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 NI

OVERVIEW TO THE PROJECT

- PROJECT BACKGROUND
- DATA LINKAGE
- DATA ANALYSIS
- INITIAL RESULTS
- ACKNOWLEDGEMENTS
- OUTCOMES

PROJECT BACKGROUND

RATIONALE AND AIM

PROJECT BACKGROUND

- Evidence indicates an increase in antidepressant prescription rates across the United Kingdom (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 UK prescribing practices, The Script Report gained access to 36 million prescription records from across the UK, including 3.5 million prescriptions from General Practitioners (GPs) in Northern Ireland (NI) for the period April to September 2013.

- NI are 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 National Health Service (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 (rural-urban).

PROJECT BACKGROUND

- Social prescribing is a mechanism for linking patients with non-medical sources of support within the community.
- Aware NI, the only charity working exclusively for those with depression in NI. Aware NI 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 set of NI-wide indicators detailing the socio-economic context of antidepressant prescribing in NI. This will support Aware NI in their efforts to develop and implement effective and coordinated intervention programs by (i) generating 'risk' profiles specific to identified hotspots using personal and household socio-demographic and socio-economic data and (ii) identifying 'vulnerability' at a personal, social and economic level through longitudinal change modelling.'

DATA LINKAGE AND ANALYSIS

LINKAGE AND ANALYSIS OF DE-IDENTIFIED CENSUS AND ANTIDEPRESSANT PRESCRIPTION DATA

ADMINISTRATIVE DATA RESEARCH NETWORK

Acknowledgement

'The Administrative Data Research Network takes privacy protection very seriously. All information that directly identifies individuals will be removed from the datasets by trusted third parties, before researchers get to see it. All researchers using the Network are trained and accredited to use sensitive date safely and ethically, they will only access the data via a secure environment, and all of their findings will be vetted to ensure they adhere to the strictest confidentiality standards.'

DATA LINKAGE

Data and Providers

- NI Census (Northern Ireland Statistics and Research Agency; NISRA)
- Enhanced Prescribing Database (Business Services Organisation)

Trusted Third-Party

- NISRA Census branch

DATA ANALYSIS

Phase 1. Detailed breakdown of prevalence and variation of antidepressant prescribing.

- Prescription data 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 covers 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).

DATA 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. marital status), and economic status (e.g. employment status, deprivation) will be extracted from the 2011 Census.

DATA 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 a rural to an urban area). Such longitudinal changes will be modelled and used as predictors by linking Census-based records from 2001 and 2011.

