

Health and social risk factors of Scottish suicides: a 30 year record linkage study

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DAMES EPR demonstration linkage



- Individual electronic patient records (EPR) held by NHS ISD in Scottish Morbidity Records (SMRs)
 - SMR datasets indexed by unique identifier Community Health Index (CHI)
 - SMR01 (physical health), 02 (maternity), 04 (mental health) and GRO vital events (deaths)
- Ethical approval gained from REC and Privacy advisory committee (PAC) approval secured for a VanGuard demonstration linkage by NeSC
 - Allows for deterministic or probabilistic linkage
 - Vanguard system provides secure transmission of protected data from multiple sources
 - Vanguard system links data to provide derived data sets which are checked and released to the user
- 3 potential routes to linked dataset:
 - 1. ISD link, join anonymise and provide SMR dataset to researcher
 - 2. ISD provide individual pseudonymised SMR datasets for researcher to link
 - 3. NeSC do Vanguard demonstration linkage

3 potential routes to linked dataset

1. ISD link, join anonymise and provide SMR dataset to researcher

- We didn't ask for this (more £'s)
- But good for validation and checking of our linkage in 2.
- Would provide a proof of concept as a comparison to Vanguard or researcher-linked dataset

2. ISD provide individual pseudonymised SMR datasets for researcher to link

- In tandem with 3. below, linked four SMR datasets into one on UoS secure server using Stata
- Deterministic match merge possible on 'DAMES code'
- Provided proof of concept it can be done by non-NHS ISD

3. NeSC provide Vanguard demonstration linkage

- What we said we would do, scheduled for early New Year
- Work in progress recoding Vanguard
- In collaboration with NHS ISD IT, resource booked

Study design and data summary



Study design:

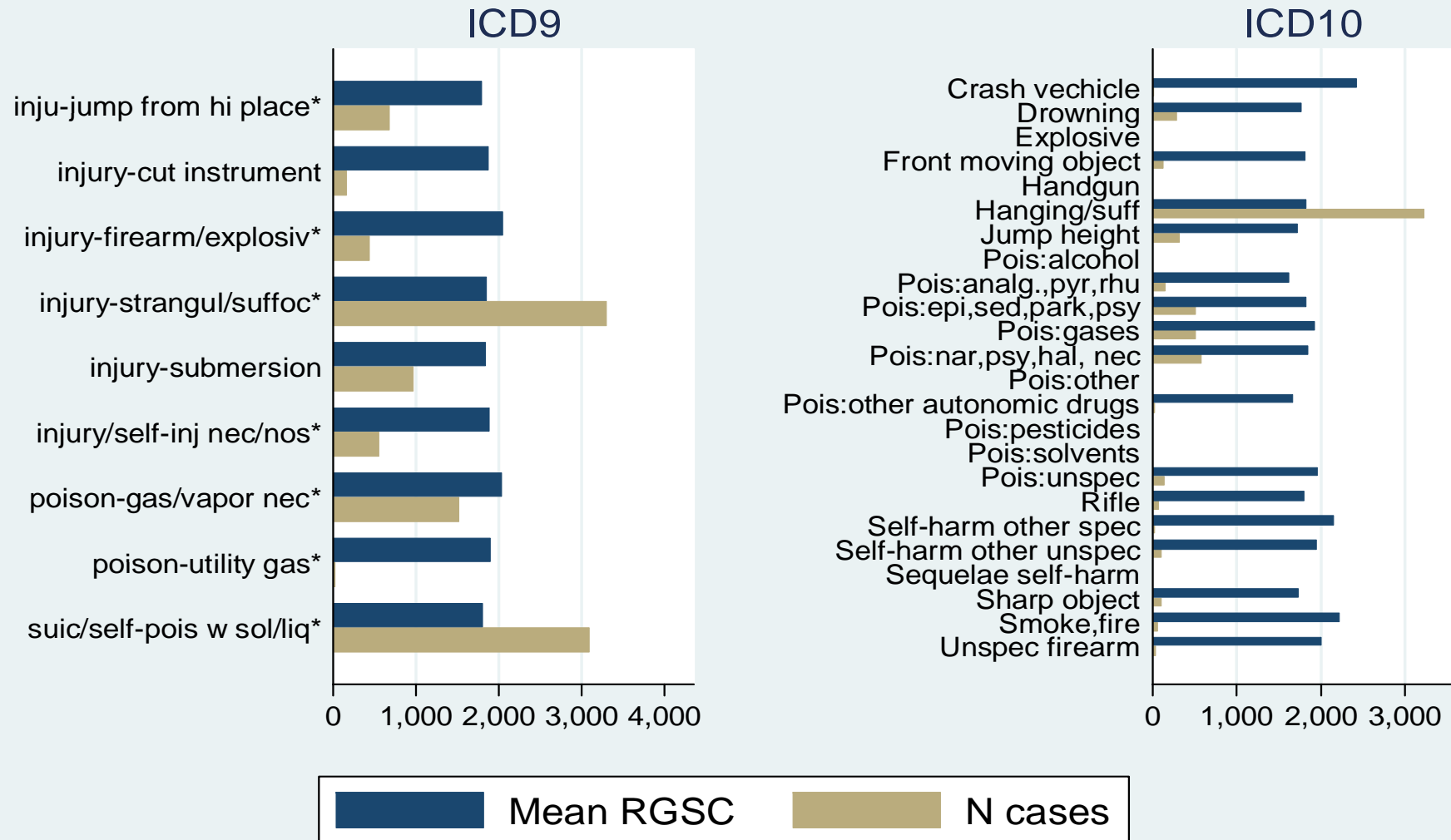
- Retrospective observational suicide cohort study using vital events death data linked to hospital episodes
- ISD data provided with unique identifier 'DAMES code', no CHI number (pseudonymised)
- Stored on secure server, linked using STATA

