Human Factors in the development of a National Medicines Safety Improvement Programme

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SUMMARY

This paper explores how human factors principles shaped the design and implementation of England's National Medicines Safety Improvement Programme (MedSIP) to help people with learning disability, at risk of behaviour that challenges, avoid harm from psychotropic medicines. Frameworks such as SEIPS v2 and AcciMap supported a systems approach to analysing data from a national Appreciative Inquiry. Findings highlighted the need for whole system change and key work system components for effective medication reviews, informing the national programme launched in April 2025 to promote safer prescribing across health and social care.

KEYWORDS

medicines safety, system change, learning disability.

Introduction

The National Medicines Safety Improvement Programme (MedSIP) aims to reduce avoidable harm from high-risk medication in high-risk patients. From April 2024 to March 2025, we designed a new programme that aims to help people with learning disability reduce the harm from psychotropic medication, used for behaviour that challenges. A core design requirement was the integration of human factors, and the programme launched nationally in April 2025 as a National Patient Safety Improvement Programme.

In England, an estimated 1.3 million people have a learning disability (Disparities, 2025), with an estimated 18% (Bowring et al., 2017) exhibiting behaviour that challenges (e.g. aggression, self-injury). This is often managed through psychotropic medication, particularly antipsychotics, which are associated with severe harm such as movement disorders (Scheifes et al., 2016a) and reduced quality of life (Scheifes et al., 2016b).

When medication is prescribed long-term a Structured Medication Review (SMR) is required which is a framework that is routinely used by clinicians to support an evidenced based and patient centred review of a patient's medication (NHS England).

Method

We led a national Appreciative Inquiry (AI), which is a strengths-based approach to change (The Center for Appreciative Inquiry), across England's 15 Patient Safety Collaboratives (PSCs) to identify current and past related initiatives. Data from the AI was collected using semi-structured interviews that incorporated the Systems Engineering Initiative For Patient Safety (SEIPS v2) framework (Holden et al., 2013) to explore implementation barriers and facilitators. National thought leaders were also interviewed for strategic insights. We applied AcciMap to analyse system

factors for prescribing and SEIPS v2 to identify enablers for effective Structured Medication Review (SMR) in people with a learning disabilty.

Results

The AI yielded 83 PSC interview responses and 15 national leader interviews. The AcciMap (Figure 1) revealed widespread socio-technical contributors to the normalisation of psychotropic prescribing, underscoring the need for a whole-system approach to change. The Acci-map was validated at the MedSIP programme advisory board. SEIPS analysis of 40 SMR-focused AI responses identified key work system factors for effective SMRs in this population and highlighted the importance of making reasonable adjustments, multidisciplinary team working, access to clinical records across services, and clinician capability.

