



## Knowledge Exchange Seminar Series (KESS)

*...is a forum that encourages debate on a wide range of research findings, with the overall aim of promoting evidence-based policy and law-making within Northern Ireland*



# MENTAL HEALTH, BEREAVEMENT AND SUICIDE

## Using administrative data to understand mental health in Northern Ireland: *Results from two exemplar projects*

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# INTRODUCTION

- Northern Ireland consistently has worse mental health than the rest of the UK
- Growing burden of disease – individual, family, society, government budget
- Need to understand what causes poor mental health – who is most affected, who is resilient



# MENTAL HEALTH IN NORTHERN IRELAND

*Currently measure*

- 20% of adult population with mental health disorder - Health Survey for Northern Ireland (2010/11)

**1 in 5**

cases:

• 5.8% of entire population with mental health disorder - Census (NISRA 2014)

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- 5% of adult population with mental health disorder - Northern Ireland Survey of Adult Disability (NISRA, 2007)

**1 in 20**

• 5% of adult population with mental health disorder - Northern Ireland Survey of Adult Disability (NISRA, 2007)



# PROBLEMS WITH SURVEYS

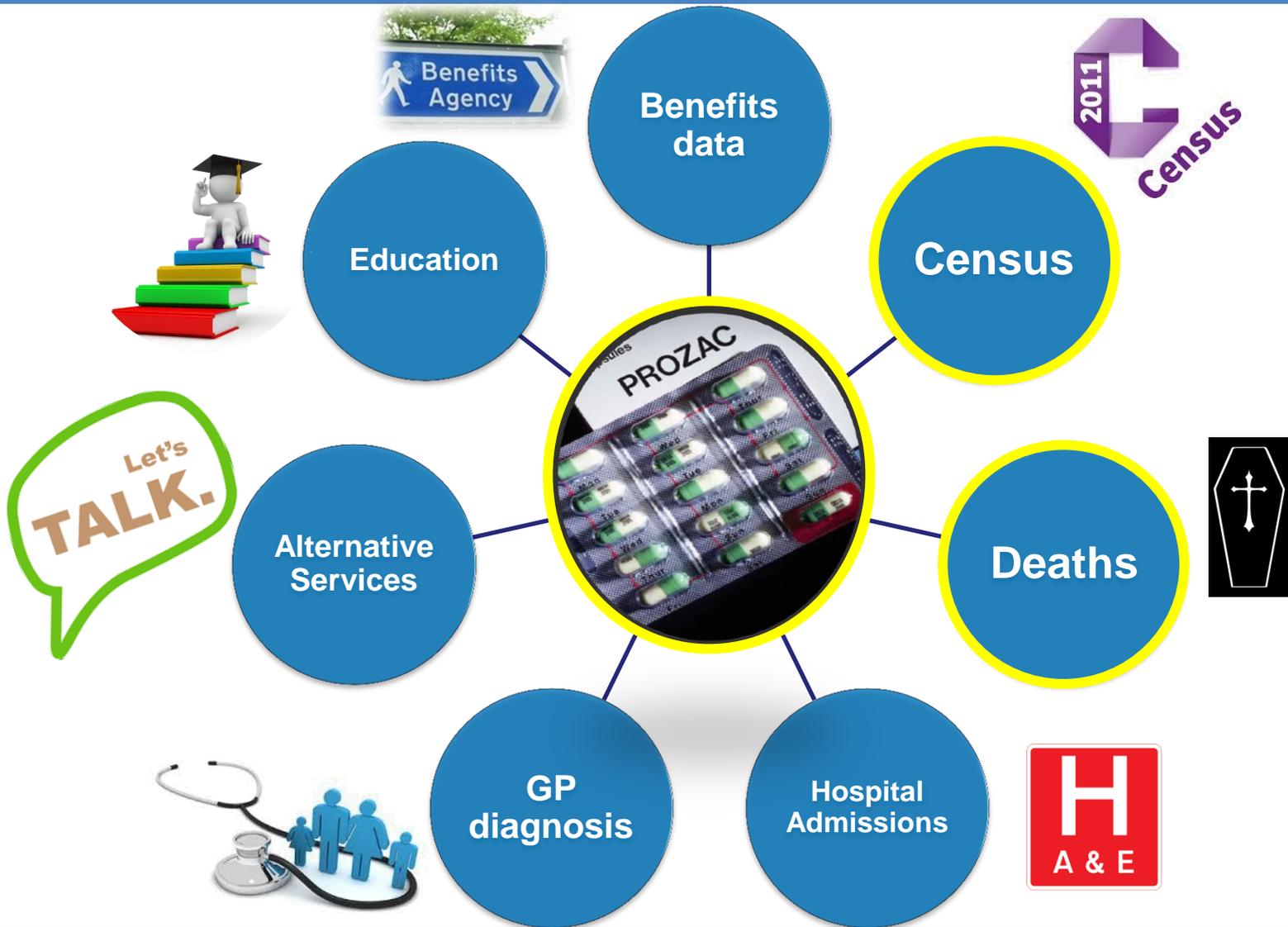
- Expensive
- Labour intensive
- Bias – researcher bias / responder bias
- Stigma
- Non-representative – married, females, high SES, older people
- Attrition



