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Population health analytics for the discharged Covid 19 patients March 3rd– August 30th, 2020

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Service stimulus to the project

Early

- Referral rates to community rehabilitation services was very low (11% initially)
- Rhetoric was that Community Services '*would be overwhelmed*'
- Concern that patient follow up and rehabilitation opportunity was being missed

Later

- Anticipatory care and risk stratification was needed
- Continuing strategy to adopt digital methods sustainably
- Enhanced offer to care homes

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Key Literature

- The COVID-19 impact inquiry builds on the work of our previous research exposing how, before the pandemic hit, the UK was already falling behind comparable countries on life expectancy. Our report *Mortality and life expectancy trends in the UK* showed that the UK has a lower life expectancy and slower improvements in life expectancy than comparable high-income countries. The *Marmot Review 10 Years On* highlighted large and growing gaps in health between different communities.

The COVID-19 pandemic and health inequalities

Brambra et al 2020
https://jech.bmj.com/content/jech/74/11/964.full.pdf

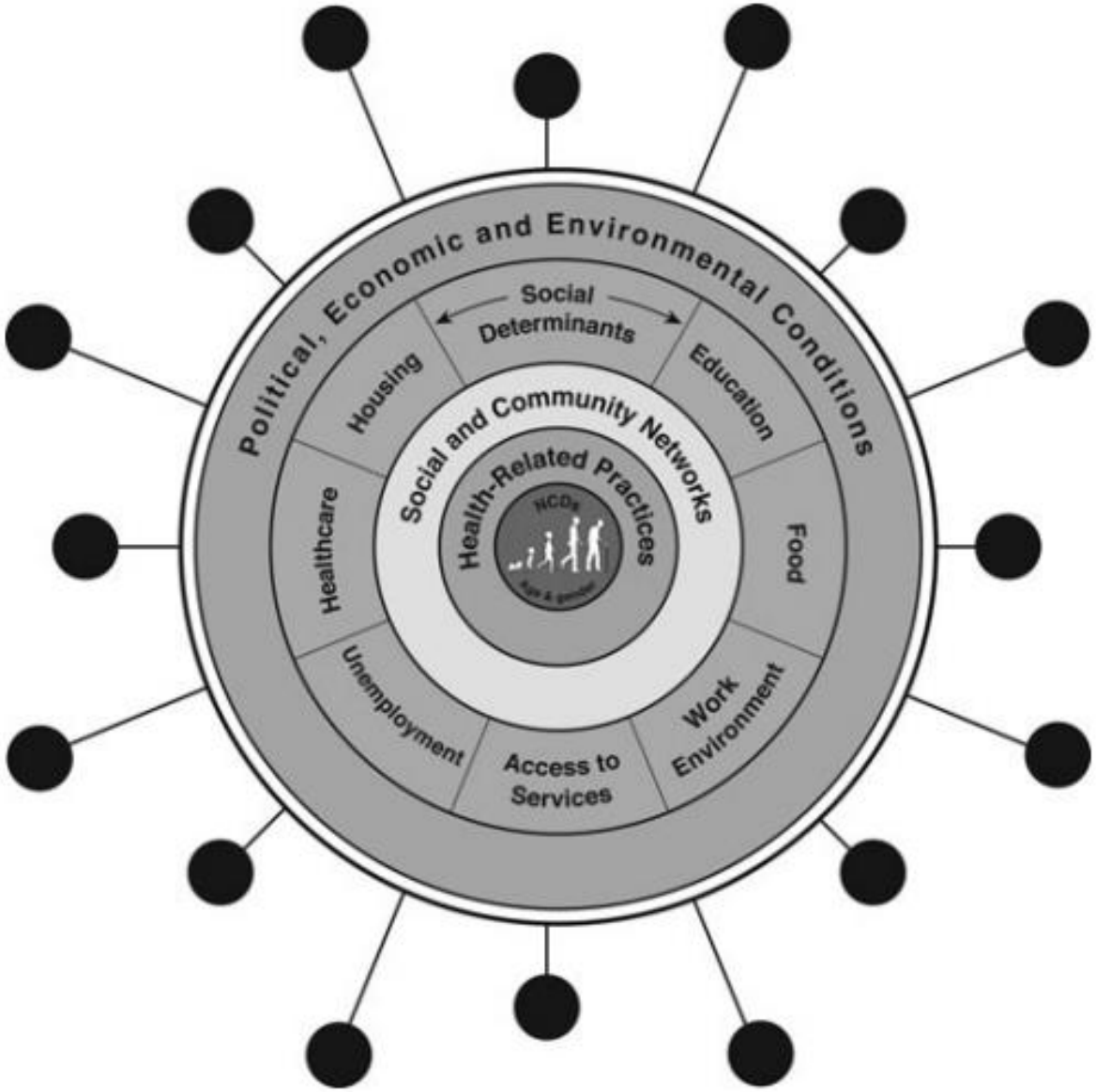

Figure 1 The syndemic of COVID-19, non-communicable diseases (NCDs) and the social determinants of health (adapted from Singer[23] and Dahlgren and Whitehead[25]).

