

**Method.** EEG data were recorded simultaneously with BOLD data measured with 3T functional magnetic resonance imaging (fMRI), whilst participants performed an n-back working memory task. We included seventy-eight participants – 32 patients with schizophrenia, 16 with bipolar disorder and 30 healthy controls. Beta bursts were identified in the EEG data using a thresholding method and burst timings were used as markers in an event-related fMRI design convolved with a conventional haemodynamic response function. A region of interest analysis compared beta-event-related BOLD activity between patients and controls.

**Result.** Beta bursts physically activated brain regions implicated in coding task-relevant content (specifically, regions involved in the phonological representation of letter stimuli, as well as areas representing motor responses). Further, bursts were associated with suppression of tonically-active regions. In the EEG, PMBR was greater in controls than patients, and, in patients, PMBR size was positively correlated with Global Assessment of Functioning scores, and negatively correlated with persisting symptoms of disorganisation and performance on a digit symbol substitution test. Despite this, patients showed greater, more extensive, burst-related BOLD activation than controls.

**Conclusion.** Our findings are consistent with a recent model in which beta bursts serve to reactivate latently-maintained, task-relevant, sensorimotor information. The increased BOLD response associated with bursts in patients, despite reduced PMBR, could reflect inefficiency of burst-mediated cortical synchrony, or it may suggest that the sensorimotor information reactivated by beta bursts is less precisely specified in psychosis. We propose that dysfunction of the mechanisms by which beta bursts reactivate task-relevant content can manifest as disorganisation and working memory deficits, and may contribute to persisting symptoms and impairment in psychosis.

### Evaluating service user & carer experience of videoconferencing software during COVID-19 pandemic

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**Aims.** To evaluate service user and carer experience of use of videoconferencing software (Microsoft Teams) during MDT meetings.

To identify specific areas for improvement

To make changes based on these recommendations

**Method.** 2 surveys were distributed to inpatients and their carers on a functional Older Adults inpatient ward (n = 21), including quantitative and qualitative questions. The results from these were compiled, and on review, multiple recommendations for improvement were made.

**Result.** 90% of service users find it helpful to have family present over videoconferencing software during their MDT meetings, and 91% of carers feel involved and able to contribute when they do join in this way

81% of carers have the technology available at home to use such software, but only 55% of them feel confident using it. 73% need more information on its use.

60% of carers referenced poor staff skills with software as a barrier to its use, and 60% referenced poor organisation of meetings

2 service users raised issue with the size of a small laptop screen not allowing them to see who was actually present over MS Teams, although none were concerned with issues around confidentiality and the use of such software

Several service users, carers and members of community teams identified poor sound quality as an issue, both when joining over the software, and when present in the room.

**Conclusion.** Widespread use of videoconferencing software such as MS Teams is likely to continue beyond the end of the COVID-19 pandemic. Through discussion with the ward team, the IT department, the training department, and the local council, multiple changes were made to the service, as below. These form a recommended list of areas for improvement in other services.

Availability of videoconferencing equipment (in addition to laptop)

Dedicated videoconferencing microphone/speaker to improve sound quality

Display screen

Webcam

Organisation of meetings

Designating a chairperson to admit and introduce all participants

Designating a meeting organiser to invite all necessary participants

Staff skills

Local audit of staff familiarity with software

Introduction of mandatory training for staff on use of software

Carer skills & access to equipment

Information and support available from well-trained staff

Liaison with other organisations including council and third sector about availability of equipment loans and training for carers

### Using quality improvement to standardise and enhance the use of the national early warning score (NEWS) in an old age psychiatry inpatient setting

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**Aims.** Within an inpatient old-age psychiatry setting, there is an increased risk of acute physical deterioration secondary to age, comorbidities and reduced physiological reserve. Numerous recent clinical incidents highlighted late recognition of physical deterioration within this population. We assessed the use of the NEWS, a system for scoring physiological measurements, in an old-age psychiatry ward and subsequently attempted to improve performance of obtaining physical health observations in this cohort of patients.

**Method.** Retrospective pre- and post- quality improvement study in a twenty bed Old Age Psychiatry Ward in East Lothian Community Hospital, Haddington, Scotland. Data were collected from 12th October – 16th November, 2020 (pre- period) and from 16th November 2020 to 15th February, 2021 (post- period). The primary process measure was ensuring all patients had at least one full set of physical observations at least once a week, or more frequent as deemed clinically appropriate. Secondary measures included ensuring NEWS scores were accurately calculated and improved documentation. This was tracked using a run chart. Improvement activities focused on increased awareness, effective training, key stakeholder buy-in and reviewing trust policy.

**Result.** The percentage of NEWS documented for all patients at least once a week improved from a mean of 28.7% (31/108) in the 6 weeks prior to intervention, to a mean of 71.4% (125/175) in the following 13 weeks. The minimum required physical

observations required to accurately calculate a NEWS improved from 51.6% (16/31) pre-intervention to 95.2% (119/125) post-intervention and NEWS being calculated correctly increased from 80.6% (25/31) to 96% (120/125). Documentation of a reason why physical observations were not taken increased from 2.5% (2/77) to 62% (31/50) pre- and post- intervention respectively.

