

Analysis on older people

Measuring frailty with a new validated electronic index (eFI): Camden

Ester Romeri

Public Health Information and Intelligence Analyst

Camden and Islington Public Health Intelligence Team

 ester.romeri@islington.gov.uk

Context and purpose

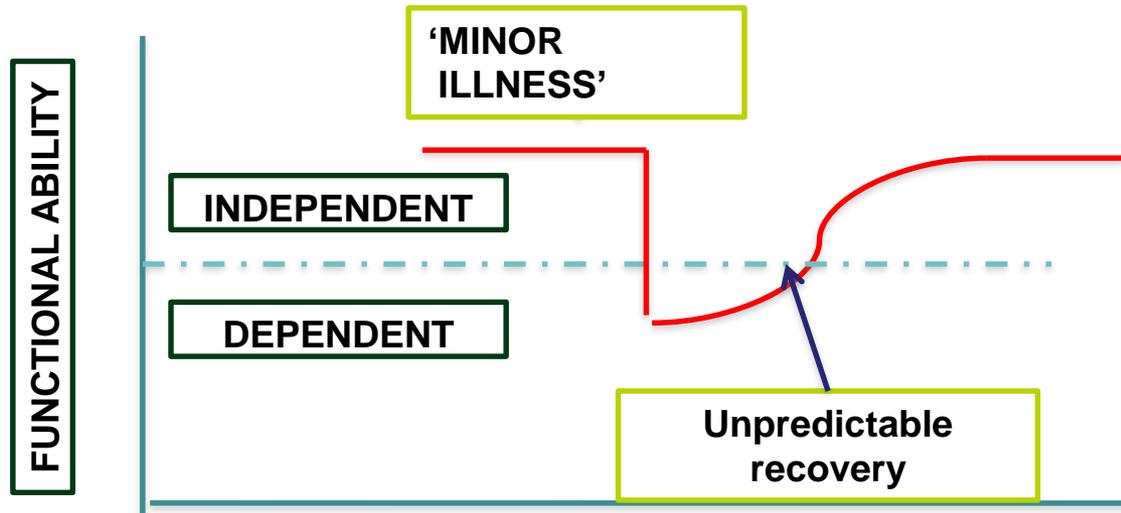
- This analysis uses a new validated Electronic Frailty Index (eFI) on local GP dataset to identify older people with mild, moderate and severe frailty in Camden, and to understand their pattern of hospital admissions

- This work will help developing a new integrated pathway for older people by considering individual vulnerability rather than by age alone:
 - More proactive and early interventions to prevent people with mild or moderate frailty becoming severe
 - Intensive support and case management for people with severe frailty



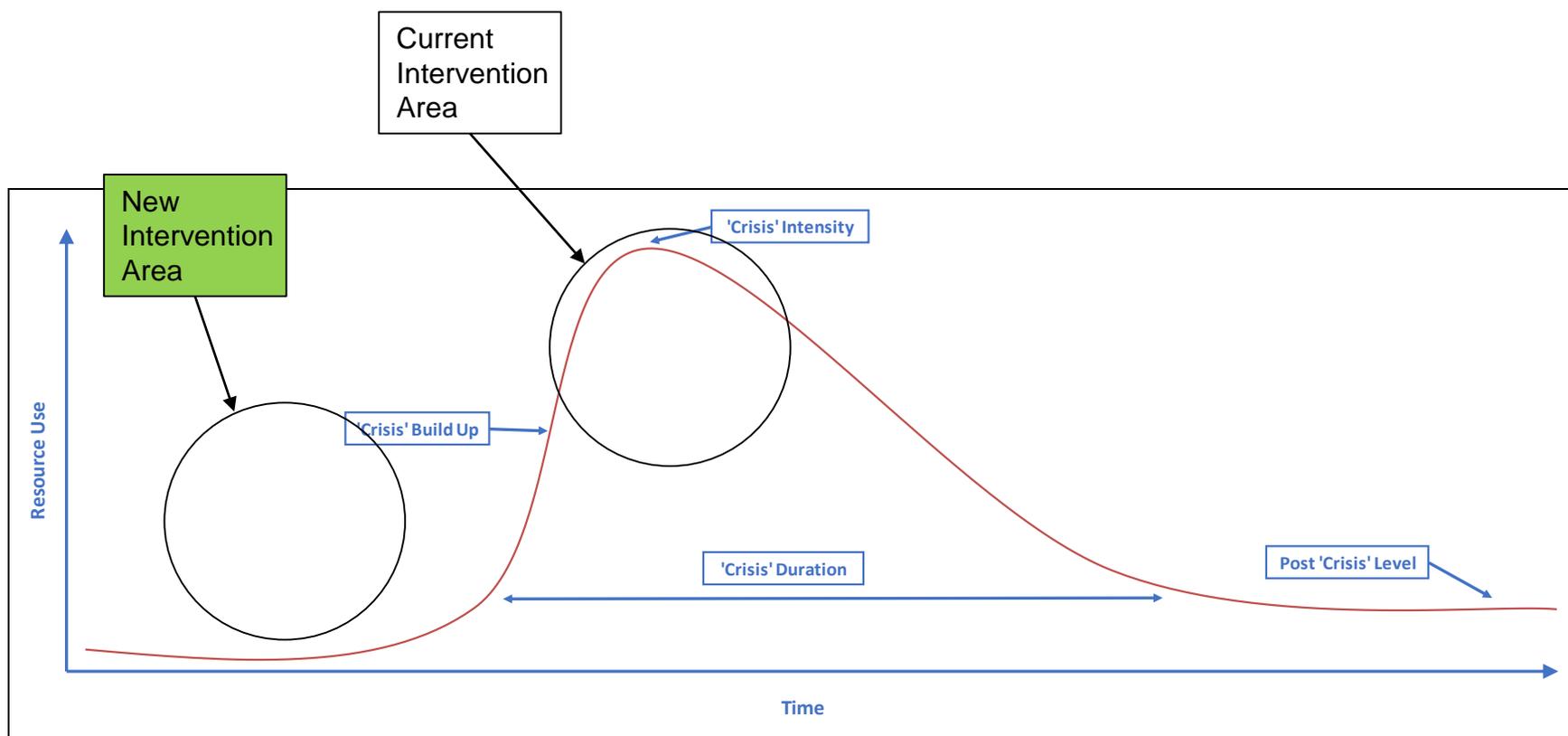
Why does frailty matter?