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Aim- to identify and specify the characteristics of the population of patients discharged from STH between March and September of the C19 pandemic

Objectives;

1. Achieve a data set that can be linked across different electronic Health Record (EHR) for inpatient and community services

2. Identify the demographic and socio-economic determinants of the population diagnosed with C19 in hospital

3. Identify sub-groups within the data and cross tabulate the needs of those segmented populations with reference to the triage data

4. Use the findings to support C19 pathway development in relation to population health needs

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Methods

- Existing clinical academic partnership via ‘researcher in residence’ and links with the Advanced Wellbeing Research Centre (AWRC)
- Ethical approval via Sheffield Hallam University including GDPR and governance for data sharing
- Covid 19 data sharing arrangements- including pseudonymisation and relevant permissions
- Total population N= +/-1400 based on data from information services using NHS number as patient identifier linking Lorenzo, Whiteboard, Metavision and SystmOne
- Single Point of Access (SPA) triage process to follow-up discharged patients
- Population demographic data analytics undertaken in AWRC
- Population health data shared with Combined Community and Acute Care group in STH

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Characteristics of the whole population N=1425 with a positive C19 test between 3.3.20 and 30.8.20

Demographics

Gender - 654 women 771 men

Ethnicity - 77% White British with Asian, Black and a mixed/unknown 23%

Deprivation - 48% in most deprived areas of England

94% in Sheffield CCG with rest from mainly South Yorkshire on the basis of early arrangements for ID admissions

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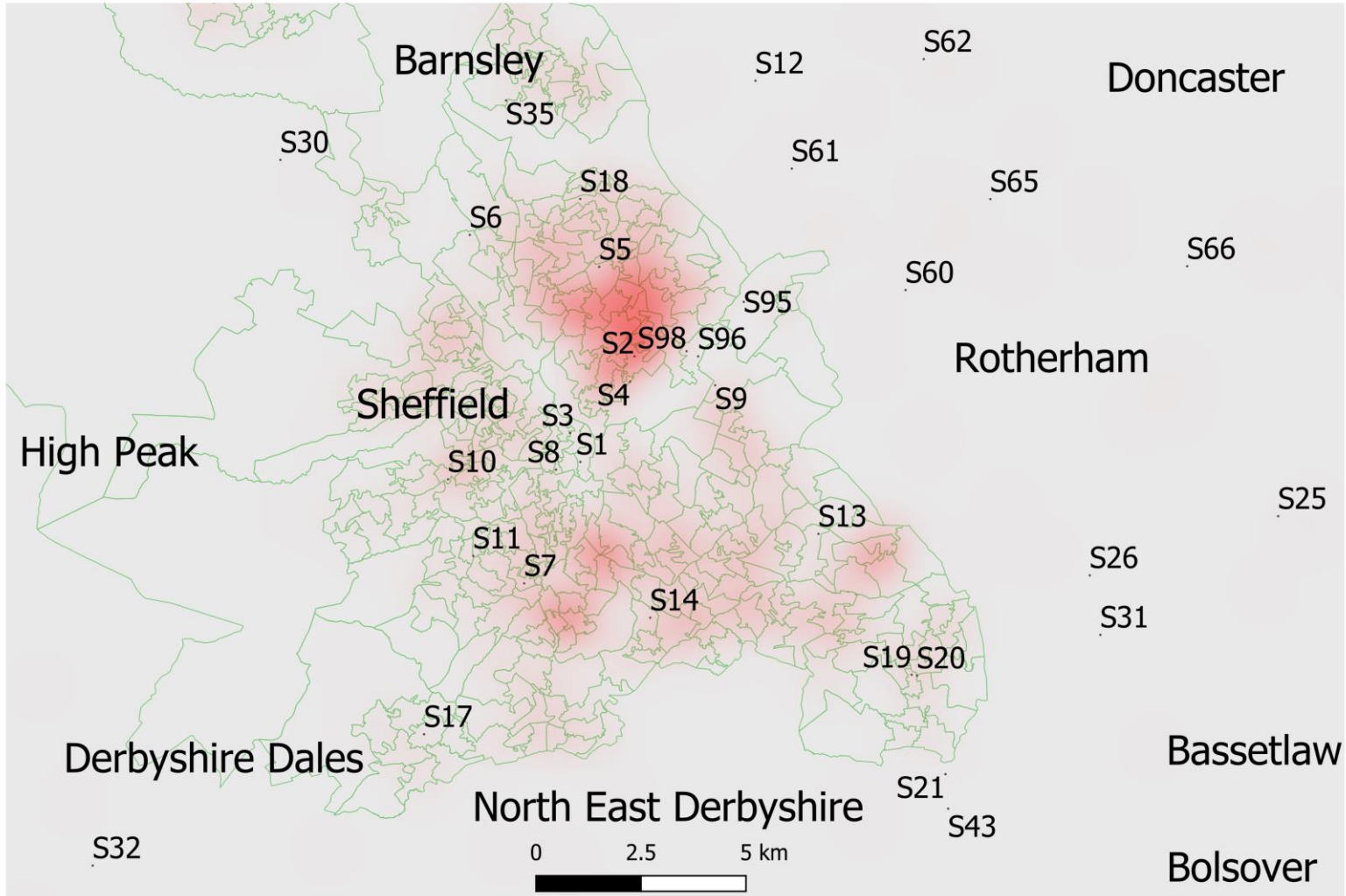
Heat map of Covid hospitilisations based on patient postcode. Sheffield CCG highlighted