Age 15+ completed suicides 1980–2010

- GRO Deaths: 14325 individuals with 'DAMES code'
- SMR01: 10692 individuals with 5419 hospital episodes
- SMR02: 329 individuals with 1082 hospital episodes
- SMR04: 4207 individuals with 15676 hospital episodes

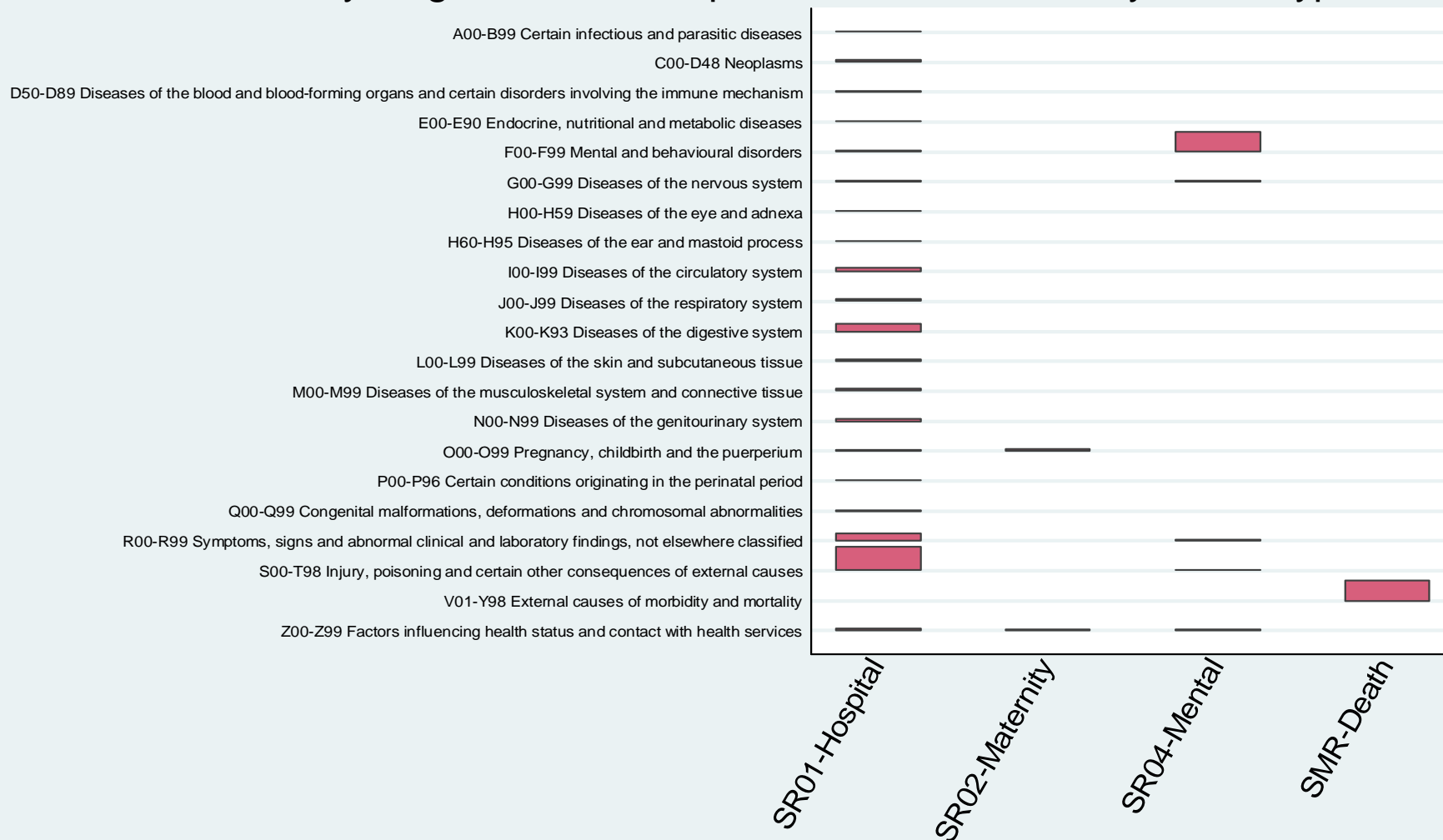
