator awards**: For researchers at the full professor level (or equivalent). These are worth up to $100,000 for one year, and 15 of these grants are awarded annually.

Current collaborations

The BBRF does not currently have formal collaborations with other funders. Informal interactions occur through scientific council members’ activities and involvement with other scientific organisations.

The president and CEO of the BBRF, Jeffrey Borenstein, M.D., is on the board of related organisations, such as the American Brain Coalition and the National Alliance on Mental Illness in New York City. These groups do not have formal partnerships, but they do assist one another in, for instance, publicising events through their respective networks.
Portfolio evaluation practices

To gather information on the research it funds, the BBRF asks its grantees to provide an interim update and a final report. The foundation also surveys prior grantees periodically. One survey finding has been that 3,700 scientists, awarded a total of $328m since 1987, have gone on to win a total of more than $3bn in funding from other sources – a statistic that the BBRF highlights as evidence that it uses an effective model to select its grantees and that its support provides a ‘springboard’ for further funding. The BBRF scientific council also tracks the scientific areas being funded.

Future

The BBRF feels that its current funding model – which brings together financial donors and scientists and puts funding decisions in the hands of the scientific council – works well. It does not plan significant changes to its approach to funding.

The foundation does aim to increase the amount of donations it brings in, in order to increase the number of grants it can offer. The strategy for achieving this increase involves (a) raising awareness of the importance of mental health research and the BBRF’s role in supporting it, and (b) working to reach more people who may be interested in supporting research and broaden the base of support.

Collaboration

The BBRF has recently been discussing partnerships with foundations that already fund research or are interested in doing so and of taking advantage of the BBRF’s existing selection processes and the expertise of the scientific council.

The BBRF is open to learning more about the activities of other funders.

Challenges

The BBRF is aware that there has been a general decline in government support for research, which is leading to a greater need for private support.

Opportunities

BBRF president and CEO Jeffrey Borenstein believes significant scientific opportunities lie in developments in our understanding of the brain and in technologies for studying the brain. This progress, he says, is opening up exciting possibilities for mental health research breakthroughs.

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**British Heart Foundation (BHF)**

https://www.bhf.org.uk/

**Mission:** The British Heart Foundation’s (BHF) mission is ‘to win the fight against cardiovascular disease, and its vision is a world in which people do not die prematurely or suffer from cardiovascular disease.’

**Established:** 1961

**General information:** The British Heart Foundation (BHF) is the UK’s largest independent funder of research into cardiovascular disease. It is governed by a board of trustees, who volunteer their time to help direct the Foundation’s work. They oversee the directors, who manage the staff across the whole charity.

**Definition of mental health:** The BHF does not have a definition of mental health, as its focus is on cardiovascular research.

**Size:** £100 million

**Area:** Other health area – cardiovascular disease.

**Funding acknowledgements 2009–2014:** 290

**Geographical location**

The majority of BHF-funded mental health research takes place in the UK. Some research is funded outside the UK, but to only a limited extent, and only if it is led by a UK PI or if the reviewers are convinced that the results will be relevant to the UK.

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**Funded research areas**

From our bibliometric analysis, we learned that the three major mental health research areas funded by the BHF are: substance use and addictive disorders, depressive anxiety and personality disorders, and neurodegenerative and cognition disorders. Cognition post-stroke and substance abuse related to cardiovascular disease were recognised by the BHF as areas where it has funded research related to mental health. In addition, it also funds a psychology professor, who has done a lot of research into understanding how mental health affects cardiovascular disease, and vice versa. The BHF also contributed to a grant with Cancer Research UK, as well as a number of other research funders, to understand smoking among people with mental health disorders.

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### Research level of funded papers

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**Funding mechanisms**

The BHF provides financial support for clinical and non-clinical cardiovascular researchers at all stages of their career. This includes grants for short- and long-term research projects, essential infrastructure and strategic initiatives. The BHF has also been investing in Centres of Research Excellence at leading UK universities since 2008.

**Current collaborations**

The BHF has ongoing collaborations with a number of research funders in the UK, including research councils, health funders and other charities. In relation to mental health research, the BHF jointly funds the National Prevention Research Initiative (NPRI) and the UK Clinical Research Collaboration (UKCRC) Public Health Research Centres of Excellence. Both of these initiatives have funded projects with a mental health angle. The BHF also holds one grant with the Alzheimer’s Society on vascular dementia. In addition to funding research, the BHF has also recently supported the charity MQ’s ARQ (Asking the Right Questions) project, by promoting the survey on its online forum. This did not involve funding and was led from the policy team.

Network of co-acknowledgement for papers acknowledging this funder – each node represents a funder and the connecting lines indicate co-acknowledgement. Node size is proportional to the number of acknowledgements, line thickness to number of co-acknowledgements. Funders are coloured according to the country in which they are located.
Portfolio evaluation practices

The BHF evaluates its portfolio of research in a number of ways. In the past it has been involved in joint analysis with the MRC and has also contributed to the UK Clinical Research Collaboration health research portfolio analyses. These include 29 UK health research funders and are based on the Health Research Classification System (HRCS), which includes mental health research subtopics. The BHF is also engaged in Researchfish and has used it for the past 2 years. As a result of moving to Researchfish, the BHF now only formally evaluates its larger programme grants, through a mid-term review, its professorships, through site visits every five years; and all clinical trials, through quarterly reporting and being represented on the trial’s steering committee.

Future

Nothing is specifically mentioned on mental health research in the BHF’s current research strategy, and it is unlikely to be in future iterations. However, the BHF noted that as the general interest in dementia research increases in the UK, it expects there to be further calls for collaborative funding. It is also very unlikely that the BHF would move away from response mode funding for its research. One area of interest for the BHF in future research funding is around research translation – that is, getting basic science translated into products. It has just started a translational award, with £1m a year, although it is hoping that this award, along with other types of funding, will increase over time.
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Bundesministerium für Bildung und Forschung (BMBF)
www.bmbf.de

**Mission:** ‘Education and research are the foundations for our future. The promotion of education, science and research by the Federal Ministry of Education and Research represents an important contribution to securing our country’s prosperity.’

**Established:** 1955

**General information:** The Bundesministerium für Bildung und Forschung (BMBF), or Federal Ministry of Education and Research, is a ministry of the Federal Republic of Germany. The Ministry designs general education policy. It shares responsibility with the Länder (states) in the fields of non-school vocational training, training assistance and continuing education. The BMBF designs research strategies and provides research funding for projects and institutions. It funds all areas of research, including mental health research.

**Definition of mental health:** The BMBF does not work with a specific definition of mental health.

**Area:** All areas of mental health research are covered, including neuroscience.

**Size:** The annual expenditure in the mental health area, including dementia, is around €90m.

**Funding acknowledgements 2009–2014:** 1939

**Geographical areas of work**
The BMBF is a federal funder which covers all of Germany.

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Funded research areas

The strategy for BMBF funding follows its Health Research Programme, which is a governmental framework programme published approximately every eight years. Areas include major diseases, prevention, nutrition, health economy and international health. Mental health research cuts across many of these areas. The BMBF primarily funds interdisciplinary research consortia with translational cross-sectional and cross-disease approaches. This also includes research on methodological aspects, such as psychotherapy or clinical trials.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

BMBF funding in the mental health area is provided through a strategic top-down approach. It comprises temporary project funding of regional or nation-wide consortia or of German researchers in transnational consortia in response to calls for proposals. These consortia consist of research groups from various disciplines, as well as clinicians and health care specialists, as required in the respective calls. Long-term funding occurs through institutional support, mainly of the Deutsches Zentrum für Neurodegenerative Erkrankungen (DZNE), or German Center for Neurodegenerative Diseases.

Current collaborations

The BMBF is strongly involved in international cooperation in research and science with ministries and funding agencies in Europe and globally. Among other initiatives, the BMBF is part of EU-wide projects. ERA-NET NEURON (www.neuron-eranet.eu) and the EU Joint Programme – Neurodegenerative Disease Research (www.neurodegenerationresearch.eu) are particularly relevant for the area of neuroscience and mental health. One of the most important aims of these projects is to develop joint funding measures and other activities that support transnational research in Europe and worldwide.

At the national level, joint funding measures are possible with the Deutsche Forschungsgemeinschaft (DFG), or German Research Foundation, or with private charities in specific funding areas. The DFG is a governmental response mode funder in Germany, which receives around 60% of its funding from the BMBF. Most basic research is funded through the DFG.
Portfolio evaluation practices

In order to assess the success of strategic programmes, external evaluations are sometimes commissioned. Evaluations are usually done towards the end of a programme. Bibliometrics can be used to contribute to the evaluation.

Future

The BMBF did not feel able to comment on future developments.
Mission: The Canadian Institutes of Health Research aims to 'excel ... in the creation of new knowledge and its translation into improved health for Canadians, more effective health services and products, and a strengthened Canadian health care system'.

Established: 2000

General information: The Canadian Institutes of Health Research (CIHR) is the Government of Canada's health research investment agency. The CIHR was created in 2000 and is composed of 13 virtual institutes. It provides leadership and support to health researchers and trainees across Canada. The CIHR is part of the health portfolio, which supports the Minister of Health in maintaining and improving the health of Canadians. The Institute of Neurosciences, Mental Health and Addiction (INMHA) supports research to enhance mental health, neurological health, vision, hearing and cognitive functioning and to reduce the burden of related disorders through prevention strategies, screening, diagnosis, treatment, support systems and palliation.

Definition of mental health: The CIHR does not define mental health. It chooses to leave it open as its scope changes over time, but it does refer to DSM-V or WHO definitions for categorisation if needed.

Area: General health research

Size: CIHR budget: Can$950m (annual)

Mental health research: Can$60m (annual average)

INMHA budget: Can$4.25m (annual) – included as part of CIHR budget overall

Funding acknowledgements 2009–2014: 4701

Geographical location

CIHR aims to broker and stimulate productive and mutually beneficial health research collaborations among Canadian researchers, institutions and firms and their colleagues/counterpart organisations throughout the world.

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Funded research areas

CIHR categorises health research into four broad themes, or ‘pillars’ (not mutually exclusive): biomedical; clinical; health systems and services; and social, cultural, environmental and population health research.

The INMHA chooses to strategically fund more mental health and addiction research than neuroscience research, as fewer grants in mental health and addiction are successful across CIHR investigator-initiated (i.e. open) programmes. More specifically, the INMHA chooses to fund mental health research in the area of implementation because it is an underfunded area where strategic investment may be more likely to have high impact. While the INMHA has a general idea of which mental health research it would like to fund, this support is balanced with more opportunistic funding, e.g. mental health chair, fellowships in depression and grants in schizophrenia.

The INMHA currently has a programme on knowledge translation in mental health, one on addiction and co-morbid conditions, and a large initiative on substance misuse. A large amount of CIHR organisational-level funding, from a targeted envelope dedicated to the Strategy for Patient-Oriented Research, has supported the development of a mental health research network under the Transformational Research in Adolescent Mental Health (TRAM) programme.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.
Funding mechanisms

Mental health initiatives are funded at both the organisational and the institute (INMHA) level. These include project grants, fellowships, chairs and strategic initiatives. The INMHA writes prescriptive funding calls, but once these are launched, a separate CIHR group administers the competition, and applications are funded through a peer review system.

Current collaborations

Formal mental health collaborations include co-funding with the Graham Boeckh Foundation for the TRAM network; the Mood Disorders Society of Canada for fellowships on depression; the Schizophrenia Society of Canada for fellowships and grants on schizophrenia; and a Chinese funding body on suicide. The CIHR has a record of international collaboration, including in linking Canadian researchers with other researchers around the world. One way it supports this is by investing in larger international initiatives, e.g. on addiction, epigenetics, neurodegenerative disease and traumatic brain injury. The CIHR understands that successful collaboration requires a willingness to be flexible and patient, as the cultures of two different organisations have to be integrated. The CIHR has informal collaborations with the Mental Health Commission of Canada, the International Alliance of Mental Health Research Funders and the USA’s Brain Initiative.

Network of co-acknowledgement for papers acknowledging this funder – each node represents a funder and the connecting lines indicate co-acknowledgement. Node size is proportional to the number of acknowledgements, line thickness to number of co-acknowledgements. Funders are coloured according to the country in which they are located.
Portfolio evaluation practices

CIHR has a central group that conducts annual reporting, performance measurement, impact assessment and evaluation to support planning and decisionmaking and to meet the legislative and policy requirements of the Government of Canada. CIHR has implemented a ‘performance measurement regime toolbox’, which is informed by a structured researcher reporting system, and it conducts evaluations of the relevance and performance of all spending every five years to support accountability to Parliament and to Canadians in general. When funding is awarded, the INMHA has a role in following the researcher, receiving and reviewing reporting, and requesting further review should problems arise.

Strategy development

The CIHR has a two-level strategy, with plans at the level of the CIHR overall and of each institute, including the INMHA. While the CIHR organisational-level strategy is renewed every four years, the INMHA strategy is renewed approximately every five years or when a new Scientific Director starts. The INMHA strategy has two main influences: the INMHA Scientific Director (in discussion with the INMHA Advisory Board) and the overall CIHR strategy. Because the INMHA strategy is influenced by the Scientific Director, the institute adopts a ‘transition mode’ beginning approximately two years before the mandate of the existing Scientific Director ends and continuing until about one year after the next Scientific Director has started. This is done to free up funding to accompany the launch of the new director’s strategy.

1 Institutes will continue to have Advisory Boards, but the structure will change in 2016.

Future

Over the next five years, the CIHR will focus on research for:

- Innovation in health care and health systems for improved patient outcomes
- Health and wellness for aboriginal peoples
- Health promotion and disease prevention
- The management and treatment of chronic conditions

Mental health research is being supported through cross-cutting (cross-institute) initiatives, including eHealth Innovations and the Healthy Life Trajectories Initiative. New INMHA initiatives will most likely be developed with the arrival of the next Scientific Director in 2017.

Collaboration

Both CIHR and INMHA will continue to seek domestic and international partnership opportunities.

Challenges

The CIHR commented that, while research has led to advancements in characterising and diagnosing mental health issues, these findings are not yet translating into the provision of services that are needed. Research on implementation at many levels is required, as is research on prevention, particularly with a focus on working with youth.

Opportunities

The CIHR believe that alliances with large international initiatives could provide opportunities for synergies based on common objectives. There are also many brain initiatives in Europe and the USA that will yield information (e.g. imaging) that has the potential for application in the area of mental health. There is a possibility to connect with these initiatives.
Mission: To improve Brazil’s scientific and technological development, leading to social, economic and cultural progress of the country. It aims to expand Brazil’s knowledge base by supporting research and research training across all scientific areas.

Established: 1951

General information: The primary role of the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) (National Council for Scientific and Technological Development) is to manage public funds devoted to research and research training across all scientific areas in Brazil. Although formally under the umbrella of the Ministério da Ciência, Tecnologia e Inovação (Ministry of Science and Technology), the CNPq manages all public research funds for the Ministry and any other public body.

Created in the aftermath of the Second World War, the CNPq was initially focused on promoting research in nuclear physics. Its remit evolved over time, as nuclear activity was gradually transferred to the nuclear energy agency in the late 1950s. In 1995 its mission was officially set as a multidisciplinary research funder.

Because the CNPq manages funds on behalf of others, its own budget does not reflect the total funds it channels into research. A substantial portion of the CNPq budget is to cover its running costs, and the remainder accounts for only a small portion of the CNPq-managed public funds devoted to research.

Definition of mental health: The CNPq does not adopt a definition of mental health because it is not one of its core areas. Rather, mental health research is split among several areas, e.g. Public & Population Health Science and Biosciences, both part of the Health Research Division; Genetic Sciences, which sits outside the Health Research Division; and Psychology, which is part of the Social Sciences Division.

Area: General research funder

Size: Around £412m (~R$2bn) annually, of which 20–30 per cent is for health research. The level of funding in mental health is impossible to quantify, since it overlaps with many other research areas.

Geographical location

Brazil (and Brazilian researchers in international institutions, provided they return to Brazil afterwards).
Funded research areas

The CNPq does not have a specific mental health research funding strategy. The extent to which the CNPq has invested in mental health research has largely been determined by the interests of the researchers who have applied for open calls and scholarships and, to a lesser extent, by some one-off targeted calls to address mental health issues (e.g. behavioural disorder call in 2004; substance abuse calls in 2011 and in 2014). Our bibliometric analysis (confirmed by the CNPq as likely to be a good representation of the topics funded) shows that the main areas supported are:

- Bipolar disorder
- Cognition disorders
- Alzheimer disease
- Schizophrenia
- Depressive, anxiety and personality disorders
- Neurodegenerative and cognition disorders
- Schizophrenia, bipolar and other psychotic disorders
- Sleep disorders
- Eating disorders
- Neurodevelopmental disorders
- Substance use and addictive disorders

The majority of funding managed by the CNPq is focused on basic research; only a small portion of the funds goes to applied research. This pattern tends to mirror researchers’ preferences more than it reflects any particular strategy. Brazilian researchers tend to apply for open calls and scholarships (the CNPq’s largest funding vehicles) with proposals in basic research.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
**Funding mechanisms**

The CNPq provides a mix of response mode and directed funding. As a response mode funder it awards a substantial part of the funds it manages through one of two vehicles: (a) open calls aimed at supporting the most excellent research proposals across all scientific areas and (b) scholarships for Master’s, PhD and postdoctoral programmes, in Brazil or abroad, targeted at the best applicants. Other funding is awarded via targeted calls aimed at addressing particular topics that the government and/or the public agencies from which the funds originated consider pertinent in Brazil at the time. The split between response mode and targeted calls varies considerably from year to year, as do the research topics of the targeted calls.