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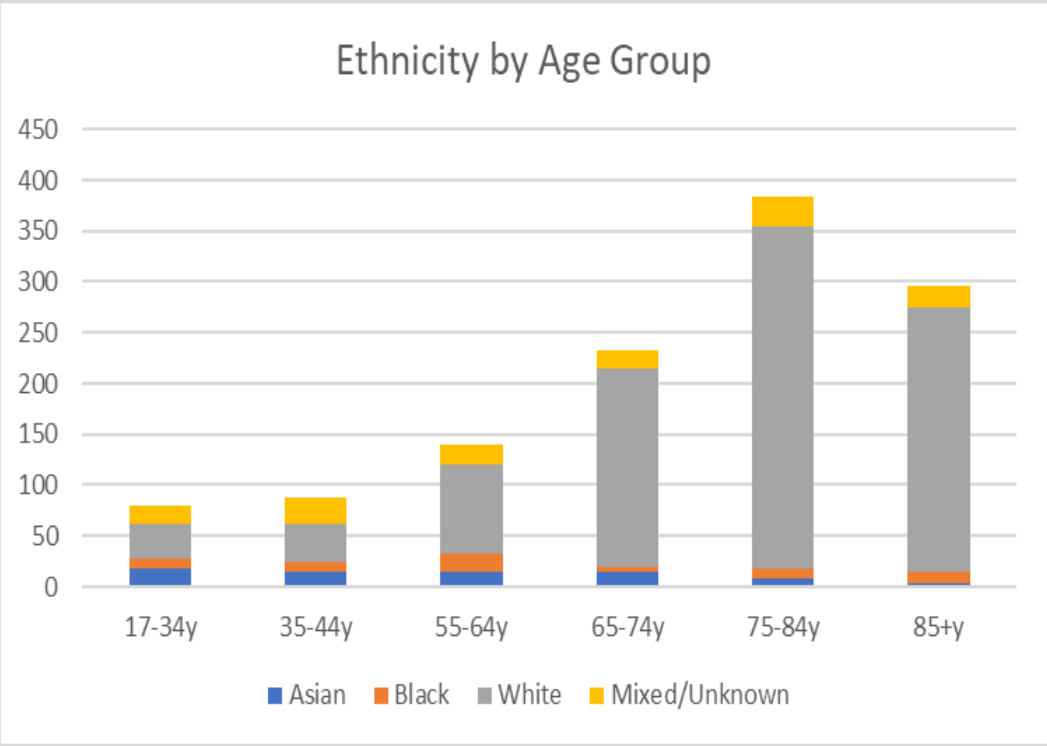
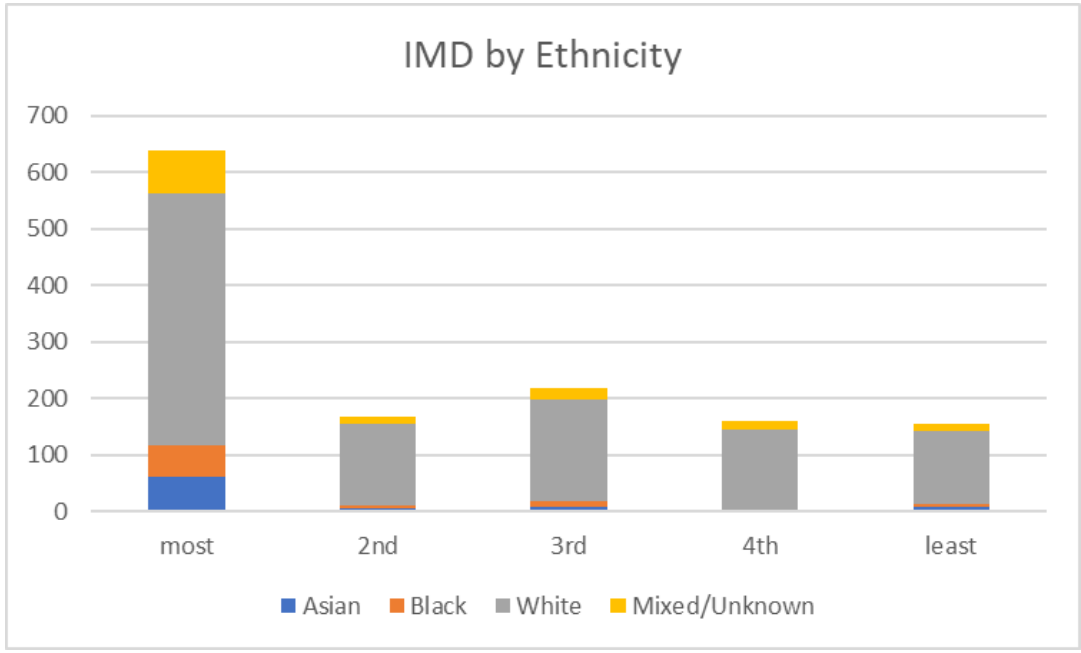
Ethnicity by age and Indices of Multiple Deprivation





