PREVALENCE AND VARIATION IN ANTIDEPRESSANT PRESCRIBING ACROSS NORTHERN IRELAND: A LONGITUDINAL ADMINISTRATIVE DATA LINKAGE STUDY FOR TARGETED SUPPORT.

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IN COLLABORATION WITH AWARE, N.I.

OVERVIEW TO THE PROJECT

- FUNDING
- COLLABORATION WITH VCSE SECTOR
- PROJECT BACKGROUND
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FUNDING

- Funded by Phase III of the Secondary Data Analysis Initiative (SDAI)

- The SDAI is an Economic and Social Research Council (ESRC) funded initiative. It's aims to employ the greatly underused pre-existing administrative data resources here in the U.K. to address pressing challenges in our society

- Aims of SDAI
  1. Exploitation of major data resources
  2. High-quality research
  3. High-impact research

COLLABORATION WITH VCSE SECTOR

- SDAI promotes academic partnership with VSCE sector organisations to maximise potential societal impacts of research

- SDAI maintain that partnerships need to be meaningful to be fully effective in generating impact

- Key aspects of our ongoing partnership with Aware N.I.:
  - Early engagement
  - Understanding the context of their work and how research can meet their needs
  - Engaging directly with Aware N.I. to shape the research agenda

What are we working in partnership to create? First… a bit of background

PROJECT BACKGROUND

- Evidence indicates an increase in antidepressant prescription rates across the UK, however rates of depression are not changing substantially. There was a 165% increase in the prescribing of antidepressant drugs in England between 1998 and 2012 (an average of 7.2% a year).
- There are significant geographic variations.

PROJECT BACKGROUND

- The 'Script Report', based on a freedom of information request on U.K. prescribing practices, gained access to 36 million prescription records from across the UK, including 3.5 million prescriptions from GPs in NI for the period April to September 2013.
- NI prescribed proportionately more antidepressants than 23 other countries, and that NI consumed more than two-and-a half times the antidepressants per head than in similarly wealthy economic areas in England.
- Overall, GPs in NI prescribed enough antidepressants to give every member of the population a 27-day supply; the same statistics for England and Wales were 10 days and 19 days respectively.

PROJECT BACKGROUND

- Nuffield Trust and Health Foundation Quality Watch
  - Longitudinal analysis demonstrated that higher unemployment was associated with significant increases in the number of anti-depressant tablets that were distributed. A 1% rise in unemployment typically meant that one and a half more tablets were prescribed per person, per year.
  - There are sizable geographical variations in prescription rates across the UK. During the period between October and December 2012/13, rates varied from 71 items per 1,000 people in NHS Brent, to 331 items per 1,000 people in NHS Blackpool. Generally, there were lower levels of prescribing in London, and higher rates in the North East.

PROJECT BACKGROUND

- Research by the Mental Health Foundation found that 78% of GPs had prescribed an antidepressant in the previous three years, despite believing that an alternative treatment might have been more appropriate.
- It also found that 66% had done so because a suitable alternative was not available, 62% because there was a waiting list for the suitable alternative, and 33% because the patient requested antidepressants.
- Of the GPs surveyed, 60% said they would prescribe antidepressants less frequently if other options were available to them.

PROJECT BACKGROUND

In summary:

(a) the prevalence of antidepressant prescribing can be explained by personal, social and economic factors

(b) the supply-demand association for antidepressant prescribing is moderated by personal, social and economic factors

(c) the relative importance of these moderating factors vary geographically.

What has this to do with administrative data research?

PROJECT BACKGROUND

- Social prescribing is a mechanism for linking patients with non-medical sources of support within the community.
- AWARE, the only charity working exclusively for those with depression in NI. AWARE has an established network of 24 support groups in rural and urban areas across the country. Aware has been delivering intensive education and training programmes to thousands of adolescents and adults across NI since 1996 and has been awarded the GSK IMPACT Award in 2014. A primary focus of these programmes is to educate individuals about positive strategies that can be used in the recovery from depression.

PROJECT AIM

- The project team aims to develop a nationwide map detailing the socio-economic landscape of antidepressant prescribing in NI. This map will support AWARE in their efforts to develop and implement effective and coordinated intervention programs by (i) highlighting prescription hotspots at a small geographical level (ii) generating 'risk' profiles specific to identified hotspots using personal, social and economic census data and (iii) identifying 'vulnerability' at a personal, social and economic level through longitudinal change modelling.

