London Borough of Ealing and NHS Ealing Clinical Commissioning Group

Ealing Joint Strategic Needs Assessment

Older People -Frailty 2018

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Contents

1. Executive summary

Frailty is a distinctive health state related to the ageing process in which multiple body systems gradually lose their in-built reserves. Frail older adults experience an increased risk of adverse outcomes such as falls, fractures, comorbidity, disability, dependency, hospitalisation, need for long-term care and mortality.

Section 2 creates the context with a definition of frailty and the phenotype and cumulative deficits models which allow for local prediction of prevalence as well as highlighting the distinction between frailty and living with long term conditions and or disabilities. Around 10% of people aged over 65 years have frailty, rising to between a quarter and a half of those aged over 85 years. The national burden of frailty is outlined, and the global vision of healthy ageing is described including the concept of functional ability and intrinsic capacity. Factors affecting frailty are considered.

Section 3 considers the level of need in Ealing detailing the estimated prevalence and incidence analysed from data from the electronic Frailty Index (eFI) used by local GPs. Details of local factors involved in frailty prevalence or incidence are shown. Demographic changes predicted and potential impact on frailty is suggested. North West London frailty pilot findings and intentions to develop a front door focus and for shifting out of hospital and away from emergency care towards a semi planned service is highlighted.

Section 4 presents the evidence of what works guidance from National Institute of Health and Care Excellence (NICE). Primary, secondary and tertiary prevention is highlighted.

Section 5 outlines current Interventions and assets through service mapping relevant CCG and local authority services. Cost effectiveness, future need and return on investment tools are also considered.

Section 6 presents the gap analysis and unmet needs.

Section 7 lists the existing strategies, policies and action plans followed by recommendations.

2. Background

Frailty is a distinctive health state related to the ageing process in which multiple body systems gradually lose their in-built reserves. Around 10% of people aged over 65 years have frailty, rising to between a quarter and a half of those aged over 85 years. Older people living with frailty are at risk of adverse outcomes such as dramatic changes in their physical and mental wellbeing after an apparently minor event which challenges their health, such as an infection or new medication[1]. Frail older adults experience an increased risk of adverse outcomes such as falls, fractures, comorbidity, disability, dependency, hospitalisation, need for long-term care and mortality[2]. It is defined as:

> A clinically recognizable state in which the ability of older people to cope with every day or acute stressors is compromised by an increased vulnerability brought by age-associated declines in physiological reserve and function across multiple organ systems.[3]

There are two broad models of frailty – the first, known as the **phenotype model** (observable characteristics), describes a group of patient characteristics for example, unintentional weight loss, reduced muscle strength, reduced gait speed, self-reported exhaustion and low energy expenditure which, if present, can predict poorer outcomes. Generally, individuals with three or more of the characteristics are said to have frailty. This model also allows for the possibility of fewer characteristics being present with pre-frailty as a possible condition[1, 2].

The second **deficit model** is an accumulation of deficits, is broader than the phenotype approach, encompassing co-morbidity and disability as well as cognitive, psychological and social factors ranging from symptoms like loss of hearing or low mood, signs such as tremor or breathlessness, through to various diseases such as dementia, hypertension and disabilities. Increased health risks occur when there is a reduction of the reserve capacity of various physiological systems [1, 2]. The phenotype model of frailty should be used in fundamental research and a multidimensional deficit model in studying healthcare organization and planning[4].

Frailty is distinct from living with one or more long-term conditions or disabilities, although there may be overlaps in their management. Frailty may be the cause of disability in some patients and the consequence in others[1]. The distinction between frailty and disability made based on geriatricians' perceptions suggests that a critical mass of impairments or geriatric conditions add up to the phenotype of frailty, more than any one condition or disease. Furthermore, it is suggested that frailty is distinct from comorbidity. The latter being an aggregation of clinically manifest diseases present in an individual, and frailty the collective of subclinical losses of reserves across multiple physiologic systems. It is important to make this distinction as there is potential for prevention and to diminish the impact. In the case of frailty, evidence suggests that resistance training can increase lean body mass and the existence of preclinical frailty offers opportunities for early detection and prevention [4].

Frailty appears when the reserve capacity has decreased to a critically low point, where even small disturbances can lead to a series of complications. It is important from a societal perspective because it identifies groups of people in need of extra medical attention as well as indicating required financial health care planning[2]. More importantly, identifying frailty can help health and social care professionals to act to prevent the poor outcome of an intervention (or even to avoid the intervention) and to start a pathway of care to address the issues contributing to frailty[1].

2.1 The national burden of frailty[5]

The national burden of frailty is:

- 1.8 million people aged over 60 and 0.8 (25%) million people aged over 80 living with frailty
- Overall prevalence of frailty in people aged over 60 is 14%
- Tends to be more common in women
- 5% of people aged 60-69 and 65% in people aged over 90 have frailty (ELSA (2016))
- Frailty is linked with poor mobility, difficulty doing everyday activity, or simply 'slowing up'
- It progresses with age and as the population ages the prevalence and impact of frailty is likely to increase
- Frailty results in large increases in the health cost for care settings such as inpatient, outpatient and nursing homes

2.2 Global approach on frailty

The world is rapidly ageing: the number of people aged 60 and over as a proportion of the global population will double from 11% in 2006 to 22% by 2050. Older people are also living in cities. Population ageing, and urbanization are the culmination of successful human development during last century. To be sustainable, cities must provide the structures and services to support their residents' wellbeing and productivity. Older people require supportive and enabling living environments to compensate for physical and social changes associated with ageing[6]. World Health Organisation's (WHO) definition and its conceptual framework for healthy ageing are shown below:

Definition

Healthy ageing as the process of developing and maintaining the functional ability that enables wellbeing in older age