# ADMINISTRATIVE DATA

- Prescribing Data
  - identify poor mental health by accessing information on all psychotropic medications dispensed to the entire Northern Ireland population
- Enhanced Prescribing Database (EPD)
  - electronic data on all medicines dispensed in community pharmacies NI from 2008 onwards





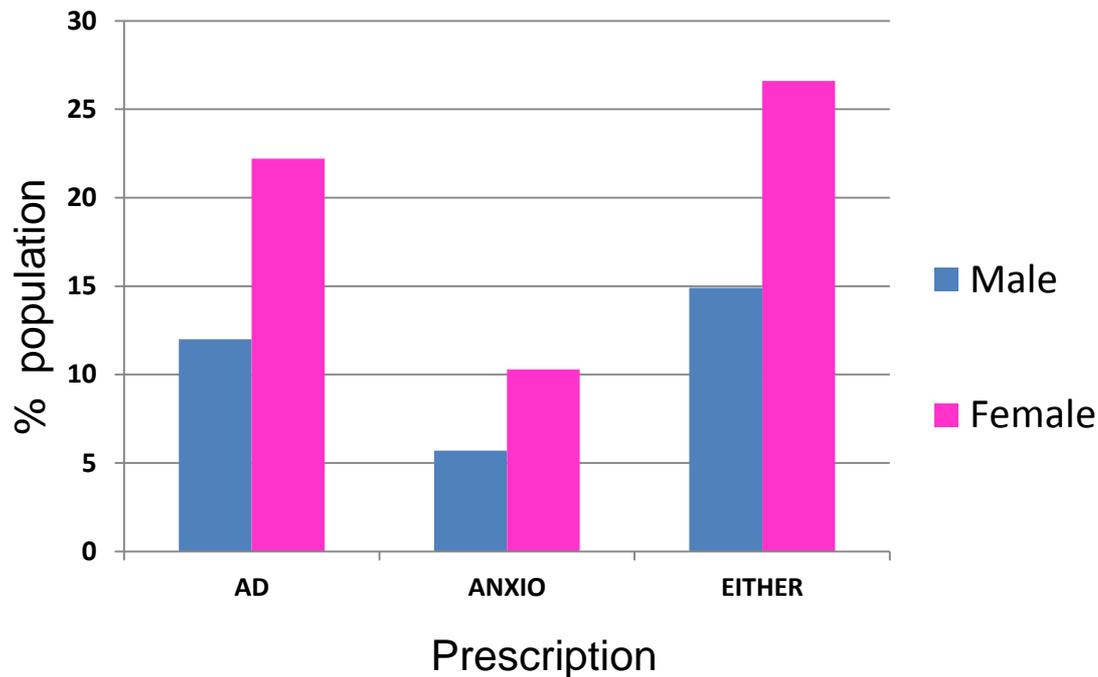
# MEASURING MENTAL HEALTH: A Pharmacoepidemiological Approach