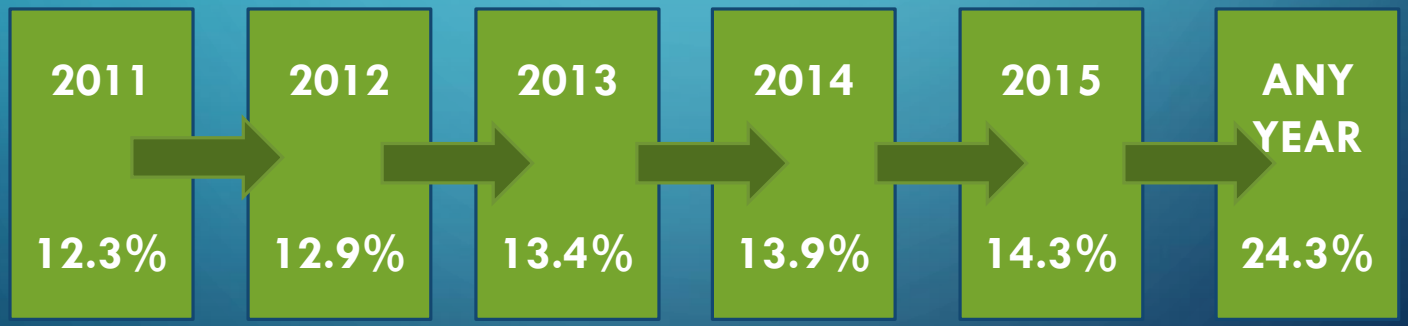
INITIAL RESULTS

PRESCRIBING RATES AND ASSOCIATED SOCIODEMOGRAPHIC,

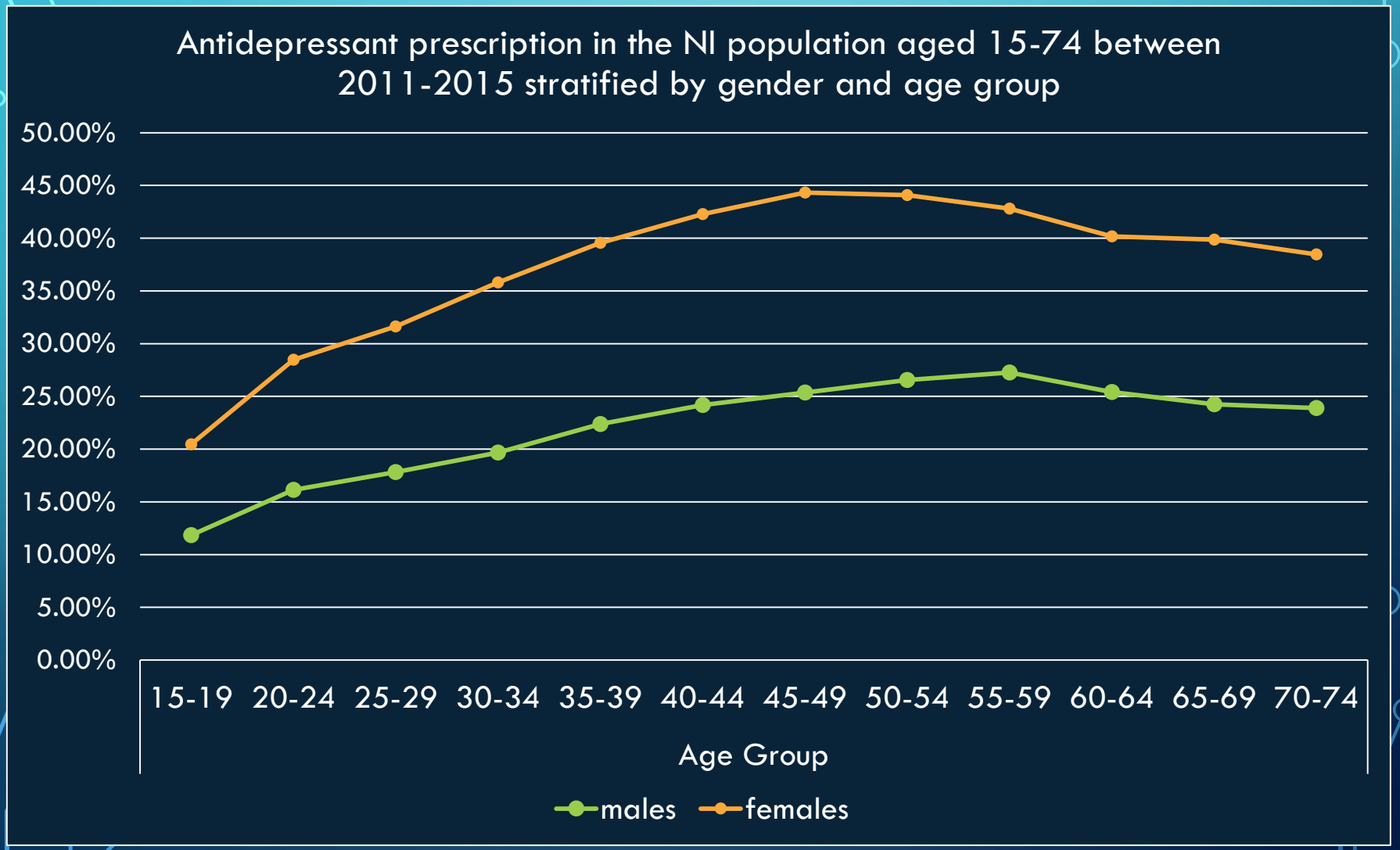
ECONOMIC, AND HEALTH FACTORS

PRESCRIBING RATES 2011-2015

- Antidepressant prescriptions to all residents of private households enumerated at the 2011 NI Census
- Adjustments made for deaths (2011-2015)
- *N* = 1,572, 870; Age 0-95 years; Deaths (2.6% over 5 years)



ANTIDEPRESSANT PRESCRIBING STRATIFIED BY AGE AND GENDER



ANTIDEPRESSANT PRESCRIBING AND AGE GROUP

Table 1. Socio-demographic, socio-economic and health characteristics for those aged sixteen or more and prescribed anti-depressant medication in Northern Ireland (2011-2015). Data represents Odds Ratios (and 95%CIs) derived from logistic regression models.

