PIONEER
Health Data Research Hub

Machine Learning Frailty Index estimates with routine test results in acute care

Data range for infographic: 01.01.2020-01.01.2021
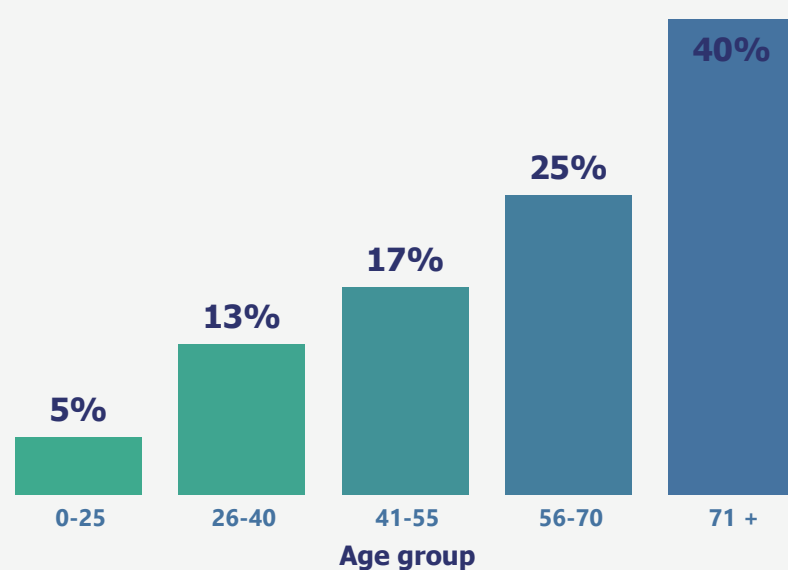**Other extended time periods are available on request**

All hospitalised patients admitted to UHB during the COVID-19 pandemic, curated to focus on patients with frailty score. Longitudinal & individually linked, so that the preceding & subsequent health journey can be mapped & healthcare utilisation prior to & after admission understood.

Demographic

The dataset includes:
- children **1%** (ages 0-17)
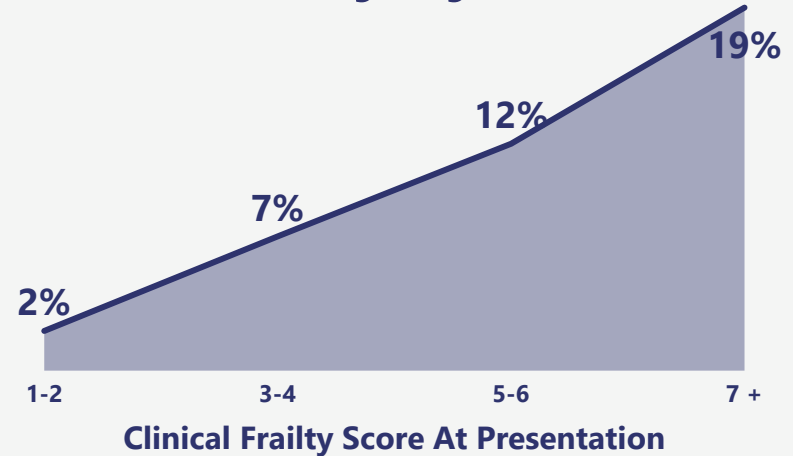- adults **49%** (ages 18-64)
- elderly **50%** (ages 65+).

67% of patients are of White ethnic background. Followed by **14%** Asian, **4%** Black, African or Caribbean, **1%** Mixed and **14%** Other/Not Stated.

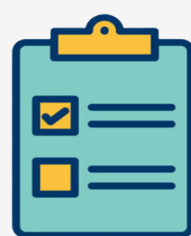| Age group	Percentage
0-25	5%
26-40	13%
41-55	17%
56-70	25%
71 +	40%

Clinical Frailty Scale

- The average initial clinical frailty scale (CFS) is **4** - Vulnerable.
- The minimum clinical frailty score is **1**
- The maximum clinical frailty score is **9**
- The median clinical frailty score is **4**
- The interquartile range of frailty score is **4**

Mortality By CFS

Clinical Frailty Score At Presentation

Clinical Frailty Score	Mortality
1-2	2%
3-4	7%
5-6	12%
7 +	19%

Observations

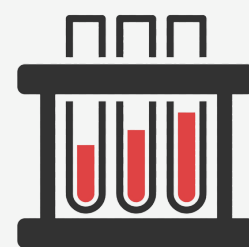Median result for each observation assessments:

- **132** Systolic blood pressure
- **77** Diastolic blood pressure
- **19** Respiratory Rate

Other observation are available.

Lab Analysis

Average for each initial lab assessments:

- **34.55** Albumin
- **113.79** Alkaline Phosphatase
- **71.98** C-Reactive Protein

Other lab samples are available.

Inpatient care

- **6,551** Hospitalised acute spells; containing **5,528** unique patients with frailty score
- **48,590** days worth of inpatient stays with an average in-hospital length of stay of **7** days
- Hospital mortality rate is **8%** with a total of **544 patients** died in hospital
- The average emergency readmission within 1 year from hospital discharge is **89** days

Diagnoses

Top 5 ICD10 Diagnosis in patient spells:
- **2.4K** Essential primary hypertension
- **2.1K** Other Physical Therapy
- **1.8K** Special screening examination for other viral diseases
- **1.4K** Observation for other suspected diseases and conditions
- **1.1K** Confirmed case of COVID-19

SNOMED CT diagnosis are available.

Discharge Destinations

- **5%** Care Home
- **2%** Hospital Care
- **3%** Other
- **10%** Patient Died
- **80%** Usual Place of Residence

Other associated data available upon request

Contact us at:
www.pioneerdatahub.co.uk
pioneer@uhb.nhs.uk