Summary data – Cause of death

Principal cause of death, ICD code Suicides in Scotland, 1980-2010



Summary data – SMR common ICD10 codes

Suicide data: Primary diagnosis ICD Chapter for ICD10-codes, by record type

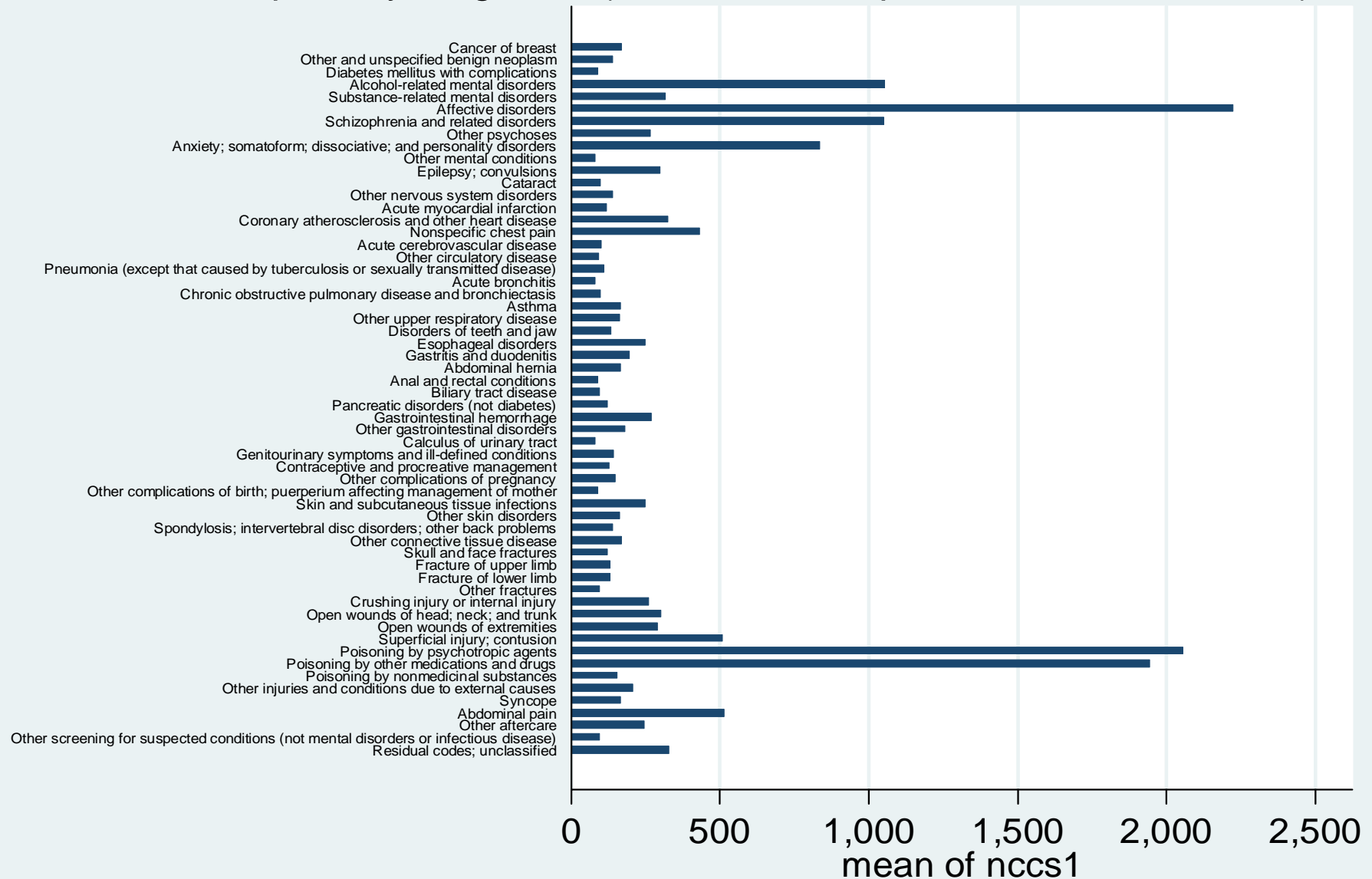


85278 total records, including 14325 deaths.