Hospital usage

5% no overnight stay; 50% stayed 1-8 days

150 patients were in ITU; 65% once; 24% twice

765 had a referral to community services
814 had a new outpatient appointment

This reflects the fact that this patient population already use a lot of services

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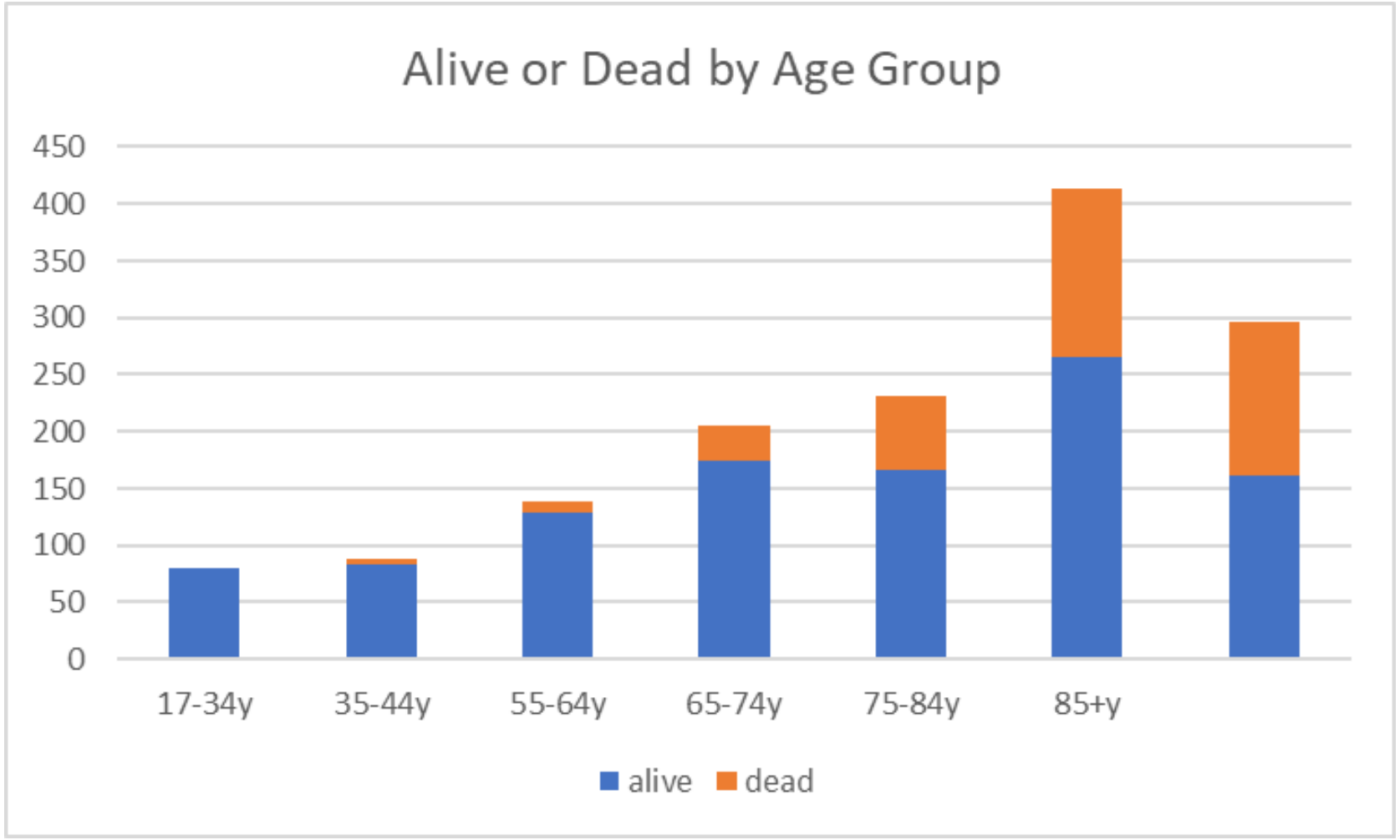
Age is a significant determinant of mortality risk