Vision

- a world in which everyone can live a long and healthy life

Goals

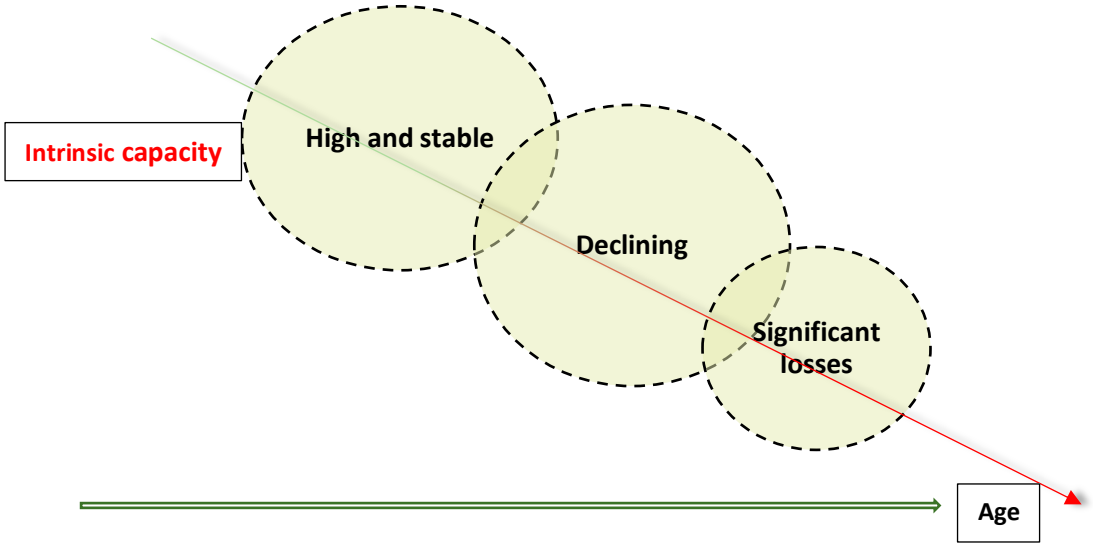
- 5 years of evidenced based action to maximise functional ability that reaches every person
- by 2020 establish evidence base and partnerships to support a decade of healthy ageing from 2020 to 2030[7]

Functional ability (FA) within the healthy ageing framework is a product of intrinsic capacity ((IC) which comprises physical, mental and psychological capacities); the environment and the framework for healthy ageing proposes that IC peaks in early adulthood and tends to decline from midlife onwards [3] - see figures 1[7] and 2[7]. A notable feature is that although IC can vary between individuals, most people experience significant losses towards the end of their lives[7].

Figure 1 Functional ability and intrinsic capacity[7] (Adapted from WHO[7])

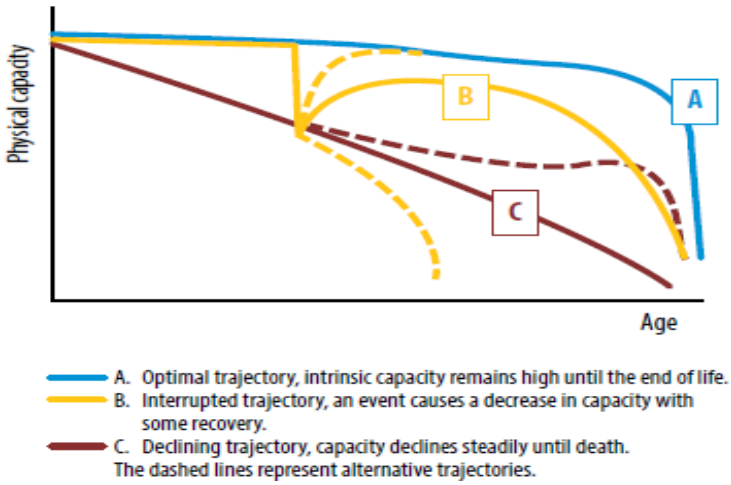
Functional ability = intrinsic capacity + environment

Figure 2 Population in the second half of life adapted from [7](Adapted from WHO[7])



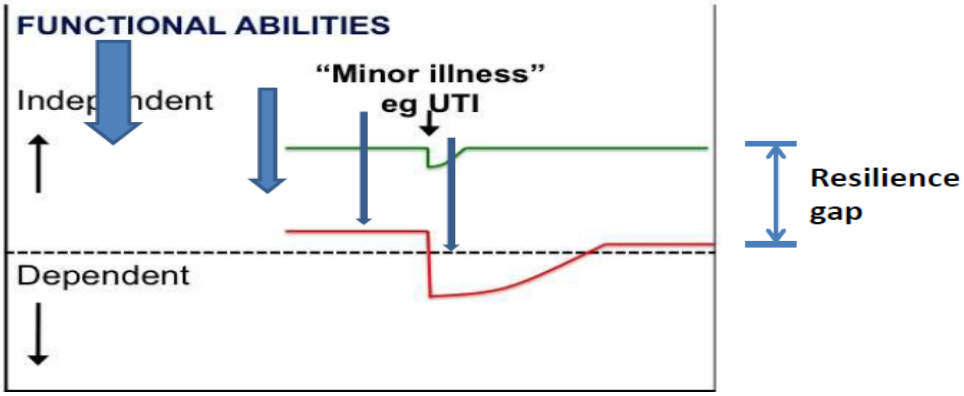
Healthy Ageing reflects the ongoing interaction between individuals and the environments they inhabit. With increasing age, numerous underlying physiological changes occur, and the risk of chronic disease rises. The interaction between individuals and environments results in trajectories of both IC and FA which represent physical capacity for individuals beginning from the same starting point in midlife[8] in figure 3. Trajectory A can be considered the optimal trajectory, in which IC remains high until the end of life and contributes to healthy ageing.

Figure 3 Potential trajectories of healthy ageing[8]



Healthy ageing also conceptualizes resilience as the ability to maintain or improve a level of FA in the face of adversity, either through resistance, recovery or adaptation[8]. Recovery affected by a minor illness like a urinary tract infection can reveal a resilience gap that exists among the frail (Figure 4)[9].

Figure 4 Functional ability and resilience[9]



Diminished IC results in impairments in FA and, eventually, difficulties with activities for daily living. Interventions should be targeted against the causes underlying frailty rather than its clinical manifestations to prevent or reverse frailty[3].

Public health interventions can improve IC at almost all points in a person's life. Adoption of a healthier lifestyle such as through physical exercise and good nutrition can positively modify the trajectory of the IC in later life[3].

2.3 Factors involved in frailty

2.3.1 Deprivation and stigma

Accumulation of disadvantage occurs over the life course and social conditions appear to influence the rate of deficit accumulation in older populations. Relative deterioration in socio-economic circumstances are reflected in differences between the most deprived and least deprived[10] and chronic diseases did explain the higher prevalence of frailty in lower socioeconomic groups [11]. A Spanish study found that those with lower educational background showed an increasing likelihood of being frail, even after adjusting for all confounders, including obesity[12].

People living in deprived areas not only die sooner, but they also spend more of their shorter lives with limitations of capacity. And deprived areas often lack the infrastructure and resources that might enable someone with restricted capacity to do what they need to do[13,8].

Services that promote the health, wellbeing and independence of older people and, in so doing, prevent or delay the need for more intensive or institutional care, make a significant contribution to ameliorating health inequalities[13].

Socially ingrained ageism can not only have profound consequences for older people and society but become self-fulfilling by promoting in older people stereotypes of social isolation, physical and cognitive decline, lack of physical activity and economic burden[8].

Other determinants are identified in Figure 5.

Figure 5 Frailty and determinants[1]

Addressing underlying diagnoses and reversible causes of such problems is considered essential and should be part of the assessment of frailty (Figure 5)[1].

