

THIS WEEK

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Mind how you go

The protracted battle to find cures for psychiatric illnesses is changing course, but prejudice and stigma against those with poor mental health remain a problem.

When *Nature* broke the news in December 2011 that Novartis was to close its brain research facility in Basel, Switzerland, the story noted that this move closely followed similar cuts by rival pharmaceutical firms. As a report from the European College of Neuropsychopharmacology had warned a few months earlier, the abandonment of research into new psychiatric drugs by AstraZeneca, GlaxoSmithKline and others meant that “withdrawal of research resources is a withdrawal of hope for patients and their families”.

That 2011 story did offer a glimmer of optimism. Novartis, we reported, was not deserting these patients and families completely. It planned to switch focus — away from conventional neuroscience-drug development based on chemistry and small molecules, and towards treatments based on the genetics of psychiatric and cognitive disorders.

As we report this week on page 153, the company has made good on its promise. It has reopened its neuroscience division, now at its global drug-discovery headquarters in Cambridge, Massachusetts, and has hired Ricardo Dolmetsch, a former senior director at the Allen Institute for Brain Science in Seattle, Washington, to head it.

In the time that Novartis has been out of the game, some things have changed in the field of psychiatric medicine, but some have not. Among the latter is the depressing ease with which mental illness is subject to stigma and misunderstanding. Just this month, two UK supermarkets — Asda and Tesco — were criticized for selling online ‘mental patient’ Halloween costumes, complete with bloody cleavers, and orange jumpsuits stamped with the phrase ‘Psycho Ward’.

Both companies apologized, and removed the offending items from their digital shelves. If that was a clumsy mistake, and one that seemed to cash in on the Hollywood stereotype of the deranged killer rather than a deliberate move to offend, it is harder to find excuses for *The Sun* newspaper. On 7 October, the UK tabloid splashed on its front page that “mental patients” had killed 1,200 people in a decade (2001–10). Drawing on a sober report from the Centre for Mental Health and Risk at the University of Manchester, the newspaper mangled the results and managed to make the opposite point to that intended by the report’s authors about help for people with mental illnesses. Contrary to the newspaper’s claims, significant numbers of the 1,200 people highlighted were not receiving any treatment, and so were not “patients” and were under no supervision by the “broken” system. Of those who were being treated, many had alcohol and drug problems rather than severe delusional disorders. And, as the report made clear, homicides by patients with schizophrenia in the United Kingdom — the peg for the paper’s “exclusive investigation” was the manslaughter conviction last week of a man with schizophrenia — have fallen to an all-time low.

One heartening change seems to be that the prejudice written through *The Sun*’s story now seems out of step with the public mood — or at least with the mood of the public active on social media. Rapid Twitter campaigns saw the costume-selling supermarkets lambasted and, as *Nature* went to press, *The Sun* was facing similar online bombardment.

The science of mental health has changed too, as Novartis knows well. Earlier this year, when the American Psychiatric Association released the fifth edition of its *Diagnostic and Statistical Manual of Mental Disorders*, the official guide to mental illness, critics complained loudly about its listed categories, such as depression and bipolar disorder, and the way they are classified and diagnosed. Various books have poked holes in psychiatry and its relationship with the drug industry. And prominent researchers talk of the need to go back to the drawing board.

“Millions of people are left exposed, vulnerable and ripe for tabloid demonization.”

Some of this is down to the age-old antipathy of psychologists who prefer a holistic approach to mental illness and who dislike what they view as the reductionism of those who look to biochemistry for the fixes, if not always the causes. Some is down to deep distrust of big pharma, and staggering statistics that record the ever-growing diagnoses of mental disorders and prescriptions for drugs to combat them. But much is also down to sheer frustration that decades of research into psychiatric medicine have failed to find cures for these ailments, leaving millions of people exposed, vulnerable and ripe for tabloid demonization.

Novartis is not the only drug giant to adopt a new approach to this problem. Roche is taking a similar path, and others will surely follow, if only because of the size of the market if they get it right. That is far from certain. The science is immature and this approach looks more than a little like a leap of faith. But all who have a mental illness, and all who know someone affected (almost everybody), should wish them luck. ■

Closed question

The US shutdown is damaging science, and Congress must be called to account.

On 1 October, lawmakers in Congress, bitterly divided along partisan lines, failed to agree on a new budget. The US government closed. Roughly 800,000 civil servants, including thousands of scientists, were ordered to stay at home. Even accessing their work e-mail would constitute a federal crime, they were told. Now entering its second week, the shutdown is showing few signs of abating.

Non-government scientists must be imagining that this nightmare will pass. This is just a Washington DC thing, right?

It is true that the effects are most pernicious in greater Washington, where commuter buses and trains have plenty of empty seats. At the National Science Foundation (NSF) in Arlington, Virginia, 98.5% of

the agency's employees were sent home. But at the National Institutes of Health in Bethesda, Maryland, about one-quarter of the agency's 19,000 employees have kept working, keeping mice fed and cell lines growing. And 45% of workers at the National Oceanic and Atmospheric Administration in Washington DC have kept at it, largely because data collected by the National Weather Service are so crucial.

There is a veneer of continuity. But it is an illusion. Clinical trials will not begin. Grant applications will not be evaluated. Even grants that have been awarded are in jeopardy if the cheque was not in the post.