- Most of older people with mild or moderate frailty are not always known by services.
- The contact with the health and social care usually occurs at a point of crisis, for example, after a fall or infection which then presents as an acute episode usually with hospital admission.



Why does frailty matter?

- Early interventions designed to support patients with mild and moderate to prevent crisis situations



ANALYSIS OF FRAILITY IN OLDER PEOPLE (2015): CAMDEN

This section describes the differences in demographics characteristics (i.e. sex, age, ethnicity) of elderly people (65+) with mild, moderate or severe frailty, and the variations across GP practices in Camden.

It also looks at the rate of fall-related hospital admissions for elderly people in each of the frailty categories.

The aim of this analysis

- This analysis uses the Electronic Frailty Index (eFi) on Camden 's local GP data (extracted in 2015) to identify the number of people with severe, moderate and mild frailty and their demographic characteristics.
- It also shows the hospital admissions related to falls in each category of severity. The analysis provides:
 - A better understanding of the population aged 65+ and their health needs at borough level
 - A benchmark for clinicians to better monitor, and understand the gaps of the frail patients at GP practice level
 - Intelligence on the impact of frailty on fall-related hospital admissions.

About the frailty index

The electronic frailty index is a scoring system that identifies frailty by the accumulation of a range of deficits

Innovative frailty tool for early intervention

- This index represents a major shift in frailty care for older people, because, for the first time, it enables identification of severity grade frailty using existing electronic health record data (and not age alone).