It takes between five and ten years to develop frailty, but older people often present in crisis with hyper-acute frailty syndromes such as falls, delirium, and incontinence or reduced mobility. Symptoms can be treated but if a proactive case-finding approach was adopted and frailty was identified before a crisis occurred, exacerbations and deterioration of function may be prevented[14, 15 , 4].

The risk of frailty (as well as dementia and disability) will sometimes be determined by factors that can't be changed, such as inherited conditions or injury.

But changing specific *changeable* risk factors and behaviours can reduce the risk of frailty (as well as dementia and disability) for many people. These changeable factors are smoking, lack of physical activity, alcohol consumption, poor diet and being overweight[16].

2.3.2 Age

Older people contribute to society in many ways – whether it be within their family, to their local community or to society more broadly. However, the extent of these human and social resources, and the opportunities available to each of us as we age, will be heavily dependent on one key characteristic: our health. If people are experiencing extra years in good health, their ability to do the things they value will have few limits. If these added years are dominated by declines in physical and mental capacities, the implications for older people and for society may be much more negative[17]. The sometimes-drastic loss of ability that many older people experience is not an inevitable part of ageing. Ageing is a normal biological process that leads to a decline in vision, hearing, skin elasticity, immune function, and resilience[18].

One of the declines of ageing can be loss of muscle mass (**sarcopenia**) with a corresponding reduction in muscle strength. Muscle weakness is one of the underlying mechanisms of poor function and muscle strength correlates with several measures of functional status. Some age-related changes that were thought to result solely from ageing are now known to be the result of disuse and are therefore potentially reversible. While healthy women in their seventies retain 40-50% of the handgrip strength found in young adults they may retain as little as 26% of the power. A few weeks of immobilisation or disuse also has a detrimental effect on muscle mass, muscle strength and power even in young people. The decrease in muscle strength is greatest during the first week of immobilisation, 3-4% per day, and up to a 40% decrease in isokinetic muscle strength after 3 weeks of immobilisation.

In the oldest, namely 90–94 and >95 years, the prevalence of moderate frailty was significantly higher relative to the younger age groups (21% and 34%)[17].

2.3.3 Gender 

Frailty is more prevalent among women than men[2, 10]. While older males and females acquire new comorbidities with age, females have been found to acquire slightly more overall. This is not unexpected as women have lower average amounts of lean body mass and muscle strength[2].
In addition, the types of diseases commonly acquired by females, such as osteoarthritis, depression, and anxiety, appear to be more likely to impact negatively on function and quality of life[19]. The relationship between frailty and sarcopenia is recognised and the longer life expectancy among women is likely to be an explanation for this difference in prevalence[2].

The incidence of higher levels of frailty was greater in adults who were older, female, living alone, poorer and who had no educational qualifications [20].

2.3.4 Ethnicity

A survey of 7510 community-dwelling older adults in 10 European countries found that prevalence of frailty was higher in southern than in northern Europe, and African Americans are more likely to be frail than Caucasians[21].

2.3.5 Disability

Reduced sensory input seen with increasing age and compounded by medications, oedema and arthritis, exacerbates the inefficiency of the musculoskeletal system[22].

Disuse alone rather than disease increases the risk of loss of performance. One week's bed rest:

- Reduces strength by up to 20%
- Spine bone mineral content by 1%.
- Nursing home residents spend 80%-90% of their time seated or lying down – leading to inactivity-related disability
- Those who are less active and weaker will enter nursing homes earlier than those who maintain their fitness[23, 24]

Severe disabilities are common among older people who have impairments in a range of physiologic systems. The presence of co-impairments is a powerful predictor of new severe walking disability, an underlying cause of dependence in older people. Substantial reduction in the risk of walking disability could be achieved even if interventions were successful in correcting only one of the impairments because a deficit in only one physiologic system may be compensated for by good capacity in another system[25].

In the UK, on average, people could expect to live to age 77, with 15 of these years likely to be spent with some form of disability. Moreover, both life expectancy and disability-free life expectancy varied depending on where someone lived. On average, people living in wealthier neighbourhoods in England die approximately 6 years later than those living in poorer neighbourhoods. The difference in disability-free life expectancy was even greater: 13 years. So, people living in poorer areas not only die sooner, but they also spend more of their shorter lives with limitations of capacity, experiencing unequal outcomes[13].

2.3.6 Dementia

The relationship between frailty and dementia is reciprocal. Frailty appears to be a crucial factor increasing the risk for both hypoglycemia and dementia, initiating the reciprocal relationships[26, 27] .

In cases of frailty, muscular strength and walking speed are impaired, as is cognitive performance, with memory being the most impaired. Among the major outcomes of this are Mild Cognitive Impairment (MCI), dementia and the greater risk of mortality in the elderly[28].

Evidence from clinical-pathologic studies reveals that the rate of progression of frailty is significantly associated with the accumulation of common brain pathologies including macro-infarcts, cerebrovascular disease, Alzheimer's disease and Parkinson disease. Risk factors that are common to both frailty and dementia include indicators of vascular dysregulation, hormonal systems, inflammation, insulin resistance, obesity and nutrition. Increased levels of frailty are also independently associated with an increased risk of dementia, although this was not observed in adults who have a low global cognitive function at baseline[20].

Findings above highlight that frailty should be considered alongside levels of cognitive performance when assessing the risk factors for dementia[20] .

2.3.7 Diabetes

The number of older people with diabetes is rising and with ageing populations both are risk factors for functional disability. Diabetes is an important risk factor of developing physical disability in older adults and this could result in older people with diabetes having lower muscle mass and weaker muscle strength. In addition, muscle quality is poorer in diabetic patients. Thus, the likelihood of increasing numbers of frail older people with diabetes will increase direct and indirect health related costs[29].

By 2025, there will be more than four million people with diabetes in the UK. Prevalence of diabetes by age group in England (2006), Table 1 [30].

Table 1 Diabetes prevalence[30]

Age	Men	Women
65-74	15.7%	10.4%
75+	13.5%	10.6%

Diabetes and hypertension are associated with frailty with an incremental association when both conditions were present or with worse associated features (any complication, more time since diagnosis). Frailty should be of concern in populations with a high prevalence of these conditions[31].

2.3.8 Depression, loneliness and social isolation

Physical frailty is associated with more severe depressive symptoms and quarter of depressed older patients is physically frail. Even though broader concepts of frailty include psychological characteristics, frailty is largely neglected in mental health care[32]. The incidence of depressive symptomatology or frailty or their co-occurrence was higher than 10% in older adults aged 55 plus years and these prevalence rates varied widely, but less so in large epidemiological studies of new incident frailty. The prospective relationship between depressive symptomatology and increased risk of incident frailty was robust, while the opposite relationship was less conclusive[33]. Correlation of frailty and depression is substantial and may be the basis for comprehensive approaches to intervention for depression and frailty in later lives that address both mental and physical vulnerability to poor health[34].

