



PIONEER

Health Data Research Hub

The emergency health care needs of >40,000 patients with complex multimorbidity

Data range for infographic: 01.01.2018-31.03.2019

Other extended time periods are available on request

Longitudinal data for >40,000 patients presenting acutely with multimorbidity including demographics, comorbidities, serial physiology, frailty scores, blood results, medications, drug allergies, treatments, procedures and 12-month mortality.

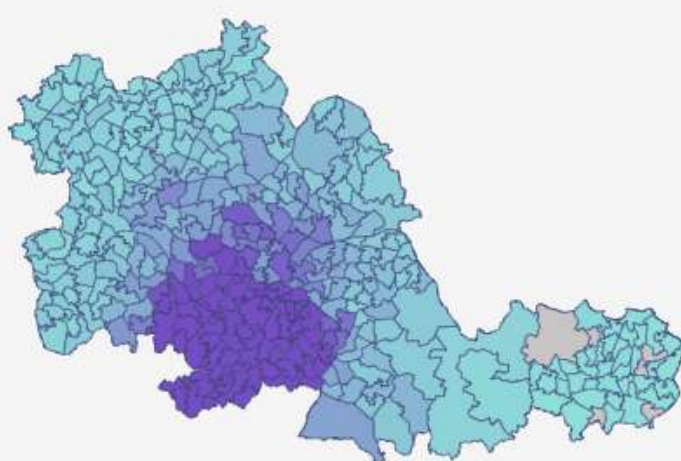
Demographic

The dataset includes:

- Young adults **7%** (ages 15-24)
- Adults **48%** (ages 25-64)
- Elderly **45%** (ages 65+)

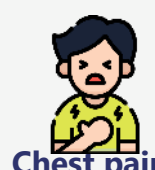
The majority of the patients are of White ethnic background accounting for **66%** of the population followed by **14%** Asian, **11%** Unknown, **4%** black/African/Caribbean, **3%** Other and **2%** Mixed.

West Midlands patient heatmap



Top A&E presenting complaints

6731



Chest pain

4854



Abdominal pain

4657



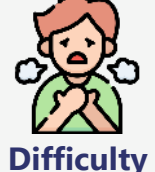
Asthenia

4256



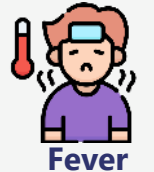
Dyspnea

2251



Difficulty breathing

1478



Fever

Multimorbidity

Top 5 ICD10 diagnosis in patient spell:

- **21K** Essential primary hypertension
- **11K** Type 2 diabetes mellitus
- **7K** Atrial fibrillation and flutter
- **6K** Unspecified Asthma
- **5K** Chronic ischaemic heart disease

Other diagnoses are available.

8%



Fit

24%



Mildly frail

34%



Moderately frail

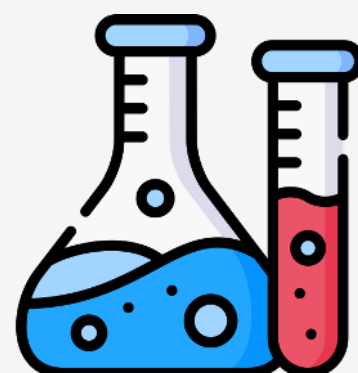
33%



Severely frail

Frailty index

The average hospital electronic record frailty index (HERFI) is 0.36, moderately frail. The average Frailty Index score by QEHB (FI-QEHB) is 0.31, moderately frail.



Laboratory tests

4.5M serial laboratory tests recorded including complete blood counts, liver functions tests and more. Other laboratory tests are available.

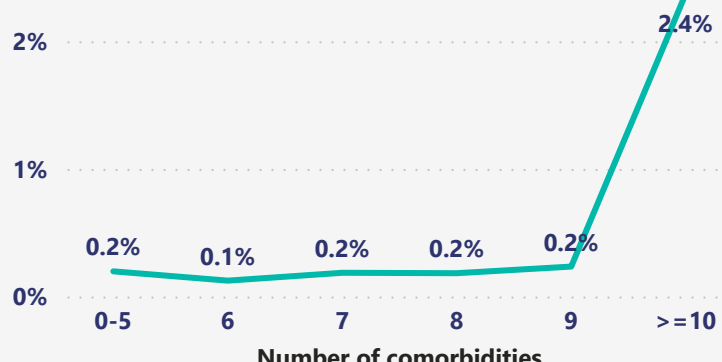
Inpatient care

- **61,636 Hospitalised spells;** containing **39,511** unique patients admitted to hospital
- **395K** days worth of hospital data with an average in-hospital length of stay of 6 days
- Hospital mortality rate of 3% with and a survival rate of 87% within 1 year of discharge
- The average national early warning score (NEWS2) is 2, indicating low clinical risk

Comorbidity mortality

The average number of ICD10 coded comorbidities in patient spells is 7.

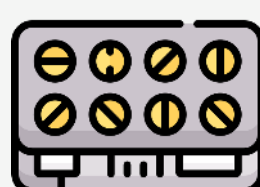
Mortality rate by comorbidity



Medication

Top 5 prescriptions to take out from hospital:

- **66K** Paracetamol prescriptions
- **42K** Lansoprazole prescriptions
- **37K** Prednisolone prescriptions
- **30K** Aspirin prescriptions
- **25K** Sennosides prescriptions



Other medications are available