Robust predictive validity

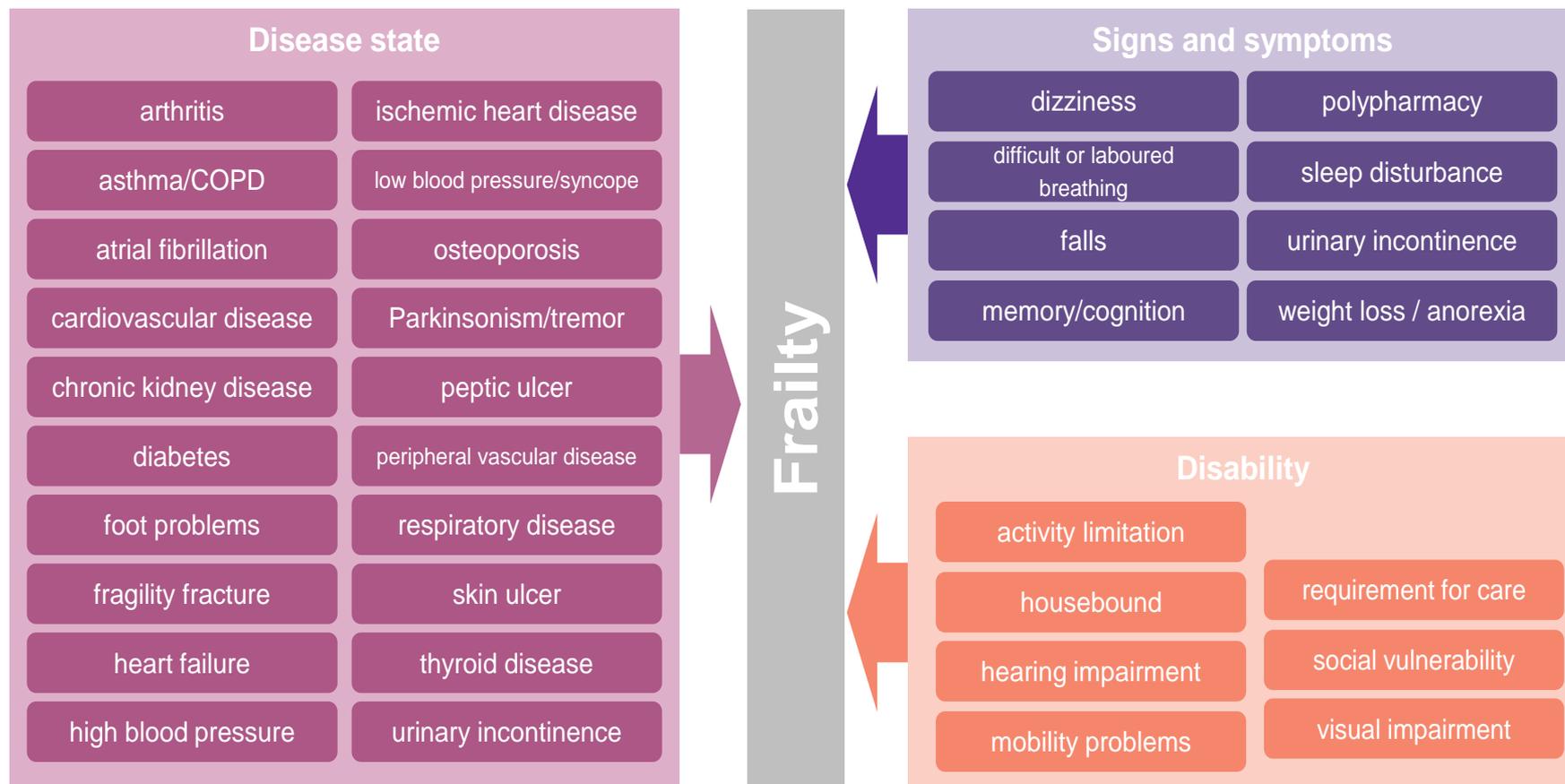
- The eFI was developed and validated by the Academic Unit of Elderly Care & Rehabilitation, University of Leeds and the University of Birmingham (Glegg et al, 2016).
- It predicts adverse outcomes in people with frailty (hospital admissions and mortality).

Easy to use and implement

- The eFI uses existing electronic primary care coding (around 2,000 Read codes).
- Camden's GPs and CCGs are using this tool (EMIS, System One software and Vision) to identify the severity frailty as part of routine care.

About the frailty index

- Frailty is defined on the basis of the accumulation of a range of 36 deficits (not type), which are clinical signs (e.g. tremor), symptoms (e.g. breathlessness), diseases (e.g. hypertension) and disabilities (e.g. hearing impairment).



(Clegg et al, Oxford University Press, 2016)

<https://academic.oup.com/ageing/article/45/3/353/1739750/Development-and-validation-of-an-electronic>

About the frailty index

- The Camden registered population (65+) has been segmented to identify elderly people living health lives, and those with severe, moderate and mild frailty based on the frailty index (eFi).
- Each category is defined by the number of deficits (but not the type of deficit).

Risk category	eFi score	Number of deficits
Severe	eFi score is ≥ 0.36	13 or more deficits
Moderate	eFi score is 0.23 to 0.35	9 to 12 deficits
Mild frailty	eFi score is 0.12 to 0.22	5 to 8 deficits
Mostly Healthy	eFi score is 0.0 to 0.11	Not on eFi index or less than 5 deficits

Source: Camden's GP Dataset (2015) and eFi index (Clegg et al, Oxford University Press, 2016)

<https://academic.oup.com/ageing/article/45/3/353/1739750/Development-and-validation-of-an-electronic>

Methodology

Data Source:

- GP dataset as of September 2015 (month when extracted)
- SUS hospital admissions data covering March 2014 to April 2015 SUS data tables (Inpatients):
 - References created so anonymised SUS data can be linked to GP dataset

The eFI index was applied to local GP dataset to quantify the identify and severity grade frailty in Camden local population