**Current collaborations**

As part of its remit as the manager of all public funds devoted to research in Brazil, the CNPq collaborates with virtually all research-funding public organisations on a regular basis. Typically, the CNPq coordinates the process and manages the funds, while the collaborator defines the research areas to focus on, as well as the amount of funding that goes into each area.

The CNPq also collaborates with international organisations. Most of these collaborations are in the form of grants and scholarships for Brazilian researchers to attend and/or work with international research organisations in numerous scientific areas. Although less frequent, some other international collaborations involve joint calls with international organisations targeted at Brazilian researchers and focused on Brazilian issues. An example is a recent joint funding call with the Bill and Melinda Gates Foundation focused on health issues that are particularly prevalent in Brazil.
Portfolio evaluation practices

The only evaluation practice that the CNPq currently has in place is to track the number of publications in peer reviewed journals by CNPq funded Brazilian researchers.

Going forward, the CNPq is considering expanding its portfolio of evaluation practices. This plan is currently in the scoping stage. The objective at this stage is to identify the appropriate outcome measures and metrics, as well as the evaluation methods.

Strategy development

As its role is predominantly in managing funding provided by a range of public agencies, the CNPq has little autonomy in setting research funding strategy in Brazil. Both the strategic research areas and the funding vehicles are largely defined by either the Brazilian Ministry of Science and Technology and/or the public bodies from which the research funds originated. However, through its role as advisor to the Ministry of Science and Technology and some other public bodies, the CNPq does have the capacity to indirectly influence strategy and policy.

Future:

It is outside the current remit of the CNPq to set out a future strategy for mental health research, since this is a responsibility which lies with the government. Currently, the Brazilian government defines research areas of interest on an annual basis and makes decisions about the specific areas on which targeted calls will focus on a sub-annual basis. The CNPq can only advise on what these areas may be in its capacity as advisor to the Ministry of Science and Technology and to the agencies providing funding.

Nevertheless, the CNPq stated that it is likely to continue to fund multidisciplinary research, targeted at research projects and research training in Brazil and abroad, and channelled via a combination of response mode and targeted calls.

Opportunities/collaboration:

The CNPq is considering establishing collaborations with industrial partners, including the pharmaceutical industry, and other private organisations, both Brazilian and international. The objective is twofold: first, to increase the likelihood of the research it funds having impact and, second, to diversify funding sources beyond public funds, as a way to mitigate potential cuts from the government and public agencies. The nature of these collaborations would likely be primarily joint funding of scholarships for Brazilian researchers either in Brazil or abroad.

Challenges:

An important challenge identified by the CNPq is the prospect of the Brazilian government and public bodies cutting their funding. It commented that the economic climate is such that Brazil is likely to have to cut public expenditure soon. Research funding is not ring-fenced and thereby is likely to suffer cuts.
Mission:

- Promote and support, by any means, high-quality basic, strategic and applied research and related postgraduate training in the social sciences.
- Advance knowledge and provide trained social scientists who meet the needs of users and beneficiaries, thereby contributing to the economic competitiveness of the UK, the effectiveness of public services and policy, and the quality of life.
- Provide advice on, disseminate knowledge of and promote public understanding of, the social sciences.1

Established: 1965

General information: The Economic & Social Research Council (ESRC) is the largest UK organisation funding research on economic and social issues, through supporting independent, high-quality research which has an impact on business, the public sector and the third sector.

The ESRC is a non-departmental public body established in 1965, with most of its funding coming from the Department for Business, Innovation and Skills (BIS).

Definition of mental health: The ESRC does not currently have a definition of mental health. However, through working with other funders (e.g. the Medical Research Council and the UK Clinical Research Collaboration), it has used the Health Research Classification System definitions where appropriate.

Area: Economic and social issues

Size: The ESRC had a budget of £213m per year (2014-2015).

Funding acknowledgements 2009-2014: 242

Geographical location

Funding has to be primarily routed through the UK, although research may take place outside the UK. The ESRC does fund outside the UK through some joint calls (e.g. with the UK Department for International Development) where eligibility is international. International co-investigators are also permitted on applications.

Funded research areas

The portfolio of ESRC-funded research is quite varied, as there has not been, to date, much strategic directive research commissioning on mental health. The three strategic priorities identified in its delivery plan are:

- Economic performance and sustainable growth
- Influencing behaviour and informing interventions
- A vibrant and fair society

Our bibliometric data indicate that the two major areas of mental health research funded by the ESRC are neurodevelopmental disorders and neurodegenerative and cognition disorders. The latter may be a result of the major investment with the National Institute for Health Research (NIHR) on dementia. However, it is important to note that data from our bibliometrics analysis, using medical subject headings, may miss some ESRC-funded research on, for example, well-being, resilience, self-esteem and prevention. ESRC-funded research tends to be more applied than basic.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

Research level of funded papers

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

The majority of ESRC funding for mental health research is provided through the responsive element of a range of its schemes, i.e. it is investigator-led. There is also some directive mode funding, where specific topics or priority areas are chosen, although the ESRC has not had a specific call on mental health to date.

Current collaborations

The ESRC’s main collaborators are UK research councils (such as Arts and Humanities Research Council, the Biotechnology and Biological Sciences Research Council, the Engineering and Physical Sciences Research Council and the Medical Research Council), other major health funders (such as the Wellcome Trust and NIHR) and large charitable funders in the UK (such as the British Heart Foundation and Cancer Research UK). This is reflected in our bibliometric data.

In terms of mental health research funding, the ESRC has collaborated with NIHR on dementia research (funding six major projects for around £20m in total) and with the MRC on alcohol misuse research.

The ESRC is also involved in the National Prevention Research Initiative, made up of 16 funders, including government departments, research councils and major medical charities, who are working together to encourage and support research into chronic disease prevention.

Network of co-acknowledgement for papers acknowledging this funder – each node represents a funder and the connecting lines indicate co-acknowledgement. Node size is proportional to the number of acknowledgements, line thickness to number of co-acknowledgements. Funders are coloured according to the country in which they are located.
Portfolio evaluation practices

The ESRC has an evaluation function responsible for advising on the successful achievement of corporate strategy through a combination of policy, large investment and project-level evaluations.

Specific projects and activities are evaluated in terms of their quality, success and impact. In addition, horizon-scanning activities with other funders and users of research are conducted to identify new and upcoming research areas in line with their planning cycles. All ESRC awards also report via Researchfish, and the ESRC will use Researchfish to capture and analyse the impact of the research it funds in future years.

The ESRC is also involved in the ongoing UK Clinical Research Collaboration health research portfolio analysis (2014–2015). The review, which includes 29 UK health research funders, is based on the Health Research Classification System, which includes mental health research subtopics.

Strategy development

Currently, research priorities are set according to a five-year strategic plan period. To scope which research areas to prioritise, the ESRC works with a number of key stakeholders. First, it works with researchers in the field to understand the current evidence base and where knowledge gaps exist. Second, it also works with users of research, including charities, government departments, local councils and commissioners of health services, to understand their research needs. In addition, it looks at the current funding portfolio of the ESRC and other funders for gaps in the UK funding landscape.

Future

To date, the ESRC has not had a specific programme on mental health research. However, it noted that mental health is an area of increasing importance in the UK and that, along with analysis of its portfolio, this is playing into current ESRC thinking when reviewing strategic plans and priorities. In this respect, mental health is gaining traction as a potential area for future targeted funding. There is a broad range of social science opportunities in the field, including maintaining life course mental health and well-being, understanding and promoting resilience and preventing mental ill health.

In the future, the ESRC intends to refresh its priorities on a more regular basis than the current five-year strategic planning cycle. It plans to have fewer and more focused priorities in the future and to rotate them on a more frequent basis.

Challenges

Challenges to the future funding of mental health research identified by the ESRC include finding the balance between well-being, quality of life, prevention and treatment, as well as balancing medical and social research. Access to funding was also considered a potential challenge for future research. Nevertheless, it was noted that many of the challenges faced in funding future mental health research are not unique to the field.

Opportunities

The ESRC also identified opportunities for future mental health research. In particular, it was noted that the relationships among research funders in the UK are good and are conducive to creating opportunities for interdisciplinary research.
Mission: ‘To encourage the highest quality research in Europe through competitive funding and to support investigator-driven frontier research across all fields, on the basis of scientific excellence.’1

Established: 2007

General information: The European Research Council (ERC), funded by the European Commission, was established to create a pan-European mechanism for supporting fundamental research. It is now one of the four activities under the Excellent Science pillar of Horizon 2020, the Commission’s research and innovation funding programme for the period 2014–2020. The ERC has seen its budget increase 60 per cent for the period 2014–2020 compared with 2007–2013.

The ERC has a Scientific Council that is responsible for establishing the overall science strategy as well as the general approach for organising calls and evaluating proposals. Scientific panels of 10–16 members evaluate proposals, with additional input from external reviewers. ‘Scientific excellence’ of the researcher and study proposed is considered to be the only evaluation criterion.

Definition of mental health: The ERC does not have formal definitions of mental health or of the other areas it funds. It has a broad range of focus covering biological investigation of the bases and diagnosis of specific disorders, as well as well-being and social aspects of mental health. Expert reviewers are relied on to evaluate proposals.

Area: General research

Size: Its annual budget was €1.7bn for FY2014 (17% of the budget for Horizon 2020). The ERC spends €15–20m per year on mental health research.

Funding acknowledgements 2009–2014: 269

Geographical location

Calls are open to researchers of any nationality, who can be based in any country when they apply, but funded work must be carried out at a host institution in the EU or an associated country. Approximately half of ERC grants have gone to researchers at institutions in the UK, Germany and France.

Funded research areas

ERC calls are completely investigator-driven; the ERC does not organise themed calls. In assessing proposals, the ERC divides its evaluation into 25 panels that are grouped into three disciplinary categories: Social Sciences and Humanities (SH), Physical Sciences and Engineering (PE), and Life Sciences (LS). Applicants select the one or two panels that are most relevant to their research area. The panels most relevant for mental health research are likely to be Neurosciences and Neural Disorders (LS5) and The Human Mind and Its Complexity (SH4).

In place of the concepts of 'basic' and 'applied' research, the ERC describes the research it funds as 'frontier research'. It says this concept reflects 'a new understanding of basic research' and is 'characterised by the absence of disciplinary boundaries'. The term is also intended to connote the importance of research for economic and social welfare and the riskiness and excitement of exploration 'at and beyond the frontiers of understanding'.

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2 European Research Council (2015). "Frontier Research."

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Research level of funded papers

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.

Sex development disorders
Depressive, anxiety and personality disorders
Neurodegenerative and cognition disorders
Schizophrenia, bipolar and other psychotic disorders
Sleep disorders
Eating disorders
Neurodevelopmental disorders
Substance use and addictive disorders

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.
Funding mechanisms

The three main types of awards offered by the ERC are described in the table below:

<table>
<thead>
<tr>
<th>Award type</th>
<th>Eligible applicants</th>
<th>Maximum award for applicants applying from the EU*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting Grant</td>
<td>Researchers at 2–7 years post-PhD</td>
<td>€1.5m over 5 years</td>
</tr>
<tr>
<td>Consolidator Grant</td>
<td>Researchers at 7–12 years post-PhD</td>
<td>€2.0m over 5 years</td>
</tr>
<tr>
<td>Advanced Grant</td>
<td>Senior research leaders</td>
<td>€2.5m over 5 years</td>
</tr>
</tbody>
</table>

* One of the ERC’s objectives is to encourage talented researchers to relocate to the EU, and researchers who will be moving to Europe from abroad are eligible to receive additional funding (e.g. €2m for a Starting Grant, as opposed to €1.5m).

ERC grantees can also apply for ‘proof-of-concept’ grants to explore the market potential of results from ERC-funded research.

Current collaborations

The ERC holds workshops to share best practices with other European funders in such topics as evaluation and bibliometrics, and it interacts with such organisations as the Cooperation in Science and Technology (COST), which supports transnational cooperation in Europe. Information sharing also occurs through informal networks that ERC scientific officers have in member states.

Outside the EU, the ERC and the National Science Foundation (NSF) in the USA have a bilateral agreement whereby NSF-funded researchers collaborating with an ERC-funded team can receive ERC support to extend their fellowship with visits (short-term, or 6–12 months) to work with the ERC team. Similar agreements exist with funders in Korea, Argentina and Japan (an agreement with China is in progress).

National funders in Europe regularly contact the ERC to find out whether researchers from their country have received a positive evaluation without having been ultimately selected for funding. The national agencies may then choose to fund these researchers themselves, but the ERC does not actively coordinate this activity.
Future

The ERC does not anticipate changes in its grant schemes or methods of evaluation, but it is reviewing the Synergy Grant scheme it piloted, which enables small groups of research teams to work together for up to six years.

An adjustment the ERC has implemented for 2015 is to allocate budgets for its three main areas (SH, PE and LS) on the basis of demand. Previously, these budgets were fixed, while budgets for the 25 panels within them were allocated according to demand.

ERC president Jean-Pierre Bourguignon recently highlighted initiatives to widen participation in ERC programmes, such as supporting researchers from less successful countries to prepare funding applications. The ERC has also surveyed grantees from countries with limited research support to better understand the barriers they face in carrying out research. (In addition to financial constraints, issues raised relate to administrative support and recruitment of research staff.) Bourguignon also commended an effort being made by Hungary and Poland to provide a ‘twinning’ opportunity for young researchers to visit existing ERC teams to gain insights for their own, future applications.

Collaboration

Bourguignon has commented that increased interaction among those who develop and administer the European Commission’s various research programmes, including the ERC, could improve the coherence of European programmes and help in the development of synergies.

Opportunities

The ERC has, in its short history, established a strong reputation. Grantees have recognised that ERC support provides flexible funding for ambitious projects, and there is evidence that it maybe be helping to promote internationalisation across Europe and beyond, as grantees employ early career researchers from across Europe and outside Europe, many of whom hold nationalities different from the Principal Investigator.1

Challenges

The European economy has remained sluggish in recent years, and despite the strong support the ERC has received, it has not been free from budgetary threats. Bourguignon has remarked that European support for science and research must come from placing research high on the political agenda and among the interests of the private sector. Meanwhile, demand for ERC grants remains high and competition is fierce. The ERC is not able to fund some excellent proposals it receives.

Mission: The mission of the Fondation FondaMental (FFM) is to ensure that psychiatric disorders are considered as an illness like any other. Its role is to improve understanding, care and prevention and to give new hope to patients and their families and friends.

Established: 2007

General information: The Fondation FondaMental is a network for scientific cooperation in mental health, focusing specifically on the most severe disorders and issues, namely, high-functioning autism, schizophrenia, bipolar disorder, suicide and obsessive compulsive disorder. It was set up through a partnership with the Ministère de l’Enseignement supérieur et de la Recherche (the French ministry for research). Its aims are to: (a) improve diagnosis; (b) improve understanding of the mechanisms of the disorder; (c) develop innovative treatments; and (d) measure the cost, funding and burden of disorders in order to inform policymakers in France who are not aware of the importance of the mental health field.

Definition of mental health: The FFM does not have a explicit definition of mental health.

Size: €2.3m on research in 2014

Area: Mental health

Funding acknowledgements 2009–2014: 87

Geographical location

Funding is focused on France, specifically on people affiliated with the foundation.
Funded research areas

The FFM focuses its funding on high-functioning autism, schizophrenia, bipolar disorder, suicide and obsessive compulsive disorder. For each funding opportunity it has either a national or an international board, which peer reviews applicants.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.

Research level of funded papers
**Funding mechanisms**

- A Chair of Excellence in autism
- A prize for researcher of the year in mental health
- PhD and postdoctoral grants for projects connecting neuroscience research labs and clinicians

It also provides financial support to the network for conference organisation and attendance, and to enable visitors to and from FFM labs.

**Current collaborations**

The FFM has agreements with more than 70 research labs and with the 35 hospitals that host its expert centres. It would be interested in collaborations with other funders, although it currently does not have any.
Portfolio evaluation practices

Project evaluation is carried out by the international scientific advisory board, which meets yearly and looks at the progress of each project. This includes a presentation of all projects funded by the FFM. The FFM would like to carry out more portfolio evaluation, but it currently does not have the resources.

Strategy development

The scientific direction of the FFM is developed by the steering committee and approved by the Board of Directors, with advice from the scientific council.

In order to provide funding, the FFM has to obtain money either through fundraising or through a government call. This means that the specific areas it funds tend to depend on the restrictions placed on the money it has received. Often the FFM proposes a project and then, through fundraising or a government call, obtains money to carry out this specific project.