**Psychotropic prescribing data from the EPD (2008-2010) linked to 2001  
Census data from the NILS**

- Who suffers poor mental health in Northern Ireland?  
*- how much medication is utilised?*
- Is mental health related to where people live?
- How does poor mental health vary by **gender**, **age**, **marital status**, **education**, **socio-economic status**, **GP Practice?**



## Percentage of the population receiving at least one prescription for either an antidepressant or an anxiolytic or either drug over the study period stratified by sex



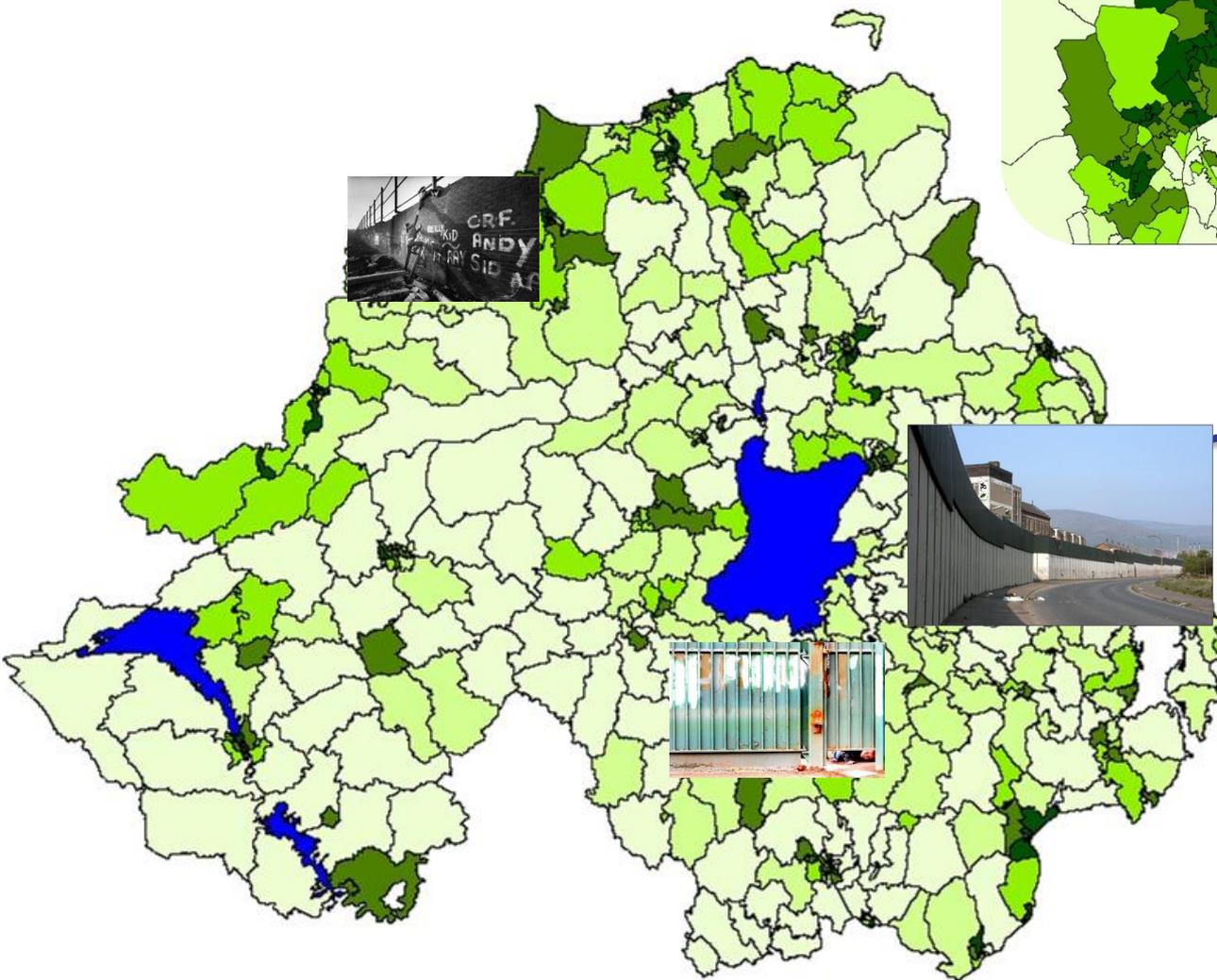
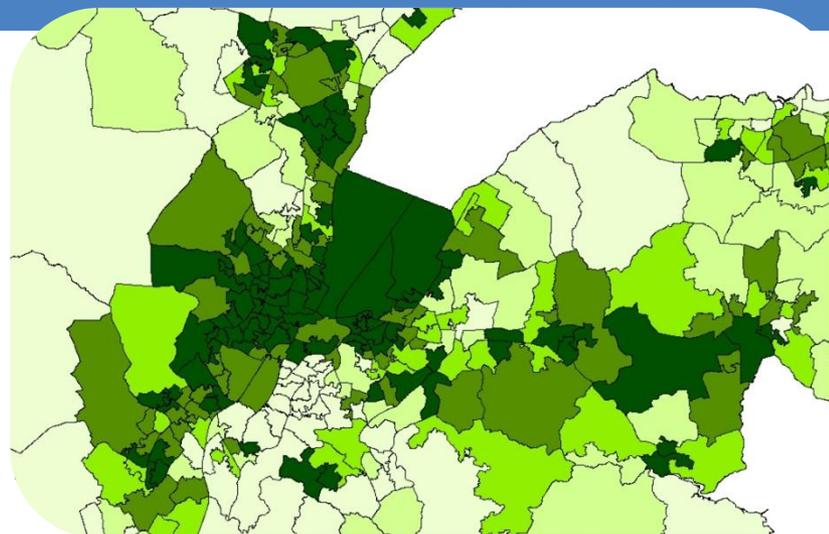
- One in five (20%) received at least one prescription for either drug