Social relationships are important for health. Social isolation is defined objectively using criteria such as having few contacts, little involvement in social activities and living alone. Loneliness is a subjective feeling of dissatisfaction with one's social relationships. Both social isolation and loneliness have been linked with increased mortality, incident heart disease and functional decline.

Social isolation and loneliness tend to be weakly correlated.

Elevated levels of loneliness, but not of social isolation, increased the risk of becoming physically frail. Neither loneliness nor social isolation were associated with the rate of change in a more broadly defined frailty index[35].

2.3.9 Health behaviours

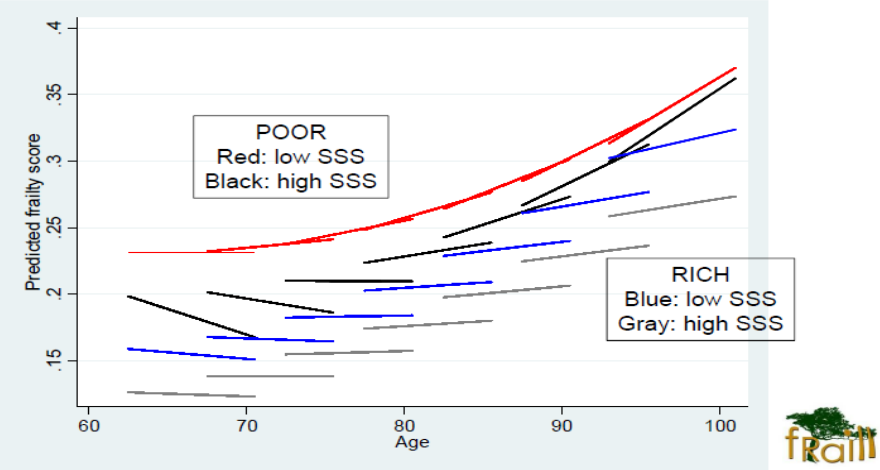
The big four "proximate" causes of preventable ill-health are: smoking, poor nutrition, lack of physical activity and alcohol excess[36]. The English Longitudinal Study of Ageing concluded that there may be reducing gender inequalities, with considerably higher levels of frailty amongst those with lower incomes compared to those with higher incomes and, enduring or increasing class-based inequalities[37]. Compared to adults who were non-frail, frail adults were approximately four times more likely to be in the income deprived wealth quintile and nearly twice as likely to have no educational qualifications. Frail adults, compared with their less frail counterparts, were also more likely to smoke and to live a sedentary lifestyle, but they were less likely to drink alcohol daily. Frail adults were approximately ten times more likely to live a sedentary lifestyle than non-frail adults[20].

All disease prevention strategies require changes in behaviours and their social, economic and environmental contexts. A complexity influencing health inequalities is differences in access to information, services and resources[38].

2.3.9.1 Smoking

Differences are also seen in health behaviours and frailty between communities e.g. smoking and wealth in relation to frailty are seen below in Figure 6[37]. COPD is strongly associated with incident frailty suggesting that current smokers are more likely to develop frailty due to COPD, rather than smoking itself. Smoking also has a negative impact on bone mineral density, with evidence of damage apparent from as early as the late teens that increases with age[39]. Given that smoking is a modifiable lifestyle factor, and smokers who quit did not appear to be at elevated risk for frailty, it is suggested that smoking cessation may potentially prevent or delay developing frailty, even in old age[40]. A systematic review provides evidence suggesting smoking can be a predictor of worsening frailty status among community-dwelling people. Smoking cessation may potentially be beneficial for preventing or reversing frailty[41].

Figure 6 Smoking, wealth and frailty[37]



2.3.9.2 Nutrition

Among community-dwelling older adults, an increasing adherence to the Mediterranean diet was associated with decreasing risk of frailty[42, 43].

Suboptimal protein/total calorie intake and vitamin D insufficiency have both been implicated in frailty [1]. Low level of vitamin D is significantly associated with the risk of frailty and results of subgroups analysis indicates that low level of vitamin D is significantly associated with the risk of frailty in females[44].

To protect musculoskeletal health, it is recommended that the blood concentration of vitamin D in individuals in the UK should not fall below 25 nmol/L at any time of the year. Osteomalacia in adults, develops because of vitamin D deficiency. It commonly presents with severe aching in bone and muscles and proximal muscle weakness making standing up and walking difficult and painful and results in a marked waddling gait. Evidence on vitamin D and musculoskeletal health outcomes suggests beneficial effects of vitamin D in reducing the risk of osteomalacia in adults and risk of falling in adults >50y people and in improving muscle strength and function in all adults.

Further, bone mass later in life depends on peak bone mass reached at skeletal maturity and the subsequent rate of bone loss. For men, bone loss is slow and continual. Women experience accelerated rate of bone loss caused by the sudden decline in oestrogen production by the ovaries at menopause and generally lose more bone than men.

Those at risk of low vitamin D status are:

- people from a minority group, such as African, African-Caribbean or South Asian
- those who are not often outdoors
- populations with inadequate exposure to sunshine, such as:
  - housebound or institutionalised people
  - deeply pigmented persons living in low ultraviolet radiation settings (like the UK)
  - those who, for religious or cultural reasons cover their entire body surface when they are outdoors
- people with inadequate dietary sources e.g. non-fish eating, vegetarian and vegan diets [45, 46].

In the UK, population groups at increased risk of having a serum concentration < 25 nmol/L are those with minimal sunshine exposure because of not spending substantial time outdoors (e.g., frail and institutionalised people) or due to the habitual wearing of clothing that covers most of the skin while outdoors[45]. A healthy balanced diet is also important for good bone health, to prevent osteoporosis in later life. According to the Scientific Advisory Committee on Nutrition (SACN) this should include vitamin D and calcium, which are both important dietary components for musculoskeletal health through maintaining healthy bones, teeth and muscles[46].

2.3.9.3 Obesity

Obesity prevalence varies with age for both males and females, with the highest levels in the 55 to 64 age group. Obesity is a strong risk factor for the development of osteoarthritis of the knee. A meta-analysis of observational studies published in 2011 estimated that people with a healthy weight (a body mass index below 25) are less likely to develop osteoarthritis of the knee than those who are obese[39]. There is emerging evidence that frailty increases in the presence of obesity particularly in the context of other unhealthy behaviours such as inactivity, a poor diet and smoking[1].

2.3.9.4 Physical activity

In 2010, physical inactivity was the 11th-largest risk factor for years of healthy life lost, accounting for 2.8% of the total disease burden[47]. Regular exercise can prevent dementia, type 2 diabetes, some cancers, depression, heart disease and other common serious conditions – reducing the risk of each by at least 30%. This is better than many drugs[36]. Evidence of reduction in risk of common

conditions, and scale of reduction, with exercise at the 30-minutes 5-times-per-week level can be seen in Table 2[48, 36].