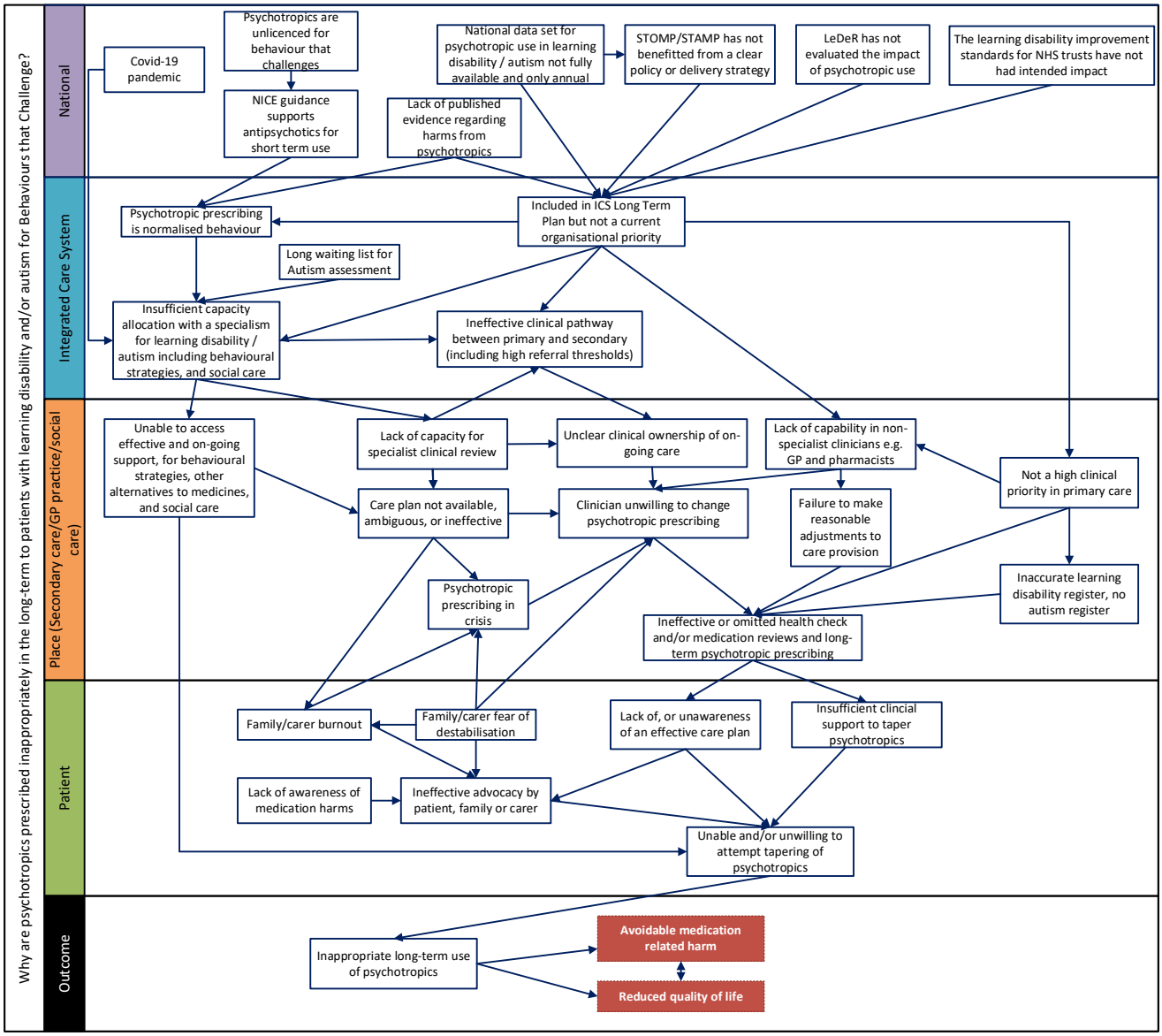

Figure 1: AcciMap of the system factors that affect psychotropic prescribing.

Conclusion and impact

AcciMap analysis provided a clear, visual representation of the complex socio-technical challenges across health and social care that clinicians confirmed resonated with their experience. Almost 50% of AI responses focused on SMRs, with the SEIPS model effectively identifying the work system

elements needed for high-quality reviews. This highlights a disparity between current SMR-focused efforts and the need for a broader, whole system change.

This work demonstrates the role of human factors in shaping national patient safety programmes offering both strategic insight and practical tools to drive meaningful, system-wide improvement.

References

Bowring, D. L., Totsika, V., Hastings, R. P., Toogood, S. & Griffith, G. M. 2017. Challenging behaviours in adults with an intellectual disability: A total population study and exploration of risk indices. *British Journal of Clinical Psychology,* 56**,** 16-32.

Disparities, O. O. H. I. 2025. *Learning disability - applying All Our Health* [Online]. Gov.uk: Gov.uk. Available: https://www.gov.uk/government/publications/learning-disability-applying-all-our-health/learning-disabilities-applying-all-our-health#:~:text=Sometimes%20the%20cause%20of%20a,for%20National%20Statistics%20(%20ONS%20) [Accessed 21.10.2025 2025].

Holden, R. J., Carayon, P., Gurses, A. P., Hoonakker, P., Hundt, A. S., Ozok, A. A. & Rivera-Rodriguez, A. J. 2013. SEIPS 2.0: a human factors framework for studying and improving the work of healthcare professionals and patients. *Ergonomics,* 56**,** 1669-1686.

NHS England. *Structured medication reviews and medicines optimisation* [Online]. NHS England: NSH England. Available: https://www.england.nhs.uk/primary-care/pharmacy/smr/ [Accessed 13/02/2026 2026].

Scheifes, A., Walraven, S., Stolker, J. J., Nijman, H. L., Tenback, D. E., Egberts, T. C. & Heerdink, E. R. 2016a. Movement Disorders in Adults With Intellectual Disability and Behavioral Problems Associated With Use of Antipsychotics. *J Clin Psychopharmacol,* 36**,** 308-13.

Scheifes, A., Walraven, S., Stolker, J. J., Nijman, H. L. I., Egberts, T. C. G. & Heerdink, E. R. 2016b. Adverse events and the relation with quality of life in adults with intellectual disability and challenging behaviour using psychotropic drugs. *Research in Developmental Disabilities,* 49-50**,** 13-21.

The Center For Appreciative Inquiry. *What is Appreciative Inquiry (AI)?* [Online]. The Center for Appreciative Inquiry. Available: https://centerforappreciativeinquiry.net/resources/what-is-appreciative-inquiry-ai/ [Accessed 13/02/2026 2026].