- Identified and processed 35 deficits (out 36) constructed using 2,171 Read codes from our local GP dataset
 - Excluded Polypharmacy deficit which was defined on the basis of the presence of ≥ 5 prescribed medications, using chapters 1–15 of the British National Formulary (BNF)

Source: Camden's GP Dataset (2015) and eFI index (Clegg et al, Oxford University Press, 2016)

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Key findings

- In 2015, **about a third (6,964)** of older people aged 65 and over, registered with GP practices in Camden, have mild frailty as identified by the eFI.
- **Older women are significantly more likely to have mild frailty (32%)** than older men (31%) and almost **twice** as likely to have a severe frailty than older men (8% vs 5%).
- **Black women (39%), Black men (38% respectively)** are significantly more likely to have a mild frailty than the Camden average (32%).
- **High percentage of fall-related hospital admissions are found in older people with a severe frailty (31%)** compared to older people who are mostly healthy (16%).

Breakdown of eFI by age and gender

Actual numbers: Camden GP linked dataset 2015, registered population, 65+

Sex	Mostly Healthy	Mild frailty	Moderate frailty	Severe frailty	Total population (65+)
Men	52%	31%	10%	4%	9,907
Women	44%	32%	16%	8%	12,170
Total	48%	32%	14%	6%	22,077

Estimated numbers: UK primary care patients 2008, registered population, 65+ (Clegg et al, 2016)

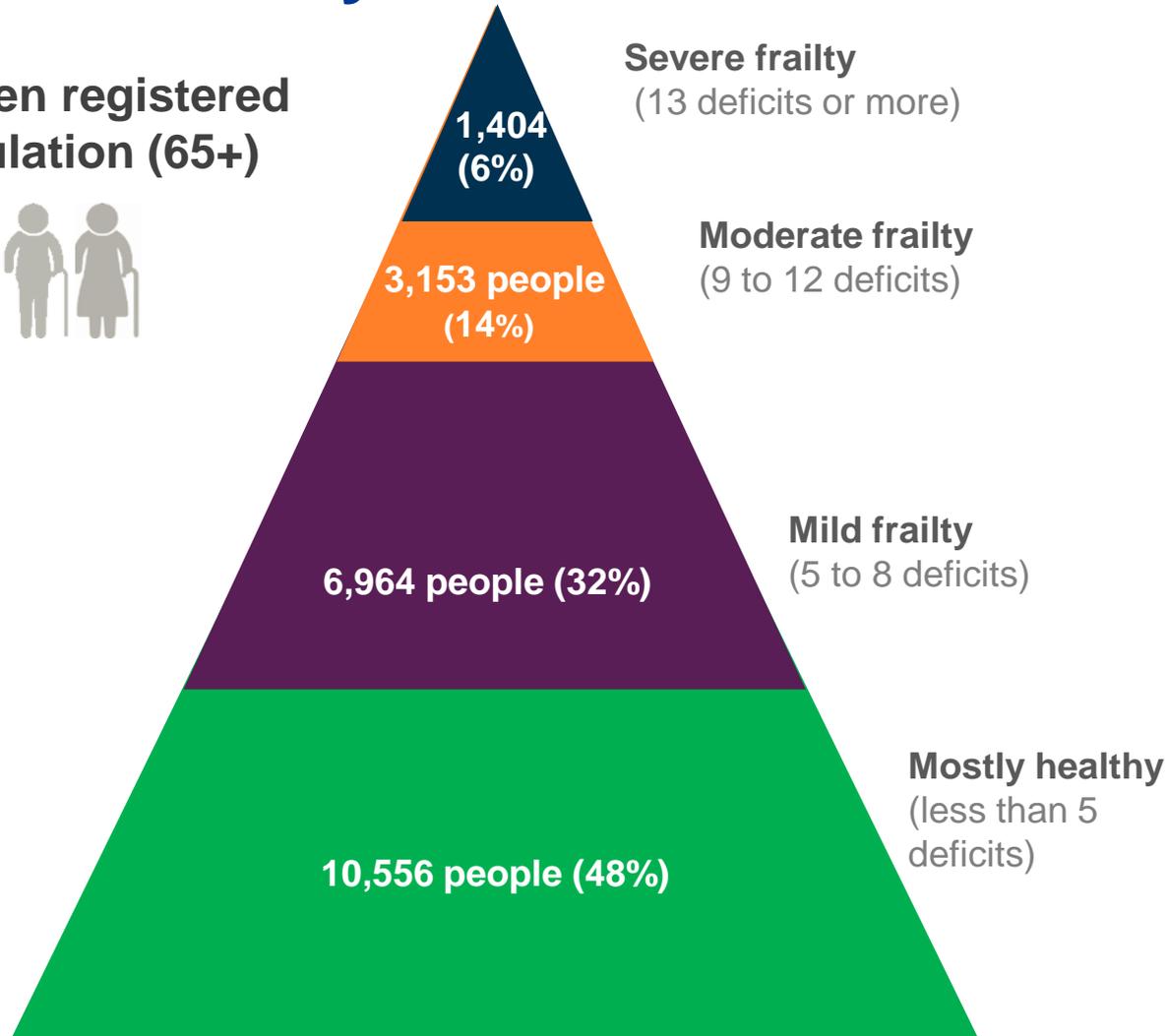
Total	50%	35%	12%	3%	
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Source: Camden's GP Dataset (2015) and eFI index (Clegg et al, Oxford University Press, 2016)