- Likelihood of medication peaks ~55 years then falls
- **Married 16%\*** more likely to receive either drug than those never married  
(OR=1.16, 95% CI 1.13, 1.20)
- **Re-married 65%\*** more likely, **separated/divorced 48%\*** more likely
- **No qualifications 61%\*** more likely to receive either an antidepressant or an anxiolytic compared to those who had a degree or higher  
(OR=1.61, 95% CI 1.55, 1.67)
- **Never worked/long-term unemployed 33%\*** more likely to receive either an antidepressant or an anxiolytic compared to those employed in higher professional jobs  
(OR=1.33, 95% CI 1.25, 1.42)
- Living in **rented accommodation 30%\*** more likely compared to those in own home  
(OR=1.30, 95% CI 1.26, 1.34)
- % individuals in a GP Practice being prescribed an Antidepressant ranges from **3.5% to 22.4%** (~7-fold increase)

*\*MLM regression models fully adjusted for age, sex, education, NSSEC, housing tenure and car access*



# Antidepressants Distribution by Area



Percentage of people on anti-depressants

0.155 to 0.236	(177)
0.133 to 0.155	(184)
0.117 to 0.133	(157)
0.102 to 0.117	(187)
0 to 0.102	(185)

# CURRENT RESEARCH PROJECTS

## STUDY 1: Honest Broker Service

Child Health Data – Enhanced Prescribing Database - GRO Death Data

**Early life exposures (birth weight/gestational age/birth order) and likelihood of poor mental health as measured by receipt of psychotropic medication or death by suicide**

## STUDY 2: Northern Ireland Longitudinal Study

NILS 2001 Census - NILS 2011 Census

**Address change in early childhood and Mental Health in young people**

## STUDY 3: Northern Ireland Longitudinal Study

NILS 2001 Census Data – GRO Death Data 2001-2011

**Familial Influence on Suicide**



# The Grief Study: Research Questions

1. Does bereavement lead to an increased risk of poor mental health – as measured by use of hypnotic, anxiolytic and antidepressant medication?
2. Which groups most commonly suffer mental ill-health following bereavement?