Future

Opportunities
There is an opportunity to identify environmental factors and communicate them with policymakers.

Challenges
In France the biggest challenge is convincing policymakers that investing in research would diminish overall costs and improve prognosis. There is a need to convince the government and private funders, who have many demands on their money, that investing in mental health will be cost-effective and have a significant impact.

The FFM commented that, in general, industry withdrawing from the development of psychiatric drugs is a big challenge for the field. Currently industry is inclined to develop new compounds in fields other than psychiatry because it does not feel that psychiatry will yield enough income. There is a need for industry to be encouraged back into the field.
Fonds de recherche du Québec – Santé (FRQS)

http://www.frqs.gouv.qc.ca/

**Mission:** The Fonds de recherche du Québec – Santé aims to promote and provide financial support for research, training, and dissemination of scientific knowledge in the field of health.

**Established:** 1964

**General information:** The Fonds de recherche du Québec – Santé (FRQS) is the Canadian province of Québec’s provincial health funder. Until 2011, Québec had three separate research funders, for health, for engineering and the natural sciences, and for the humanities and the social sciences. In 2011, these were brought together under the umbrella organisation Fonds de recherche du Québec, with an aim of developing more interdisciplinary research. There is a chief scientist for the whole organisation; however, the three funders have kept their own boards and councils. The FRQS is a broad health research funder which aims to build capacity and make scientists competitive at the national and international levels.

**Definition of mental health:** The FRQS does not have a definition of mental health, although it feels that it would be helpful for the parameters of mental health research to be defined.

**Area:** General health research

**Size:** Can$24.7m for mental health and neuroscience research (FY2013-2014)

**Funding acknowledgements 2009–2014:** 838

**Geographical location**

The FRQS funds research in the province of Québec, Canada.

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[Map of FRQS funding distribution]
Funded research areas

The FRQS is a broad health research funder. The area of Neurosciences, Mental Health, and Addiction is just one of its 12 research domains. This is a wide area, ranging from basic research on the cellular and molecular mechanisms that affect brain function and neurological mechanisms associated with thought and emotion, to studies on the diagnosis and treatment of diseases of the nervous system, to mental illness prevention through social, economic and cultural factors.

While most of its training grants are investigator-driven, within partnerships with other funders it does have specific calls. It also funds a thematic network on suicide, mood disorders and related disorders, which aims to promote the development of research for the prevention of suicide.

The FRQS sees translational research as an important area to build on. Its infrastructure programme encourages engagement in knowledge transfer and translation. It is currently discussing incentives it could put in place to further increase translation activities.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

Research level of funded papers

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

The FRQS has two main streams of funding:

- Training grants, which covers master’s, PhD and postdoctoral fellowships, as well as research scholar awards, which cover the salary of academic researchers on campus or in university hospital research centres
- Research infrastructures, made up of 17 centres in university hospitals and 18 thematic networks (including one on suicide)

Funding on specific areas is also provided through its partnership programmes.

Funding decisions are based on peer review by panels of national and international scientists. For training grants, this is often carried out online, or by phone or teleconference. For infrastructure awards, the peer review panel meets in person.

Current collaborations

Twenty per cent of the budget is spent on partnership programmes. The FRQS has formal partnerships with provincial, national and international funders spanning the private sector, charitable foundations and other research granting agencies. Its partnerships have varied aims, including: funding health research, increasing research capacity and mobilising knowledge obtained through research. Within mental health, collaborators include:

- The Graham Boeckh Foundation and the Ministère de la Santé et des Services Sociaux: Québec Research Network on mental health and young people
- Pfizer Canada: The Pfizer-FRQS Innovation Fund programme for research into Alzheimer’s disease

The FRQS is also a member of the National Alliance of Provincial Health Research Organisations (NAPHRO). NAPHRO members meet monthly to understand what other members are doing and to see what they could develop together.

Network of co-acknowledgement for papers acknowledging this funder – each node represents a funder and the connecting lines indicate co-acknowledgement. Node size is proportional to the number of acknowledgements, line thickness to number of co-acknowledgements. Funders are coloured according to the country in which they are located.
The FRQS wishes to strengthen its partnership strategy, particularly on an international level. A key challenge identified by the FRQS is ensuring that mental health research is a high priority, as it should be if the burden of disease is taken into account. It needs to be recognised that mental health is affected by a variety of factors, and that there is a need to train enough researchers with a sufficient variety of skills. There is also a need to ensure that the connections between the social and biological aspects of mental health are made, and that research is translatable into policy.

Mental health has been identified by the Ministère de la Santé et des Services sociaux (the Québec ministry of health) as one of the key priorities of the next decade. This provides a favourable environment for mental health research, which needs to be capitalised on. The FRQS thinks that there is a need to encourage more collaboration and exchange. The International Alliance of Mental Health Research Funders is one way of doing this.

Strategic decisions are made in consultation with the scientific community in Québec. An example of this is its current reorganisation of the network programme to encourage collaborations, particularly international collaborations. To decide how best to do this, the FRQS has formed a committee made up of scientists at the FRQS, the FRQS board and external stakeholders. The committee met with the scientific directors of the 18 networks, the vice presidents of research and the deans of medicine of Québec universities, and it also held focus groups with the wider scientific community. This gave a good idea of the perception of the current networks and of ways in which they could be reorganised and improved. The new programme will commence in July 2016.
Mission: The Graham Boeckh Foundation aims to be a catalyst for improving mental health services and treatments.

Established: 1996

General Information: The Graham Boeckh Foundation (GBF) is a private foundation, based in Canada, funding initiatives in the area of mental health. Specifically, the Foundation’s goal is to be a catalyst for improving mental health services by initiating a suite of selectively chosen projects. The focus is on research that aims to foster innovation in systems of care. These projects also aim to foster collaboration and to break down the silos within the sector. The GBF works with numerous partners across Canada and abroad.

Definition of mental health: The GBF has no specific definition of mental health.

Area: Mental health

Size: The Foundation spends approximately Can$3–4m a year on research.

Geographical location
Most of the Foundation’s activities are currently focussed on Canada, the major exception being the International Alliance of Mental Health Research Funders.

Funded research areas
The GBF focuses on strategic projects that aim to encourage systems change, with three themes:

● Improving treatments and services, with a current focus on child and youth mental health (early intervention). This includes a major collaborative with the Canadian Institutes of Health Research (CIHR), which is funding the ACCESS network, to demonstrate how youth mental health services can be transformed in a variety of settings across Canada. Each funder has provided Can$12.5m. The ACCESS network is funded under CIHR’s Strategy for Patient-Oriented Research. The GBF has also created a joint venture with the Québec government and is working with a number of provinces to form research collaborations on integrated youth services.

● Fostering the development of indicators to measure the performance of the mental health care systems in Canada and facilitate comparisons among and within provinces.

● Promoting collaboration and greater effectiveness in the sector, through the International Alliance of Mental Health Research Funders, a philanthropic collaborative in Canada called the Mental Health and Wellness Affinity Group, and the Coalition for Access to Psychotherapy (Québec).
Funding mechanisms

The GBF predominantly funds programmes of research, including the ACCESS network, which is co-funded with CIHR, and the youth mental health network in Québec, which is co-funded with the FRSQ. It also funds a chair in schizophrenia research at McGill University in Montreal and the Dr. Samarthji Lal Award for Mental Health Research.

Current collaborations

The GBF has formal collaborations with the CIHR and a range of Canadian federal and provincial governmental organisations as well as other philanthropic organisations.

In partnership with RAND Europe, the GBF set up the International Alliance of Mental Health Research Funders, which fosters international collaboration in funding. Through this initiative, the GBF collaborates with a number of governments and private foundations within Canada and abroad.

Other funders co-acknowledged on papers with the Graham Boeckh Foundation include:

- The Canadian Institutes of Health Research
- BC Mental Health and Addictions Services (Canada)
- Bell Canada
- The Bill and Melinda Gates Foundation (USA)
- Biolytical
- The British Columbia Mind Foundation (Canada)
- The Canadian Centre on Substance Abuse
- The Carraresi Foundation (Canada)
- l’Agence nationale de recherches sur le sida et les hépatites virales (the National Agency for Research on AIDS and Viral Hepatitis) (France)

Portfolio evaluation practices

The foundation does not have a formal evaluation framework but works intimately with the organisations and people who are funded. This allows for continuous interaction with the recipients of funds and the sharing of ideas, plans and results.

Future

The Foundation will continue to develop its large projects, such as the International Alliance of Mental Health Research Funders, youth mental health systems transformation and indicators for Canadian mental health systems.

Collaborations

The GBF is keen to continue collaborating with funders within and outside of Canada. In youth mental health, plans are to develop more collaborations with the Canadian provinces and to develop an international collaborative. The Foundation hopes that the International Alliance of Mental Health Research Funders will facilitate this process.

Challenges

The Foundation’s projects aim to create broad-based system change. Success depends on fostering a scale-up within the mental health care system.

Opportunities

The GBF thinks that there is potential for synergy among its projects. For example, the International Alliance of Mental Health Research Funders and projects on Canadian youth mental health transformation and indicators of systems performance could work together and amplify their impact.

RAND Europe is a not-for-profit research institute whose mission is to help improve policy and decisionmaking through research and analysis. This document is one of 32 ‘deep dive’ profiles of mental health research funders compiled for the study “Project Ecosystem: Mapping the global mental health research funding system”. The main report and other accompanying documents are available from www.randeurope.org/mental-health-ecosystem.
Mission: ‘Saving and improving lives in low- and lower-middle-income countries through Integrated Innovation’.

Established: 2010

General information: Grand Challenges Canada was launched in 2010 to support research in global health, led by innovators in low- and middle-income countries (LMICs) and Canada. To date, it has supported more than 700 projects, totalling Can$177m, implemented in more than 80 countries. Grand Challenges Canada is mainly funded by the Government of Canada and has leveraged an additional Can$269m in funding from other sources, including significant private sector investment. Of the challenges targeted by Grand Challenges Canada, the Global Mental Health challenge seeks to improve treatments and expand access to care for mental disorders through transformational, affordable and cost-effective innovations which have the potential to be sustainable at scale.

Definition of mental health: The term mental health disorders refers to depression, anxiety disorders, schizophrenia, bipolar disorders, alcohol and drug use disorders, emotional and behavioural disorders of childhood and adolescence, developmental disorders of childhood, migraines, dementias and epilepsy.

Area: Health

Size: Grand Challenges Canada has spent Can$32m to date.

Geographical location

Of the funding in the Global Mental Health stream, 75 per cent has gone to LMICs, with 24 projects in Africa, 18 in Asia and 11 in Latin America. About 20 per cent of all research projects funded have Canadian innovators, although the majority of these are larger grants (representing 75 per cent of total funding).

Funded research areas

Within the Global Mental Health challenge, Grand Challenges Canada’s research portfolio includes 64 projects across a number of LMICs. Research funded under the Global Mental Health challenge focuses on innovative ideas aimed at improving treatment and access. Within this are six key areas, highlighted in the figure below.

The majority of research projects are focussed on service delivery or implementation science, although there are a small number of projects on innovative ways to diagnose and treat conditions, as well as a handful of projects focused on developing mobile and IT technologies. While Grand Challenges Canada does not explicitly fund capacity-building activities, these are recognised as an important impact of its research projects.

Grand Challenges Canada also supports the Mental Health Innovation Network, which aims to facilitate the development and uptake of executive mental health innovations by enabling learning, enhancing linkages, disseminating knowledge and leveraging resources.

Current collaborations

Grand Challenges Canada works closely with a number of Canadian institutions, including its consortium members, namely, Canada’s International Development Research Centre; the Canadian Institutes of Health Research (CIHR); and the Department of Foreign Affairs, Trade and Development Canada. Grand Challenges Canada tends to fund early-stage, high-risk innovations that have the potential for scale and sustainability, and it works with
partners, including the private sector, governments, non-governmental organisations and development agencies.

In terms of formal collaboration with mental health research funders in particular, it has partnerships with the Graham Boeckh Foundation and the US National Institutes of Mental Health’s Grand Challenges programme. A memorandum of understanding has been signed with the latter, and in June 2015 Grand Challenges Canada co-hosted two Grand Challenges in Global Mental Health community meetings with researchers funded by NIMH Grand Challenges and Grand Challenges Canada.

The Mental Health Innovation Network’s activities are led by a team of researchers and policy makers from the London School of Hygiene & Tropical Medicine’s Centre for Global Mental Health and the World Health Organization’s Department of Mental Health and Substance Abuse.

### Funding mechanisms

Grand Challenges Canada funds institutions in low- and lower-middle-income countries and Canada to develop, test and transition to scale Integrated Innovations that have the potential to save and improve lives on a project basis. Funding is provided to prove the concept (Can$100,000–$250,000) and to transition innovations with proof of concept to scale (up to Can$1m in matched funding). Innovators are encouraged (at proof of concept) / required (at transition to scale) to form multidisciplinary/cross-sector teams with the requisite scientific, social and business expertise to ensure that a path to scale and financial sustainability exist beyond Grand Challenges Canada’s investments. To date there have been three rounds of funding in the Global Mental Health stream.

### Portfolio evaluation practices

Together with the Mental Health Innovation Network, Grand Challenges Canada collects both qualitative and quantitative data related to outputs and outcomes of interest against a Theory of Change for Global Mental Health. The data are analysed and presented to its Scientific Advisory Board and key experts on a periodic basis (at least annually). To date, these reviews have focused on immediate and intermediate outcomes, because the first rounds of projects funded under the Global Mental Health program are scheduled to be completed in late 2015. High-level interim findings on these projects are documented in Grand Challenges Canada’s 2014 annual report, which includes interview data with innovators and users on the impact of the research funded, as well as quantitative assessments of lives reached, jobs created and changes in policy/legislation effected as a result of the projects.

### Future

Looking forward, Grand Challenges Canada is bringing together a partnership designed to build on its current momentum and catalyse sustainable impact on global mental health at scale over the next five years. Grand Challenges Canada recognises that different organisations have unique value to bring to this global mental health challenge, and it seeks partners who would bring their own resources and expertise to amplify the impact that each organisation would have when working alone. This partnership will build on the positive partnership between Grand Challenges Canada and the NIMH.

Grand Challenges Canada is currently focussed on optimising the impact of the innovations currently in their global mental health portfolio and expects near-term funding to focus on transitioning the most promising of these to scale.

In terms of challenges for future funding, it was felt that in a developing country context, mental health research may struggle to compete for resources with other health concerns, such as infectious diseases, child mortality and the rise of non-communicable diseases. Country resources in LMICs were also seen as a limiting factor for significant impact at scale, as many mental health disorders are chronic diseases which require long-term investment, much of which will come from the public sector.

However, it was noted that there is a growing awareness of the importance of mental health research around the world, especially with the publication of the World Health Organization’s Comprehensive Mental Health Action Plan 2013–2020. There may also be an opportunity in the overlap with other health areas, such as women’s and children’s health. These opportunities may also help in coordinating research funding across funders, outside of just mental health research.

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This document is one of 32 ‘deep dive’ profiles of mental health research funders compiled for the study ‘Project Ecosystem: Mapping the global mental health research funding system’. The main report and other accompanying documents are available from [www.randeurope.org/mental-health-ecosystem](http://www.randeurope.org/mental-health-ecosystem).
Project Ecosystem: Mapping the global mental health research funding system

Lundbeck Foundation
http://www.lundbeckfoundation.com/

**Mission:** 'To make a significant impact on people’s health and well-being by funding research of the highest international quality, conducted by top researchers both in Denmark and involving scientists abroad, and mainly within biomedicine and health science.'

**Established:** 1954

**General Information:** The Lundbeck Foundation is an active industrial foundation established in 1954, which aims to maintain and expand the activities of the Lundbeck Group and to provide funding for scientific research of the highest quality. The Foundation holds a substantial interest in the share capital of H. Lundbeck A/S, ALK-Abelló A/S and Falck A/S. The Foundation annually grants DKK400–500m to support biomedical research and supports educational and communication activities related to science. The foundation is managed by a Board of Trustees which defines the overall funding strategy and makes funding decisions. The Board has also set up research and investment committees, which meet regularly to analyse and discuss grant and investment issues in greater detail.

**Definition of mental health:** The Lundbeck Foundation does not have a formal definition of mental health, despite some researchers requesting a clearer definition. The Foundation believes it is useful to have quite a loose definition/broad view on mental health to attract the best research.

**Area:** General health research

**Size:** The foundation spent DKK766m in 2010–2014 on mental health research.

Funding acknowledgements 2009–2014: 348

**Geographical location**

The majority of research funded is within Denmark or for Danish-based researchers working abroad. Outside of Denmark, research is mainly funded in the USA. Research can be funded worldwide, especially through international collaborations, if it has a strong link to the Danish research community.