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The scale of frailty

Camden registered
population (65+)



Severe frailty
(13 deficits or more)

Moderate frailty
(9 to 12 deficits)

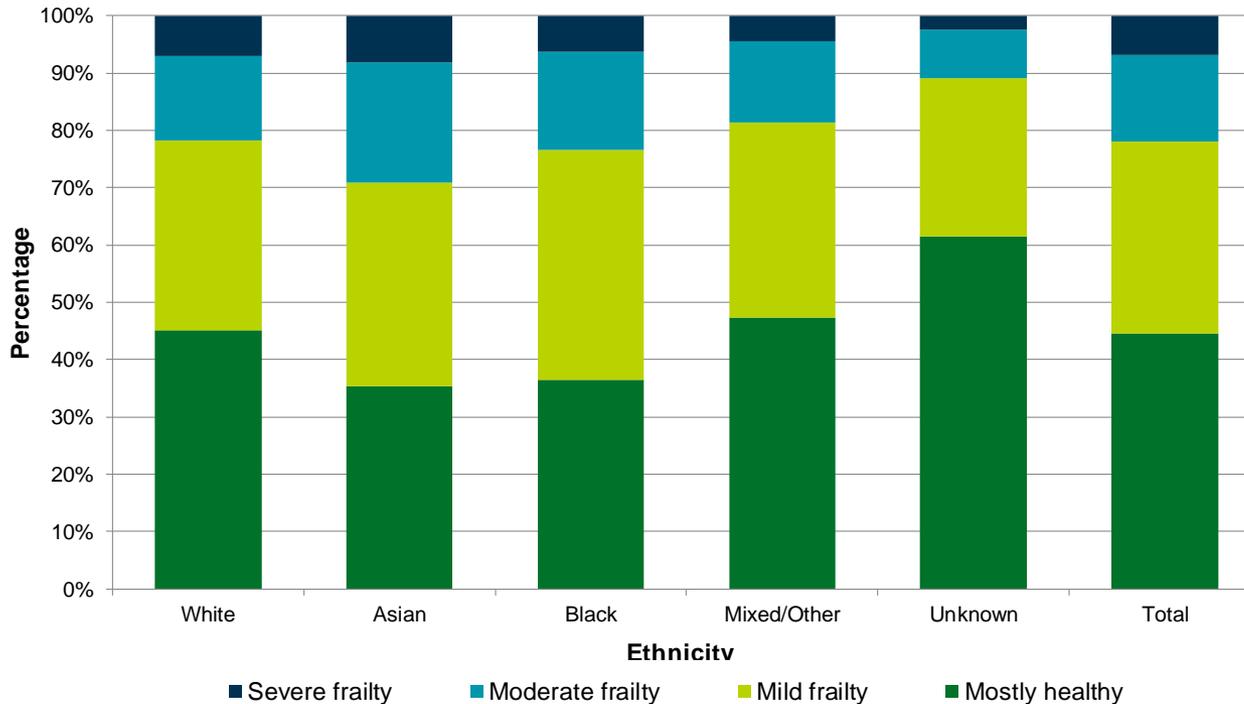
Mild frailty
(5 to 8 deficits)

Mostly healthy
(less than 5
deficits)

Breakdown of eFi by ethnicity

Black ethnic groups more at risk of mild frailty

Frailty index risk stratification by ethnic group,
Camden's registered population aged 65 and over, all persons, 2015