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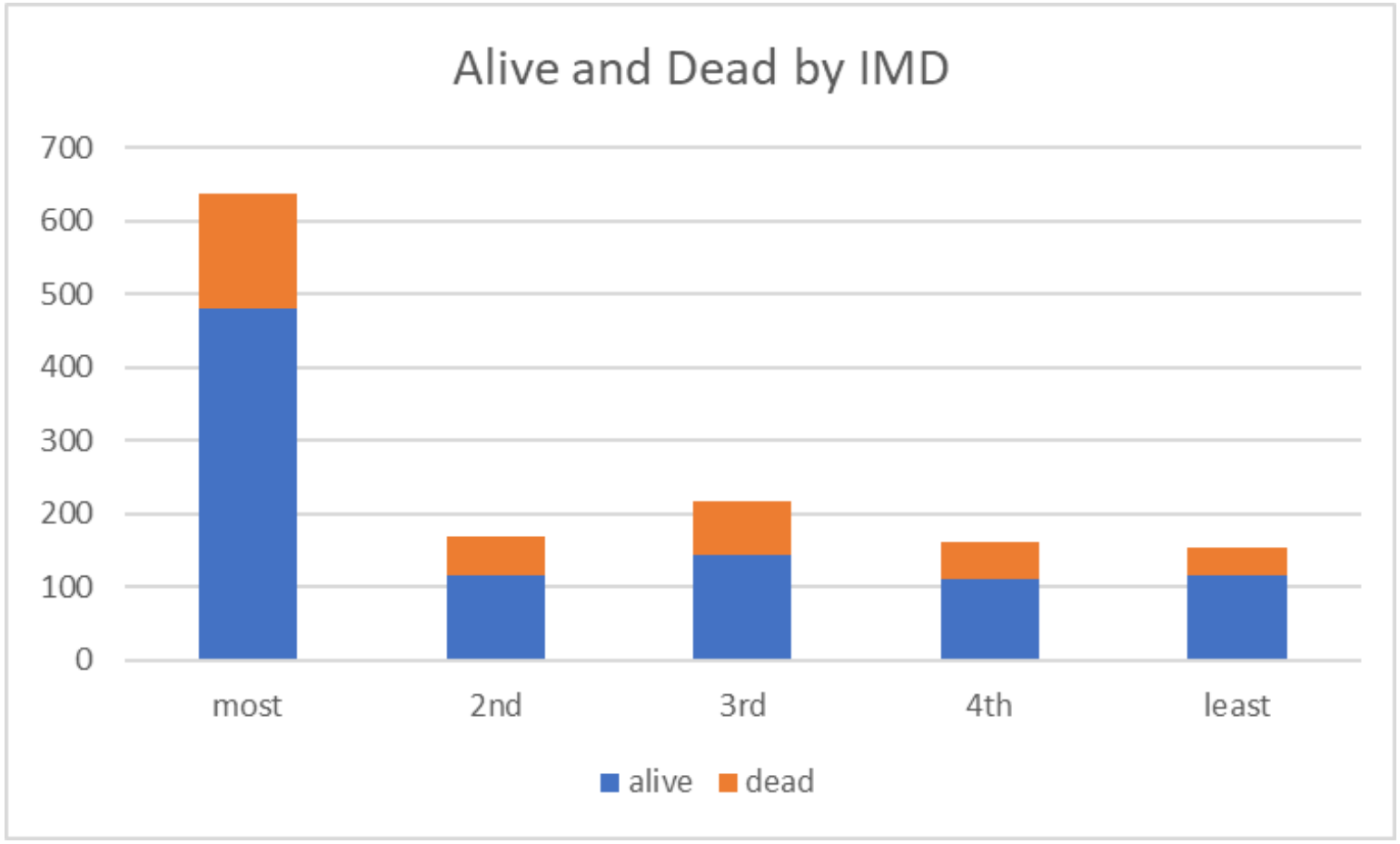
People in worst deprivation more likely to contract and die with Covid19