ANALYSIS

- **Phase 1.** Detailed geographical breakdown of prevalence and variation of antidepressant prescribing.
- Prescription data will be obtained from the Enhanced Prescribing Database. This holds information on all prescriptions that have been prescribed by a GP, or have been dispensed by a community pharmacy or dispensing doctor, and submitted to the Business Services Organisation for payment. Data is available on or before the last working day of each quarter and will cover dispensing information from the previous quarter.
- Prescribing data includes generic name, quantity, prescription date, and British National Formulary (BNF). The BNF code will be used to identify the four main antidepressant drug types (BNF 4.3.1 (Tricyclics), BNF 4.3.2 (MAOIs), BNF 4.3.3 (SSRIs), BNF 4.3.4 (Others)).
- This information will be available at the individual level but will be analysed at the level of small geographical areas, or Output Areas (OAs). There are 5022 OAs in NI and these were designed to have similar population sizes of around 125 households and 350 people. Results will be mapped using the boundary information available from the Northern Ireland Statistical Agency.

ANALYSIS

- **Phase 2.** Personal, social and economic predictors of prevalence and variation in antidepressant prescribing.
- The estimates derived from Phase 1 will be used as dependent variables for a series of fixed and random effects regression models using predictors from the 2011 census. Variables that represent personal (e.g. age, gender, health status), social (e.g. familial status, education), and economic status (e.g. employment status, deprivation) will be extracted from the 2011 Census. Importantly, both the absolute and relative values (using Gini coefficients where appropriate) of these variables will be used as predictors. This will allow 'high risk' profiles to be developed at the population level but also at the OA level as it is predicted that risk factors will be moderated by geographical location (e.g. living alone may have a stronger association with prescribing rates in rural areas compared to more densely populated areas). The Northern Ireland Multiple Deprivation Measure (NIMDM) will also be used in this phase as a predictor and also as a statistical control variable to assist in isolating the effect of the other risk factors.

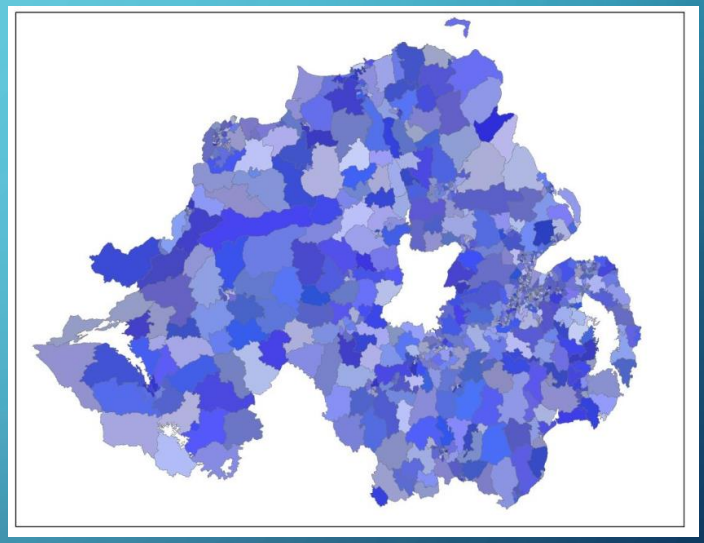
ANALYSIS

- **Phase 3.** Modelling longitudinal changes in personal, social and economic predictors of prevalence and variation in antidepressant prescribing.

- Using predictor variables from the 2011 census provides information on their temporally proximal effect. However, longitudinal changes in these variables may provide additional important information, for example changes in family structure (e.g. marriage dissolution) or deprivation (e.g. moving from one quintile to another). Such longitudinal changes will be modelled and used as predictors by linking census records from 2001 and 2011.