And the consequences are not confined to Washington DC. Websites used routinely in research are not accessible. Conferences in which government scientists have vital roles are either being cancelled or going ahead as pale shadows of what they ought to have been.

The ripple effects will get worse as the government misses lump-sum payments to contractors. One casualty came on 4 October, when the National Radio Astronomy Observatory, based in Charlottesville, Virginia, closed its radio telescopes. This week, an NSF contractor is preparing to evacuate research stations in Antarctica, putting an entire summer season of research under threat. By the end of the month, the operator of NASA's most famous observatory — the Hubble Space Telescope — will nearly have run out of money (see go.nature.com/smgwr1).

The public data collected at these facilities are used widely. Even

scientists at financially secure institutions will soon find themselves missing a key tool or piece of data. In an interconnected world that relies on global collaboration, foreign scientists are not safe either.

Part of the frustration with the fiscal crisis is how manufactured it is. Republicans in the House of Representatives want to extract concessions on US President Barack Obama's signature health-care law. Obama and the Democrat majority in the US Senate say that they will not be held hostage to these demands.

There are signs that the stand-off will persist until 17 October, when a new forcing factor would kick in: the government exceeding the amount of money that it is legally allowed to borrow. The economic consequences of not raising the debt limit are expected to be immediate and catastrophic, and so the warring parties in Congress might finally be forced to compromise.

That would be welcome. The damage being done to science — the slow business of meticulous data gathering — is not as immediately apparent as in other arenas. But it is insidious. A missed moment in a data campaign may not reveal its importance until much later. A talented scientist, fed up with budget vagaries, might seek greener pastures. And an experiment not performed might seem to be no worse than an unasked question. For these reasons, we must all ask the US Congress: why are you doing this? ■

ANNOUNCEMENT

Launch of an online data journal

Everyone wants better ways to make research data available and to give more credit to the researchers who create and share data. But for a data set to be widely reusable, scientists need to know how the data were produced and what quality-control experiments were performed. They need access to detailed descriptions of the data outputs, file formats, sample identifiers and replication structure. This is hard work that is often poorly rewarded. As a result, potentially valuable data sets go unpublished, or are not fully released to the public or not described in sufficient detail to permit reuse.

To address this need, Nature Publishing Group will next spring launch *Scientific Data*, an open-access, online-only journal for detailed descriptions of data sets (<http://nature.com/scientificdata>). This week, *Scientific Data* announced its first call for submissions (see go.nature.com/1gnd1j). The doors are now open for scientists to submit 'Data Descriptor' manuscripts — a new article type that is designed to describe scientifically valuable data sets in a way that will promote data sharing and reuse.

Data Descriptor articles are fully fledged, peer-reviewed scientific publications, and will be listed in major indexing services, thereby giving authors the credit they deserve for sharing their data and making it usable by others. All Data Descriptors will be released under a Creative Commons licence that allows researchers to reuse, redistribute and remix the articles' content.

The format of the Data Descriptor includes 'Technical Validation' and 'Usage Notes' sections. These will allow authors to characterize the quality of the data and to provide advice on their reuse — valuable information that does not always fit into traditional research articles. And, as is the case in other *Nature* journals, the Methods section will have no length limit, giving authors space to provide detailed, reproducible descriptions of their experiments.

Data Descriptors will link to both related journal articles and data files stored at data repositories, helping readers to navigate easily between research, data descriptions and the actual data. And

each Data Descriptor publication will be supported by machine-readable experimental metadata to help advanced users mine and search *Scientific Data*'s content. Metadata records will be curated by in-house staff to ensure consistent and useful annotation, and will be released in the ISA-Tab format (see S.-A. Sansone *et al. Nature Genet.* **44**, 121–126; 2012).

Peer reviewers of Data Descriptors will focus on the technical rigour of the data-collection procedures, the completeness of the data and alignment with existing community standards. They will check that the data are indeed worth sharing, but will specifically be asked not to base their evaluations on the perceived impact or novelty of the findings associated with the data sets. *Scientific Data*'s editors have already conducted peer review of a small set of prototype Data Descriptor manuscripts, and have found that scientists adapt quickly to this different peer-review perspective.

What *Scientific Data* will not be is a new data repository. Rather, it will promote and cooperate with existing community-based repositories, and will combat data fragmentation by ensuring that data sets are deposited in an appropriate repository. *Scientific Data* is also working with figshare and Dryad, two repositories that accept a wide range of research data types. Integrated data upload is already available with figshare — authors may deposit their data as they submit their Data Descriptor manuscript. Editors and referees will be given secure, confidential access to the data files through the figshare website, and the data will be made public when the Data Descriptor is published.

Scientific Data will not be a place to publish new conclusions or hypothesis-driven analyses, and editors will ask authors to remove material that is beyond the journal's scope. This will help to ensure that Data Descriptor publications can exist alongside and complement primary research articles. Authors may publish stand-alone Data Descriptors about data sets that have not been used in other publications, or Data Descriptors about data sets published elsewhere but for which a more in-depth description is merited.

Editors of *Nature* journals have agreed that prior publication of a Data Descriptor will not jeopardize publication of research articles, as long as those articles go beyond a descriptive analysis of the data and report major scientific findings. *Scientific Data* will initially focus on the life, biomedical and environmental sciences, but may in due course be open to a broader range of scientific disciplines. ■