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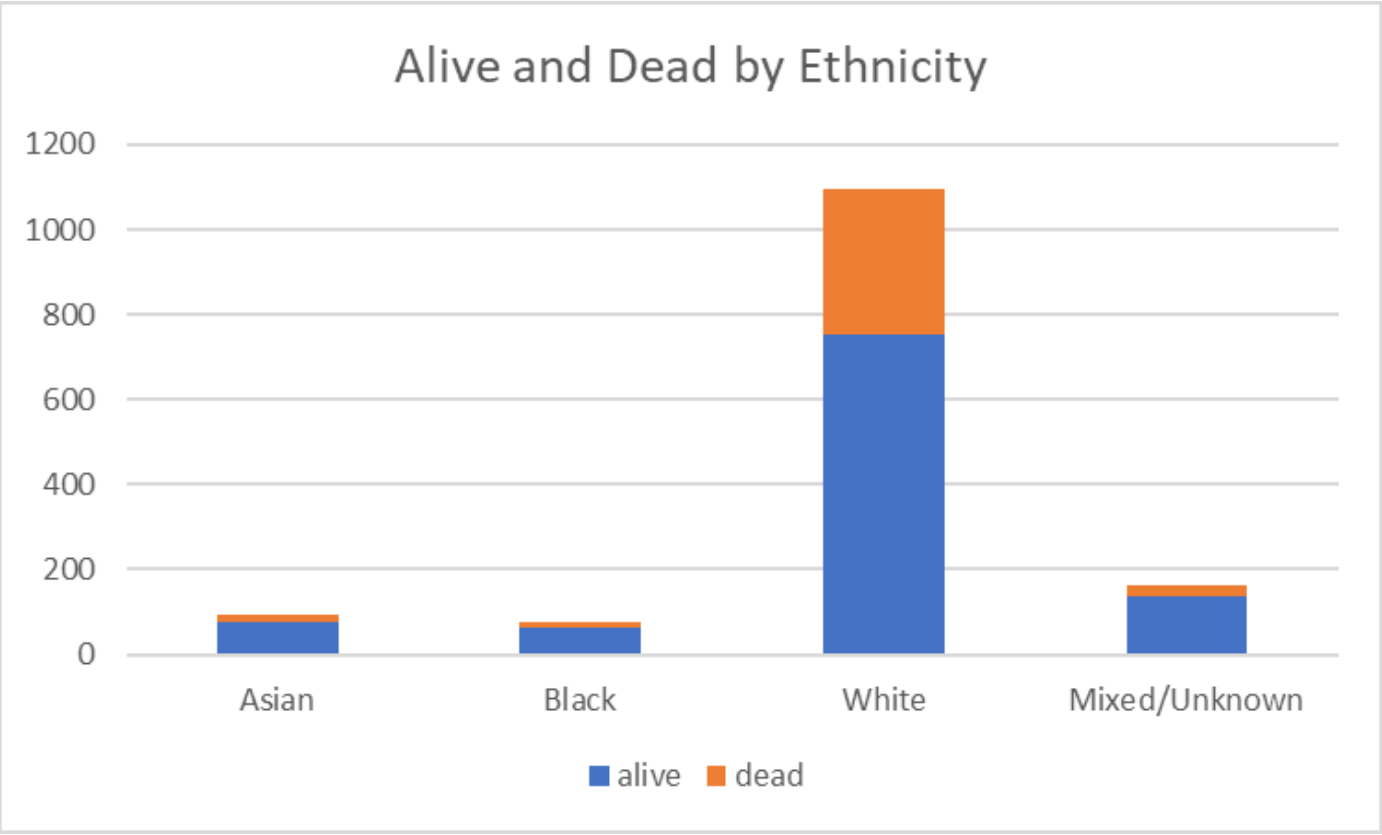
In Sheffield the majority of admissions and discharges were white British?



Asian includes all Asian categories plus mixed Asian and white
Black includes all Black categories plus mixed black and white
all white categories combined

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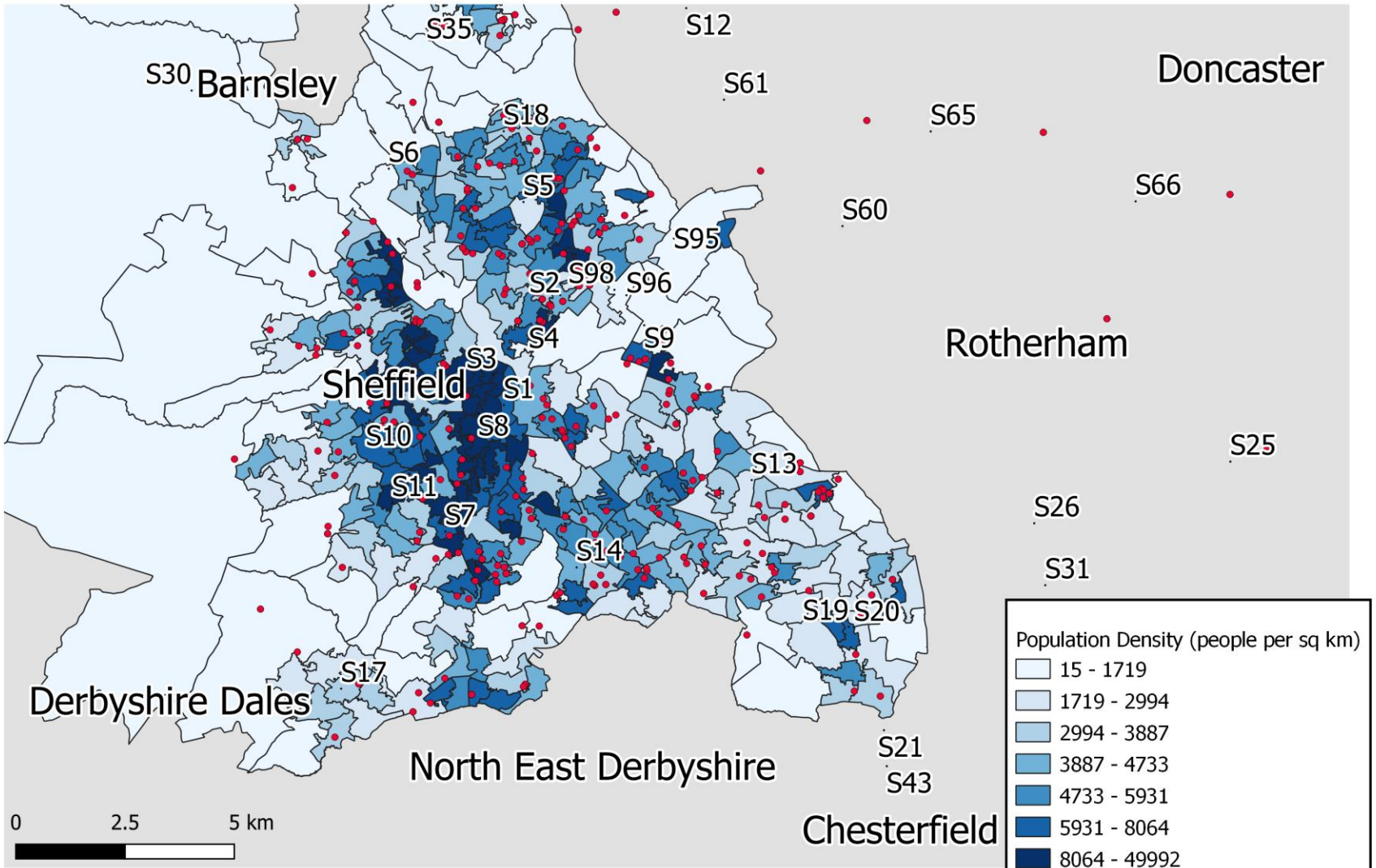
Deaths throughout city based on home postcode. Map shows population density throughout city. Only Sheffield CCG shown.