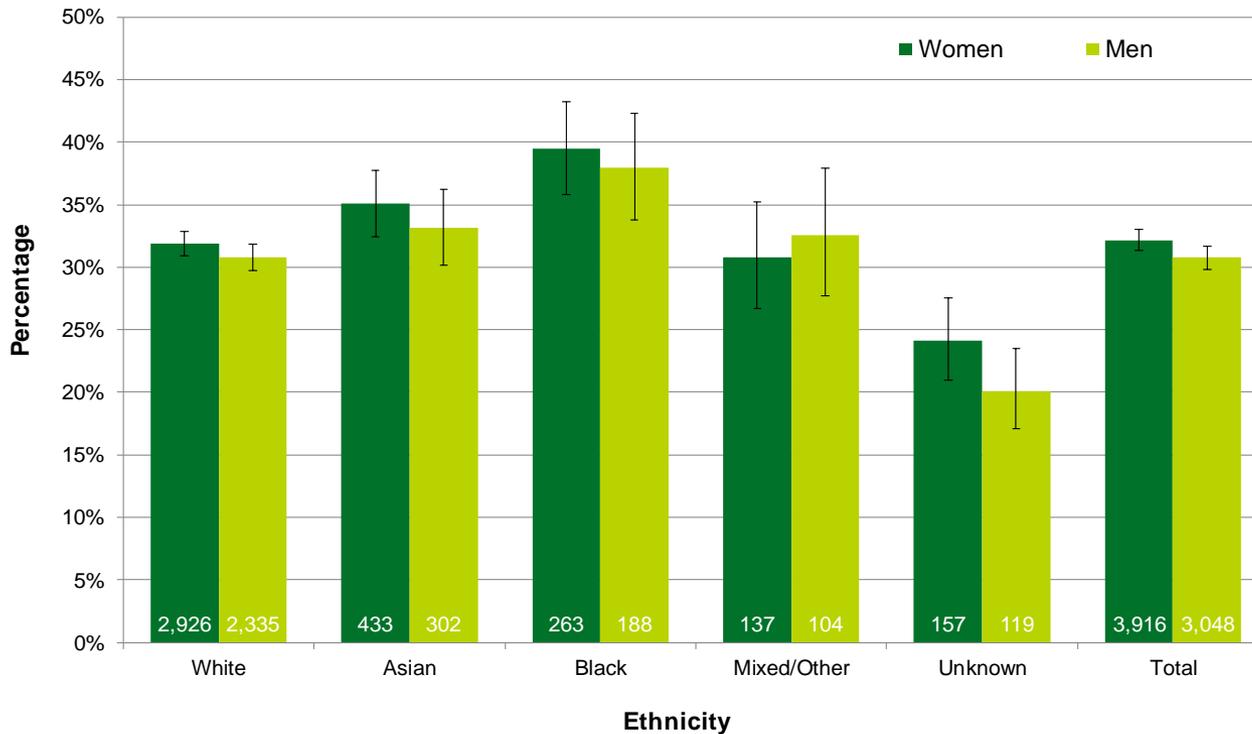


- Across ethnic groups, **Black ethnic groups** are more likely to have a mild frailty (39%) compared to any other people with a mild frailty (32%).

Breakdown of mild frailty by ethnicity and sex

Women and men in BAME ethnic groups more at risk of mild frailty

Proportion of older people (65+) with mild frailty by sex and ethnic groups, Camden's registered population, 2015

