

## From the Editor's desk

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**Plasticity and optimism  
in psychiatric research and practice**

Neuroplasticity affords optimism

The potential to harness the neuroplasticity of brain structure and function opens up exciting and optimistic pathways for intervention across the life course, and for recovery from brain injury, stroke, psychiatric and addictive disorders, neurodevelopmental disorders and cognitive and muscular impairments related to ageing.<sup>1</sup> For example, promoting new learning and challenge to cognitive function, alongside physical activity, better nutrition and sleep, and mindfulness, while reducing inflammatory reactions, all seem to help improve the outcome for people who experience cognitive decline.<sup>2</sup> Similarly, promising interventions might be researched and applied for psychoses and mood disorders. Lithium appears to reduce stress-induced changes in brain function and morphology, and promote neuroplasticity.<sup>3</sup> Berk *et al* (pp. 1–2) highlight the remarkable properties of lithium in improving cardiovascular health and dementia symptoms and perhaps reducing the risks of cancer.<sup>4</sup> There is emergent evidence that even electroconvulsive therapy and ketamine may act through mechanisms that promote neuroplasticity.<sup>5</sup> Yet these very properties of plasticity and neurogenesis also carry hazards to the fetus in the antenatal period (Wieck, pp. 3–4) and to maternal mental health if lithium levels fluctuate during pregnancy (Wesseloo *et al*, pp. 31–36). Investigating the underlying molecular mechanisms of clinical benefits creates new models for future interventions that can shape social, psychological and pharmacological components of care.<sup>5</sup>

Plasticity in practice

These emerging novel understandings of mechanism and benefit from treatments require systems of care that are receptive to the adoption of new interventions, and application of evidence at the individual patient level. Such a response is increasingly difficult when the costs of care in all countries are escalating, and core resources for the most essential care are declining. The consequences in care systems are care pathways that concentrate resources on a limited number of well-evidenced and least costly interventions.<sup>6</sup> These processes that lead to inflexible care pathways may explain the findings of Taylor Salisbury *et al* (pp. 45–49) that mental health spend in Europe is associated positively with six of seven quality of care domains, service user autonomy and experiences of care. Austerity and limited budget produce less plasticity in care systems and clinical practice that then attracts criticism from patients, carers, and professionals who at the same time face greater demand due to the more adverse material conditions that are also a consequence of recession (for

example, see <https://www.theguardian.com/commentisfree/2017/may/29/help-mental-illness-easy-as-dentist>).

Evidence requires sustainability and plasticity in practice

Turkington *et al* (pp. 5–6) outline the importance of befriending schemes and these may help people through isolation and peer support in a way that formal health systems cannot match. There remain important and powerful treatments that can benefit those with complex and otherwise neglected psychiatric disorders, for example autism, in which depressive symptoms may be important mediators of psychosis (see Hassiotis *et al*, pp. 50–51). Depression may also follow extremes of body mass index, and the influence appears to differ by gender (Jung *et al*, pp. 14–21). Cancer mortality is higher among people with schizophrenia (Zhuo *et al*, pp. 7–13), suggesting that they are not benefitting from trends towards greater survival following cancer. These findings may reflect health risk behaviours related to lifestyle, smoking and exercise, higher incidence of cancer in areas of deprivation and low income, and a lack of access to effective care and treatment of mental disorders.<sup>7,8</sup> Newton-Howes and colleagues (pp. 22–30) attack the therapeutic pessimism surrounding alcohol use in people with personality difficulties, who require more tenacious and personalised care systems and practice. Implementation of new findings and sustaining effective outcomes requires resources: for example Chang *et al* (pp. 37–44) show that the effects of a first episode of psychosis programme are not sustained after 2 years if the specialist service is withdrawn. Plasticity and sustainability of care systems need to be built into integrated clinical research programmes. Cost-effectiveness analyses help, but research and implementation plans should be cognisant of differing socio-economic, geographical and political conditions within which health systems must operate.<sup>9</sup>

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