Table 2[36]

Condition EXERCISE (5 x 30mins/week) reduces risk by…		Treats?	UK life-time risk
Heart disease	40%	✓	40%
Hypertension (blood pressure)	50%	✓	50%
Stroke	30%	✓	20%
Diabetes type 2 amputations/ulcer	50%	✓	6%
Obesity	10%	✓	25%
Cancer	Unclear	✓	33%
…Breast cancer	25%	✓	12%
…Bowel cancer	45%	✓	6%
Depression	30%	✓	15%
Dementia	30%	✓	15%
Low back pain	40%	✓	50%
Osteoarthritis	50%	✓	40%
Falls in elderly	40%	✓	30%
Osteoporosis	40%	✓	50%
Fractures	50%		20%

For people who fear reduced independence, the solution is not to hope for a quick exit from this world but to do enough activity every day and with every diagnosis. The attitudes of health and care professionals need to change too. Functional decline and the need for social care are not inevitable consequences of ageing. 25% of women and 20% of men in the UK report doing no activity at all in a week, let alone the recommended minimum 150 minutes to maintain health. People with long term conditions and those who experience pain often mistakenly believe that exercise will make things worse, rather than understanding that the more conditions you have the more you need to improve the four aspects of fitness: strength, stamina, suppleness, and skill. Strength and balance training reduce the risk of falls. Furthermore, evidence is growing that recovery of these four attributes of fitness improves cognitive ability and reduces the risk of dementia, not only in midlife but also in the 70s and 80s. The physical, mental, and social benefits of exercise can help enable people to live more independently and more autonomously[18]. Reduction of the risk of frailty associated conditions namely dementia, diabetes, depression, hypertension, falls and fractures may be of interest to commissioners.

Multicomponent exercise programmes are effective for older people living in long term nursing homes (focused on strength, balance [1, 49], stretching exercises, and walking), with specific relevance in those with lower physical function scores[50]. Additionally, there are several proposed interventions which target aspects of frailty or physical frailty, including exercise and nutrition[51, 52, 4] as well as technology-based approaches. Multicomponent training interventions, of long duration (≥5 months), performed three times per week, for 30–45 minutes per session, generally had superior outcomes than other exercise programs. Structured exercise training seems to have a positive impact on frail older adults and may be used for the management of frailty[53].

The numbers of frail older people with multiple medical problems is increasing rapidly, yet many conditions are preventable or improved with moderate physical activity[36, 39,49].

2.3.9.5 Alcohol

NHS recommended limits are now a maximum of 14 units each week for men and women, spread over 3 or more days – although lower limits have been suggested for older people because their bodies handle alcohol differently. A small 125ml glass of wine is typically about 1.5 units and a pint of beer, lager or cider is usually 2–2.5 units.

Substance misuse in older people is associated with reduced life expectancy and accelerated ageing, which is further compounded by socio-economic deprivation. The recent revision highlighted above of lower risk drinking guidelines for all age groups may still be too high for some older people, especially for those who have accompanying physical and mental disorders and who are receiving medication. Older people with mental health conditions such as depression, anxiety and personality disorder have higher rates of alcohol misuse than those without mental health disorders[54, 55].

It is estimated that 1.4million over 65s drink above the recommended limits for alcohol. They face different stressors and face unique barriers which mean they could remain 'hidden'. As individuals become older, they often experience multiple losses, for example, loss of family, friends and health, and changes in role such as retirement or becoming a caregiver for an elderly partner or relative. Additional stressors (e.g. chronic pain or insomnia) and multiple crises (e.g. economic and health problems) may result in an overwhelming situation in which alcohol misuse may begin or increase. Approximately one third of older drinkers, known as 'late-onset' drinkers, first develop a drink problem in later life. The other two thirds of older drinkers, known as 'early-onset' drinkers develop an alcohol problem earlier in life[56].

Alcohol-related brain damage (ARBD) the brain disorder caused by regularly drinking too much alcohol over several years and drinking more than the recommended limit for alcohol increases a person's risk of [57]developing common types of dementia such as Alzheimer's disease and vascular dementia. The deficit model of frailty includes presence of dementia.

Alcohol related admissions rate in Ealing for persons aged 65+ in 2016/17 was 1,259 per 100,000 and this was higher than England at 1,014 and London at 986[58].

2.4 Care

Frailty in later life affects individuals, families and society and has a direct effect on community resources, because people are less able to go through their usual daily activities and often need support and long-term care. This impact is predicted to increase in the future as the population ages[59].

Home help utilisation increased statistically significantly per the degree of frailty and highest prevalence of frailty, predictably, was among those cared for by others, namely by family excluding spouse (83.9%, n = 89) or by a spouse/partner (78.4%, n = 58). Frailty has consistently been shown to be a significant contributor to increased utilisation of home care services in community dwelling elderly[60].

Within the people living with frailty, those with severe frailty comprise around 3% of the population aged 65 and older in England. For moderate frailty, it is 12% of those aged 65 and older and 35% for mild frailty. These individuals are frequent users of services across health and social care and are particularly vulnerable to adverse outcomes, health outcomes such as unplanned admissions to hospital, care home admission, acquisition of new disability or death. However, there is evidence that for some of this group, these adverse outcomes could be avoided through proactive case finding, timely comprehensive assessment, care planning and targeted proactive use of services outside of hospital[61, 62].

The proportion of people who have difficulty with activities of daily living (e.g. eating, toileting and washing, doing housework, taking medications and preparing meals) increases with age. 16.4% of 65year olds have at least one difficulty and this rises to 50% for those aged 85. By the late 80s 1 in 3 people have difficulty with 5 or more activities of daily living[63]. 24% of men and 31% of women aged 65 and over needed help with at least one Activity of Daily Living[64]. The same briefing also presses us to think about whether it is too simplistic to equate elder people with an equally greater burden of disability and disease on the basis that this would miss out the possibility of improving health in later life and the failure to account for changing nature and complexity of health needs as we age. Lifetime costs of care differ massively between individuals and the being fitter not only benefits the individual but also reduces the cost of society's needs for social care. Prevalence of frailty seems higher among nursing home residents than in community dwelling people with a general pooled prevalence[21].

Majority of people nursed at home and who get help with activities of daily living such as washing, dressing and eating are 75 or older. Half a million people receive home care from social services; 84 per cent of them are over 75 and 2.5 million people over 75 also have informal care at home from close family members, neighbours and friends. A quarter of carers are themselves 65 or older[65].

