Scottish Government Health Directorates Chief Scientist Office

A HEALTH INFORMATICS APPROACH TO IMPROVING LONG-TERM PHYSICAL HEALTH OUTCOMES IN MAJOR MENTAL ILLNESS.

Researchers: Dr Gary McLean, Prof Daniel Smith, Dr Daniel Mackay, University of Glasgow; Dr Moira Connolly NHS Greater Glasgow & Clyde

Aim: The aim of this study was to use a health informatics approach to assess the extent to which patients with a major mental illness, (schizophrenia, bipolar disorder or other psychotic disorder), were being routinely monitored for key health indicators such as blood glucose, cholesterol levels and liver function tests comparing these with national and UK wide guidelines.

Project Outline/Methodology: We used an electronic held database (PsyCIS) of health and demographic characteristics of 8,029 patients who had been diagnosed with schizophrenia, bipolar disorder or other major mental illness (MMI) and linked this to (i) routinely collected hospital inpatient data, (ii) routine blood testing data, (iii) cause of death data and (iv) prescribing data.

Key Results: We found that the proportion of patients with no record of routine blood monitoring was low, but there was variation by type of mental illness. Patients with bipolar disorder tended to be monitored more often than patients with schizophrenia. The age of the patient was also a factor, with younger patients more likely to have no record of blood monitoring than older patients. We did not find evidence that patients in more deprived social circumstances were less likely to receive routine blood monitoring. However, we did discover some findings that will require intervention from clinicians. Nine percent of individuals were found to have a raised plasma glucose level. Two-thirds of this group were on anti-diabetic medication. This suggests a high proportion of this group were diabetic. Levels were particularly high in individuals with schizophrenia than other diagnoses such as bipolar disorder or other psychotic disorders. In addition, we found that over two thirds of patients had a raised cholesterol level, higher than found in the general population. Of this group, one-third were on cholesterol-lowering medication such as statins, again suggesting a treatment gap which may need to be further quantified. Furthermore, this figure was as high as 92.8% in the youngest age-group (age 16-34). Patients with raised total cholesterol who live in more deprived circumstances were much more likely than those in more affluent areas to receive statins. Death rates proved to be high within this cohort with neoplasms being the leading cause of death, followed by cardiovascular disease. Alcohol related deaths were more common in men (4.1%) than women (1.6%) and were more likely to occur in the most deprived areas and in those diagnosed with other MMI.

Conclusions: The use of a health informatics approach has considerable potential for comparing actual clinical practice with the recommendations published in clinical guidelines for patients with MMI.

What does this study add to the field? This study is the first to use Health Board level data linkage to assess the extent to which patients with a major mental illness are being monitored for routine blood tests. For the first time, clinicians can now see the extent to which clinical practice may deviate from guidelines. Furthermore, it opens up opportunities for more detailed analyses of treatment gaps and novel cross-sectoral linkages, such as with educational achievement data or criminal justice data, that could be used to identify additional support needs for sub-groups of MMI patients in the future.

Implications for Practice or Policy: To date there are no data on how well clinical practice across an entire health system at Board level has met recommendations in clinical guidelines for the monitoring of key blood tests in patients with MMI. Our results show that routine monitoring in NHS Glasgow is high but there are areas for improvement, especially with regard to monitoring in younger age groups, the use of statins, the use of glucose lowering drugs and alcohol-related deaths.

Where to next? We view this study as a "proof of concept" of the power and utility of health informatics to help realign, and refine, clinical practice with clinical care guidelines. Future linkage work could take a multi-regional perspective focussing on major health comorbidities that would allow the comparison of key health outcomes across regions for patients with major mental illness, paving the way for targeted interventions and quality improvement work.

Further details from:
Dr Daniel Mackay, Prof. Daniel Smith and Dr Moira Connolly
Email: Daniel.Smith@glasgow.ac.uk,
Daniel.Mackay@glasgow.ac.uk
Moira.Connolly@ggc.scot.nhs.uk