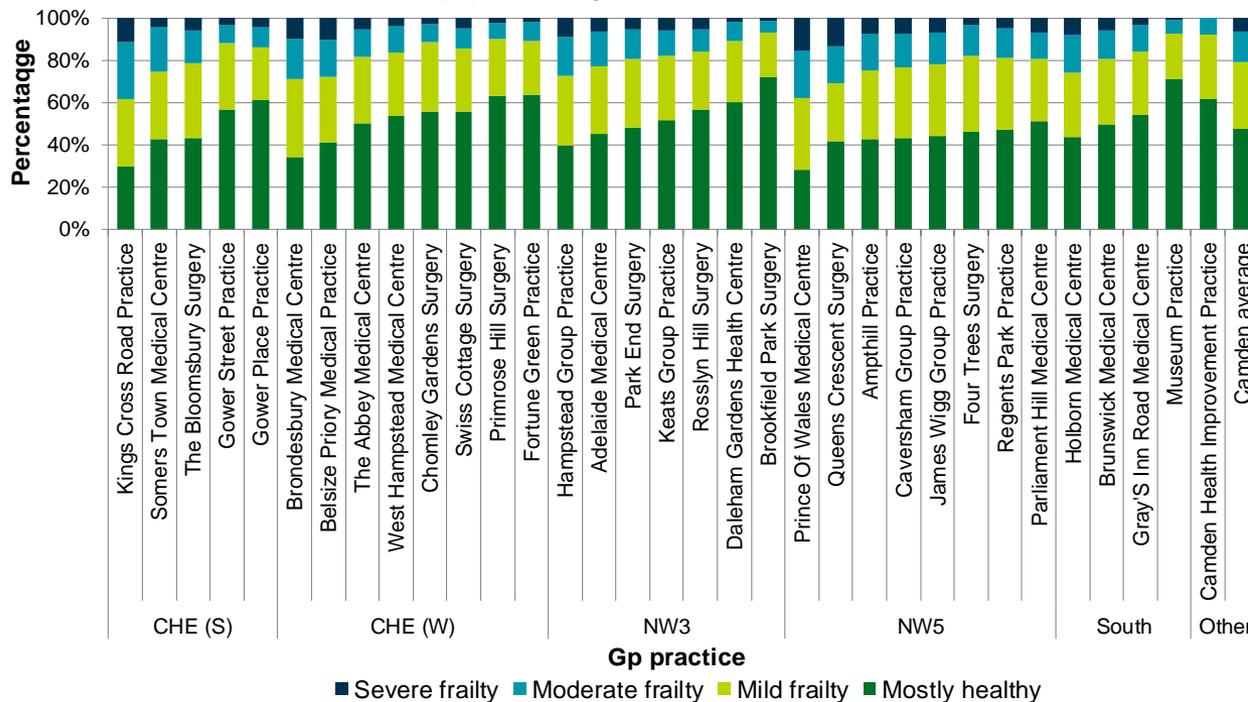


- **Black women (39%)** and **Black men (38%)** respectively) are significantly more likely to have a mild frailty than all older women (32%) and men (31%).

Breakdown of eFI by small areas

There is variation across GP practices and CHIN areas in Camden

Frailty index risk stratification by GP practice and CHIN, Camden's registered population aged 65 and over, 2015



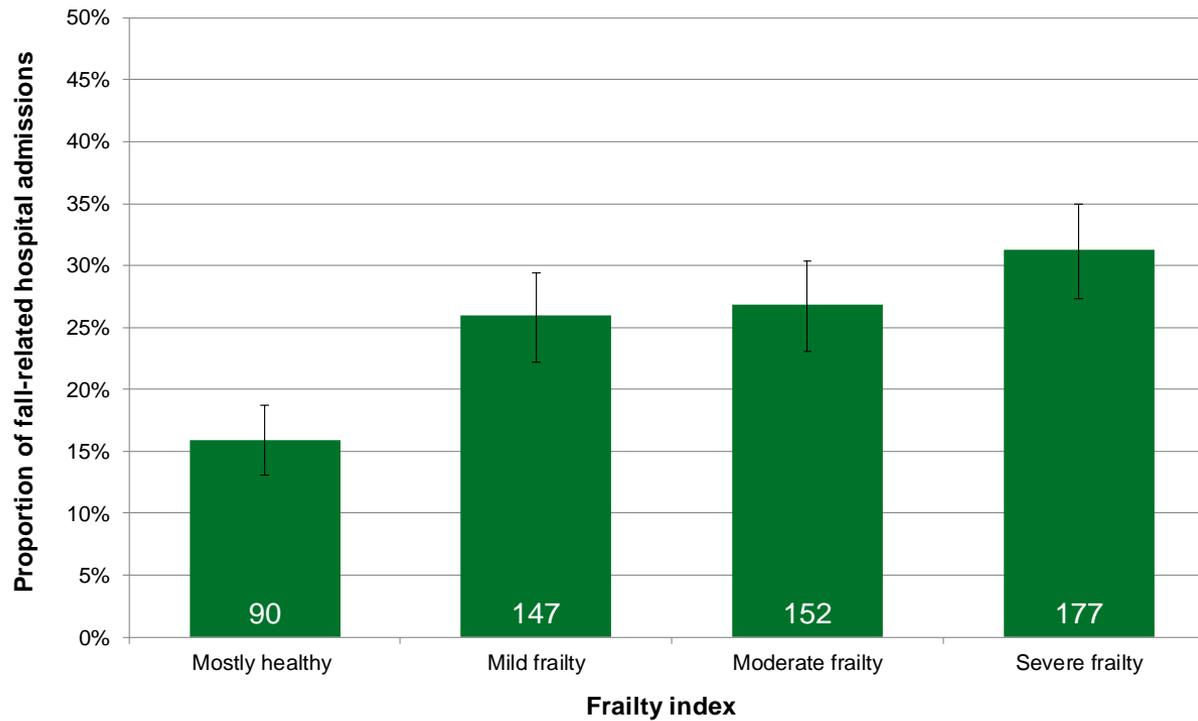
Source: Camden's GP dataset, 2015

Note: Camden Health Improvement has not yet been assigned a CHIN

Breakdown of frailty by hospital admissions

High proportion of fall-related hospital admissions in people with a severe frailty

Frailty index by fall-related admissions, age 65+, Camden, 2015



- In Camden, older people (65+) with a **severe frailty are twice as likely to have a fall-related hospital admissions (31%)** compared to those who are mostly healthy (16%).

