

mechanisms underlying their development, DNA methylation may be involved.

**Objectives:** The aim of this study was to estimate DNA methylation changes occurring secondary to psychotropic treatment and evaluate associations between 1-month metabolic changes and baseline DNA methylation or 1-month DNA methylation changes, using an epigenome-wide approach.

**Methods:** Seventy-nine psychiatric patients recruited as part of PsyMetab study, who started a treatment with either an anti-psychotic, a mood stabilizer or mirtazapine were selected. Epigenome-wide DNA methylation was measured using the Illumina Methylation EPIC BeadChip at baseline and after one month of treatment.

**Results:** A global methylation increase was observed after 1 month of treatment, which was more pronounced in patients whose weight remained stable (i.e., <2.5% weight increase). Epigenome-wide significant methylation changes were observed at 52 loci in the whole cohort and at one site, namely cg12209987, located in an intergenic region within an enhancer, specifically in patients who underwent important early weight gain (i.e., ≥5% weight increase) during the same period of treatment ( $p < 5 \times 10^{-8}$ ). Multivariable analysis confirmed an association between an increase in methylation at this locus and weight gain in the whole cohort ( $p = 0.004$ ). Epigenome-wide association analyses failed to identify any significant link between other metabolic changes (e.g. glucose or lipid levels) and methylation data.

**Conclusions:** These findings give new insight into the mechanisms of psychotropic drug-induced weight gain. With improved understanding of the metabolic side effects, the use of precision medicine with epigenetics may become possible

**Disclosure:** No significant relationships.

**Keywords:** psychotropic drugs; Metabolic side effects; Precision Medicine; epigenetics

## Mental Health Care 2

O0096

### NeuroBlu: a natural language processing (NLP) electronic health record (EHR) data analytic tool to generate real-world evidence in mental healthcare

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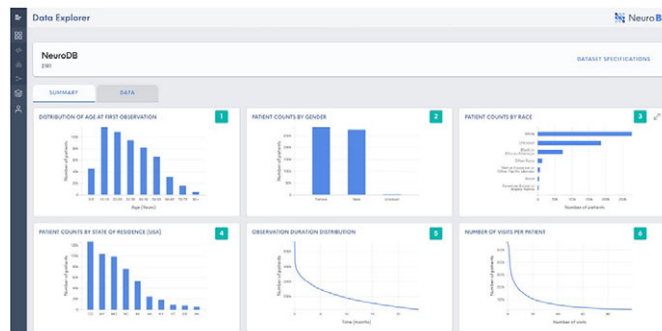
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doi: 10.1192/j.eurpsy.2022.286

**Introduction:** EHRs contain a rich source of real-world data that can support evidence generation to better understand mental disorders and improve treatment outcomes. However, EHR datasets are complex and include unstructured free text data that are time consuming to manually review and analyse. We present NeuroBlu, a secure, cloud-based analytic tool that includes bespoke NLP

software to enable users to analyse large volumes of EHR data to generate real-world evidence in mental healthcare.

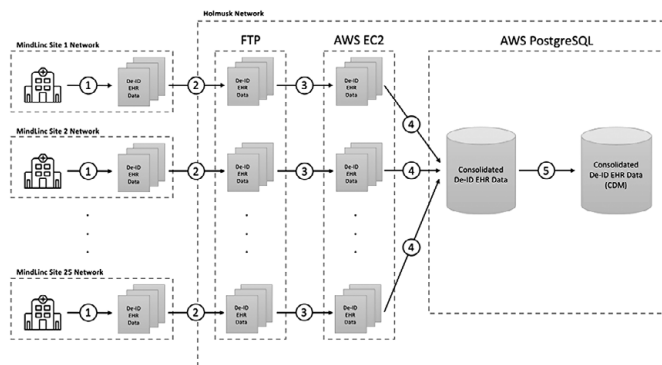


**Objectives:** (i) To assemble a large mental health EHR dataset in a secure, cloud-based environment.

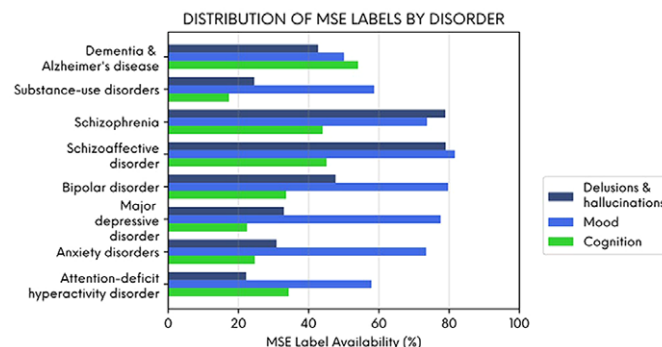
(ii) To apply NLP software to extract data on clinical features as part of the Mental State Examination (MSE).