Being fitter not only benefits the individual it reduces society's need for social care and national and local organisations and individuals must act on this. The gap between the best possible level of ability and actual ability can be reduced at any age, no matter how many long-term conditions the person may have. The increase in the level of ability may not only restore the person to the ability they enjoyed 10 years earlier, it may make the crucial difference between living well at home or being dependent on social care or residential care[18].

Even modest improvements in fitness could mean a value of several billion per year since the mean costs of care double between the age of 65 and 75 and triple between 65 and 85[66].

2.5 Self- care

Care for people with long-term conditions (LTCs) forms a significant part of the health and social care system. Care services can play a key role in helping people to build their knowledge, skills and confidence, and to access services and support networks in their local communities such as self-management education programmes, coaching, peer support and group activities. However, the actual proportion of time that a person with an LTC spends with a health professional is very small compared to the time they spend managing their own care. 35% of the population of people living with LTCs have low or very low levels of knowledge, skills and confidence to self-care, to manage their health and wellbeing and live independently[67, 68].

56.6% of people in Ealing felt they were supported to manage their condition (2015/16) compared to 64.3% in England[68].

NHS England established the Self-Care Support Programme in 2016 to help people to manage their own health by "staying healthy, making informed choices [about] treatment, managing conditions and avoiding complications. Measuring patient activation is a central theme of the Self-Care Support Programme, to enable providers of health and social care to develop support systems for people to manage their own health [69, 70].

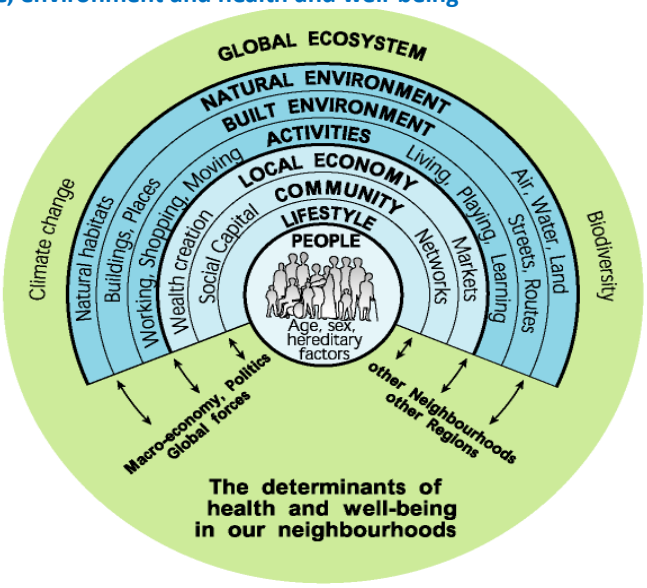
Key actions for CCGs to undertake to ensure people with LTCs feel supported to self-care and manage their health and wellbeing include:

•Identifying the services and resources in local area, building relationships with voluntary and community services and commissioning a menu of options to support self-care, including structured self-management education programmes, health coaching, peer support, group activities, and asset-based community support.
•Establishing criteria and methodology for cohort identification of people with LTCs with low levels of knowledge, skills and confidence who would benefit from additional support.
•Ensuring providers are facilitating personalised care and support planning conversations with people with LTCs and their carers to discuss what is important to them and what support they need to help build their knowledge, skills and confidence. Care professionals may need additional training and support.
•Commissioning active signposting or social prescription service to help people access support in their local areas[68].

2.6 Living environment

"Healthy older people are a resource for their families, their communities and the economy". Preventing frailty through all possible modifiable factors creates benefits in the community[71].

Figure 7 Place, environment and health and well-being [72]



The built environment and well-designed outdoor spaces seen in Figure 7[72] can enhance the long-term health and wellbeing of those who use them regularly, reduce the risk of falls, promote physical activity and reduce social isolation[73]. Older people who live in environment where it is easy and enjoyable to go outdoors are more likely to be physically active and satisfied with life and twice as likely to achieve the recommended levels of healthy walking[74, 75].

Safe, well maintained accessible natural greenspace can facilitate older people being more active through use of outdoor green spaces for health and exercise and well-maintained pavements can help prevent falls[71].

Neighbourhoods and planning have an impact on place and the built environment and on health and well-being (Figure 7). Less user-friendly environments are often perceived by older people as posing an increased risk of falling, especially by those who have vision, mobility or other impairments[76].

Utilisation of outdoor space for exercise health has risen in Ealing over the 2013 – 2016 (Table 3)[77].

Table 3 Utilisation of outdoor space for exercise and health in Ealing, London and England[77]

Period		Ealing Value	Lower CI	Upper CI	London	England
Mar 2013 - Feb 2014		11.4	7.1	15.8	11.8	17.1
Mar 2014 - Feb 2015		13.6	8.3	19.0	12.3	17.9
Mar 2015 - Feb 2016		18.7	12.6	24.8	18.0	17.9

Also, for architects and designers, and those who commission services, both general and specialised housing present challenges when designing for care at home. General housing stock is not always fit for purpose and older people's expectations of specialised housing have changed. Providers of social care are increasingly interested in creating inclusive, non-institutional environments, where residents retain control. Independent living in housing with care schemes can be compromised by building elements that do not take account of reduced physical ability and make movement difficult around the schemes[78]. It is not just the homes themselves that are important to maintaining independence: a local environment with accessible shops and services is vital, too[78].

In homes, fuel poverty can contribute to frailty through the impact of lower temperatures on mental health and the body for instance found cold homes worsen arthritis, a condition which affects 10 million people in the UK, including many over 65s, and this in turn can lead to a loss of dexterity and an increased risk of accidents and injuries in the home, including falls amongst older people[79, 80].

3. Level of need in Ealing

3.1 Prevalence

Frailty prevalence depends on the model of frailty used and can vary between 4% and 17% for people aged 65 years plus living in the community using the **phenotypic model** with 5 possible physical phenotypic markers of weight loss, exhaustion, weakness, slowness, and reduced physical activity.

The **broader deficit model** which includes co-morbidity and disability as well as cognitive psychosocial frailty shows a higher prevalence of 4% and 59%[2]. This could mean there are 1,620 (4%) to 23,895 (59%) residents with frailty in the total population of 40,500 over 65s[2]. Estimated frailty using the phenotypic model is shown below in Table 4.

