

The **Networked Data Lab**: Analysis plan for Topic 1 on shielding patients during COVID-19

Satellite analysis for Liverpool CCG, Wirral CCG and Wirral LA

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Background and research question

- The impacts of Covid-19 are widespread and numerous, with the impact on Mental Health being a rising concern for Liverpool and Wirral. In July 2020, MerseyCare NHS Foundation Trust, which serves the population of Liverpool and Sefton and is one of the largest mental health providers in the UK, commissioned the CSU Strategy Unit a forecast report of possible demand for mental health services in Liverpool. According to the model employed, which did not consider the scenario of a second wave of the pandemic, overall demand for mental health services would rise by 28% in the 24 months from July, peaking between December 2020 and January 2021. The largest demand for the services is expected to arise from patients with existing long-term conditions, which struggled and/or are currently struggling with the effects of restrictions imposed to fight spread of infections. Such effects may be a difficulty in adapting to the psychological dynamics of living in a health crisis, the unavailability or change in delivery of normal health and care services, and the changes in economic circumstances. It is also estimated that anxiety, depression, stress and PTSD will be the most likely presentations of mental health difficulties. The system dynamic model commissioned by MerseyCare needs to be recalibrated and revisited in its ideation assumptions with more recent data, which at the time of the model development were unavailable. One of the most important policies introduced to fight the effects of the pandemic was that of shielding. The effects of shielding are still currently under-studied and from additional knowledge about the effects of shielding it would be possible to design and plan more effective and targeted approaches to protect vulnerable segments of the population, as well as plan for sufficient capacity in delivery of services according to foreseen need. The effect of shielding on mental health is of particular concern. By studying the emergence of some manifestation of need for mental health support both in the shielded and the non-shielded population and their differences, we could both better quantify the demand for services and have a measure of mental health impact on restrictive measures that may be introduced in the future.
- With this in mind, this analysis will focus on members of the population who were prescribed antidepressants during Covid-19.
- This will be split between patients who were on the shielded list and those that were not in order to attempt to identify if those on the shielding list are more likely to be prescribed antidepressants during lockdown.
- Research questions:
 - Research question 1: What was the impact on prescriptions pre-post Covid for both Covid & Non-Covid cohorts
 - Specifically: Has COVID had a greater or lesser impact on shielded patients than the wider population.
 - Research question 2: Is there any impact on prescriptions by demographic factors, specifically:
 - Social Demographics - Deprivation
 - Personal Demographics – Age, Gender etc
 - Are there any impacts by QOF conditions
 - Research question 3: Are there significant differences between Liverpool & Wirral populations that could affect overall findings e.g. demographics?

Aims

- The analysis will allow us to better understand if being on the shielded list resulted in more members of the population seeking medication for mental health conditions/ illnesses.
- It will add to the current strands of Mental Health analysis and reporting which forms part of Liverpool and Wirral's Business As Usual in order to add further intelligence for better commissioning of healthcare.
- We will use this analysis to further our understanding of how analysis from Liverpool and Wirral will be integrated.
- This builds on the Networked Data Lab central analysis by continuing to focus on Covid-19 lockdown, and the shielded patients.

Data and data linkages

- Where relevant and applicable, the analysis will rely on the following data sources through data linkage:
 - The Shielded Patient List (SPL).
 - Variables: pseudo id
 - Time (inserted in the SPL)
 - Reason for shielding
 - Primary Care Prescriptions Data (Liverpool) and EPACT (Wirral)
 - Variables: pseudo id
 - Item prescribed
 - Primary Care Records
 - Variables: pseudo id
 - Age
 - Gender
 - Ethnicity
 - Deprivation
 - Diagnosis for depression/other mental illnesses
 - GP antidepressant prescription flag
 - Care home resident flag
 - Secondary Care Admitted Patients Care Records (if data in primary care has gaps)
 - Variables: pseudo id
 - Admissions planned
 - Admissions: unplanned
 - Cause for admission
 - Outpatient contacts
 - A&E attendance
 - Mortality records.
 - Variables: pseudo id
 - Date of death
 - Cause of death
 - Place of death

Methods

- Anti-depressant drugs will be identified using the British National Formulary (BNF), section 4.3; “Antidepressant drugs”.
- As detailed under Data, Primary Care Prescriptions Data is being used for this analysis. This data does not identify which patients ultimately had those prescriptions fulfilled.
- The analysis will look at prescriptions for antidepressant drugs, in order to identify members of the population whose mental health has deteriorated during lockdown.
- Where relevant and applicable, information will be split by gender, age, deprivation, and CEV/shielded status in order to see if there is a link between these factors and prescription of antidepressants.
- The analysis will take on the form of a short report / briefing paper.
- It will include charts and supporting narrative in order to explain the findings.
- **Setting:** LCCG registered population of 551,362 (with shielded cohort of 51,083 as of 31st July 2020) and Wirral CCG registered population of 337,069 (with shielded population of 14,795 as of 31st July 2020). The pre-COVID period was defined as prior to April 2020, and “during” COVID was defined as after April 2020.
- **Primary outcome:** Any prescription of antidepressants.
- **Design:** We modelled the monthly rate of anti-depressant prescriptions in the Liverpool population from January 2018 to February 2021, covering the pre and during COVID pandemic time periods.
 - The monthly prescription rate was calculated overall by identifying how many patients had received one or more prescriptions of anti-depressants per month, and dividing by the total number of patients in the population. To get the rate in person-months, the crude rate was multiplied by 10,000.
 - The crude rate was then stratified by; age in the time period (categorised into 10-year increments); gender; ethnicity; local IMD 2019 quintile; and CEV/shielded status.

Local audience

- The Outputs from this work, once produced, will be circulated to teams within the local system who will be able use the intelligence to inform better decision making, and will be able to use in the wider reporting function of the organisations and its partners. Examples are provided below:
 - Prescribing Team e.g. Medicines Optimisation Committee.
 - Mental Health Commissioning Team.
 - MerseyCare NHS Foundation Trust.
 - Shielding working group (Wirral).
 - Primary Care Network (PCN) Leads.

Dissemination plan

- The Health Foundation will summarize key findings from all satellite analyses in a publication and the RMarkdown files outlining your findings will also be published online.
- As indicated above, the findings from the analysis will be circulated to teams within the organisation who will be able to use the intelligence.
- They will be presented at committees where Mental Health and Prescribing are our work areas.
- They will be disseminated to partner organisations whose services are commissioned and fall within these topic areas.
- In particular, we will present a practitioner focussed short report to the NIHR ARC North West Coast.