		minimally adjusted[&] OR (95% CI)	fully-adjusted OR (95% CI)
age group (ref=age 16-34)	35-54	1.60 (1.58, 1.61)	1.29 (1.28, 1.31)
	55-74	1.46 (1.45, 1.48)	1.04 (1.03, 1.06)
	75 plus	1.21 (1.19, 1.23)	0.82 (0.80, 0.84)
gender (ref=male)	female	2.15 (2.13, 2.17)	2.10 (2.09, 2.12)
family structure (ref=couple-based family)	not in family	1.41 (1.40, 1.43)	0.98 (0.97, 0.99)
	lone-parent family	1.60 (1.59, 1.61)	1.18 (1.16, 1.19)
religious denomination (ref=Catholic)	Protestant & other Christian	1.03 (1.02, 1.04)	1.10 (1.09, 1.11)
	Other faith groups	0.88 (0.84, 0.92)	0.87 (0.83, 0.91)
	None stated	1.03 (1.01, 1.06)	0.99 (0.97, 1.01)
housing tenure – rateable value of property (ref=owner occupied properties valued at £160,000 or more)	OO[$]: £115 - £<160,000	1.20 (1.17, 1.24)	1.11 (1.07, 1.14)
	OO: £90 - £<115,000	1.39 (1.34, 1.43)	1.18 (1.15, 1.22)
	OO: £70 - £<90,000	1.65 (1.60, 1.70)	1.28 (1.24, 1.32)
	OO: <£70,000	2.08 (2.02, 2.14)	1.42 (1.38, 1.47)
	OO: value not assigned	1.34 (1.29, 1.40)	1.15 (1.11, 1.20)
	private renting	2.47 (2.40, 2.55)	1.47 (1.43, 1.52)
	social renting	3.60 (3.49, 3.71)	1.68, 1.62, 1.74)
locale (ref=rural)	intermediate	1.27 (1.26, 1.28)	1.15 (1.14, 1.16)
	urban	1.28 (1.27, 1.29)	1.06 (1.04, 1.07)

ANTIDEPRESSANT PRESCRIBING AND AGE GROUP

economic activity (ref=full-time employed)	part-time employed unemployed retired homemaker permanently sick other	1.24 (1.23, 1.26) 1.61, 1.58, 1.64) 1.51 (1.49, 1.54) 1.77 (1.74, 1.81) 4.08 (4.63, 4.79) 1.16 (1.14, 1.18)	1.15 (1.14, 1.17) 1.24 (1.22, 1.27) 0.99 (0.97, 1.00) 1.27 (1.25, 1.30) 1.27 (1.25, 1.30) 0.91 (0.90, 0.93)
area-level deprivation (continuous)	area-level deprivation%	0.936 (0.935, 0.937)	0.994 (0.993, 0.996)
general health (ref=very good health)	good health fair health bad health very bad health	1.86 (1.85, 1.88) 4.11 (4.06, 4.16) 7.68 (7.54, 7.83) 9.00 (8.68, 9.34)	1.65 (1.64, 1.67) 2.83 (2.79, 2.87) 3.95 (3.86, 4.04) 4.02 (3.86, 4.19)
self-reported mental health problems (ref=none stated)	problem reported=yes	6.95 (6.84, 7.06)	3.57 (3.50, 3.64)

%: age and gender mutually adjusted; the remainder each adjusted for age and gender
$: OO=owner occupation
%: continuous variable – 10 categories from most to least deprived
&: column 3 - (a) age and sex mutually adjusted; (b) all other variables minimally adjusted for age/sex

ANTIDEPRESSANT PRESCRIBING AND AGE GROUP

Age-standardised prescribing rates for males and females aged 10-19 and 20-24 years.

	Males		Females	
Age at 2011 Census	2011	2015	2011	2015
10-19	132.3	485.3	245.1	883.4
10-14	127/54475=0.0023	1215/54427=0.023	133/51793=0.0026	2325/51767=0.0449
15-19	1191/54819=0.0217	3604/54685=0.0659	2189/52186=0.0420	6029/52077=0.1158
15-24	446.6	823.6	900.0	1537.0
15-19	1191/54819=0.0217	3604/54685=0.0659	2189/52186=0.0420	6029/52077=0.1158
20-24	2659/44826=0.0545	3742/48691=0.0769	5507/49348=0.1116	7397/49301=0.1500

ANTIDEPRESSANT PRESCRIBING AND AGE GROUP

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Males:10-19 (in 2011)=132.3;
Males:10-19 (in 2015)=485.3;
485.3/132.3= 3.7 fold increase