## **Bereavement Circumstance:**

Illness/ Sudden Death/ Suicide  
Spouse/ Parent/ Child/ Sibling

## **Socio-demographic characteristics:**

Men/Women  
Affluent/Deprived  
Old/Young/Working Age

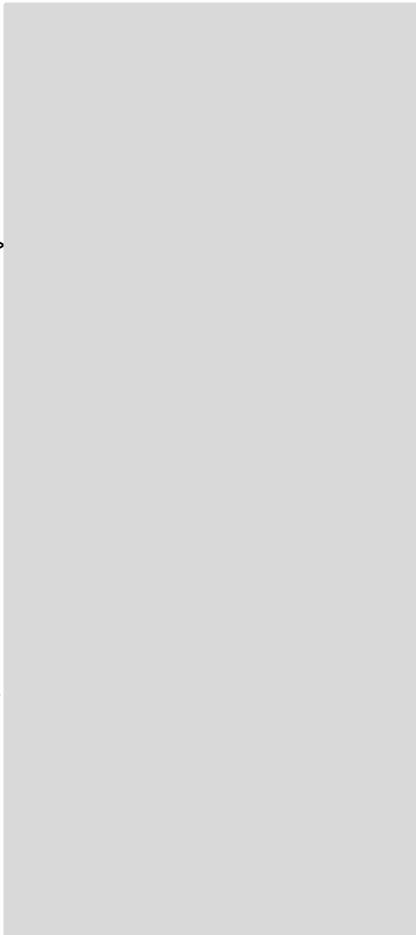
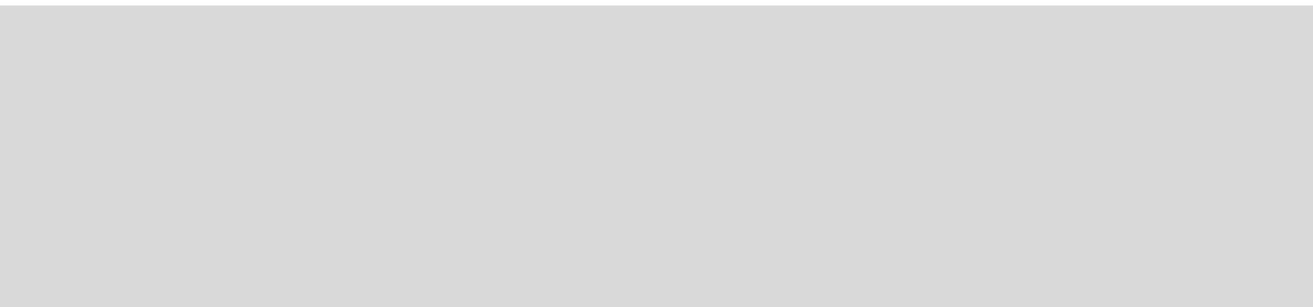
**Northern Ireland Longitudinal Study**  
Northern Ireland healthcard data for c.28% population- linked to Census and vital events data (inc: Census ID, Household ID, HCN)