Next Steps

- Consider the systematic use of eFI in a locality/integrated network to identify moderate and mild frailty patients and intervene early to prevent escalation of need.
- Camden's GPs and CCGs are using this tool (EMIS, System One software and Vision) to identify the severity frailty as part of routine care.

Key current interventions and their impacts

Study	Population	Intervention	Outcome
Effect of home-based health promotion service for older people with mild frailty to prevent becoming severe Randomised control trial (UCL, 2015-17)	<ul style="list-style-type: none"> - 65+ with mild frailty GP practices in both Camden and Hertfordshire	3 to 12 one-to-one sessions helping on daily activities and overall well being <ul style="list-style-type: none"> - Mood/Nutrition - Social isolation/mobility - Physical activities - Managing medication 	Maintain or improved independence and overall well being (prevent mild frailty to become severe) Results will be published later in the year
Impact of the integrated care approach (Newton Abbot Frailty Hub)	<ul style="list-style-type: none"> - 65+ with severe frailty - Top 2% of high risk of hospital admissions GP practices in both South Devon and Torbay	Set up a multidisciplinary frailty hub to joined-up health and care and address critical and complex patients	Expected reduction of: <ul style="list-style-type: none"> - avoidable A&E - permanent care home Still waiting for evaluation
Hull FIRST integrated care approach to respond quickly and effectively to people in need	Risk stratification RAIDR tool to identify people at high risk of hospital admissions GP practice linked to hospital data	Clinical Hub with multi-skilled falls response service to provide help within one hour	Expected reduction of all unplanned admissions due to fall
The South Somerset Symphony programme to provide integrated care for complex patients with long-term conditions care	People who account for: <ul style="list-style-type: none"> - 4% of the population with 3 or more co-morbidities (around 1,500 people) - 50% of health and social care costs Use EMIS GP practices	NHS E vanguard site working to deliver an integrated Primary and Acute care system for a more effective and enhanced service <ul style="list-style-type: none"> - Direct access to GPs and multidisciplinary hub team - Home visits 	Expected reduction of: <ul style="list-style-type: none"> - avoidable A&E - permanent care home - elective admissions

Examples of how CCGs are using eFI

- Proactive falls prevention interventions for people with moderate frailty (NHS Leeds South & East CCG)
- Adding people with severe frailty to practice palliative/Gold Standards Framework registers and offering advance care planning interventions (NHS Airedale, Wharfedale and Craven CCG)
- Offering self-management support to people with mild frailty (NHS Bradford Districts CCG)
- Medication reviews for people with severe frailty and care home residents (NHS Vale of York CCG)
- Adding people with severe frailty to a GP practice top two per cent of patients at risk of avoidable unplanned admissions register (NHS West Lincolnshire CCG)
- Nurse-led frailty assessments for people with mild, moderate and severe frailty (NHS Hambleton, Richmondshire & Whitby CCG)
- Identifying patients with moderate and severe frailty for geriatrician led Frailty Clinics or comprehensive geriatric assessment clinics (NHS South Devon & Torbay CCG)

Key references and further reading

Clegg et al: **Development and validation of an electronic frailty index using routine primary care electronic health record data**, Oxford University Press, March 2016

<https://academic.oup.com/ageing/article/45/3/353/1739750/Development-and-validation-of-an-electronic>

Healthy Ageing Collaborative: Electronic Frailty Index. Academic Unit of Elderly Care & Rehabilitation, Bradford Teaching Hospitals Foundation Trust Yorkshire & the Humber Improvement Academy

https://www.kingsfund.org.uk/sites/files/kf/media/Healthy-Ageing-Collaborative-Electronic-Frailty-Index_2.pdf

For more information on how the eFI has being used, and case examples, visit:

<http://www.improvementacademy.org/improving-quality/healthy-ageing.html>

A similar analysis for Islington is also available on the Evidence hub:

[https://evidencehub.islington.gov.uk/PublicRecords/Public-health/Quality-and-performance/Reporting/2017-2018/\(2017-04-12\)-Managing-the-care-of-older-people-with-Frailty-Islington-2017.pdf](https://evidencehub.islington.gov.uk/PublicRecords/Public-health/Quality-and-performance/Reporting/2017-2018/(2017-04-12)-Managing-the-care-of-older-people-with-Frailty-Islington-2017.pdf)

Further information

This slide set has been created by Camden and Islington's Public Health Knowledge Intelligence team. For further information please contact **Ester Romeri**.

Email: publichealth.intelligence@islington.gov.uk

Tel: 020 7527 1810

We would also very much welcome your comments on this analysis and how it could better suit your individual or practice requirements, so please contact us with your ideas.

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