Topic 1: The impact of physical health shocks on the consumption of healthcare resources for the treatment of depression

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Why is this issue important?
Epidemiological and clinical evidence suggests that physical health shocks which occur with increasing incidence in old age, might trigger the onset of a new, or deterioration of an existing mental health condition, especially depression. The proportion of older individuals with mental health problems is projected to increase dramatically, driven mainly by population ageing and the increased occurrence of physical health problems which impact on individuals' mental health. Depression in older people is an important public health issue and is associated with functional disability, social deprivation, poorer outcomes from physical illness and higher healthcare costs. Depression costs the UK economy £11bn a year in lost earnings and healthcare expenditures.

Existing studies examining the link between physical health shocks and depression suffer from limited generalizability, due mainly to limitations with selective samples (e.g. cancer registry data) and estimation approaches (e.g. based on cross-sectional data). The Five Year Forward View for Mental Health calls for more focus on the link between physical and mental health. This study will fill the gap in the evidence-base using longitudinal data where the timing of a physical health shock is observed and depression is systematically measured both before and after the onset of a health shock.

This research aims to measure the impact of two types of physical health shocks (stroke and acute myocardial infarction (AMI)) on depression in older individuals and their subsequent utilisation of healthcare resources for the treatment of depression in terms of i) hospital admissions, ii) contact with healthcare professionals in community mental health care, and iii) overall healthcare costs.

Intended approach, available data and skills required
The research will use individual patient-level data from Hospital Episode Statistics (HES) linked to the Mental Health Services Dataset (MHSDS). Cost data will come from Reference Costs and PSSRU unit costs. We will identify patients who experience a health shock in HES and then a subsequent admission for depression in HES or presentation in the community in MHSDS. We will then cost the admissions and healthcare utilisation in the community. A variety of matching methods will be applied to match based on observable characteristics, individuals who have had an acute health shock with those who did not. We will then use regression methods such as difference-in-difference to compare admission rates, contacts with healthcare professionals and health care costs associated with depression between the two groups. We will also explore the use of dynamic models. The student will require strong quantitative and data management skills.