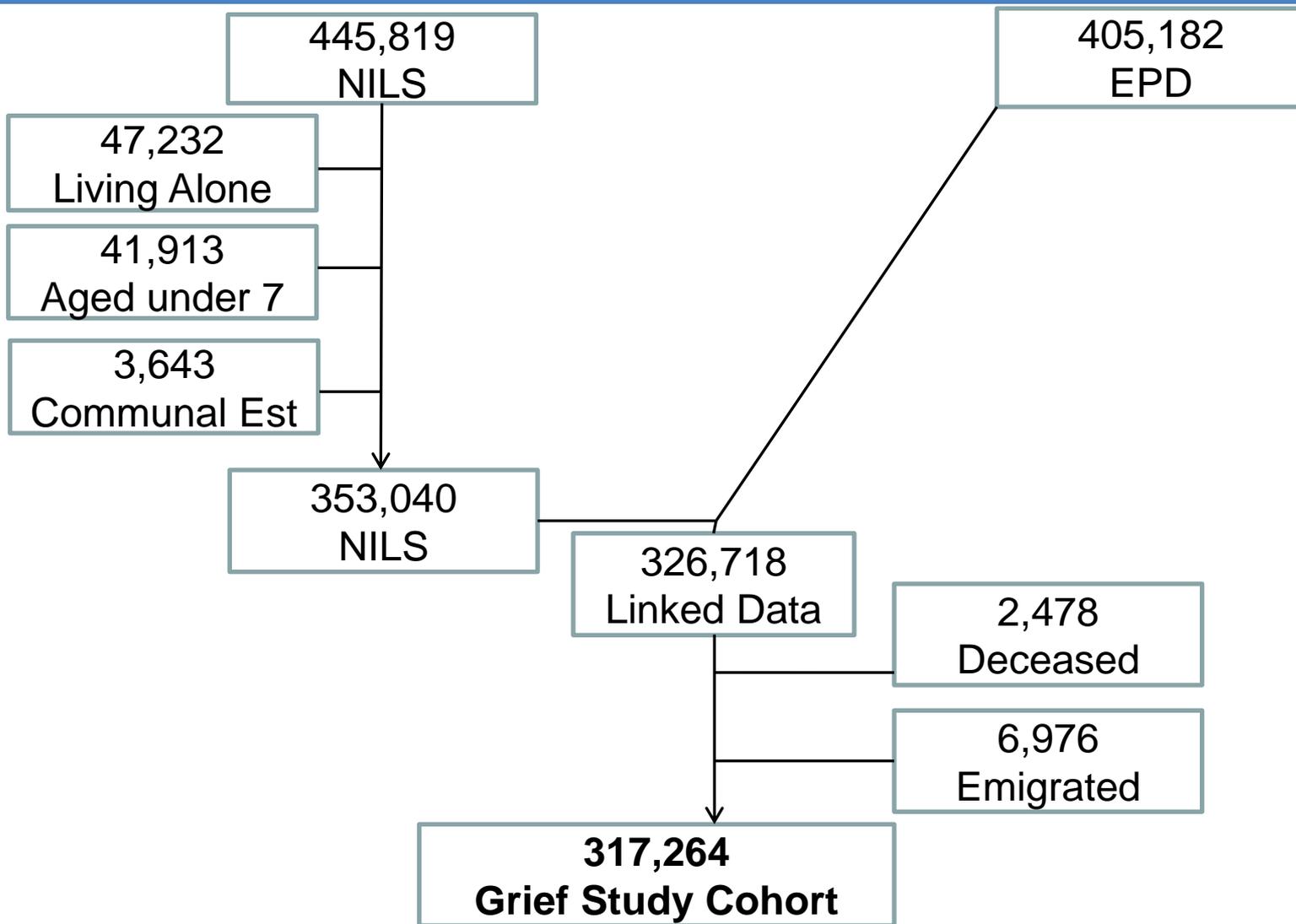
**Northern Ireland Mortality Study**  
Census data  
100% NI population  
Contains: Census ID, Household ID

**NISRA Data**

- Census data for NILS members and members of their household
- Deaths of NILS members and members of their household
- Info on relationship of NILS member to others in their household
- HCN number of NILS members only

**Linkage & Anonymisation**





# ESTIMATING BEREAVEMENT EFFECTS

Mental Health Outcome Measure:

- Received an antidepressant prescription in January or February 2010: Yes / No

Bereavement exposure (Apr 2001 - Dec 2009)

- No deaths within household
- Bereaved through illness
- Bereaved through sudden death
- Bereaved through suicide