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1 Correspondence with Lundbeck Foundation
**Funded research areas**

The overriding criterion for the Foundation’s research funding is that the scientific content of the application, the applicant’s qualifications and the academic environment at the host institution should all be of top quality. Within the field of mental health, major areas of investment have included: psychiatry, neuroscience, genetics, biochemistry, pharmacy, epidemiology and primary care. Our bibliometric analysis shows that the major mental health disorders funded include schizophrenia, bipolar and psychotic disorders, neurodegenerative disorders and depression, anxiety and personality disorders.

The Foundation funds both basic and applied research, but there is a clear tendency towards focusing on basic research. However, in our dataset there are slightly more ‘applied’ papers that acknowledge funding. For example, in 2014, the Foundation awarded DKK350m to basic research and DKK109m to applied research, although this varies year to year, depending on the quality of applications. Funding for translational research is also available.

The Foundation has shifted its focus on personal grants through increasing the number of Lundbeckfond Fellows for promising young researchers – Danish or foreign – who wish to establish or develop their own research groups at a Danish university or university hospital.

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**Research level of funded papers**

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.
**Funding mechanisms**

The Lundbeck Foundation supports two main types of research funding. It supports application-based funding, including PhD and postdoctoral fellowships, visiting professorships and travel stipends. Within this, the Foundation does not support application costs, student fees, administrative costs or projects by commercial companies. It also supports more strategic larger projects, with priorities defined by the board of directors.

**Current collaborations**

The Lundbeck Foundation works closely with a number of other research funders also focusing on biomedical research, through joint calls, co-funded projects and informal sharing of information. From our bibliometric analysis, we learned that the funders most commonly acknowledged with the Foundation on research papers are mainly Danish research councils and foundations, such as the Danish Medical Research Council, the Aase og Ejnar Danielsens Fond (Aase and Ejnar Danielsens fund), the NOVO Nordisk Fonden (NOVO Nordisk foundation) and the Augustinus Fonden (Augustinus foundation). Non-Danish funders include the Swedish Research Council, the Stanley Medical Research Institute in the USA and the European Commission.
Portfolio evaluation practices
The Foundation has recently signed a contract with Researchfish and is starting the process of implementing it. The aim is to be able to track research grants in a systematic way and use the data to conduct studies on the impact of the research. The Foundation receives written status reports from the projects it funds.

Future
The Foundation is currently working on its strategy for the coming years, and mental health research will play a prominent part in it.

The Foundation is also engaged with a number of key stakeholders, including deans of health faculties in Denmark, top researchers, representatives from research councils and other foundations, to get a broad overview of the field, in terms of which topics to fund, where the gaps are and how to best support research.
Mission: ‘Mental Health Research UK was the first UK charity dedicated to raising funds for research into mental illnesses, their causes and cures.’

Established: 2008

General information: The charity Mental Health Research UK (MHRUK) was set up in 2008 by barristers John Grace, QC, and Dr Laura Davidson and by Professor Clair Chilvers, now Chair of Gloucestershire Hospitals NHS Foundation Trust. Initial discussions began in 2007 with the Wellcome Trust, when it was noted that there was a significant lack of funding for mental health research in relation to the disease burden in the UK. A number of leading researchers in the field advise MHRUK, through its Scientific Committee. MHRUK funds PhD scholarships by means of a competition for university applications. The successful university then selects the best PhD student in a further competitive process. MHRUK gives at least 95 per cent of all donations received to research.

Definition of mental health: MHRUK does not have a definition of mental health. It funds research into mental illnesses, their causes and cures. It does not fund social research, health services research or research into dementia.

Geographical location

All the PhD scholarships funded by MHRUK are based in the UK. Students funded to date have been based at University of Nottingham (2), Cardiff University, University of Edinburgh, King’s College London, University College London and City University.

Funded research areas

MHRUK funds one PhD scholarship a year in schizophrenia and one in another area. Other topics previously funded include depression, suicide, bipolar disorder and anxiety. To date, seven PhD scholarships have been awarded. PhD scholarships are funded based on whatever is deemed to be the best project, through peer review. The balance of basic versus applied research funded by MHRUK is about 50/50, and there is no particular strategy to support either type of research. MHRUK does not fund dementia research because it feels that as a disease area it is already relatively well funded.

Funding mechanisms

MHRUK now funds two PhD scholarships per year in the UK. To date it has funded seven competitive research awards, aimed at supporting the UK science base. Funding covers PhD fees and the student’s stipend. It cannot be spent on laboratory costs but may be used for travel expenses or translational activities if funds are left over.

Current collaborations

In April 2014, MHRUK linked with the Schizophrenia Research Fund (SRF). This relationship came about because, over the years, both charities have been awarding joint PhD Scholarships in the field of schizophrenia and the trustees of both organisations had a common interest to develop this association further.

MHRUK’s first research award was co-funded with the University of Nottingham.

MHRUK is also a member of the Alliance of Mental Health Research Funders in the UK. The group meets twice a year to share progress, generate new ideas for improving mental health research and lobby for more funding for mental health research.

Portfolio evaluation practices

In deciding which thematic areas to fund each year, the trustees of MHRUK meet to assess where the current gaps are in the UK mental health research landscape.

In terms of assessing their portfolio, it is too early for informative evaluation, as only one of their funded PhD students has reached completion since the establishment of MHRUK.

Future

MHRUK noted that in the future it is likely it will continue to fund PhD scholarships primarily. Lack of PhD funding was identified as an issue when the charity was founded, and MHRUK coordinates with other funders, such as the charity MQ, which supports other parts of the research career pathway. It is possible that MHRUK may start to fund pilot studies in addition to PhD scholarships, but this would be dependent on available finances. If it proves possible to provide pilot study funding, this funding would likely be around £50,000 a year.

A major challenge to the future of mental health research that was identified by MHRUK is the fragmentation of research funders. This observation contributed to MHRUK helping to set up the UK Alliance of Mental Health Research Funders. The other significant challenge highlighted by MHRUK is difficulty in securing enough funding.
The Movember Foundation (global)  
(http://www.movember.com/)

Mission: "The Movember Foundation is the leading global organisation committed to changing the face of men's health... This work is saving and improving the lives of men affected by prostate cancer, testicular cancer and mental health problems."¹

Established: 2003

General information: The Movember Foundation is a global organisation committed to changing men's health. The Movember Foundation has funded more than 800 programmes in 21 countries to date. This work is aimed at saving and improving the lives of men affected by prostate cancer, testicular cancer and mental health problems. The Movember Foundation was founded in 2003 in Australia and has since grown to be a global foundation, inspiring support from more than 4 million so-called Mo Bros and Mo Sistas. The Movember Foundation urges men to grow a moustache during the month of November to generate awareness of men's health and to raise funds for its men's health programmes.

Definition of mental health: The definition of mental health used by the Movember Foundation comes from the World Health Organization: 'Mental health is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.'²

Area: Health. The Movember Foundation covers men’s health, both physical health (e.g. prostate cancer) and mental health.

Size: The Movember Foundation estimates that it spends around Aus$20m per annum on mental health projects globally.

Geographical location

In mental health, the Movember Foundation funds initiatives in Australia, New Zealand and Canada, and it has just established a large piece of work in the USA. It is planning work in the UK.

Funded research areas

The Movember Foundation is a strategy-driven funder that focuses on the health and well-being of men and boys. It funds research and projects in three core areas: prostate cancer, testicular cancer and men’s mental health.

In the areas of prostate and testicular cancer, the types of research funded cover the spectrum, from biomedical and clinical research to care and education. In mental health, however, the focus is more specifically on community-based programmes that target the mental well-being of men and on the evaluation and translation of these. This means the Movember Foundation does not fund either biomedical mental health research or drug and intervention trials. The aim is to go where men gather, such as sports clubs, rather than to wait for men to come to a clinic or hospital.

Funding mechanisms

The Movember Foundation is currently moving away from national open research grant calls to more focused, community-based programmes. Important for all these programmes are knowledge-translation strategies which outline how knowledge is to be translated into practice. The Movember Foundation does not currently fund fellowships or PhDs because the focus is increasingly on community-based projects.

Current collaborations

In mental health the Movember Foundation maintains major collaborations with the Australian charity beyondblue, the Mental Health Foundation in New Zealand, the Prevention Institute in the USA, and many academic and community-based teams in Canada. Generally, the Movember Foundation provides the funds in these collaborations and the partners focus on programme delivery. The Movember Foundation has not yet established a large-scale partnership or collaboration with other research funders in the mental health field. Collaborations with other funders could be established where there is strategic alignment. This means that other funders should also have a commitment to knowledge translation and share the Movember Foundation’s appetite for high-risk and innovative projects. Furthermore, the Movember Foundation believes that a lot of the solutions to mental health problems do not lie in the medical sphere, and thus it is looking for solutions outside of the medical setting.

Portfolio evaluation practices

All individually funded projects are evaluated at the project level. The Movember Foundation has adopted a ‘results based accountability framework’ for all its investments. At the portfolio level, no comprehensive evaluation practices are in place yet, but this is something that the Movember Foundation is starting to think about. There is an interest in globally assessing the impact of the Movember Foundation investments.

Strategy development

The Movember Foundation works according to a global investment strategy that has been approved by the global board. As of May 2015, the strategy is undergoing a major revision. The current strategy has the following priority areas: prevention, early intervention and stigma reduction.

Future

In the future, the Movember Foundation will continue to move away from open calls for research in mental health to focused, strategy-led, community-based projects. The strategic focus of the funding is expected to help the Movember Foundation achieve the strategic impact it is aiming for. Crucial to all these projects will be knowledge translation, which in itself is one of the major challenges for the future. The Foundation argues that a lot of research is already being funded but that there is too little funding for knowledge translation, despite the fact that current knowledge could have a much greater impact if it were integrated into practice.

Finally, the Movember Foundation notes that it is important for it as a funder to stay focused on the population that it is there to serve, acknowledging that there is a danger of losing sight of what is really going to make a difference to men and boys when an organisation only thinks of research.
**Mission:** To create a world where mental health is as respected as physical health, where research is a global priority and where the best science is applied to improving quality of life.¹

**Established:** 2013

**General information:** MQ is a relatively new fundraising charity based in the UK that funds mental health research globally. The first two funding schemes initiated by MQ were (a) improving quality of and access to psychological treatments and (b) Fellows Awards for early-career investigators. Programmes in development will focus on mental health of children and young people and mental health data science. MQ works to advance mental health science internationally, across all relevant research disciplines. It works transparently, with frequent communication with similar mental health research funders and stakeholders, seeking to stimulate collaboration and avoid duplication of effort.

**Definition of mental health:** For the purposes of one of its reports, MQ defined mental illness as a condition that significantly interferes with an individual’s cognitive, behavioural, emotional or social abilities, causing distress.²

**Area:** mental health

**Size:** As of the end of 2014, the amount MQ had spent on funding was £3m; 100 per cent of its annual research budget is for mental health research. By early 2016, it hopes to be investing £2m per year in mental health research, and as its fundraising programme develops, its goal is to allocate £5m per year.

**Geographical location**
MQ funds projects worldwide. It receives applications from many countries, including the UK, USA, Australia, and those in Asia.

**Funded research areas**
MQ takes a wide-ranging approach to the mental health research it funds, from basic science through to public health research. Areas include common and severe mental disorders, e.g. depression, anxiety, bipolar disorder and schizophrenia. Thus far it has funded research through two calls for the early-career fellows programme and one call for research to improve current psychological treatments, called PsyIMPACT. Investigator-led research was funded through an open call under various themes, and the possibility has been kept open for invited proposals to fulfil specific MQ-driven purposes. However, in general, MQ does not want to be too prescriptive on the topics funded.

**Funding mechanisms**
MQ will only accept invited research proposals. Through its current funding mechanisms, it funds or seeks to fund both investigator-driven proposals and commissioned projects. MQ also funds smaller projects/initiatives in addition to its three main research programmes. MQ is committed to the peer review process. Proposals are peer reviewed by internal and external reviewers, with final recommendations drawn from a committee of experts.

**Current collaborations**
MQ does not yet have any co-funding research collaborations. However, it is involved in activities with:

- The International Alliance of Mental Health Research Funders, to support research and analysis into mental health research funding to improve the translation of research into faster cures and better treatments
- The UK Alliance of Mental Health Research Funders, meeting regularly to share progress and generate new ideas for improving mental health research in the UK

The Association for Medical Research Charities (AMRC), to find guidance on such areas as how to conduct portfolio evaluation

The James Lind Alliance, to seek the views of stakeholders on the future of depression research

MQ is actively cultivating a network of expertise and developing informal collaborations. It has organised an annual science meeting which provides a platform for networking.

In considering a collaboration, MQ would evaluate alignment with research goals and priorities and operating values; diligence will focus on potential partner projects, financial stability of the collaboration, and research partners (academic or industry).

Portfolio evaluation practices

MQ is currently assessing how it will evaluate the impact of its portfolio. MQ believes that this is important to see if it is reaching its goals, to inform strategy development and to justify its investments to its stakeholders. Its goal is to apply the best practices of impact evaluation, but in an efficient way and with a clear purpose. MQ finds the AMRC to be a helpful resource as it develops as a funding body, and it will be referring to AMRC guidance for evaluation.

MQ is using various tools to track investigator progress and to manage the information collected for each research programme. Mendeley is one such tool for knowledge management. MQ is mandating the use of ORCiD, a universal identifier of investigators, and plans to use it in conjunction with UberResearch to link funding with data on research outputs for ongoing monitoring and impact assessment. In addition to ORCiD, it plans to use other universal identifiers, such as figshare, to help simplify the management of its research enterprise.

Strategy development

MQ is developing its strategy through convening meetings of topic experts, consulting with patients and conducting data analysis and literature searches in order to identify the most promising avenues of research that it could fund. All final funding decisions are made by the Board of Trustees.

Future

MQ is aiming to create a balanced portfolio of basic research, translational research and clinical research, including in public health. Its next funding area will be mechanisms in children and young people’s mental health, which should be introduced in 2016.

Collaboration

MQ is planning to fund an initiative on big data and bioinformatics for mental health and is currently networking in this area. It is interested in organisations coming to MQ with proposals for collaborations, and although MQ has not entered into any yet, it does intend to do so.

Challenges

MQ suggested that a key challenge for the future of mental health research is to connect the dots between research areas. It feels that although there is much good mental health research, there is a need for investigators to talk to researchers from different areas of expertise in order to capitalise on it. MQ perceives that there is a need to raise awareness internationally of what the UK has to offer in the mental health research field, in order to increase global collaborations. It suggested that, while there are many collaboration networks between UK and overseas research institutions, a broader awareness is needed to facilitate more international collaborations.

Opportunities

MQ believes that not having a definition for mental health that satisfies all constituents is a problem, and it suggests that the members of the International Alliance of Mental Health Research Funders might be able to work together to overcome this. In particular, it sees a working definition as being important for advocacy purposes.
Medical Research Council (MRC)  
http://www.mrc.ac.uk/

**Mission:** The Medical Research Council’s mission is to improve human health through supporting biomedical research, from fundamental lab-based science to clinical trials in all major disease areas.

**Established:** 1913

**General information:** The Medical Research Council (MRC) is a large and established government funding body in the UK. The MRC Neurosciences and Mental Health Board (NMHB) funds research into neurosciences, mental health and disorders of the human nervous system. This is underpinned by fundamental research with relevance to human health or the underlying mechanisms of disease. It funds high-quality, novel research across the spectrum of neurosciences and mental health addressing themes of its strategic plan, namely, ‘resilience, repair and replacement’ and ‘living a long and healthy life’.

**Definition of mental health:** The MRC does not have a formal definition of mental health research.

**Area:** General health research

**Size:** The MRC spent, on average, £20.8m a year funding on mental health research between 2008 and 2013, i.e. 2.75% of awards.

**Funding acknowledgements 2009–2014:** 3503

**Geographical location**

Most grant funding is for UK investigators or those based in one of its two MRC units in Africa. However, international collaborators can be included in grant applications and funded where there is a strategic rationale.
Funded research areas

The MRC has funded much mental health research, including research on psychosis, schizophrenia, depression, bipolar disorder and anxiety disorders. It funds both animal-based and human-based research, from genetic and cellular studies through to the development of talking therapies, apps and early stage clinical trials.

As the MRC is mainly a response mode funder, it is very unlikely to release a call for grants specific to any particular mental health condition. However, it has put out calls in the past for pilot projects in experimental medicine related to mental health in general, in order to stimulate applications to the MRC’s dedicated experimental medicine initiatives. There was also a recent call on ‘Intellectual disabilities: Risk factors affecting the trajectory of development and their impact on mental health outcomes and behaviour’. All grant applications undergo a rigorous peer review process.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

The MRC is mainly a response mode funder, although it also makes strategic calls and funds centres, units and institutes. The number of new NMHB awards each year varies depending on the applications submitted, the open competition and available funding. The MRC, as a whole, also funds mental health research through other routes, e.g. the Developmental Pathway Funding Scheme and fellowships.

Current collaborations

The MRC welcomes the opportunity to fund in partnership, although it rarely actively seeks collaboration to fund individual grants. However, for larger initiatives, the MRC will seek funding partners when and where appropriate, e.g. recently with the Indian Council for Medical Research and the Newton Fund. When establishing collaborations, the MRC negotiates with its partners to ensure mutually acceptable terms. The MRC regularly works with a wide range of charities and Royal Colleges within its fellowship schemes.