(iii) To analyse the distribution of NLP-derived MSE features by psychiatric diagnosis.

**Methods:** EHR data from 25 U.S. mental healthcare providers were de-identified and transformed into a common data model. NLP models were developed to extract 241 MSE features using a deep learning, long short-term memory (LSTM) approach. The NeuroBlu tool (<https://www.neuroblu.ai/>) was used to analyse the associations of MSE features in 543,849 patients.



**Results:** The figure below illustrates the percentage of patients in each diagnostic category with at least one recorded MSE feature.



**Conclusions:** Delusions and hallucinations were more likely to be recorded in people with schizophrenia and schizoaffective disorder, and cognitive features were more likely to be recorded in people with dementia. However, mood symptoms were frequently recorded across all diagnoses illustrating their importance as a transdiagnostic clinical feature. NLP-derived clinical information could enhance the potential of EHR data to generate real-world evidence in mental healthcare.

**Disclosure:** This study was funded in full by Holmusk.

**Keywords:** RWE; NLP; EHR; RWD

## O0097

### Giving a leg up part 2: the ethical challenges of Body Integrity Dysphoria

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doi: 10.1192/j.eurpsy.2022.287

**Introduction:** Body Integrity Dysphoria (BID) is a diagnosis, newly described in ICD-11, “characterised by an intense and persistent desire to become physically disabled in a significant way... accompanied by persistent discomfort, or intense feelings of inappropriateness concerning current non-disabled body configuration”. Patients with BID may request the amputation of healthy limbs but this raises multiple ethical challenges.

**Objectives:** By the end of the presentation, participants 1) will better understand the new diagnosis of Body Integrity Dysphoria; 2) will be able to have some landmarks to evaluate and manage this rare condition 3) will discern the ethical challenges raised by an elective or emergent amputation request.

**Methods:** We present a complex case we faced in Quebec City, Canada. A young adult admitted to the intensive care and burn unit was referred to our Consultation Liaison (CL) team. For the second time in a year, the individual deliberately burned his leg, with the intention of having an amputation. Based on the available literature and our experience, we explore the ethical aspects of this case.

**Results:** For this situation, the multidisciplinary team faced uncertainty and ambivalence toward the best treatment options. Deontological concerns and ethical issues emerged from the patient's request for amputation.

**Conclusions:** We outline how ethical concepts helped us to gain a shared comprehension of the patient's extraordinary request, both during treatment and afterwards.

**Disclosure:** No significant relationships.

**Keywords:** Rare condition; Body integrity dysphoria; Ethics; Consultation-Liaison psychiatry

## O0098

### Trajectories of psychiatric care in an innovative outpatient program designed for transitional age youth (16 to 24 years old) in French-speaking Belgium: results of a retrospective study

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doi: 10.1192/j.eurpsy.2022.288

**Introduction:** Transitional age youth (TAY), from 16 to 24 years old, are a particularly at-risk population in mental health. They have specific needs, not currently covered between child and adolescent mental health services (CAMHS) and adult mental health services (AMHS), mainly because of existing barriers.

**Objectives:** This retrospective study was carried out to describe sociodemographic and clinical characteristics of 243 patients who attended a new TAY-tailored outpatient psychiatric program.

**Methods:** Outcomes related to trajectories of psychiatric care were analysed, such as leading symptom, consultation's referral and requester, and final orientation.

**Results:** The sample was mainly composed by female; the average age was 18.7 ( $\pm$  2.0) years. Leading symptoms were divided into three dimensions: internalizing (67.5%), externalizing (21.8%) and psychotic (10.7%). Leading symptom differed according to sex ( $p < 0.001$ ), with internalizing symptoms more frequent in women, externalizing and psychotic symptoms more frequent in men. Patients presenting psychotic symptoms were significantly older than both those with internalizing ( $p = 0.016$ ) and externalizing symptoms ( $p = 0.008$ ). After first assessment, 81.5% of youth were followed-up in our specific outpatient program, without any difference according to sex ( $p = 0.081$ ) or leading symptom ( $p = 0.092$ ). Overall and final psychiatric orientation are showed in the flowchart.