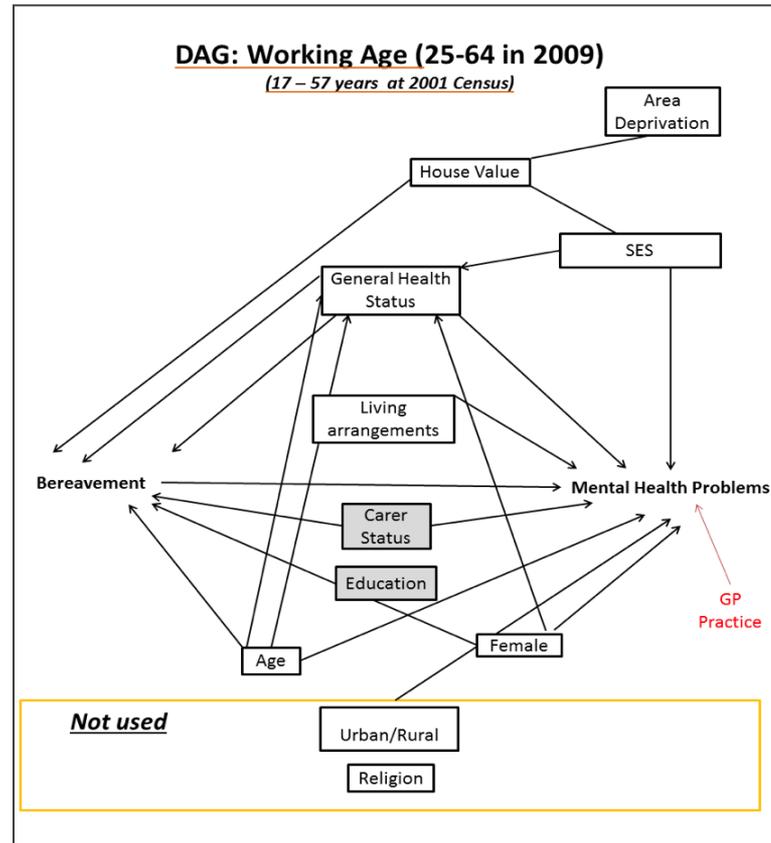
Multilevel models accounting for variation between GP practices



# THE MAJOR CHALLENGE

- Factors such as deprivation and general health may contribute both to the likelihood of bereavement and to the likelihood of poor mental health

# THE MAJOR CHALLENGE



[blogs.qub.ac.uk/griefstudy/files/2013/12/Working-Age.png](https://blogs.qub.ac.uk/griefstudy/files/2013/12/Working-Age.png)

# SOME EXPECTED FINDINGS

- Bereaved persons had greater risk of poor mental health (additional risk  $\approx$  40%) and also of dying themselves
- The risk was greater following sudden or traumatic bereavements
- Persons who lost spouse or child had further elevated risk of poor mental health
- Risk was also higher for older people compared to those bereaved during working age