The MRC has an initiative with seven industry partners whereby the companies share deprioritised compounds for experimental medicine research. While the initiative is not specifically for mental health research, compounds may have the potential to be used in this area.

Network of co-acknowledgement for papers acknowledging this funder – each node represents a funder and the connecting lines indicate co-acknowledgement. Node size is proportional to the number of acknowledgements, line thickness to number of co-acknowledgements. Funders are coloured according to the country in which they are located.
**Portfolio evaluation practices**

The MRC is required to report its spending to the government. It uses the UK Clinical Research Collaboration Health Research Classification System and Medical Subject Headings (MeSH) to compare funding across different funding streams within the MRC and across different funders. Mental health research has been one of the MRC’s priority areas for some time, and it published a review of the area in 2010 (as noted above). An internal review of progress is currently underway.

Considerable work has taken place to review the mental health research portfolio. Given its size, resource limitations require that a high-level approach be taken, with more in-depth analysis of particular outputs when necessary.

The MRC has an evaluations team. All grant holders are required to fill out Researchfish once a year to gather information on publications, public engagements, other grant funding, patents, etc. Evaluation is conducted to assess if goals are being achieved, for transparency and legitimacy to the public, and to inform strategy development. Researchers are requested to further update their Researchfish profile three and five years following grant completion. There are currently around 7,000 awards in Researchfish with 300,000 outputs. Approximately 200 standard reports and 50 ad hoc reports are evaluated per year. The MRC has developed Researchfish and EvalMRC, supports ORCID, and has worked with Collexis, Elsevier and UberResearch.

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**Strategy development**

The MRC Neuroscience and Mental Health Board makes decisions on response mode funding and provides guidance to the management board for centres and units. Institutes are dealt with through the MRC Strategy Board, which has oversight of all of the work that the MRC is doing. New calls developed by the NMHB tend to go through the Strategy Board for their ultimate sign-off. The membership of the Strategy Board includes all research board chairs, all panel chairs and some council members, and it is chaired by the Chief Executive.

The NMHB has occasional strategy days to discuss areas that might be of interest in the future. However, the MRC made it clear that while it shares a summary of areas of interest on its website, it is still interested in researchers coming to the MRC with ideas. In 2010, the MRC published *Review of Mental Health Research: Report of the Strategic Review Group 2010*, which has been used to inform its mental health research strategy.

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**Future**

The MRC does not have any special funding streams for mental health research planned beyond the existing response mode grant and fellowship schemes. It is awaiting the outcome of the UK government’s comprehensive spending review.

**Collaboration**

The MRC welcomes the opportunity to fund in partnership, although it rarely actively seeks collaboration to fund individual grants. However, for larger initiatives, MRC will seek funding partners when and where appropriate. If approached by a funding body with a suggestion, it is open to discussions. It is important that partners have similar values and aims to those of the MRC.

**Challenges**

The MRC reported that while there is now a better understanding of the mechanisms underlying mental health conditions, more money is needed to deliver effective treatments for people with mental health conditions. While research into genetics has yielded more targets, the MRC stated that research needs to be done to translate genetic findings into tractable therapies. Other challenges that it highlighted include the mental health research capacity in the UK, stigma and access to data (such as access to large numbers of patients or samples).

**Opportunities**

The MRC suggested that with further translation of genetics findings, there is the potential for making a positive impact on patients’ lives if these discoveries are implemented within the National Health Service. Other areas of opportunity described included the promotion of preventive strategies and the development of therapies.
National Health and Medical Research Council (NHMRC)

Mission: ‘Working to build a healthy Australia.’
Established: 1936

General information: The National Health and Medical Research Council (NHMRC) is the Australian government’s main funding body for health and medical research. It is also responsible for developing evidence-based health advice and for providing advice on ethical practice in health care and in research.

Mental health has been a National Health Priority Area (NHPA) for the NHMRC since 1996, and it is a strategic priority in the NHMRC Strategic Plan 2013–2015. Dementia was recognised as a separate NHPA in 2012.

The NHMRC’s aim in these areas is to advance health care practice and policy on the basis of evidence by identifying gaps, working in partnerships, funding discovery and translational research and building research capacity.

Definition of mental health: Mental illness is defined by the Australian government as a clinically diagnosable disorder that significantly interferes with an individual’s cognitive, emotional or social abilities.¹ Dementia is considered to be separate from mental health.

Area: General health research
Size: The NHMRC spent Aus$78m on mental health in 2014.

Funding acknowledgements 2009–2014: 4033

Geographical location

The NHMRC is tasked with raising the standard of individual and public health throughout Australia. The majority of NHMRC’s funded research, though not all of it, is accordingly based in Australia.

Mental Health

The NHMRC administers several investigator-led programmes that provide funding opportunities for mental health research across what it considers to be the four health and medical research pillars: biomedical, clinical, public health and health services.

The NHMRC also supports initiatives with a mental health focus. Recent examples include:

- Establishment of a new fellowship scheme to build national leadership and expand capacity in Australian mental health research (Aus$7.5m)
- Centres of Research Excellence (CREs) in mental health research, focusing on suicide prevention and substance abuse intervention strategies (Aus$5m)
- A targeted call for research focusing on mental illness in children and young people (Aus$13m)

Since 2005, the NHMRC has invested more than Aus$513m in mental health research.

Dementia

The Australian government recently committed an additional Aus$200m over five years to boost Australia’s dementia research capacity. Key elements of this initiative include:

- Funding for dementia research in prevention, treatment and cure (Aus$150m)
- Support for a new NHMRC National Institute for Dementia Research to target, co-ordinate and translate the national research effort (Aus$50m)

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

The NHMRC provides grants for research activities that are carried out by individuals or teams of researchers. The NHMRC also funds Centres of Research Excellence and activities that provide postgraduate training, postdoctoral training, career development or other opportunities for individual researchers.

Current collaborations

The NHMRC provides assistance to Australian researchers to participate in collaborative, multinational research projects with international researchers. The NHMRC also partners with philanthropic groups, other government agencies and non-government organisations to co-fund research, provide top-up funding and assist with peer review.

Past collaborations have included:

- A tripartite agreement between the NHMRC, the Canadian Institutes of Health Research and the Health Research Council of New Zealand to improve Indigenous peoples’ health.
- A joint dementia research initiative with the Australian Research Council.
- Co-funding of research grants with beyondblue, an independent not-for-profit organisation working to increase awareness and understanding of anxiety and depression in Australia.

Network of co-acknowledgement for papers acknowledging this funder – each node represents a funder and the connecting lines indicate co-acknowledgement. Node size is proportional to the number of acknowledgements, line thickness to number of co-acknowledgements. Funders are coloured according to the country in which they are located.
Future

As part of its 2014–2015 budget, the Australian government announced the establishment of a Medical Research Future Fund (MRFF). The Fund aims to transform how health and medical research is conducted in Australia by providing a sustained funding stream for medical research and helping to drive further medical innovation in the medium to long term. Priorities for the fund are yet to be determined, but they could include mental health. It has not been announced through which body the MRFF will be allocated; it is possible that some will be through the NHMRC.

Challenges

The NHMRC has observed that stigma against people who have experienced a mental illness is deeply entrenched in many cultures. It considers the development and implementation of effective strategies – supported by research – in order to dispel stigma to be one of the key challenges for governments.

Opportunities

Over the past two decades, mental health issues have been identified as a priority by a wide range of organisations and initiatives. The NHMRC recognises that coordinating research and translating it into actual services are vital to this effort.

The NHMRC identifies three main ways that it is working to create opportunities in this area:

- Supporting the development of evidence for better treatment and health services in mental health
- Naming mental health as a strategic priority
- Working actively to embed mental health research into its activities and to consult with the sector

Portfolio evaluation practices

Financial reports and scientific updates are required annually and at the completion of most grants. The purpose of this requirement is to collect and report information about the progress, research achievements and expected future outcomes of a grant’s research activities.

Grantees are also encouraged to provide information on the achievements of a grant after the final report is submitted. This enables the NHMRC to evaluate the long-term scientific, health and economic impacts of NHMRC-funded research.

The NHMRC performs the following additional evaluation activities:

- It undertakes periodic evaluations of the performance and administration of its funding schemes to determine strengths and identify where improvements can be made.
- It publishes periodic bibliometric reports on the outputs and impacts of NHMRC research funding. The most recent was published in 2013. The NHMRC highlights that this evaluation showed that NHMRC-supported research significantly outperformed other comparable Australian research over the five-year study period.

Strategy development

The NHMRC’s strategic plan sets out its priorities; the major health issues it has identified for the three-year period covered by the plan and how it will address them; and a strategy for medical public health research. The plan is influenced by the NHMAs, advice from expert scientific committees and the Australian government’s current health priorities. Dementia priority-setting has also been driven by recent national investment and has been refined through consultation.

The NHMRC’s current strategic plan expires in 2015. Its replacement is currently being developed and will set priorities for 2016–2018.

This document is one of 32 ‘deep dive’ profiles of mental health research funders compiled for the study “Project Ecosystem: Mapping the global mental health research funding system”. The main report and other accompanying documents are available from www.randeurope.org/mental-health-ecosystem.
**Mission:** ‘To lead the Nation in bringing the power of science to bear on drug abuse and addiction.’¹

**Established:** 1974

**General information:** The National Institute on Drug Abuse (NIDA) in the USA supports research and training in a number of areas related to substance use and substance use disorders, including their relationship to other mental illnesses. NIDA also supports work on the underlying mechanisms (both biological and social) of vulnerability to substance use and on the impact of substance use and substance use disorders on society. NIDA’s current strategic plan focuses on four strategic goals: prevention, treatment, HIV/AIDS and cross-cutting priorities (research on other relevant health conditions, reducing health disparities, educating a range of stakeholders, training researchers and promoting international collaboration). A new strategic plan is currently under development.

**Definition of mental health:** NIDA does not provide a specific definition of mental health, but the institute does consider substance use disorders to be mental health disorders.

**Area:** Specific condition (substance use)

**Size:** Overall budget for FY2015 was US$1.02bn.

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### Geographical location

Like the NIMH, and consistent with NIH policy, NIDA accepts applications from investigators at foreign institutions, but foreign applicants are subject to additional review criteria.

In FY2014, NIDA supported 119 research projects in 40 non-US countries. The largest numbers of these were in Canada, the UK, Australia and Mexico.

NIDA also runs an International Program, which ‘fosters international cooperative research and the exchange of scientific information by drug abuse researchers around the globe.’ According to programme details, the majority of international researchers who receive NIDA funding are supported indirectly – through a domestic grant with a foreign component. The International Program supports collaboration as well as international research training and exchange opportunities, capacity building, and information sharing.

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Funded research areas

In addition to aspects of substance use, NIDA has funded projects in general mental health, depression, schizophrenia, PTSD, dementia and other areas.

NIDA does not categorise its research projects in the same basic and applied categories as other NIH institutes and centres, such as the NIMH. However, NIDA does track funding within its divisions, which are largely organised along the lines of the nature of the research they support. The largest investments in FY14 were in: Basic and Clinical Neuroscience and Behavioral Research; Epidemiology, Services and Prevention Research; and Pharmacotherapies and Medical Consequences.

Priorities for the 2016-2020 strategic plan are: basic neuroscience; better integration of clinical and translational science with discovery science; precision medicine (pharmacogenomics and tailored treatment for patients with substance use disorders and other co-morbidities); implementation science; prevention of substance use disorders to protect public health; science infrastructure; and unifying themes (e.g. big data stewardship and scientist training).

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

Research level of funded papers

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

Like other NIH institutes, NIDA offers research project grants (RPGs), and support for research centres, research training and career development, and intramural research. In 2014, 1,307 RPGs accounted for 60% of NIDA’s total research investment.

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Number of awards, 2014</th>
<th>Total value, 2014</th>
<th>Percentage of total, 2014</th>
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</thead>
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<tr>
<td>Research Project Grants</td>
<td>1,307</td>
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</tr>
<tr>
<td>Career Development</td>
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<td>3%</td>
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<td>Research Centres</td>
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<td>Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) grants</td>
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<tr>
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<td>6%</td>
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<tr>
<td>Total</td>
<td></td>
<td>$1,018m</td>
<td>100%</td>
</tr>
</tbody>
</table>


Current collaborations

NIDA mainly collaborates with other NIH institutes and centres and with other federal government organisations. Formal structures for collaboration include:

● Collaborative Research on Addiction at NIH (known as CRAN): a partnership involving NIDA, the National Institute on Alcohol Abuse and Alcoholism and the National Cancer Institute. It aims to create research synergy across the institutes, particularly regarding objectives relevant for patients with multiple substance abuse problems and/or other illnesses.

● National Research Action Plan: formulated in response to an executive order from the US president to improve access to mental health services for veterans and service members and their families. It involves the Department of Defense, the Department of Veterans Affairs, the Department of Education and the Department of Health and Human Services (which the NIH is part of).

● Foundation for the NIH: an initiative that facilitates partnerships between the NIH and other organisations, including charities, to leverage the resources and expertise of all parties involved.

Network of co-acknowledgement for papers acknowledging this funder – each node represents a funder and the connecting lines indicate co-acknowledgement. Node size is proportional to the number of acknowledgements, line thickness to number of co-acknowledgements. Funders are coloured according to the country in which they are located.
Portfolio evaluation practices

Each NIDA division carries out portfolio analyses annually, and more often if needed. Each division uses different approaches, systems and processes for its internal analyses, and the divisions use software tools and databases that are specific to NIDA and the NIH. The information obtained, which includes bibliometric data, is used for multiple purposes: a) gauging progress in priority areas; b) identifying research gaps or other needs that may necessitate a shift in priorities; c) evaluating the impact of NIDA-funded research; and d) identifying researchers who could serve as council members, grant reviewers, mentors for trainees or invited speakers at events.

Going forward, NIDA is considering developing a new, internal coding system that would make it possible to capture more detailed information about the institute’s funded activities. This information would enable NIDA to more accurately gauge progress on research priorities and identify research gaps.

Strategy development

Overall, future investment by NIDA will be shaped by its strategic plan, which is currently under development and is expected to be published in autumn 2015. Feedback from the public on the draft strategic priorities was accepted until early 2015, after which work groups were established to discuss research priorities, identify objectives within each strategic priority, and identify indicators for gauging progress on those objectives. Three groups were set up, each made up of NIDA staff and external experts:

- Big Data Work Group
- The Complexity of Substance Use Disorders and the Continuum of Substance Use Problems Work Group
- Gene x Environment x Development Interactions Work Group

Another area of discussion in development of the strategic plan relates to the Research Domain Criteria (RDoC), which was introduced by the NIMH. The RDoC create a framework for classifying mental illnesses and research by focusing on the underlying mechanisms involved instead of the symptoms observed (the traditional basis for classification). NIDA is considering how to incorporate the concepts of the RDoC framework into its programmes.
National Institute for Health Research (NIHR)

[http://www.nihr.ac.uk/](http://www.nihr.ac.uk/)

**Mission:** To provide the research evidence needed to improve health and wellness, to enable services to be provided more cost-effectively, and to promote economic growth.

**Established:** 2006

**General information:** The National Institute for Health Research (NIHR) is funded through the Department of Health in England. It supports research infrastructure and programmes addressing a broad range of questions. The NIHR has established a health research system in which the National Health Service (NHS) supports ‘outstanding individuals, working in world-class facilities, conducting leading edge research focused on the needs of patients and the public’. Criteria for funding include the importance of the question to the public and professionals, alongside quality and value for money of the research. The NIHR does not have strategies for specific research areas, but it does identify priorities, seeking opinions from patients, professionals and the public through various routes.

**Definition of mental health:** The NIHR does not use a prescribed definition of mental health. It uses UK Clinical Research Collaboration condition groupings when needed.

**Area:** General health research

**Size:** 2013–2014: £754m total, of which £72m in mental health

**Funding acknowledgements 2009–2014:** 3062

**Geographical location**

The NIHR supports research only in England, but researchers it supports have international collaborators.
Funded research areas

The NIHR funds clinical and applied health and social care research, including translational research. 9.5% of the research budget was invested in mental health research in 2013–2014. The NIHR does not have any funding programmes dedicated to particular mental health conditions. Research on mental health is funded through researcher-led programmes and in the NIHR infrastructure. In addition, mental health may be researched as part of a wider study, for example, mental health and co-morbidities, such as heart disease and diabetes, or in studies examining new models of care or services. The NIHR has also commissioned research in support of specific programmes, e.g. the government’s Improving Access to Psychological Therapies programme. The Department of Health may also run specific policy research initiatives through the Department of Health Policy Research Programme, e.g. around suicide and self-harm, launched in support of the government’s suicide strategy. Furthermore, the Chief Medical Officer’s report in 2014 on public mental health highlighted gaps in the field that led to a public mental health–themed research programme call.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

Research level of funded papers

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

Calls are issued from three different funding streams:

- Commissioned research
- Researcher-led research
- Themed calls in response to the need for an increase in evidence on a particular topic, e.g. dementia

The NIHR also funds training, such as clinical academic training awards for doctors, dentists, nurses, midwives and allied health professionals, and others.