**Conclusion.** This quality improvement project highlighted that recording of physical observations and use of NEWS was inadequate in this setting, increasing the risk of a delay in identification of acute physical deterioration and thus increase morbidity and mortality. Introducing simple measures and standardising the NEWS assessment process, along with senior nursing and medical oversight, greatly enhanced acquiring and recording of physical observations and NEWS scores. This quality improvement project has shown that practical solutions and staff education can increase efficacy and are hoping further input can consolidate the gains achieved and lead to continued improvements.

### Transition from child and adolescent MHS to adult MHS: what happens to young people with personality disorder?

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**Aims.** *Hypothesis:* Personality Disorder (PD) adolescents, compared to non-PD case, have a worse experience at transition.

*Aims:* To describe the outcomes of referrals of adolescents for transition to adult services and compare PD and non-PD populations to identify potential improvements to allow for better transition experience of the PD patients.

**Background.** Borderline PD is prevalent in adolescents - although there is a reluctance to make the diagnosis. When patients reach graduation from CAMHS, many fall through the 'gap' in services during the transition. Consequently, adding the paucity in research about the transition experience of PD patients, it is important to evaluate what happens to these patients during the transition process to help better understand their experience, and how it can be improved.

**Method.** Patient's clinical records from Tower Hamlet CAMHS, East London NHS Foundation Trust, were reviewed retrospectively from July 2018 to November 2019, assessing whether optimal transition standards were met. A total of 41 cases that transitioned from CAMHS to AMHS were identified. Transition standards compared were: information sharing – case and risk, parallel care, transition planning and continuity. PD diagnosis was identified based on the recording of this diagnosis or meeting DSM5 criteria from the notes. PD and non-PD transition experience was compared.

**Result.** 36 were given a diagnosis by the CAMHS clinician at transition and 5 had no diagnosis assigned. No cases had a PD diagnosis made by the CAMHS clinician, however 1 case mentioned 'PD traits', 1 mentioned 'EUPD' as a possible differential and 2 cases were labelled as 'emotional dysregulation'. The

research team found 17 cases that met DSM5 criteria for PD diagnosis.

Comparing transition experience of PD vs non-PD patients, the PD patients had a less optimal transition process. Statistical analysis using Chi Square Tests, showed significantly less optimal transition planning ( $X^2 = 5.103$ ,  $p < 0.05$ ) and continuity (Fisher's exact test  $p = 0.049$ ). Cohens W indicated a medium effect for transition planning and continuity.

**Conclusion.** Adolescents with a diagnosis of PD transition less well to Adult MHS than those without the PD diagnosis. Implications of our findings point to 1) the importance of considering a diagnosis of PD 2) if the diagnosis of PD is made, to anticipate greater difficulties in transition 3) the need to identify specific reasons for transition difficulties related to patient, clinician and system factors and their interrelation.

### Can parent-infant observation predict later childhood psychopathology: a systematic review

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**Aims.** Difficulties in parent-child interaction are easily observed and are a potential target for early intervention. This study aimed to assess the utility of observation of parent-child interaction in the first year of life in identifying children at risk of developing later psychopathology, using a rigorous systematic review method.

**Method.** EMBASE, CINAHL, PsycINFO, MIDIRS, MEDLINE and Cochrane Library databases were searched using MeSH terms and keywords, and reference lists screened. Two authors independently reviewed papers for inclusion and completed data extraction. All peer reviewed papers studying the association between an independent observation of parent-child interaction and later childhood psychopathology in community-based samples were included. Studies based on 'high risk' samples (studies exclusively examining cohorts with a sibling or parent with a mental illness or studies of low birth weight or premature infants and those with other physical comorbidities) were excluded. Results were synthesised qualitatively due to high heterogeneity.

**Result.** 18,226 papers were identified, nine were included in this study. Childhood psychopathology was associated with fewer positive parent-infant interactions, lower parent vocalisation frequency and lower levels of adult speech and activity. Maternal sensitivity was inversely related to separation anxiety and oppositional defiant/conduct disorders were associated with lower shared look rates. Disruptive behaviour disorders were associated with higher frequency of child vocalisation. Pervasive developmental disorders were associated with 'abnormal' maternal infant interactions, as assessed by community health nurses using a standardised measure.

**Conclusion.** Included studies reported small samples, and several of these samples overlapped. Some studies were of poor quality, but were included due to a paucity of available data. The findings may therefore have limited generalisability. Difficulties in parent-child interaction are easily observed and assessments could be made by non-specialists such as health visitors or general practitioners. Such difficulties may be an early indicator of later childhood psychopathology. Childhood psychiatric diagnoses (with the exception of Autistic Spectrum Disorders) appear associated with level of maternal activity (vocalisation, physical activity, positive