ANTIDEPRESSANT PRESCRIBING AND AGE GROUP

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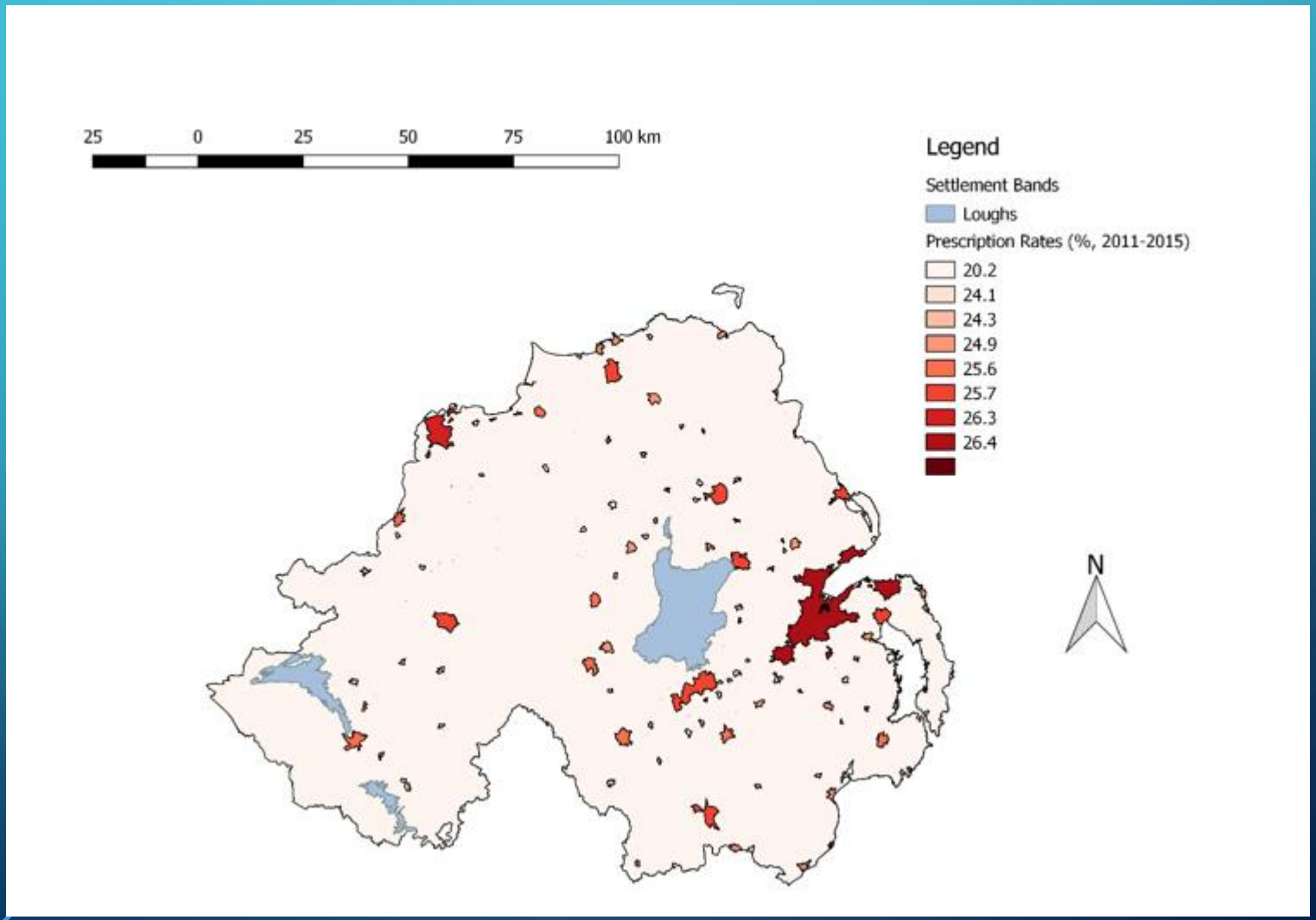
Males:10-19 (in 2011)=132.3;
Males:10-19 (in 2015)=485.3;
485.3/132.3= 3.7 fold increase

Females:10-19 (in 2011)=245.1;
Females:10-19 (in 2015)=883.4;
883.4/245.1=3.6 fold increase

ANTIDEPRESSANT PRESCRIBING AND SETTLEMENT BAND



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OUTCOMES

We hope that Aware NI will

- Gain a better understanding of degree and location of unmet need
- Tailor promotion to match high risk profiles

OUTCOMES

- We also hope that for other interested academics, public servants, VCSE sector representatives and the public, we can:
  - Promote open dialogue on mental health research
  - Generate interest in administrative data research

- To interact with the team, please follow us on social media

BLOG: https://adsopp.wordpress.com

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