BJPsych | The British Journal of Psychiatry (2025)
226, 47–48. doi: 10.1192/bjp.2024.149

Letter

Can liaison neurology add value to patient care within a mental health setting?

John H. Ward, Brendan Sargent, Rob Bale, Johannes C. Klein, Paul J. Harrison, Belinda Lennox, Adam Al-Diwani and Adam E. Handel

Psychiatric aspects of neurological disease have been well described and manifest in liaison neuropsychiatry within regional neuroscience centres.[1] Yet, neurology in-reach to mental health services is less established.[2] Dualistic service organisation drives geographic and resource separation, inconsistent with illness biology and epidemiology.[3,4] Transfer of patients in acute psychiatric care to the general hospital is frequently challenging, potentially presenting risk and therefore high resource requirements.

Recognising this dilemma, in 2021, the two Oxfordshire NHS secondary care trusts collaboratively commissioned a liaison neurology service. This aimed to bring neurology expertise into mental health settings, seeking to model a neurological approach for psychiatrists. The service includes three sessions per week from a consultant neurologist (A.H.) employed by the mental and community health trust (Oxford Health NHS Foundation Trust). Here, we evaluate the impact of the first 2 years.

Following service management approval, we surveyed referrals between August 2021 and August 2023 ($n = 169$, of which 134 were available[a]). First, data on patient presentation, investigation, changes to diagnosis and management were extracted from all available notes. Second, to understand potential impact we invited feedback from nine referring clinicians (with responses from $n = 5$) and identified themes using content analysis. Third, for conditions with a high prior likelihood of liaison neurology impact, we reviewed notes in greater detail (traumatic brain injury, psychosis, cognitive disorders, seizures, movement disorders, and peripheral and functional neurological disorders; $n = 69$).

The referral age range was 16–87 years (median 58 years). Most patients were not previously known to neurology (103/134, 77%). Referrals from acute adult wards were most common (79/169, 46%), followed by older adult ($n = 33$), forensic ($n = 10$), psychiatric intensive care ($n = 5$), eating disorders ($n = 1$) and adolescent ($n = 1$). In addition, out-patient referrals were seen from general and older adult teams ($n = 19$ and $n = 21$, respectively).

The most common clinical symptoms in referrals overlapped with our prespecified conditions of interest: cognitive disorders ($n = 32$), psychosis ($n = 21$), movement disorders ($n = 29$) and seizures ($n = 17$) (Fig. 1a). Diagnosis was altered in 57/134 (43%) cases and management in 40/134 (30%) (Fig. 1b).

For cognitive referrals specifically, further investigations were suggested in 24/32 (75%) patients, and overall diagnoses were revised in 14/32 (44%). An atypical cognitive picture was resolved to Alzheimer's disease in two patients (in one supported by cerebrospinal fluid (CSF) testing); in two others, who were initially thought to have alcohol-related brain damage and vascular dementia, Lewy body dementia was diagnosed. Furthermore, in seven people with cognitive decline, neurodegenerative disease was excluded through a mixture of clinical assessment and investigation. This informed prognosis and treatment. Most prominently, one patient admitted under section owing to severe behavioural changes had, on closer assessment, neurological signs suggestive of amyotrophic lateral sclerosis/frontotemporal dementia overlap; genetic testing revealed a C9orf72 gene mutation, meaning the family could be signposted to genetic counselling.

Movement disorders were the second most common category (29/134, 22%). Assessment frequently resulted in changes to diagnosis or management (24/29, 83%). These most commonly related to parkinsonism ($n = 10$; five idiopathic Parkinson's disease, five drug-induced). Demonstrative cases here included idiopathic Parkinson's disease being diagnosed through imaging in suspected drug-induced Parkinson's disease, and recognition of entrainment in functional movement disorder. Another common neurological category was seizures, in which 7/13 (54%) underwent a change in diagnosis or treatment, most commonly differentiating non-epileptic from epileptic events.

Psychosis was the third most common group (21/134, 16%); 16/21 (76%) had physical investigations including magnetic resonance imaging (9), electroencephalogram (7) and CSF testing (2). This revealed one rare genetic diagnosis (Myhre syndrome), and five other diagnostic revisions resulted in exclusion of secondary causes. This included, for example, using examination and investigation review to disentangling the contributions of psychosis and/or traumatic brain injury to cognitive symptoms. Three referrals followed a positive clinical and/or research serum neuronal surface antibody test. No case satisfied consensus criteria for either autoimmune encephalitis or autoimmune psychosis. This not only prevented unnecessary transfer to acute neurology but also facilitated access to an immunotherapy clinical trial.[5]

Finally, analysis of qualitative feedback revealed four themes: accessibility, value, patient perspective and outcomes. Psychiatrists noted that the service was very accessible and communicated well with clinical teams. Also, it provided diagnostic clarity and advice on treatment and suggested appropriate investigation. Clinicians particularly emphasised value in resolving psychological and medical complexity. Overall, they found that the service enhanced holistic and efficient care. This feedback closely mirrored findings of the note review.