ICD 10 codes available for deaths/admissions from c1999 onwards.

Summary data – ICD-10 main condition codes

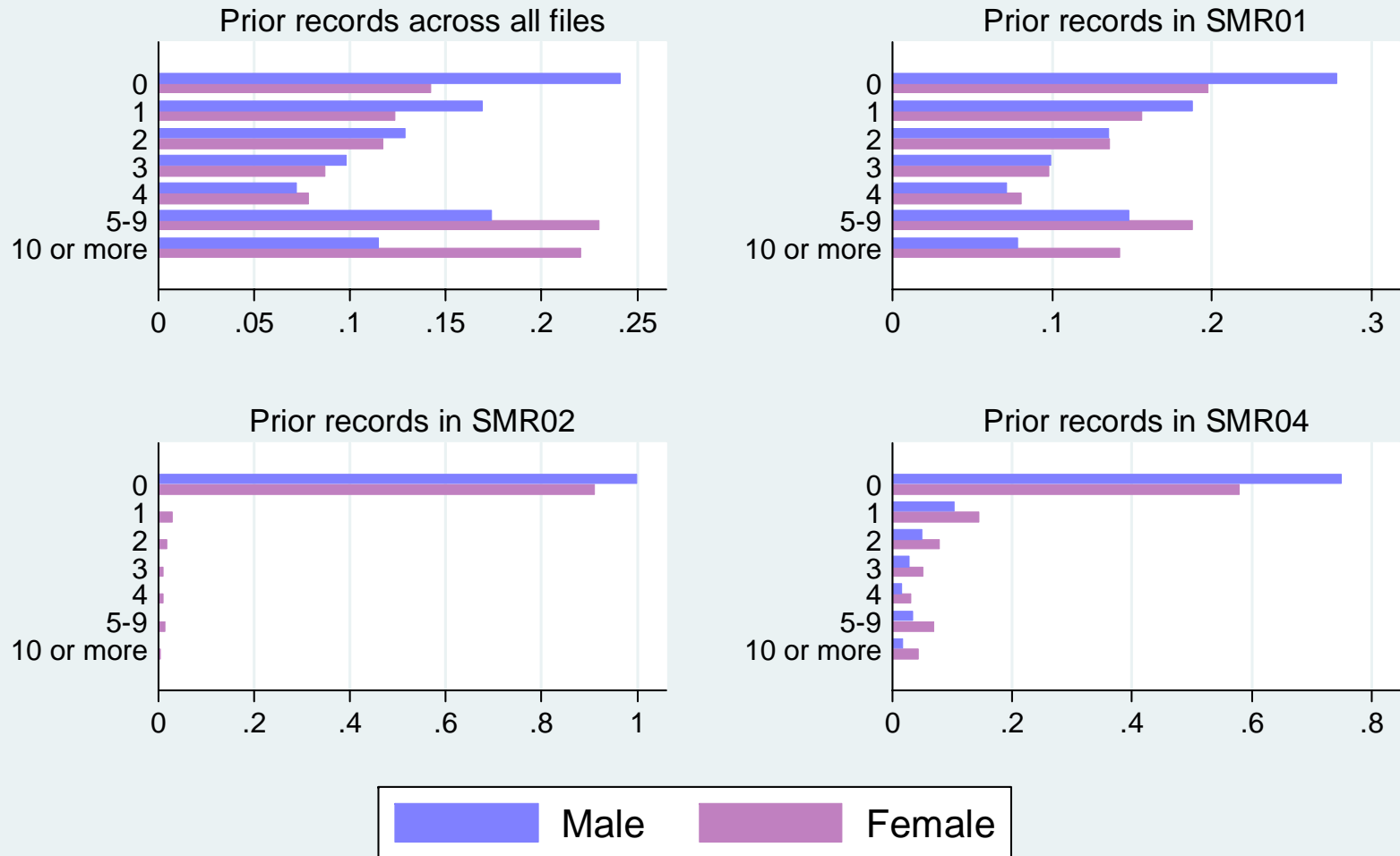
CCS code for primary diagnosis (most common prior ICD10 admissions)