Table 4 Estimated prevalence of frailty in Ealing- phenotypic model[2]

Age group	Resident population	Phenotypic model estimates	
		Frail (%)	Frail (number)
65-69	12,700	4%	508
70-74	9,400	7%	658
75-79	7,600	9%	684
80-84	5,600	16%	896
Over 85	5,200	26%	1352
TOTAL	40,500	10%	4,098

Several studies also show that the prevalence of pre-frailty is around 47%[21]. Estimated number of pre-frailty in Ealing therefore could be 19,035 (47%). Pre-frailty, frailty and multimorbidity are known to be associated with adverse health outcomes and important economic costs. The health system must adapt to respond to the needs of its aging population. In addition, given the efficient impact of

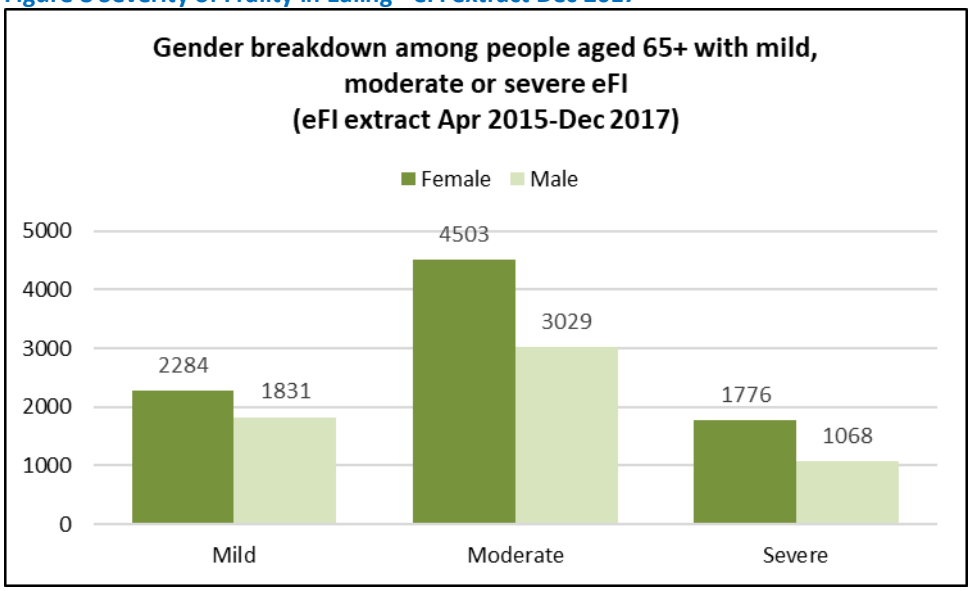
prevention actions, findings (in France) emphasize the need to implement prevention strategies against Frailty and multimorbidity[81].

3.2 Incidence

The electronic frailty index (eFI) was rolled out to general practices from July 2017 to identify patients aged 65 and over who are living with moderate and severe frailty. Extract from general practices records on frailty in Ealing (2017) shows the biggest group of patients have moderate frailty (52%) with 28% having mild frailty and 20% with severe frailty[82] in Figure 8. The total number of frail people identified in Ealing is 11,166 (24% of 46,003 registered patients, Quarter 4 2017/18[83, 83]). Therefore, there may be 27,141 (59% of 46,003 registered patients) unidentified frail patients based on the deficit model.

Severity, gender and ethnicity of people identified through the eFI (extract December 2017) in Ealing is displayed in Figures 8. Proportion of both moderate and mild frailty is significantly larger than the people who are identified as severely frail[82].

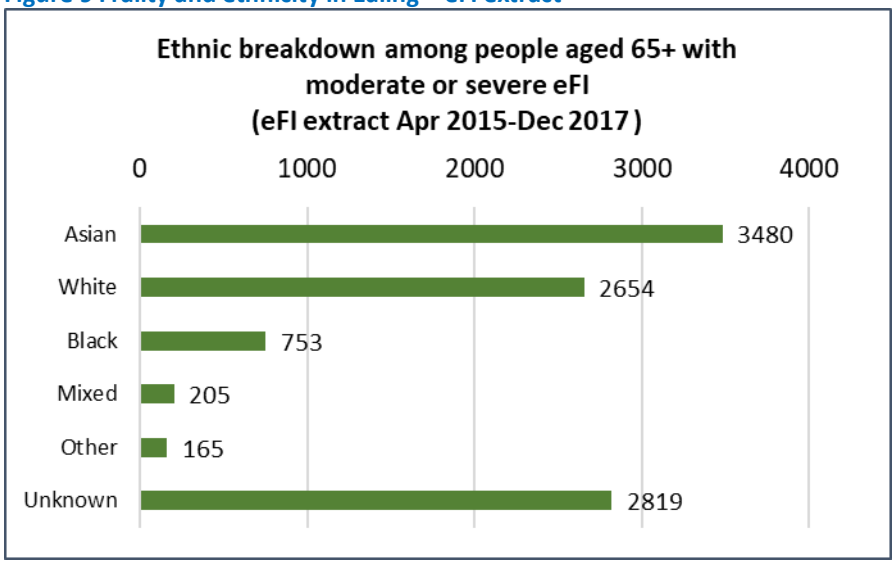
Figure 8 Severity of Frailty in Ealing - eFI extract Dec 2017[82]



The gender distribution in Ealing reflects the national picture with more women registered as frail than men and this pattern is also seen in the severity of frailty between the genders (Figure 8).

Ethnic breakdown from the eFI extract shows more patients with an Asian ethic origin with moderate or severe frailty (Figure 9).

Figure 9 Frailty and ethnicity in Ealing – eFI extract[82]



RightCare data shows 24% (11,166) of GP registered over 65+ patients (46,003) were assessed for frailty using the eFI by GP practices compared to 26% in England and number of assessments carried out in Ealing range from 5% to 95% across the (Quarter 4, 2017/18)[83].

3.3 Incidence of factors involved in frailty

Deprivation in Ealing is like the national average with nearly a quarter of 60+ year olds live in income deprived households[83]. Recorded dementia prevalence in 2016/17 is lower than estimated prevalence in 2018[83].

Table 5 compares the potential Ealing factors involved in frailty with London and England for over 65s.

Table 5 Factors involved in frailty (fingertips tool, PHE)

Public Health Outcome Indicators	Period	Ealing value	London value	England value	Comparison to England average
Population aged 65+ (ONS, Mid-year Estimate)[84]	2016	12.0%	11.6%	17.9%	**Lower**
Dementia recorded prevalence (65+)[85]	2017	3.9%	4.5%	4.3%	**Lower**
Estimated Dementia diagnosis rate (65+)[86]	2018	75.7%	70.5%	67.5%	**Better**
Alcohol related hospital admissions (65+)[87]	2016/17	1,259 per 100,000	986 per 100,000	1,014 per 100,000	**Worse**
Hip fractures (65+)[88]	2016/17	492 per 100,000	499 per 100,000	575 per 100,000	**Better**
Emergency hospital admissions due to falls (65+)[89]	2016/17	2,861 per 100,000	2,201 per 100,000	2,114 per 100,000	**Worse**

Social isolation –adult social care users who have as much social contact as they would like[90]	2016/17	39.7%	41.0%	45.4%	**Lower**
Social isolation –carers who have as much social contact as they would like[91]	2016/17	36.7%	35.6%	35.5%	**Similar**
Health related quality of life for older people*[92]	2016/17	0.719	0.728	0.735	**Worse**

**Mean score – average health status score for adults aged 65 and over, derived from responses to Q34 in the GP Patient's Survey, using the 5 dimensions of the EQ – 5D: mobility; self-care; usual activities; pain/discomfort; anxiety/depression.*

Table 6 compares Ealing data to London and England for indicators which are likely to include the over 65 age group and hence are likely to play a part in the incidence of frailty.