This service evaluation found that psychiatrists valued access to prompt neurological assessment of patients with psychiatric and cognitive disorders. Rather than generating excessive testing, a liaison neurologist rationalised physical investigation – indeed, only one patient was transferred to the acute hospital for

[a] This was owing to an electronic health records outage that affected NHS trusts nationally.

https://doi.org/10.1192/bjp.2024.149 Published online by Cambridge University Press

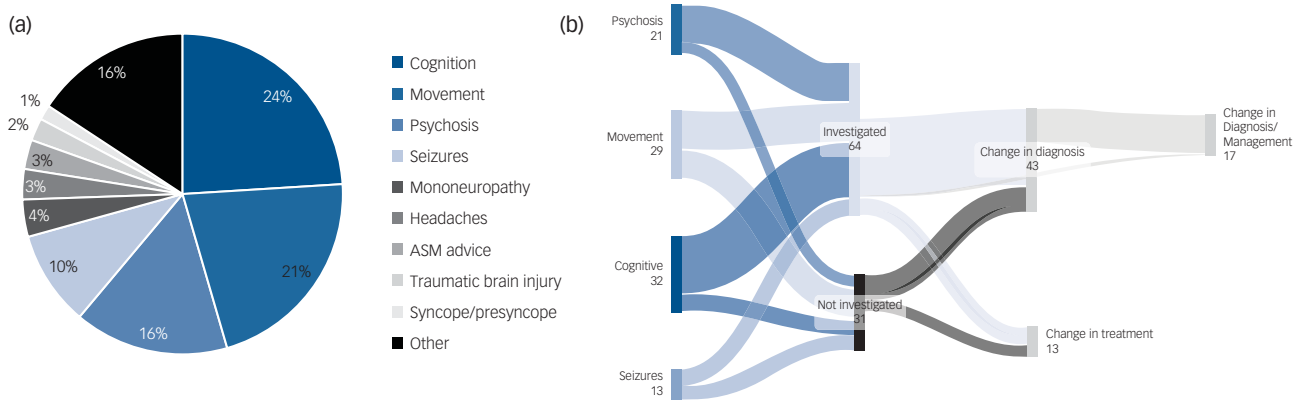

Fig. 1. Referrals and outcomes from a liaison neurology service. (a) Pie chart demonstrating the themes of referrals received. Others included other central nervous pathology, general medical queries, magnetic resonance imaging reviews and symptom management advice. (b) Sankey plot demonstrating the outcomes for the four largest presentation themes. ASM, anti-seizure medication.

further investigation. Although it is important to facilitate equitable access to tests where indicated, the ability to confidently advise when tests are not needed also helps the patient journey and can be reassuring for all involved. Nonetheless, when firmly indicated, CSF testing can usually now be done in a psychiatric setting rather than always requiring transfer. In the next phase, trainees will gain practical experience under expert supervision, cascading this skill.

Regarding limitations, although we used a pre-specified proforma to extract case information, our retrospective approach introduces a degree of subjectivity. As we largely relied on healthcare records, some narrative around specific referrals may be less granular. Furthermore, our qualitative feedback is potentially subject to responder bias. In addition, whether the impact is entirely reproducible elsewhere is difficult to assess, as this represents a single neurologist in a specific setting. However, there are universal themes and similar experience has been reported in at least one other UK centre.[2]

Overall, we provide evidence that liaison neurology can add value to patient care within a mental health setting. This impact appears to be largely rooted in clinical acumen, judicious application of investigations and expert disentanglement of diagnostic complexity, with implications for clinical management and better resource utilisation. We hope that our study acts as a catalyst to create similar services elsewhere in the UK and internationally.

John H. Ward, University Department of Psychiatry, University of Oxford, Oxford, UK; **Brendan Sargent**, University Department of Psychiatry, University of Oxford, Oxford, UK; **Rob Bale**, Oxford Health NHS Foundation Trust, Oxford, UK; **Johannes C. Klein**, Oxford Health NHS Foundation Trust, Oxford, UK; and Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UK; **Paul J. Harrison**, University Department of Psychiatry, University of Oxford, Oxford, UK; **Belinda Lennox**, University Department of Psychiatry, University of Oxford, Oxford, UK; **Adam Al-Diwani**, University Department of Psychiatry, University of Oxford, Oxford, UK; **Adam E. Handel**, Oxford Health NHS Foundation Trust, Oxford, UK; and Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UK

Correspondence: Adam Handel Email: adam.handel@ndcn.ox.ac.uk

References

1 Agrawal N, Fleminger S, Ring H, Deb S. Neuropsychiatry in the UK: planning the service provision for the 21st century. *Psychiatr Bull* 2008; **32**(8): 303–6.

2 Cope TE. Should neuropsychiatry flow both ways? Neurology inreach into psychiatric hospital. *J Neurol Neurosurg Psychiatry* 2023; **94**(12): e2.

3 Misiak B, Samochowiec J, Kowalski K, Gaebel W, Bassetti CLA, Chan A, et al. The future of diagnosis in clinical neurosciences: comparing multiple sclerosis and schizophrenia. *Eur Psychiatry* 2023; **66**(1): e58.

4 Fitzgerald M. Do psychiatry and neurology need a close partnership or a merger? *BJPsych Bull* 2015; **39**(3): 105.

5 Lennox B, Yeeles K, Jones PB, Zandi M, Joyce E, Yu LM, et al. Intravenous immunoglobulin and rituximab versus placebo treatment of antibody-associated psychosis: study protocol of a randomised phase IIa double-blinded placebo-controlled trial (SINAPPS2). *Trials* 2019; **20**(1): 331.

https://doi.org/10.1192/bjp.2024.149 Published online by Cambridge University Press