

**Aims.** Low birth weight is associated with adult mental health, cognitive, and socioeconomic problems. However, the causal nature of these associations remains difficult to establish due to confounding. We aimed to estimate the contribution of birth weight to adult mental health, cognitive, and socioeconomic outcomes using two-sample Mendelian randomisation, an instrumental variable approach strengthening causal inference.

**Method.** We used 48 independent single-nucleotide polymorphisms as genetic instruments for birth weight (N of the genome-wide association study, 264 498), and considered mental health (attention-deficit hyperactivity disorder [ADHD], autism spectrum disorders, bipolar disorder, major depressive disorders, obsessive-compulsive disorder, post-traumatic stress disorder [PTSD], schizophrenia, suicide attempt), cognitive (intelligence), and socioeconomic (educational attainment, income, social deprivation) outcomes. We performed a two-sample Mendelian randomisation using the random-effect Inverse Variance Weighting method as primary analysis, supplemented by a wide range of sensitivity analyses, including Egger regression, weighted median, and Pleiotropy Residual Sum and Outlier. Results were considered statistically significant after accounting for multiple testing using False Discovery Rate ( $q = 0.05$ ).

**Result.** After correction for multiple testing, we found evidence for a contribution of birth weight to ADHD (OR for 1 SD-unit decrease [ $\sim 464$  grams] in birth weight, 1.29; CI, 1.03–1.62), PTSD (OR = 1.69; CI = 1.06–2.71), and suicide attempt (OR = 1.39; CI = 1.05–1.84), as well as for intelligence ( $\beta = -0.07$ ; CI =  $-0.13$ ;  $-0.02$ ), and socioeconomic outcomes, ie, educational attainment ( $\beta = -0.05$ ; CI =  $-0.09$ ;  $-0.01$ ), income ( $\beta = -0.08$ ; CI =  $-0.15$ ;  $-0.02$ ), and social deprivation ( $\beta = 0.08$ ; CI = 0.03; 0.13). However, no evidence was found for a contribution of birth weight to the other examined mental health outcomes. Results were consistent across main and sensitivity analyses.

**Conclusion.** These findings support that birthweight could be an important element on the causal pathway to mental health, cognitive and socioeconomic outcomes. Early interventions targeting birth weight may therefore have a positive impact on promoting mental health and improving socioeconomic outcomes.

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### Clinical audit of prescribing for attention deficit hyperactivity disorder (ADHD) in children and young people services (CYPS)

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**Background.** The audit aimed to assess, when 3rd and 4th line medications were prescribed for ADHD, if practice was compliant with Tees, Esk and Wear Valleys NHS Foundation Trust (TEWV) prescribing guidelines and the updated NICE Guideline NG87: Attention deficit hyperactivity disorder: diagnosis and management 2018.

**Method.** The audit was conducted in the four Teesside Child & Adolescent community teams during April/May 2018. Each team identified all patients prescribed 3rd and 4th line ADHD medications leading to 30 responses ( $n = 30$ ).

Information was collected from electronic and paper medical records using a designated audit tool compiled from the above evidence based guidelines. The data were analysed for compliance

against standards using an excel spreadsheet and reviewed by the audit lead.

**Result.** There were many areas of good practice demonstrated in the audit including diagnostic recording, pre-treatment non-medical interventions where ADHD was not severe, and use of Methylphenidate as first line medication in accordance with BNF limits. In the majority of records reviewed, there was good evidence of a variety of NICE recommended non-medication interventions which were often continued post medication initiation.

There was also very good evidence of comprehensive verbal and written information and psychoeducation including benefits and potential side effects of medication (92% verbal and 58% written).

A pre-treatment assessment was completed in all but 3 cases, 1 of which had no assessment documented and 2 cases were transferred from out of area.

Issues identified by the audit, where there was deviation from guidelines, included 4 cases where Methylphenidate was not prescribed as first line, of these, 3 were prescribed Atomoxetine due to parental choice and one was due to contraindications, suggesting patient choice was an important factor in selection of 2nd line medication.

The audit demonstrates that clinical practice had moved away from the previous guidance in NICE CG72 (to prescribe atomoxetine 2nd line) towards the prescription of Lisdexamfetamine 2nd line (75%) as reflected in the new NICE guidelines: NG87, 2018 (updated 2019).

**Conclusion.** This audit cycle has demonstrated that use of an evidence based approach has been instrumental in improving patient care. The Audit evidenced good practice in areas such as pre-assessment, information and psychological education, initial use of Methylphenidate, use of Lisdexamfetamine 2nd line, as well as consideration of patient choice. Importantly the audit highlighted that implementation of updated NICE compliant trust guidance, followed by a planned trust-wide audit will promote continuous improvement in patient care.

### Pregnancy and contraceptive questioning within acute inpatient psychiatric admissions: are we asking enough?

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**Aims.** This audit explored how regularly women of childbearing age on an acute psychiatric inpatient ward are asked about pregnancy and contraception.

**Background.** Unplanned pregnancies and poor compliance with contraception are common in women with severe mental illness, with a significant number seeking abortions or losing custody of their children. As these women are also less likely to consult medical professionals, an admission is an essential point for intervention and support.

Additionally, there are risks associated with prescribing psychotropic medications during pregnancy. Because of this, The Royal College of Psychiatrists and local guidelines state that all female patients admitted onto psychiatric inpatient wards should be asked about their sexual health within seven days of admission.

**Method.** Data was collected from all 51 women of childbearing age admitted to a mixed-sex, acute adult inpatient psychiatry ward over one year, from January 2019 until the end of December 2019.