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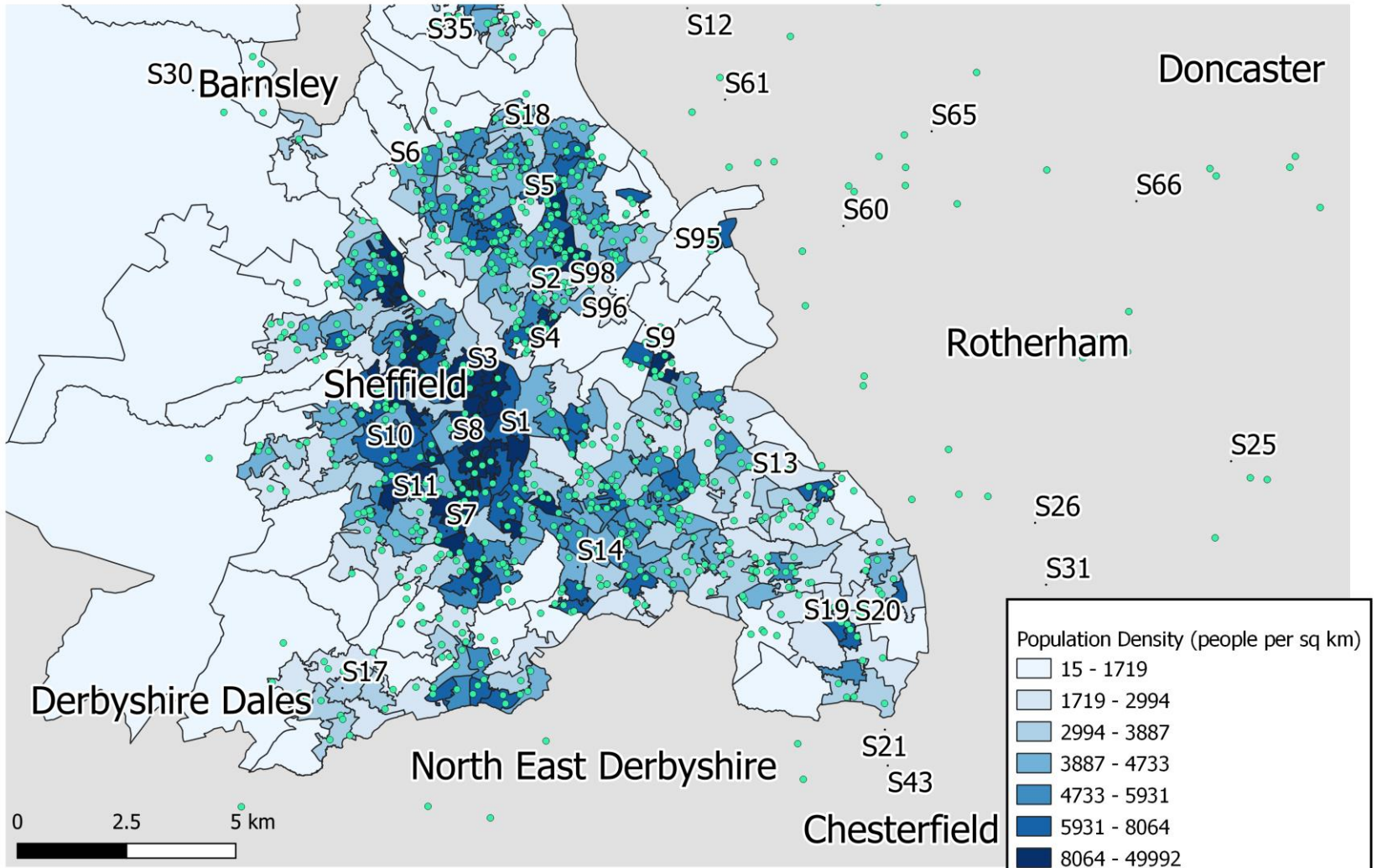
Individuals that survived hospitilisation based on home postcode. Map shows population density throughout city. Only Sheffield CCG shown.