Current collaborations

The NIHR works with the UK charity sector through the UK Clinical Research Collaboration. Public funders of health research also come together to provide foresight and coordination through the Office for Strategic Coordination of Health Research. Department of Health officials meet informally with UK Research Councils, research charities and other government departments. The NIHR belongs to the International Alliance for Mental Health Research Funders.

There have been no recent specific funding collaborations on mental health research. However, the various parts of the NIHR infrastructure collaborate with industry, charities and the NHS. The NIHR clinical research networks provide support to deliver trials funded by the NIHR, the MRC and research charities. NIHR research projects may involve funding from more than one source.
The NIHR explained that future changes to specific funding schemes are more likely to result from NIHR internal reviews and from modifications of existing programmes than through the creation of new programmes.

**Challenges**

A key challenge identified by the NIHR is to better implement mental health research evidence. Clinical uptake is a multifactorial issue. The NIHR is in discussions with the Royal college of Psychiatrists, the Medical Research Council and the charity MQ about the barriers to implementing research, and it hopes to pursue this issue further with the International Alliance for Mental Health Research Funders.

**Opportunities**

It was suggested by the NIHR that potentially more opportunities will arise for UK research on mental health with the advent of MQ. This relatively new charity aims to be the first large charitable funder of mental health research in the UK, emulating the relationship that Cancer Research UK has with public funders of research.
Mission: ‘The mission of NIMH is to transform the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery, and cure.’¹

Established: 1949

General information: The National Institute of Mental Health (NIMH) in the USA is the world’s largest mental health research funder. Initially tasked with addressing the mental health needs of veterans, it was one of the first four institutes of the National Institutes of Health (NIH). NIMH is now the seventh-largest of the NIH’s 27 institutes and centres and accounts for about 5% of the total NIH budget.

Until 1992, NIMH’s mission included both research and services related to mental health. Since 1992, NIMH has focused on research, while a separate agency, the Substance Abuse and Mental Health Services Administrations, has been responsible for services.

NIMH receives guidance from the National Advisory Mental Health Council (NAMHC), which is made up of academic researchers and industry representatives, advocates, members of professional societies and representatives from other federal agencies.

Definition of mental health: NIMH proposes that mental illnesses are brain disorders expressed as complex cognitive, emotional and social behavioural syndromes. Achieving mental health requires advances in basic behavioural science and fundamental neuroscience, in addition to clinical science.

NIMH has noted that the areas it supports include basic research studies that may have fallen outside the scope of the bibliometric analysis in this study.

Within the field of mental health, NIMH is driving a change in the categorisation of mental illnesses through its Research Domain Criteria (RDoC) Initiative. The RDoC framework enables a shift from classifying illnesses according to current diagnostic categories, which are largely based on symptoms, to classifying them based on molecular and neural mechanisms.

Area: Mental health

Size: Annual budget is US$1.4bn.

Funding acknowledgements 2009–2014: 10081

Geographical location

NIMH (consistent with NIH policy) accepts applications for some types of support from investigators at foreign institutions, but foreign applicants are subject to additional review criteria: a) whether the proposed research represents a research opportunity that is not available (or less available) in the USA and b) whether the project has specific relevance for the NIMH and potential to significantly advance health science in the USA.

Funded research areas

A portion of NIMH funding supports research in basic science or health services that is not linked to a specific condition or illness. Among grants that do relate to a specific condition or illness, the areas receiving the most funding are (in declining order of funding amount based on data for 2013):

1. Depression
2. Schizophrenia
3. Anxiety disorders
4. HIV/AIDS
5. Autism
6. Bipolar disorder
7. Post-traumatic stress disorder
8. Obsessive compulsive disorder
9. Suicide
10. Attention-deficit/hyperactivity disorder
11. Eating disorders
12. Borderline personality disorder

NIMH also co-leads the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, announced by President Obama in April 2013. This national project aims to create tools for better understanding the brain’s structure and function.

NIMH supports a range of basic and applied research, with each division funding a different balance. NIMH classifies its research as basic-basic, basic-disease related or applied. In the largest division, DNBBS, 96% of funding went to basic research for the period 2006–2013 (of which 39% went to basic-basic and 57% to basic-disease related). For DATR (the larger of the two divisions that merged to form the second-largest division, DTR), applied research accounted for 61% of spending and the rest was mainly basic-disease related.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

Like other NIH institutes, NIMH offers research project grants (RPGs), and support for research centres, research training and career development, and intramural research. RPGs are the main mechanism for funding extramural research. In 2014, 1,985 RPGs accounted for 62% of the NIMH’s research allocations. Details of this and other mechanisms used are listed in the table below.

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Number of awards, 2014</th>
<th>Total value, 2014</th>
<th>Percentage of total, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Project Grants</td>
<td>1,985</td>
<td>$880m</td>
<td>62%</td>
</tr>
<tr>
<td>Career Development</td>
<td>404</td>
<td>$80m</td>
<td>6%</td>
</tr>
<tr>
<td>Research Centres</td>
<td>44</td>
<td>$77m</td>
<td>5%</td>
</tr>
<tr>
<td>R&amp;D Contracts</td>
<td>-</td>
<td>$74m</td>
<td>5%</td>
</tr>
<tr>
<td>Research Training</td>
<td>755</td>
<td>$36m</td>
<td>3%</td>
</tr>
<tr>
<td>Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) grants</td>
<td>80</td>
<td>$37m</td>
<td>3%</td>
</tr>
</tbody>
</table>

Current collaborations

NIMH is particularly active in funding coordination, working with other federal organisations and other bodies to assess research funding landscapes and reduce unnecessary duplication of efforts. In addition to discussing funding decisions with the National Advisory Mental Health Council, it takes the research priorities of multiple groups into account in developing the NIMH Strategic Plan for Research and in other decisions. Among the policies considered are the Interagency Autism Coordinating Committee’s Strategic Plan for Autism Spectrum Disorder Research; the National Action Alliance for Suicide Prevention’s research agenda; the BRAIN Working Group Report; the National Research Action Plan for Improving Access to Mental Health Services for Veterans, Service Members and Military Families; and the NIH AIDS Strategic Plan.

NIMH is also in discussion about the RDoC framework initiative with various groups, including the World Health Organization and the Roadmap for Mental Health Research in Europe (ROAMER) project.
Portfolio evaluation practices

NIMH carries out extensive ongoing evaluation that includes individual annual project progress reports and overall programme reviews assessing scientific balance. Each programme official is responsible for evaluating his or her own portfolio and does so using tools available within the NIH. Portfolio analysis tools assist with coordination, assessing scientific balance within programmes and informing a government-specific picture of the funding landscape.

NIMH also participates in federal-level reviews of programmes in specific areas, such as autism, where it has used the NIH Interagency Autism Coordinating Committee’s Portfolio Analysis Web Tool. NIMH also contributes to portfolio analysis covering public and privately funded research, such as a recent analysis by the National Action Alliance for Suicide Prevention, a public–private partnership.

NIMH director Thomas Insel has said that, in future, NIMH would consider evaluating its 2015 Strategic Plan for Research via the impact of research on the burden of disease, as opposed to focusing solely on publications and citations. Impact on the burden of disease could be assessed through, for instance, information gathered through the ongoing Global Burden of Diseases, Injuries and Risk Factors Study, which is led by the Institute for Health Metrics and Evaluation at the University of Washington.

Future

Recent changes in US legislation are poised to cause significant changes in mental health care provision. Demand for mental health care will increase as insurance coverage requirements are broadened, but it will be important that treatments provided have an evidence base demonstrating their effectiveness. NIMH has made a contribution through its use of practical trials, or clinical effectiveness research (CER), in place of clinical trials. As this approach has gained broader support over the past several years, NIMH plans to partner with other CER supporters and ensure that studies on mental health are included in ongoing CER work.

Collaboration

Data sharing and crowd sourcing open up new possibilities for tackling research problems, and groups such as the Genetic Alliance and patients-like-me are developing new models for this type of engagement that NIMH has highlighted in its 2015 Strategic Plan for Research. In this plan, the NIMH has expressed an interest in capitalising on these developments and forming partnerships in citizen science.

Challenges

NIMH has lost more than 20% of its purchasing power in the past ten years, meaning it has the same purchasing power in 2015 as it did in 1999 and cannot fund all worthy proposals it receives. Adding to this challenge, industry support is limited, with the pharmaceutical industry having moved away from psychiatric research to a large extent. Internationally, NIMH appreciates that biomedical research activity is growing and believes it is important to work together to make mental illness a higher priority.

Opportunities

NIMH has welcomed recent increases in philanthropic support for mental health research in the USA (from e.g. the Stanley Foundation, Simons Foundation, Allen Institute for Brain Science and Lieber Institute for Brain Development). Director Insel notes that this support is important because mental illness has historically received less research funding than other areas and philanthropy has focused more on services than on research.

NIMH has also recognised that digital technologies open up possibilities for changing how patients, health care providers and researchers interact. These developments also bring challenges related to regulation, effectiveness and privacy.
Project Ecosystem: Mapping the global mental health research funding system

National Science Foundation (NSF) http://nsf.gov/

Mission: “To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense and for other purposes.”¹

Established: 1950

General information: The NSF is a federal agency in the USA that supports mainly basic research. It funds about one quarter of the federally supported basic research carried out in higher education institutions in the USA and it is the main federal funder for several areas, including mathematics, computer science and the social sciences. The NSF also supports science and engineering education at all levels, from young children onwards. The NSF’s strategic plan sets three main goals: “to transform the frontiers of science and engineering, stimulate innovation and address societal needs through research and education, and excel as a federal science agency.”²

Definition of mental health: The NSF does not have a definition of mental health research. It does have programme descriptions for related areas, such as cognitive neuroscience.

Area: Basic research across all areas of science and engineering, except biomedical fields.

Size: Annual budget: US$7.3bn (for FY2015), of which $5.9bn goes to research and related activities (data were not available on spending on mental health–related research specifically).

Funding acknowledgements 2009–2014: 242

Geographical location

Most NSF funding is only available to US-based researchers, although grantees can make sub-awards to foreign institutions. The NSF also supports US participation in international efforts.

² NSF (2014).
Funded research areas

The NSF funds a wide range of research across science and engineering through solicited (targeted) and unsolicited (researcher-led) programmes. While the NSF does not specifically fund mental health research, it does fund projects with direct applications or potential impacts in mental health.

On the more applied end are projects to develop software tools for treating depression and promoting mental health within the engineering directorate’s Industrial Innovation and Partnerships division. As one example, research with potential impacts for mental health is being carried out at an NSF-funded Center for Brains, Minds & Machines, which is based at the Massachusetts Institute of Technology.

The centre received a $10m award in 2013 through the Computing and Communication Foundations organisation of the Computer and Information Science and Engineering directorate.

Other examples include a project for understanding the long-term effects of economic distress on children, funded through the Interdisciplinary Behaviour and Social Science programme in the Social, Behavioral & Economic directorate’s Office of Multidisciplinary Activities, and a project looking at oppression and mental health in Nepal, funded through the Behavioral and Cognitive Sciences division of the Social, Behavioral and Economic Sciences directorate.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

Nearly 90% of NSF funding supports projects classified as basic research. This support is delivered through a wide range of mechanisms, including summer training programmes for undergraduates; graduate fellowships; project grants; and support for centres, instruments, workshops and symposia. Specialised mechanisms include Rapid Response Research (RAPID) funding for urgent, time-sensitive research, and Early Concept Grants for Exploratory Research (EAGER) funding for radical, ‘high–risk high payoff’ ideas. The NSF supports facilities, including observatories, computing facilities and ocean research vessels, and funds research translation through its Innovation Corps (I-Corps) programme.

Current collaborations

The NSF engages with other funders through formal partnering, participation in national initiatives and informal discussions, and it supports grantee collaborations through its Research Coordination Networks programme. The NSF has collaborative agreements with foreign organisations, including Research Councils UK and the European Research Council.

Examples of collaborative programmes include the following:

- Collaborative Research in Computational Neuroscience: This supports domestic and international projects in research and data sharing and involves the NSF, the NIH, and funders in France, Germany and Israel.
- Interagency working group on neuroscience (IWGN): Established in 2012, this coordinates neuroscience research across more than 20 US federal organisations.
- Brain Research through Advancing Innovative Neurotechnologies (BRAIN) initiative: The NSF is a lead organisation in this initiative, announced by the White House in 2013 as a major national project. It includes public and private partners.

Network of co-acknowledgement for papers acknowledging this funder – each node represents a funder and the connecting lines indicate co-acknowledgement. Node size is proportional to the number of acknowledgements, line thickness to number of co-acknowledgements. Funders are coloured according to the country in which they are located.
Portfolio evaluation practices

The NSF has portfolio analysis software tools available, though they are generally only used by certain trained members of staff at present. A new programme is currently under development that is intended to facilitate portfolio evaluation and help measure programme success and effectiveness. The public also has access to NSF award data dating back to 1989 through the NSF Award Search.

The NSF recognises that it can be extremely difficult to attribute significant developments in technology or health to the basic research it funds because many different developments and strands of research often contribute to a single significant development.

Information gathered is mainly used for decisionmaking at the level of specific programmes, for instance, by indicating whether research across the full spectrum of a particular area is being supported.

Future

The budgets and sizes of the solicited calls the NSF puts out depend on congressional approval, and its future does depend on congressional decisions.

A mechanism the NSF recently introduced is Ideas Labs, which is modelled on a ‘sandpit’ approach used by the UK’s Economic and Social Research Council. In this approach, the NSF puts out a call for ideas in a particular theme. Researchers whose ideas are selected then participate in a week-long workshop, where the output could be a funded proposal that involves researchers who attended the meeting as collaborators.

Collaboration

In general, the NSF is open to collaboration. It has recently received significant international interest from public funders keen to develop international partnerships related to the BRAIN initiative but has needed time to better define its own plans in this area before it can develop partnerships.

Opportunities

Of relevance for mental health research, the NSF is looking at increasing its investment in neuroscience through its Understanding the Brain activities, which include work related to the BRAIN initiative as well as research on neuroscience and cognition more broadly. There is strong congressional support for neuroscience research at present.

This document is one of 32 ‘deep dive’ profiles of mental health research funders compiled for the study “Project Ecosystem: Mapping the global mental health research funding system”. The main report and other accompanying documents are available from www.randeurope.org/mental-health-ecosystem.
Ontario Brain Institute (OBI) / Institut ontarien du cerveau

http://www.braininstitute.ca/

**Mission:** To improve the lives of people living with brain disorders by working to make Ontario a world leader in brain research, commercialisation and care.

**Established:** Established with proof-of-principle funding in 2010, then renewed for a five-year period in 2013.

**General information:** The Ontario Brain Institute is a provincially funded, not-for-profit research centre seeking to maximize the impact of neuroscience and establish Ontario as a world leader in brain research, commercialisation and care. Convergent partnerships are created among researchers, clinicians, industry, patients and their advocates with the aim to foster discovery and deliver innovative products and services that improve the lives of those living with brain disorders. The OBI is structured to embed basic science discovery into the clinical framework and develop new products to improve health as soon as possible.

**Definition of mental health:** The OBI groups neurological and mental health under the umbrella term ‘brain health’.

**Area:** General (brain) health research

**Size:** Can$100m over five years (Can$18m for its Depression programme over five years, including a partner contribution of $6m)\(^1\)

**Geographical location**

The OBI can be considered a ‘virtual’ research centre that brings together Ontario researchers from multiple institutions to collaborate on multidisciplinary, patient-centred research programmes.

\(^1\) This does not fully represent the funding that the OBI spends in support of mental health research, because it also provides funding to provide training, assist with commercialisation, and provide and host a communal bioinformatics platform.

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**Funded research areas**

The OBI describes its five research programmes, in the areas of depression, cerebral palsy, epilepsy, neurodegenerative disorders and neurodevelopmental disorders, as ‘Integrated Discovery programs’. This approach spans many research and clinical disciplines and involves collecting different types of data, ranging from genetic and molecular to imaging and behavioural. By establishing a common approach to how data are collected, standardised assessments allow data to be shared across the province, maximizing clinical impact.

The remaining OBI funds feed into other initiatives that enhance the impact of the research programmes: Informatics, Industry Relations, Training and Entrepreneurship, and Outreach.

**Funding mechanisms**

The OBI provides sustained, research programme–based funding, providing that the programmes maintain scientific excellence and achieve their milestones. Within this model, the OBI does not take ownership of any intellectual property created by its research programmes.

**Current collaborations**

The five research programmes bring together about 200 researchers, 35 institutions, 40 companies and 18 patient advocacy groups from across Ontario, with some collaboration outside the province. Partnerships also drive the bulk of the OBI’s work in areas outside of research, such as Outreach and Commercialisation, spurring collaborations with advocacy groups, companies, government bodies and other not-for-profits. Other funders co-acknowledged on papers with the OBI include:

- The Canadian Institutes of Health Research
- The Canadian Institutes for Advanced Research
- Genome Canada
Evaluation is built into everything the OBI does to ensure that it is making an impact on patient care, health and the economy in Ontario. The Evaluation Steering Committee serves as the final authority on evaluation activity, which includes tracking online what researchers are doing, and it ensures that all evaluation activity is timely and of high quality. The OBI has also established an Evaluation International Advisory Committee, which advises the Steering Committee on developments in the field of evaluation research, initiatives that may contribute to the goals of the OBI, and where fruitful collaborations can be developed.

