

Principal Investigator

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Summary of research

Multimorbidity, Pain, Depression, Outcomes, Treatment Burden

Application Lay Summary:

1a: Our aim is to determine the extent and patterns of morbidity reporting and treatment use, and to investigate the impact of comorbidity, multimorbidity and polypharmacy on healthcare outcomes. We will also investigate prognostic factors and the specific impact of having chronic pain and/or depression on individuals with chronic illness. Research questions include but are not limited to:

- What are the patterns of morbidity reporting?
- What are the patterns of polypharmacy reporting among people with co/multimorbidity?
- What are health related outcomes of people with co/multimorbidity and do these vary by combination of conditions, e.g. pain and depression?

1b: This research will investigate reporting of chronic illness, including heart disease, stroke, arthritis, osteoporosis, and depression, all of which are priorities for UK Biobank; and examine treatment, including polypharmacy, and outcomes for people with multiple conditions, taking into account sociodemographic and

other factors. We will examine casual pathways and prognostic factors and this will allow us to gain a better understanding of multimorbidity and to consider potential management and treatment approaches for individuals with multimorbidity. The proposed research therefore aims to promote improved understanding and treatment of a wide range of illnesses.

1c: Initial statistical models will utilise assessment centre data to determine patterns of morbidity reporting and relationships with sociodemographic, lifestyle and other factors. We intend to use assay data to determine relationships between chronic illness reporting and biomarkers. Medications will be examined to determine the treatment burden that individuals with multiple conditions experience. Subsequent analysis will build on this initial work and allow investigation of the relationship over time between chronic illness and health-related outcomes using hospitalisation, primary care, and mortality data, taking into account other factors measured at the assessment centre, which may also affect these relationships.

1d: We require the full cohort for this research as information on medical conditions was gathered from all participants. This will allow the identification of morbidity groups, including a comparison group (1 or no long-term conditions).