

## **Paediatric neurorehabilitation: we must do better**

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Keetley et al.'s important study of a novel neurorehabilitation delivery model highlights the benefits of the service, including a reduction in the length of stay in hospital, for children and young people (CYP) with an acquired brain injury (ABI).<sup>1</sup> This study demonstrates the advantages of integrating acute and outreach therapy services for the population with ABI. The speed of neuroplasticity is rapid after ABI and the provision of early and effective neurorehabilitation is crucial, and will significantly improve the overall long-term outcome.<sup>2</sup> This in turn reduces the burden of cost, for health and social care needs. We concur that such a service delivery model has the potential to be up-scaled nationally.

However, we wish to highlight other important considerations for CYP requiring neurorehabilitation. On average, it costs £346 per day per bed for an excess hospital stay in the NHS.<sup>3</sup> Currently, early discharge of CYP with ABI and complex needs is often not possible for social reasons, such as non-availability of suitable housing or care packages, as opposed to medical reasons. This is challenging for all concerned, in particular the CYP and their families. The existing specialist acute hospitals are not commissioned to meet the overall neurorehabilitation needs of CYP and the lack of available bed space in specialist neurorehabilitation centres frequently results in delayed discharge.

A lengthy stay in hospital for CYP is often exhausting for them and their families, and the need for a further extended period of time in a specialist centre can sometimes deter further engagement. In our experience, CYP and their families generally prefer out-patient based neurorehabilitation provision close to their homes or community-based therapy service interventions. However, the availability of such services is very limited.

The integration of health and social care is expected to offer better outcomes for patients, financial savings for the NHS, and social care, and reduce pressure on hospital beds.<sup>4</sup> Neurorehabilitation is a long-term process and a specific framework for integrated health and social care is vital for the optimal outcome. Keetley et al. provide a useful sketch for the health framework, but do not fully consider the wider social context and current barriers. These need further examination to gain a better understanding.

Technology based interventions have been embraced during the COVID-19 pandemic. In order to improve outcomes, reduce costs, and empower CYP and their families, we must

consider how such technologies can be best utilized in paediatric neurorehabilitation. Prospective studies on the outcomes, acceptability, and cost-effectiveness of different types of integrated models for the delivery, and use of new technologies for neurorehabilitation are necessary.

It is worth noting that, in general, the benefit of putting research into practice takes around 17 years<sup>5</sup> and we urge NHS England and the relevant commissioning bodies to consider this letter together with Keetley et al.'s findings to develop tertiary level regional neurorehabilitation centres as a priority.

## References

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