Each of the research programmes come together for annual workshops, and programme managers meet monthly. Every quarter, research milestones are reviewed; these are reported to the provincial government biannually. The OBI will be doing an external scientific review in year four for each programme.

### Strategy development

The research programmes are guided by a Science Advisory Council (SAC) and an Industry Advisory Council (IAC). The SAC consists of acclaimed neuroscientists who help ensure that the research programmes remain of international calibre and poised for patient impact. The IAC consists of multinational companies and Ontario-based small and medium-sized enterprises that help the OBI identify opportunities for commercialisation, help shape the OBI’s commercialisation strategy and facilitate outreach to industry players that could become project participants. These advisory councils work with the Science Innovation Teams and the Core Innovations Teams developed for each research programme. They provide advice on emerging scientific developments and identify opportunities to translate discoveries into clinical practice and/or commercial application. They advise on integrating cutting-edge technologies or processes into research methodology and make recommendations on suitable innovation partners. Each of the research programmes is also advised by a Patient Advisory Committee made up of researchers, patients, and their advocates. These committees are key to ensuring the exchange of knowledge between the research programmes and the community.

### Future

#### Collaboration

The OBI reported that it felt there is potential for the expansion of the ‘Integrated Discovery programs’ to other disorders if the OBI’s funding is renewed in 2018.

#### Challenges

The OBI stated that setting up strong systems for collaboration within the mental health research field is challenging and requires a diverse group of partners to work together in new ways. It explained that overcoming this challenge would help break down silos and remove barriers between clinicians and researchers, among institutions, between industry and researchers, between patient advocacy groups and researchers, and between disciplines and methodologies.

#### Opportunities

By bringing together diverse perspectives and facilitating ways for different stakeholders to work together, the OBI aims to improve the system of brain research in Ontario. The integrated nature of the research programmes allows participants to benefit from shared infrastructure, including equipment, personnel and data sharing, and the increased numbers of patients involved, which enables them to put together stronger grant applications.

RAND Europe is a not-for-profit research institute whose mission is to help improve policy and decisionmaking through research and analysis.

This document is one of 32 ‘deep dive’ profiles of mental health research funders compiled for the study ‘Project Ecosystem: Mapping the global mental health research funding system’. The main report and other accompanying documents are available from [www.randeurope.org/mental-health-ecosystem](http://www.randeurope.org/mental-health-ecosystem).
Project Ecosystem: Mapping the global mental health research funding system

The Ontario Mental Health Foundation (OMHF) / La Fondation ontarienne de la santé mentale

http://www.omhf.on.ca/home/

Mission: ‘The Foundation aims to promote the mental health of people living in Ontario, to prevent mental illness and to improve diagnosis, treatment and rehabilitation.’

Established: 1967

General Information: For more than 40 years the Ontario Mental Health Foundation (OMHF) has provided support to the Ontario Ministry of Health and Long-Term Care’s efforts to provide high-quality and effective services for Ontarians with mental illness. The OMHF supports researchers in their efforts to understand the causes of mental illness and to develop evidence-based interventions for maintaining mental health. The OMHF funds research to promote mental health and to prevent, treat and cure mental disorders; provides information to practitioners so that knowledge is promptly disseminated and used; and communicates research findings to the public to improve understanding of mental health and the nature of mental disorders.

Definition of mental health: The OMHF does not use a particular definition of mental health, and it takes a broad view. However, it requires applicants to specify why their project is of particular relevance in Ontario and why it warrants support.

Area: mental health
Size: Can$2.68m per year

Funding acknowledgements 2009–2014: 342

Geographical location

The OMHF funds researchers based in institutions within the province of Ontario, Canada, only.

Funded research areas

Research which aims to improve knowledge of prevention, diagnosis, treatment and rehabilitation is funded. Funding is awarded based on criteria of (a) scientific excellence and (b) relevance to people living in Ontario, but without any planned division according to topics or type of research. However, a broad representation is achieved by ensuring diversity in the peer review panel that reviews applications (including qualitative researchers, health services researchers and clinicians), and in recent years this has led to a shift from predominantly basic biological research to a more balanced portfolio, which also includes particularly pertinent clinical issues.

In recent years there has been a shift to providing more opportunities for young researchers, due to a concern that not enough young researchers were coming through in the province. This has resulted in an increased focus on studentships and junior fellowships, while no new senior fellowships have been funded since 2011–2012.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
**Funding mechanisms**

- Grants (max. Can$75,000 per annum for 2 or 4 years) (around 60% of funding)
- Fellowships and studentships (around 40% of funding)

In 2014–2015, the OMHF funded 17 research grants, 4 fellowships and 5 studentships. The balance between fellowships and studentships is determined by the funding available and the quality of the applications received.

**Current collaborations**

The OMHF has substantial expertise in constructing peer review panels, writing requests for proposals and administering grants, and so provides these functions for other organisations, including government agencies, Autism Ontario, the Schizophrenia Society of Ontario and the Mood Disorders Association of Ontario. It also co-sponsors a small amount of research with the Schizophrenia Society of Ontario and shares information on its activities with other mental health funders internationally through the International Alliance of Mental Health Research Funders. The Alliance has helped the OMHF build relationships with other member organisations.
Future

Over the next few years, the OMHF aims to expand its role as a knowledge translation and exchange broker between researchers, policymakers, practitioners and the public, including through recruiting mental health services clients to peer review committees. While it will continue to support research with the aim of developing capacity within Ontario and addressing the needs of knowledge users and Ministry priorities, it also plans to focus some awards on the mental health of vulnerable populations, develop education programmes for Ministry staff and the public and further build collaborations with other agencies, both in Canada and internationally.

In terms of evaluating its funded research, the OMHF plans to look beyond publications and to begin tracking professional development activities that are aimed at policy-oriented outcomes; collecting information about collaborations with researchers, policymakers and other knowledge users; reporting on events that funded researchers participate in; and looking at impacts on health services/systems and population health.
Mission: To apply science and resources to improve health and well-being by providing access to safe, effective and affordable medicines and related health care services.

Established: 1849

General information: Pfizer is a large global pharmaceutical company that invests in six therapeutic areas, including that of Neuroscience and Pain. Within this area, it is targeting neurodegenerative and neuropsychiatric diseases through a precision medicine approach, rooted in human biology, neuroimaging, novel biomarkers and a deeper understanding of brain circuitry. Decisions on investments in research are based on key patient needs and how to address these needs, in addition to business considerations, such as return on investment and further maximizing value for Pfizer’s shareholders.

Governance structure: The Research Unit’s neuroscience strategy is split between the Research Unit and the commercial/business unit. The Research Unit is aimed at understanding disease pathophysiology and identifying key products. The hand-off from research to commercial can vary, but is generally around Phase two clinical trials. Executive leaders (e.g. the CEO, the head of R&D) look at multiple disease areas beyond the budget Pfizer allocates to mental health R&D. These leaders decide how to allocate Pfizer’s budget and resources among the different projects and therapeutic areas.

Definition of mental health: Pfizer does not have a unified definition of mental health.

Area: General health research

Size: US$8.4bn total R&D expenditure in 2014

Geographical location

Pfizer has a presence in many countries. Pfizer aims to fund the best science research available, regardless of location, although much of its neuroscience research is currently done in the USA and the UK.
Funded research areas

The Neuroscience and Pain Research Unit leadership team has flexibility with regard to the research areas Pfizer will invest in within its remit. The Research Unit considers psychiatric and neurodegeneration health issues to exist on a spectrum, with psychiatric research impacting neurodegenerative research, and vice versa. Furthermore, the Research Unit believes that there are neurodegenerative components to many psychiatric disorders, e.g. schizophrenia. Pfizer’s investment in classical psychiatric disorders and neurological diseases is estimated to be around 50/50.

Areas that Pfizer has invested in include:
- Schizophrenia
- Parkinson’s disease
- Alzheimer’s disease
- Huntington’s disease

Over the past five years, the Research Unit has taken the strategic decision to invest in more basic neurobiology research to better understand disease pathophysiology and to follow up on new genetic findings in psychiatry. It has switched its attention by approximately 30% towards understanding circuit biology or the underpinnings of the disruption in the connectivity in various diseases.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

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Funding mechanisms

At any one time, Pfizer has around 30 different ongoing neuroscience projects being conducted internally. Decisions on what to fund are made as set out in the ‘governance structure’ and ‘strategy development’ sections of this profile.

Current collaborations

Much of the Research Unit’s work is collaborative. It has flexibility as to how it sets up collaborations with academia and, on occasion, with industry. There are parts of the organisation whose job it is to scout technologies and identify excellent researchers around the globe. The Research Unit puts out calls for proposals via various portals to identify collaborators, and it will travel to academic institutions to attend pitches from individual laboratories and affiliated spin-offs. While the Research Unit also actively participates in various consortia, it tries to avoid multiparty collaborations, and it reports that working with government and the private sector can be complicated if more than a few parties are involved.
**Portfolio evaluation practices**

Pfizer’s portfolio evaluation is continually ongoing but is conducted on a more formal basis quarterly. These evaluations are mainly narrative in nature and are conducted to look at progress to date, to ask what the remaining questions are and what the barriers are, and to identify what is needed to get to the next milestone. Evaluation is project and programme specific. At times, Pfizer will use external consultants, scientific panels and major external discussion groups to obtain expert opinion and to help inform strategy and development plans.

**Strategy development**

Pfizer makes strategic decisions throughout the year. At the beginning of the fiscal year, Pfizer focuses on setting goals and strategy for the year. Ongoing reviews of strategy and goals are conducted throughout the year.

**Future**

**Collaboration**

Pfizer believes that the key to expediting the translation of science into breakthrough therapies of tomorrow is to drive greater, deeper and stronger collaborations across the healthcare landscape. Pfizer’s neuroscience research aims to advance models of partnerships that focus on creativity, flexibility and openness to deliver innovation quickly, regardless of where the talent and resources live. Colleagues across industry, academia and government remain committed to collaborating on uncovering the underlying biological mechanisms of neurological disease to enable the development of next-generation therapeutics. Pfizer notes that continued collaboration and interaction will drive further discoveries that can enable neuroscience therapeutic development.

**Challenges**

Pfizer described neuroscience research as being a particularly challenging area for significant advances in R&D due to the brain being more complex than any other organ or system in the human body. The unmet need is significant and will continue to grow in the coming years, and for many brain disorders there are limited or no effective treatments.

**Opportunities**

Scientifically, Pfizer is making progress in understanding the human genetics of complex neuropsychiatric disease: is capitalising on developments in brain imaging; and has seen progress in the understanding of neural circuit function in animal models. This increase in knowledge is opening up new areas of potential therapeutic pathways and the ability to measure brain function and activity.

Pfizer believes that, with an increasing understanding of fundamental biology, the field of neurology could progress in a similar way to that of oncology and that the increased biological understanding should ultimately lead to better therapeutics. It believes that this process will be expedited and improved through increased collaborations.

This document is one of 32 ‘deep dive’ profiles of mental health research funders compiled for the study “Project Ecosystem: Mapping the global mental health research funding system”. The main report and other accompanying documents are available from www.randeurope.org/mental-health-ecosystem.
Project Ecosystem: Mapping the global mental health research funding system

Stanley Medical Research Institute (SMRI)
http://www.stanleyresearch.org/

**Mission:** The Stanley Medical Research Institute supports research on the causes of, and treatments for, schizophrenia and bipolar disorder.

**Established:** 1989

**General information:** The Stanley Medical Research Institute (SMRI) was established by E. Fuller Torrey, with funds provided by Theodore and Vada Stanley. The original agreement was that the SMRI would explore the causes and/or better treatments for schizophrenia and bipolar disorder. It aims to fill in the gaps in research funding. The executive staff, who are all heavily involved in schizophrenia and bipolar research, use their knowledge of the field to identify areas that are underfunded or being ignored by the rest of the funding community.

**Definition of mental health:** The SMRI exclusively funds research into schizophrenia and bipolar disorder.

**Area:** Specific mental health condition

**Size:** US$20m annually

Funding acknowledgements 2009-2014: **1317**

**Geographical location**

Worldwide. The SMRI has a deliberate policy to give money to researchers based anywhere, at any level of training, provided they have a good proposal and can carry it out.
Funded research areas

The SMRI focuses specifically on schizophrenia and bipolar disorder. Within these areas it:

- Funds treatment trials for drugs for schizophrenia and bipolar disorder, predominantly for off-label drugs which are no longer being followed up by pharmaceutical companies
- Carries out in-house research on the role of infectious agents in the causation of schizophrenia and bipolar disorder in the Stanley Laboratory for Developmental Neurovirology at Johns Hopkins Medical Center

The SMRI supports treatment trials. In addition, it also funds a brain bank containing post-mortem brain tissues from individuals with schizophrenia, bipolar disorder or severe depression and from normal controls. Tissue from the brain bank is available for free to any researcher.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

Research level of funded papers

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

Funding decisions for treatment trials and in-house research are made by Dr E. Fuller Torrey, Dr Maree Webster and a researcher from her laboratory, and Dr Robert Yolken and a researcher from his laboratory. Previously, when the SMRI funded grants, a committee of experts helped evaluate grant applications. SMRI intentionally picked different committee members than those picked by the National Institute of Mental Health and the NARSAD (National Alliance for Research on Schizophrenia and Depression) grant programme of the Brain & Behavior Research Foundation, as it did not want to fund the same things as these organisations.

Current collaborations

The SMRI does not feel that formal collaborations are necessary. It has had informal collaborations with other US funders. When the SMRI was funding similar grants to the National Institute of Mental Health and NARSAD, this consisted of sharing the list of people or topics to be funded, in order to avoid duplication. The SMRI has found it easy to keep in touch with European colleagues and what they are funding, as the field has generally been quite small and there are regular European conferences.
Portfolio evaluation practices

The SMRI does not have any formal portfolio evaluation processes, but does require quarterly reports to be written for treatment trials. Dr Torrey, Dr Webster and another individual from her lab review most of these, while Dr Yolken and another individual from his lab look at those in their field. These five individuals meet about once a month to discuss the effectiveness of their funding, and they use this knowledge when planning the allocation of future funding. It also helps them to plan their own research.

Future

The SMRI aims to stick to its strategy of funding areas and kinds of research that are not funded by others. They have funding guaranteed until 2019 and do not plan on changing their available streams of funding before then. They do not know at this point whether their funding will be renewed after 2019. They are hoping that the brain bank will be absorbed by the proposed National Institutes of Health brain bank.

The SMRI is currently implementing a new policy on open access to data, which requires treatment trial data from trials it funds to be submitted to the SMRI and then made publicly available in the National Institute of Mental Health database a year later. This will give researchers one year to analyse their own data before it is made public.

Challenges

The challenge for the SMRI is in deciding where funding should go. They comment that, due to the perceived ‘failure’ of genetic research, the question is now ‘Where do we go from here?’ and that the answer to this question will determine how much funding will be given to schizophrenia and bipolar research in the future.

Opportunities

The SMRI thinks that there is an opportunity for non-governmental funders to fund different things from government funders and to continue to fill the gaps and ensure that research in these areas does not slow down.
Mission: “The VA Office of Research and Development (ORD) aspires to discover knowledge, develop VA researchers and health care leaders, and create innovations that advance health care for our Veterans and the nation.”¹

Established: 1925

General information: The only US federal research programme focused entirely on veterans' needs, the Veterans Affairs (VA) research programme is part of a healthcare system providing care at more than 1,700 sites across the USA and its territories. VA research is an intramural programme, meaning that only VA employees are eligible to receive VA research funding. VA researchers do collaborate with academic researchers, and most VA researchers also hold academic appointments. More than 60% of VA-funded researchers are active clinicians.

The Office of Research and Development (ORD) is within the Veterans Health Administration, which is one of the three authorities that make up the U.S. Department of Veterans Affairs.

Within ORD, there are four research services:
- Biomedical Laboratory Research & Development Service
- Clinical Science Research & Development Service (including the Cooperative Studies Program)
- Health Services Research & Development Service
- Rehabilitation Research & Development Service

Definition of mental health: VA does not have a definition of mental health. However, its portfolio spans mental, psychiatric and behavioural aspects of veterans’ mental health.

Area: Veterans' general health

Size: ~US$600m per year (FY2014) for medical research.² ~$110m of this supports research on mental illness.

Funding acknowledgements 2009–2014: 4387

Geographical location

All VA research funding goes to support US-based researchers, who must be employees of the VA.

² This figure does not include other VA funding in support of research, such as an appropriation that supports research overall (the Veterans Equitable Research Allocation), clinicians’ salaries and infrastructure.
Funded research areas

The VA supports a wide range of research, from basic research on the cellular mechanisms of disease through to clinical observational studies, clinical trials on interventions and research into how to implement research findings in the health system. All research funded must have relevance for veterans, so research on areas relating to childhood and development is generally not funded.