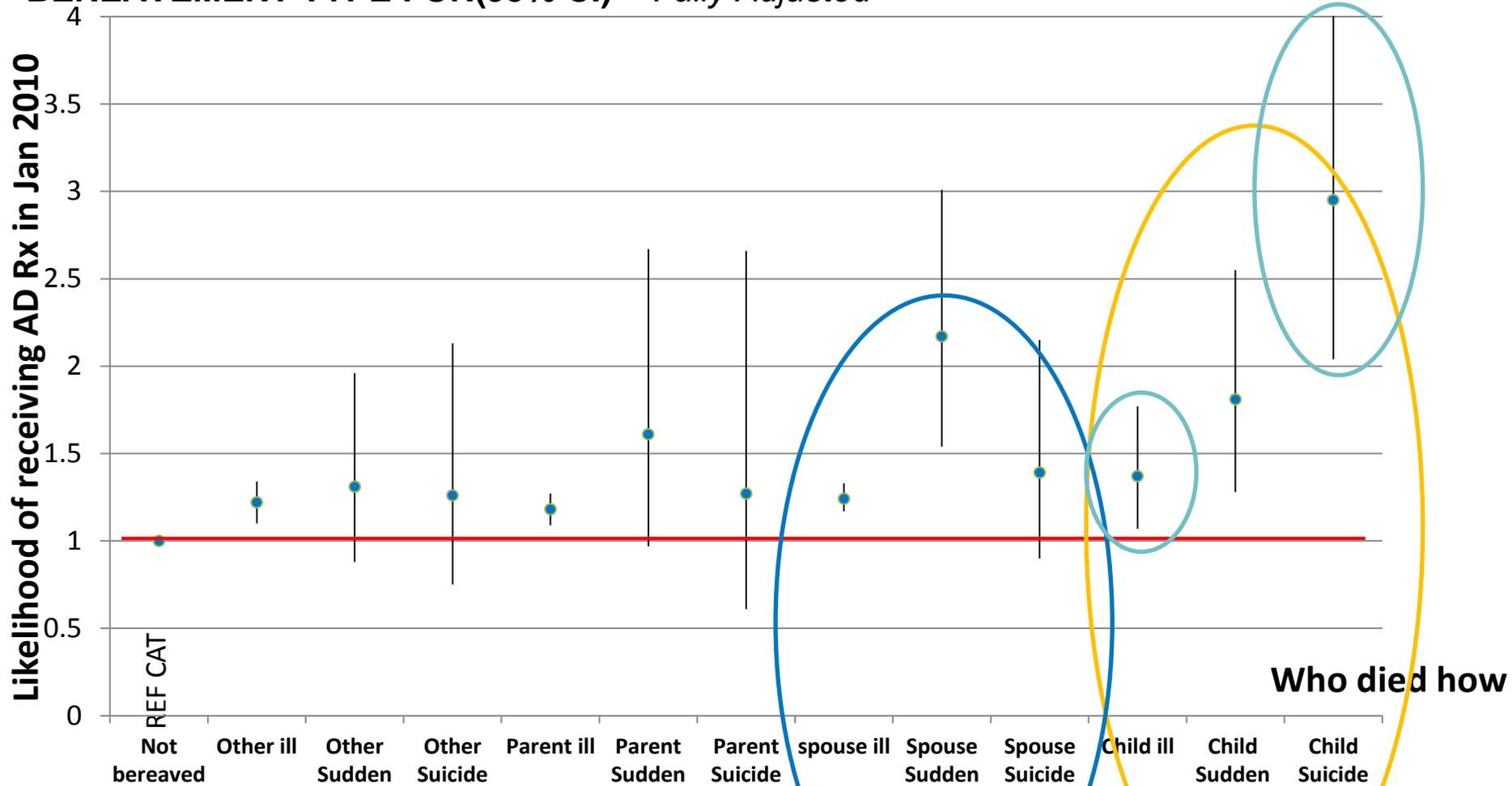


# SOME UNEXPECTED FINDINGS

- As well as those over 65, persons under 25 also experienced greater impact than working-age people
- Men were more likely to experience poor mental health after being bereaved through illness, whereas women suffered more often following bereavement through suicide
- There was no observable excess risk to people bereaved in deprived areas, after adjusting for the overall risk to people who experience greater deprivation
- The differential risk of suicidal bereavement compared to other sudden bereavement circumstances is complex



# GRAPH SHOWING RISK OF ANTIDEPRESSANT Rx AFTER A BEREAVEMENT BY BEREAVEMENT TYPE : OR(95% CI) – Fully Adjusted



# LIMITATIONS OF ADMINISTRATIVE DATA

- Collected for other purposes
- Lack detail
- Large, complex and messy
- Biases
- Focus on users rather than need
- Require knowledge of system and databases
- Sensitive and protected
- Often difficult to access



# CONCLUSION

Administrative data can be used to address questions regarding mental health which are of interest:

- to policy makers
- to bodies planning and providing targeted services
- to various scientific communities
- to the general public

Looking to the future, similar data, infrastructure and resources can be used to monitor targeted and population-level interventions



# ACCESSING ADMINISTRATIVE DATA

- Directly from data custodian
- Via 'access centres'

## Example:

- UK Data Archive

<http://www.data-archive.ac.uk>

- Honest Broker Service (HBS)

<http://www.hscbusiness.hscni.net/services/2454.htm>

- Northern Ireland Longitudinal Study (NILS)

<http://www.qub.ac.uk/research-centres/NILSResearchSupportUnit/>

- Administrative Data Research Network (ADRN)

<http://www.adrn.ac.uk/>



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