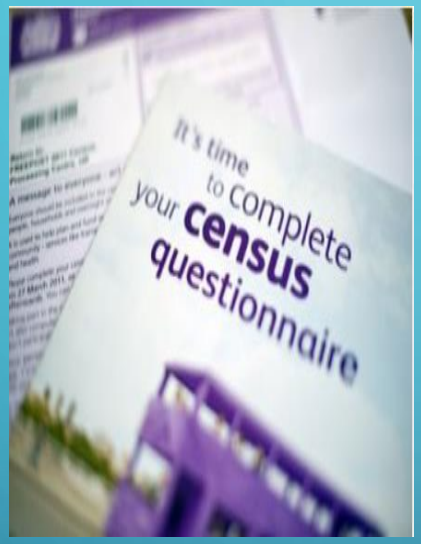
ANALYSIS

Prescribing rates by output area
2011-15

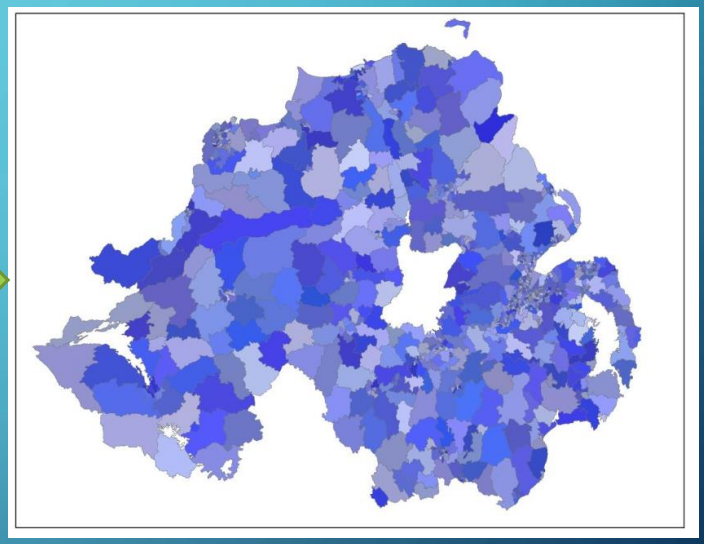


ANALYSIS

Social & demographic variables 2011

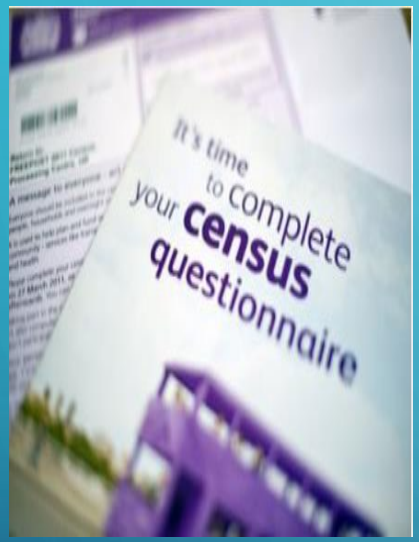


Prescribing rates by output area 2011-15

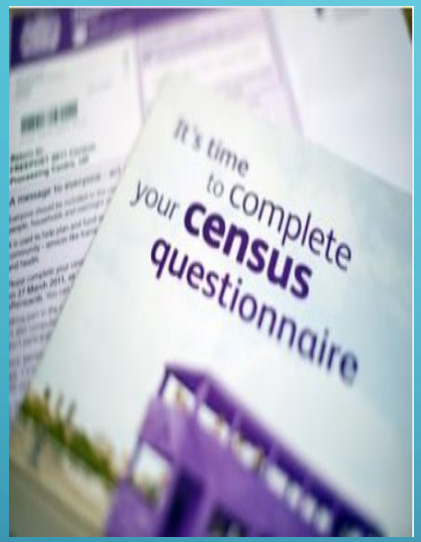


ANALYSIS

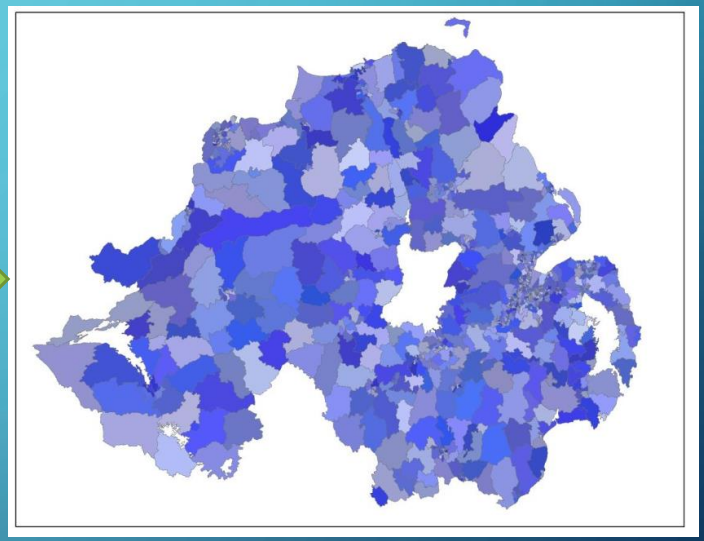
Social & demographic variables 2001



Social & demographic variables 2011



Prescribing rates by output area 2011-15



OUTCOMES

- We hope that AWARE will
  - Gain a better understanding of degree and location of unmet need
  - Target delivery geographically
  - Tailor promotion to match high risk profiles

OUTCOMES

- We also hope that for other interested academics, VCSE sector representatives and the public, we can:
  - Promote open dialogue on mental health research
  - Provide quick, open access to our research process and results
  - Generate interest in administrative data research

- To interact with the team, please follow us on Social Media

  BLOG: https://adsopp.wordpress.com

  TWITTER: ADSoPP_NI

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CONCLUSION

- Project supported July 2015
- Project approved by ADRN early 2016
- Final ethical approval March 2017
- Data availability Winter 2017

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