Summary data – hospital episodes by gender

Prior admissions data for suicide deaths

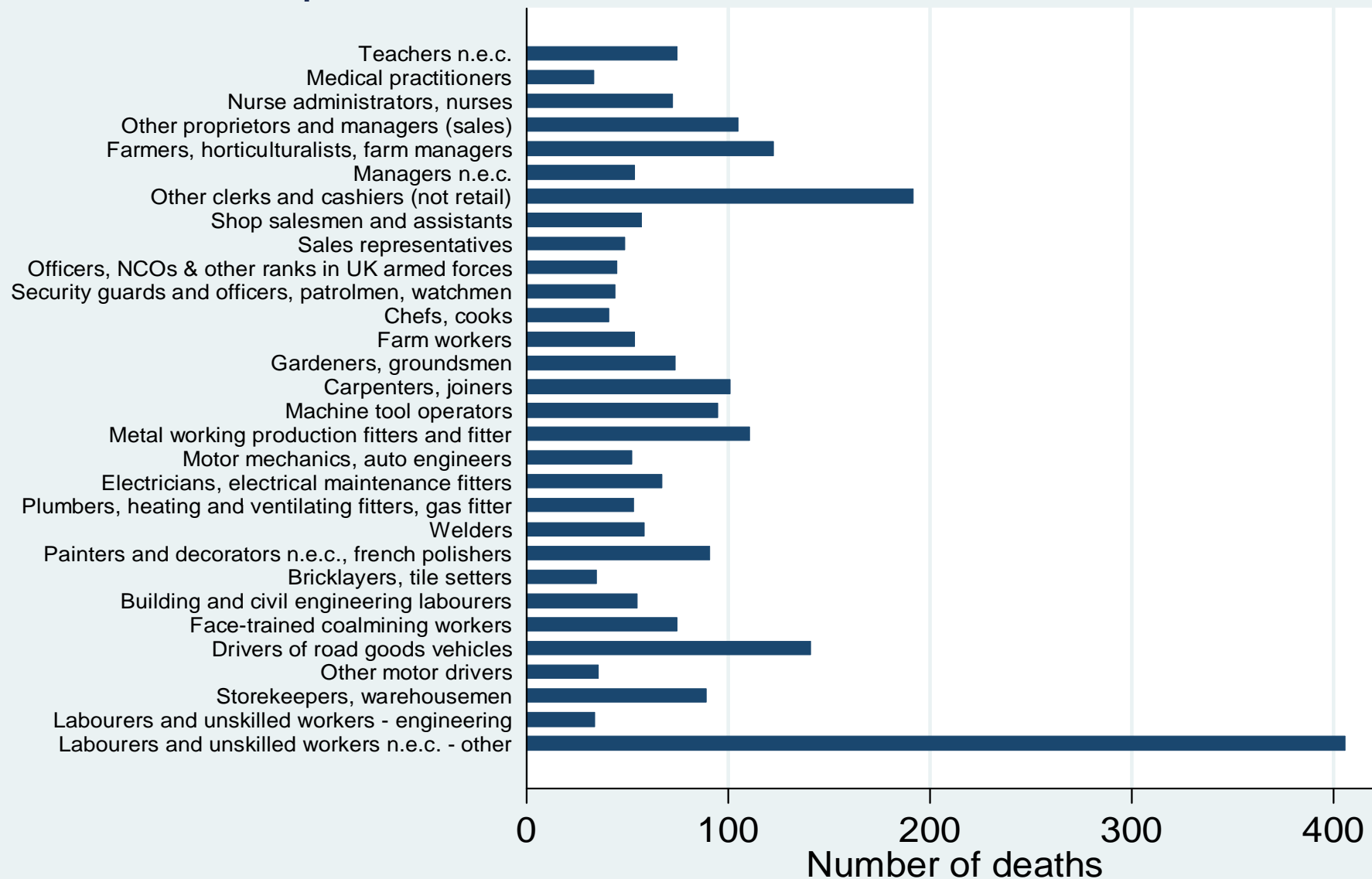
(Percentages from 10607 males and 3718 females)



Data shows percent by gender from 14325 recorded suicide deaths with respective prior admissions data.

Summary data – suicide by occupation

30 occupations with the most suicides, 1981-1990



THANK YOU

UoS: Paul Lambert, Margaret Maxwell, Alison Dawson
NeSC: Richard Sinnot, Susan McCafferty, John Watt
NHS ISD: Anthea Springbett, Carole Morris, David Clarke

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Delivering, supporting and promoting high quality research to improve health



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