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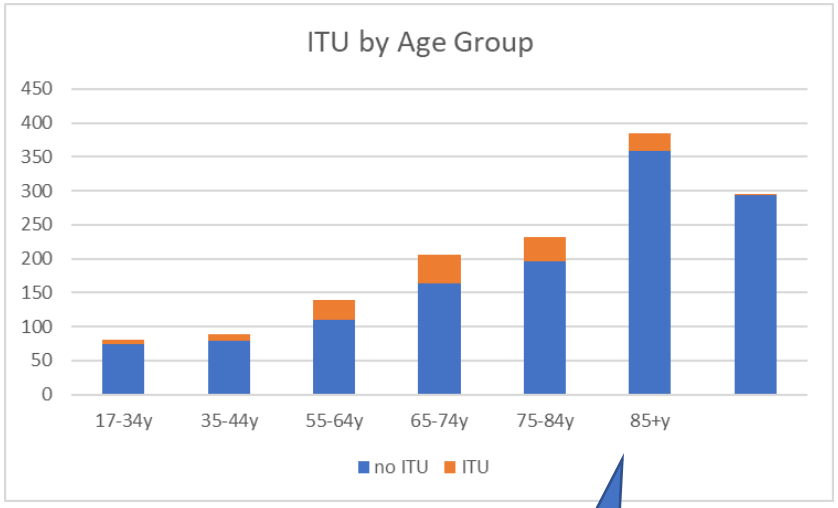
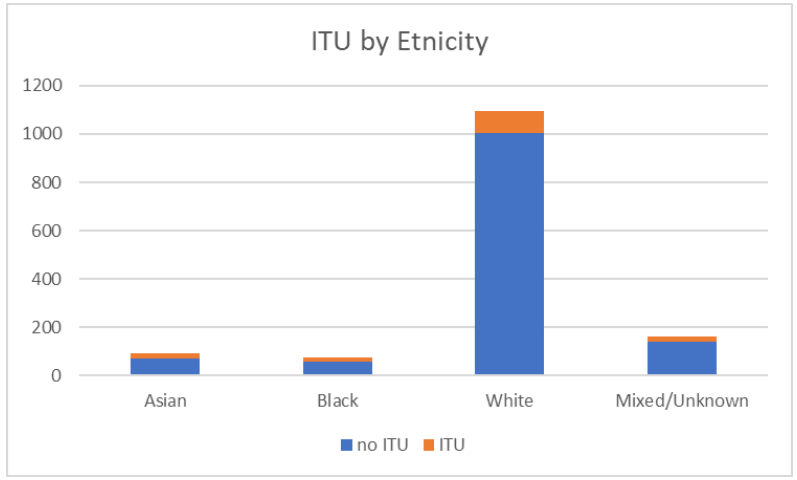
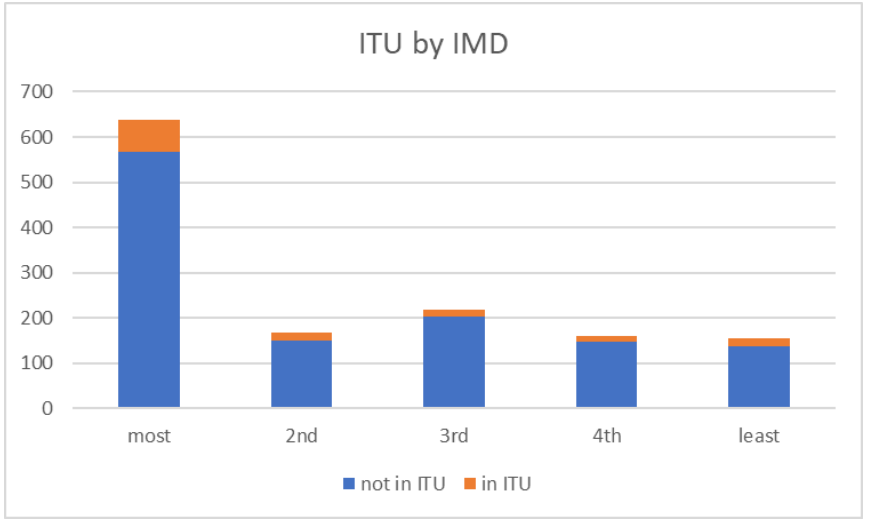
There are a lot more people in ITU from the most disadvantaged population- N=150



Proportion of the sample by age group who were admitted to ICU





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Care homes admitted few residents

- care home information available on 1,340 patients

	not discharged to a care home	discharged to a care home
not admitted from a care home	1080	30
admitted from a care home	4	226

- 50% of those admitted from a care home had died by the census date

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Transforming lives through innovations that help people move

Department of Health & Social Care

European Union
European Regional Development Fund