For FY2014, about $245m was spent on basic research and about $318m was spent on applied research.1

Key mental health research areas receiving funding include:
- Post-traumatic stress disorder (PTSD)
- Schizophrenia
- Cognitive disorders
- Alzheimer’s disease and dementias
- Substance-related disorders and alcoholism
- Depression


This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics.1 The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

The four research services offer slightly different mechanisms for funding, but in general the support offered ranges from awards for early career researchers being mentored to independent investigators. There are also funding mechanisms to support research centres.

The majority of projects are investigator-initiated, but the VA does put out some targeted calls for applications and drives development of specific projects.

Current collaborations

The VA is involved in a significant level of research portfolio coordination with the Department of Defense and with National Institutes of Health (NIH) institutes, such as the National Institute of Mental Health and the National Institute on Drug Abuse, which focus on PTSD, suicide prevention, substance abuse and other areas related to veterans’ health. Coordination in these areas was enhanced following an executive order issued in August 2012, titled Improving Access to Mental Health Services for Veterans, Service Members and Military Families, which called on agencies to develop a research action plan on PTSD, other mental health conditions and traumatic brain injury.

The VA also participates in the Senior International Forum of veterans administrations. Made up of administrations from Australia, Canada, New Zealand, the UK and the USA, the group hosts a ministerial forum every 18–24 months. There, PTSD and women’s health have been priority areas for discussions about collaboration.

Network of co-acknowledgement for papers acknowledging this funder – each node represents a funder and the connecting lines indicate co-acknowledgement. Node size is proportional to the number of acknowledgements, line thickness to number of co-acknowledgements. Funders are coloured according to the country in which they are located.
Portfolio evaluation practices
The VA tracks its spending in different research areas internally, by topic and type of research. The VA’s technology transfer office also tracks patents awarded. At present, some of the VA’s funding data is available publicly through the NIH’s RePORTER database, but the VA is also working on its own tools to make its data publicly available.

The VA’s portfolio evaluation is used for a wide range of purposes, from internal planning to supporting annual budget requests. Information gathered allows the VA to track its funded activities – for decisionmaking within the VA and for coordination with other federal agencies – and makes it possible to look at trends and progress over time, and to identify potential research support gaps. Information on the level of coverage in specific areas can also be shared with individuals or organisations that raise concerns about whether the VA is providing enough support in those areas.

Future

Collaboration
The VA is open to collaboration, where appropriate, across scientific and national borders. It feels that there is great potential in the sharing of research findings, for instance, from population studies.

Challenges
Increasing demands being placed on clinicians make it more difficult for them to have time and energy to devote to research. The VA believes that it is important that they help conduct research, as opposed to only suggesting ideas.
**Mission:** ‘To improve health by supporting bright minds in science, the humanities and social sciences, and public engagement.’

**Established:** 1936

**General information:** The Wellcome Trust (WT) is the largest UK charity that funds mainly basic science research. The WT supports high quality research with the aim of improving human and animal health. Its strategic plan for 2010–2020 sets out how the Trust intends to evolve its support to be more effective in achieving this aim. Its decision to develop a ten-year strategy reflects the long-term view that it takes in supporting research. The WT funds five areas of biomedical research. Mental health research is funded primarily via the Science division’s Neuroscience and Mental Health (NMH) stream, with a smaller proportion funded through Population Health.

**Definition of mental health:** Mental health research covers clearly translational or basic neuroscience research that has a direct and short-term relevance to a psychiatric condition, or to the promotion of positive mental health.

**Area:** General health research

**Size:** £501m total awarded in grants in FY2013–2014 (mental health represents 1.8% of funding, but this is based on a narrow definition that excludes much neuroscience)

**Funding acknowledgements 2009–2014:** 2434

**Geographical location**

Mainly restricted to the UK, with just a few grants awarded to low or middle income countries outside the UK.

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Funded research areas

One of the ‘Challenges’ within the Trust’s strategic plan is ‘Understanding the Brain’ and, within that, gaining new insights into mental health disorders by: (a) supporting new approaches for the characterisation and phenotyping of complex neurological and psychiatric disorders; (b) promoting the uptake of new treatments of proven effectiveness; and (c) exploring the implementation of interventions. However, the WT is primarily a response mode funder that has not had targeted calls for particular research areas. Instead, it delivers funding by aiming to support the most excellent researchers (fellowships, PhDs, Strategic Awards). In recent years, large Strategic Awards have been awarded to mental health research projects focusing on depression (the WT Consortium for the Neuroimmunology of Mood Disorders and Alzheimer’s disease), bipolar disorder (Collaborative Network for Bipolar Research to Improve Outcomes) and prevention (Promoting Mental Health and Building Resilience in Adolescence: Investigating Mindfulness and Attentional Control).

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.

Research level of funded papers
Funding mechanisms

Approximately two thirds of Trust funding is awarded through personal fellowships, with the remainder committed to its centres and Strategic Awards. Within this, one third is committed to disease-related research.

Current collaborations

The WT has joint fellowship funding with the Royal Society (Sir Henry Dale Fellowships) and the National Institute of Mental Health (4-year PhD studentship). It also funds basic neuroscience research jointly with the Gatsby Charitable Foundation. It encourages grantees to seek additional funding themselves. As a result, the WT has some indirect partnerships with universities, devolved government funding bodies and industry.

The WT recognises that industry investment in the mental health research space has been decreasing. One of its strategic grants supports collaboration between academia and pharmaceutical companies, and this is a type of collaboration that it wishes to support in the future.

The WT is part of the International Alliance of Mental Health Research Funders and the Institute of Medicine, and it also helped set up the mental health research funding charity MQ.
Portfolio evaluation practices

The WT conducts personal visits and reviews annual as well as end-of-grant reports from fellowship holders, strategic award holders and centres. These reports outline progress in terms of publications, as well as policy impact, public engagement and collaboration. The Trust’s Policy and Evaluation team works with such organisations as Thomson Reuters to carry out more in-depth analyses of these data.

The main purpose of its portfolio evaluation is to identify the impacts of the research that it has funded and to help shape future strategy. The Trust also finds it useful to compare the impact of this research to other Trust-funded biomedical areas and other national and international funders.

The WT has recently evaluated the achievements of the whole NMH division’s portfolio over the past ten years. In doing this, the WT found it challenging to differentiate between projects that were of direct clinical relevance to a mental health disorder and those which were exploring basic mechanisms, as well as how this analysis compares with those carried out by other funders. The Trust is planning to make an executive summary of this report available on its website in due course.

Strategy development

Because the WT is a response mode funder, it has not had themed mental health research calls in the past. However it does have an informal strategy whereby, if it is approached by a research group that has an idea for a large strategic award or collaborative award, the Trust will consider funding it. Whether it will award funding will depend on where the idea fits within its portfolio and whether it is a WT priority area – either because the Trust recognises it as an underserved need or because it would be complementary to something that the Trust already funds.

Future

The WT has not had targeted calls in the past. However, the Trust’s strategy is being revised, so this may change in the future. The Trust is very keen on funding multidisciplinary research (e.g. a maths department is involved in one of its funded grants on bipolar disorder), and there is potential to do this via the newly launched Collaborative Awards scheme.

Areas of research relevant to mental health that the WT is keen to promote in future include:

- Adopting transdiagnostic approaches
- Capitalising on recent findings in the genetics of complex and monogenic disorders
- Supporting clinical/basic science and academia–industry collaborations

Collaboration

The WT is open to discussions on collaboration. However, the potential for collaboration may be limited by geography, since funding for developed countries outside the UK is limited.

Challenges

The WT perceives a major gap in support for academic psychiatry. The Trust is working to develop this area and is hoping that a revamped clinical postdoctoral fellowship scheme, to which 50% more funding will be committed, could make a difference.

Opportunities

The WT NMH team stated that, in addition to adopting transdiagnostic approaches; capitalising on recent findings in psychiatric genetics; and supporting clinical/basic science and academia–industry collaborations, there is potential for better phenotyping through remote monitoring (of mood, activity, etc., via, for example, mobile phones); applying new analysis methods for multimodal data (e.g. machine learning); and developing effective Internet-based psychological therapies. It has also been considering how to leverage some of the research it has been funding, perhaps, for example, by creating a platform to allow sharing of learning across the different Strategic Awards in mental health.
Project Ecosystem: Mapping the global mental health research funding system

Young and Well Cooperative Research Centre

Mission: To conduct internationally recognised research and development that utilises technologies to improve the mental health and wellbeing of young people. Its vision is: ‘A digitally connected world where technologies are used to support young people to feel safe, healthy and resilient.’

Established: 2011

General information: The Young and Well Cooperative Research Centre (CRC), established under the Australian government’s Cooperative Research Centres Programme, is an international research centre which unites young people (defined as those aged between 10 and 30) with researchers, practitioners and policymakers to explore the role of technologies in young people’s lives and how they can be used to enhance mental health and wellbeing. The Young and Well CRC aims to: reduce youth suicide, self-harm, and mental health problems; reduce social isolation; increase the rates of health seeking by young people; reduce lost productivity due to illness; reduce medical, carer and welfare costs by improving health; and improve quality of life for young people, their families and their communities.

Definition of mental health: The Young and Well CRC adopts the public health approach and uses the WHO’s definition of mental health. This enables the Young and Well CRC to work across the spectrum, spanning from mental health promotion to treatment and relapse prevention.

Area: Mental health

Size: Aus$7m per year

Geographical location
Mainly Australia, although increasingly internationally

Funded research areas
All research is targeted at young people between 10 and 30 and explores technology’s role in supporting mental health and wellbeing. There are a number of key programme areas:

- Safe and Supportive, which focuses on safe and supportive online environments, and develops tools to promote cyber-security, mental health and wellbeing
- Connected and Creative, which focuses on young people who may be vulnerable to mental health problems, and how technology can be used to support them
- User-driven and Empowered, which focuses on developing innovative solutions for young people experiencing mental health difficulties
- Project Synergy, which is an R&D Platform being developed to support an integrated online ecosystem of care
- Digital Education, which is intended to equip those who care for young people to utilise technologies to support young people’s mental health and wellbeing

The research is predominantly applied research, but also includes public health and epidemiological studies.

Funding mechanisms

The Young and Well CRC co-invests in transformative programmes of work valued between $1m and $6.3m. This contribution is leveraged against the contributions of collaborating partners and is supported by an in-kind contribution.

Within these programmes, the Young and Well CRC also supports 26 PhD students.

Current collaborations

As a cooperative research centre, the Young and Well CRC aims to connect researchers and funders to help leverage funds. The cooperative has 14 essential partners – 7 universities and 7 non-governmental organisations – and 61 supporting partners. In addition to this it has a further network of around 2900 organisations who either want to benefit from the research or bring skills and expertise that might help form new projects. Collaborations vary in form, including financial or in-kind contributions. The Young and Well CRC also acts as a ‘partnership broker’ to help organisations and researchers match up and be more competitive when applying for funds.

Portfolio evaluation practices

Each project has a built-in evaluation component, which research teams are responsible for executing. Project teams are also encouraged to have a Project Control Board, to support project governance, and provide either quarterly or annual reporting.

The Young and Well CRC reports annually to the Commonwealth on output and utilisation milestones, publications, presentations and media. Podio1 is used to collect real time data on outputs from projects, which is used to complement project reporting. It also uses Google Scholar, Psychwire and ResearchGate to track research outputs.

Strategy development

Decisions on which research to fund are made jointly by the Scientific Leadership Council, made up of Australia’s leading scientists in the field, and the Centre’s Youth Brains Trust, a nominated representative group of 20 young people each year, many of whom have lived experience of mental illness. Projects carried out by the Young and Well CRC are driven by partners connected to the Young and Well CRC, the current evidence base and policy imperatives.


Future

The Young and Well CRC is developing a new five-year strategy which will enable it to evolve from a leverage fund model to a more sustainable future, where it does not rely on government funding. It will focus on ‘profit for purpose’, in order to create sustainable streams of funding, which can be put back into research. This strategy may include such options as working with impact investors, social bonds and licensing agreements.

Future collaborations

The Young and Well CRC will continue to build partnerships, and it is looking at potential international collaborations.

Challenges

The Young and Well CRC believes that there is a risk that research will continue to be done in the ‘traditional’ way, driven by impact factors and publications. While scientific rigour is very important, there is a need to shift the target away from publishing, to making a difference in people’s lives. The Young and Well CRC believes that universities are currently not moving quickly in this space.

Opportunities

The Young and Well CRC sees technology as a significant opportunity, which allows for more rapid and interesting ways of carrying out research. This also presents a challenge in working out how to translate traditional research across into less traditional settings without losing the scientific rigour.
Mission: ‘Progress requires research and development. ZonMw funds health research and stimulates use of the knowledge developed to help improve health and healthcare in the Netherlands.’

Established: 2001

General information: ZonMw funds research work that is commissioned by government ministries, the Netherlands Organisation for Scientific Research (Nederlandse Organisatie voor Wetenschappelijk Onderzoek [known as the NWO]) and other organisations. Before research is funded, ZonMw, together with experts in the field, analyses the current state of play, the problems that exist, the priorities and where to look for solutions. The findings are then incorporated into a programme which sets out the direction for developments in scientific research and health care. The programme gives scientific and health care institutions the opportunity to conduct research or to develop, test and implement innovations on a project basis.

Definition of mental health: ZonMw does not have a set definition of mental health.

Area: ZonMw covers all areas of health, but the programme GeestKracht (tr. mind power), which is no longer in operation, was dedicated to mental health.

Size: The funding available for GeestKracht was around €25m for the ten-year period from 2000 to 2010.

Funding acknowledgements 2009–2014: 3112

Geographical location

Funded research is mainly conducted in the Netherlands, as the PI needs to be affiliated with a Dutch institution.

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Funded research areas

ZonMw funds research through fixed-term programmes. Between 2001 and 2012, ZonMw ran the programme GeestKracht, which focused on mental health. Within GeestKracht, three priority areas were identified: schizophrenia and psychosis, anxiety and depression, and behavioural disorders in children.

The programme started after a government report had concluded that in comparison to other fields in medicine, mental health had been a neglected area. Mental health research was lacking in both expertise and infrastructure.

The programme therefore focused not only on funding research projects, but also on building mental health research infrastructure to ensure that mental health research could be sustained after the end of the programme.

The type of research conducted through GeestKracht ranged from basic research in the area of genetics and cohort studies to applied research on the improvement of existing care. There was no specific funding available for translational activities, yet one of the recommendations from evaluations was to focus more strongly on translation.

This chart shows the proportion of this funder’s papers relevant to each of eight mental health topics. The outer ring shows the proportion of the funder’s papers in each category. The inner section compares the funder to the overall dataset: the angle of each segment reflects that topic’s representation in the overall dataset, while the area (and number) indicates the proportion of the papers on each topic that acknowledge this funder.

1 Topics were defined by looking at the clustering of Medical Subject Headings (MeSH) assigned to papers in our dataset. Please see the study’s main report for further details.

Research level of funded papers

The ‘research level’ assigned to a journal provides an indication of the type of research it publishes, using a four point scale from applied to basic research. Although it is a fairly crude measure, when used at the aggregate level it is the best approximation available.
Funding mechanisms

Through GeestKracht, three consortia were funded, one in each of the priority areas. At the start of the programme, the consortia received a sum of money to set up a number of smaller research projects. In addition, the programme funded PhDs in the form of fellowships and individual applied research projects in mental health practice.

Current collaborations

There have not been any sustained collaborations in mental health with other funders. When it still had its GeestKracht programme, ZonMw was in contact with another small funder of mental health research in the Netherlands, the Fonds Psychische Gezondheid.

Network of co-acknowledgement for papers acknowledging this funder – each node represents a funder and the connecting lines indicate co-acknowledgement. Node size is proportional to the number of acknowledgements, line thickness to number of co-acknowledgements. Funders are coloured according to the country in which they are located.
Portfolio evaluation practices

GeestKracht had both an interim and a final evaluation. The aim of the interim evaluation was to learn from progress to date and to modify the programme on the basis of the results. The final evaluation aimed to assess whether the goals set at the start had been achieved.

Within the programme, the consortia were evaluated every three years to determine if they were progressing according to plan. Funding was made conditional on progress and was informed by these evaluations. The consortia were evaluated by an international committee of experts that had been formed at the start of the programme, and the evaluation included field visits. In addition, the consortia had to complete evaluation questions to show progress in, among other things:

- Collaboration between universities and mental health practitioners
- Multidisciplinary research
- Cohorts

Publications did not form an important part of the evaluation, as it was assumed that the publication record of the principal investigators would be good. Rather, there was a strong emphasis on research interaction with mental health practices. The aim of the programme was to introduce people from practice to research, and thus such interactions featured prominently in the evaluation.

Future

The expectation is that there will not be another programme specifically dedicate to mental health research in the near future. However, other current research programmes, such as the research programme on addiction, do touch on areas of mental health research.