Table 6 Factors involved in frailty (wider age band cohorts)

Public Health Outcome Indicators	Period	Ealing value	London value	England value	Comparison to England average
Diabetes prevalence (17+)[93]	2016/17	8.1%	6.5%	6.7%	**Higher**
Estimated Diabetes diagnosis rate (17+)[94]	2017	78.3%	71.2%	77.1%	**Similar**
Depression recorded prevalence (18+) [95]	2016/17	5.1%	6.6%	9.1%	**Lower**
Smoking prevalence routine and manual workers (18-64)[96]	2017	21.2%	24.7%	25.7%	**Similar**
Overweight and obesity in adults (18+)[97]	2016/17	56.9%	55.2%	61.3%	**Similar**
Physical inactivity adults (19+)[98]	2016/17	30.9%	22.9%	22.2%	**Worse**

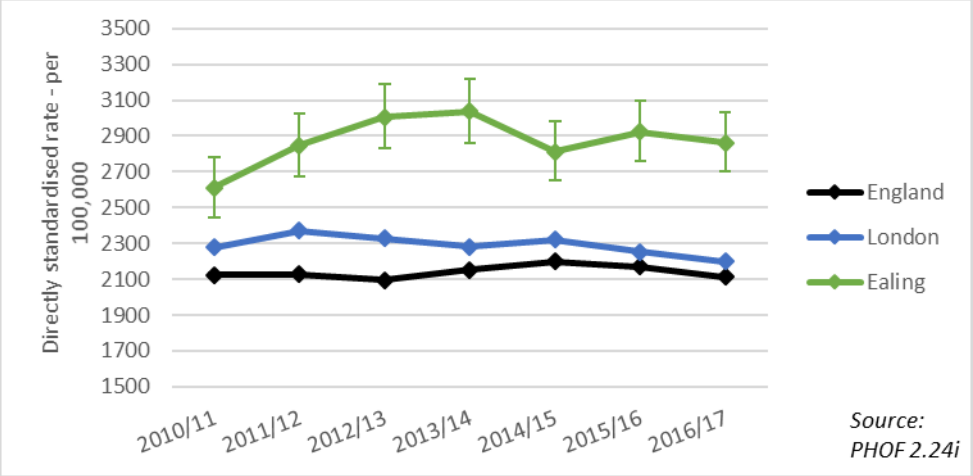
3.4 Falls and Fractures

Poor health does not have to be the dominant and limiting feature of older populations. Most of the health problems of older age are the result of chronic diseases. Many of these can be prevented or delayed by engaging in healthy behaviours[99]. The key goals of healthy ageing, where older people are supported to remain mobile, have their needs met, continue to learn, develop and maintain relationships and contribute to society, are deliverable at least in part through proactive falls and fracture prevention[49]. 26% of falls have attributable risk factors to the environment and 9.2% to alcohol abuse[100].

Declining muscle mass and strength, and painful joints coupled with loss of bone density with age make it more likely that older people will have falls and sustain injuries. One in three adults over 65 have falls each year and fear of falling can lead to loss of confidence. In turn this can lead to loss of independence and social isolation[49]. Exercise (at all ages), modified as required for frail older people can reduce the age-related loss of muscle mass, maintain strength, bone density and reduce pain in

joints. This in turn reduces the risks of falls and fractures[101, 102]. Falls in Ealing and admissions due to falls have been above the England rate since 2011[103] Figure 10.

Figure 10 Trend for emergency admissions due to falls in people aged 65+[89]



Hip fracture is a debilitating condition – only one in three sufferers return to their former levels of independence and one in three ends up leaving their own home and moving to long-term care. The annual expenditure for hip fractures is estimated at about £2 billion a year. Major risk factors for fragility fractures include low bone mineral density, previous fracture, age, female sex, history of falls, glucocorticoids, rheumatoid arthritis, smoking, high alcohol consumption, low BMI and visual impairment [49]. Hip fracture is one of the gravest consequences of falls in the elderly, with a mortality of 10% at one month and 30% at one year[104].

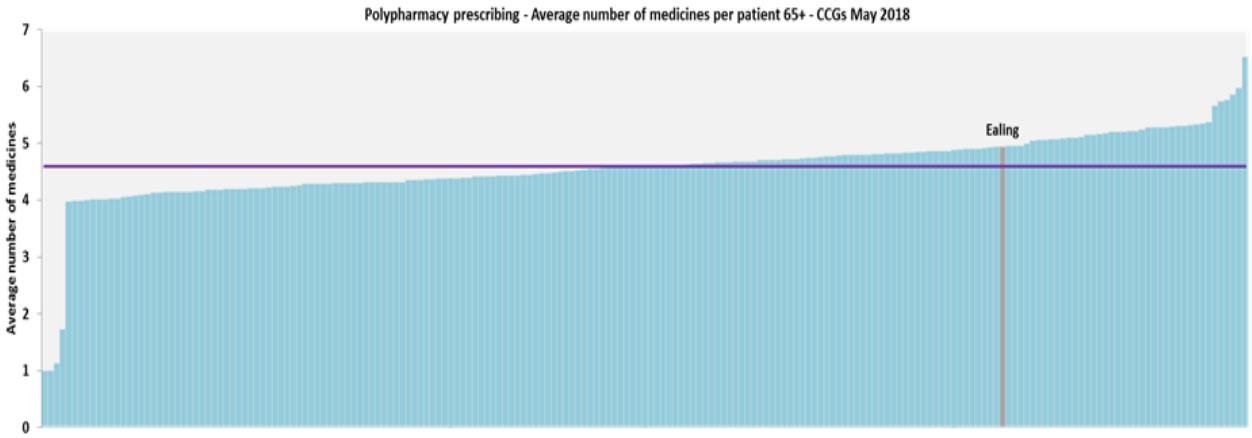
Hip fractures in Ealing in 2016/17 in people aged 65 and over were 492 compared to 499 in the region of London and 575 in England. The trend in Ealing for hip fractures has been below (Figure 11) the trend for England since 2011/12**Error! Bookmark not defined.**. It is estimated that up to 25% of hip f ractures (about 20,000 a year) could be prevented. Each year, almost a third of over 65s fall at least once and there are an estimated 500,000 fragility fractures[105]. The number of over 65s in Ealing by 2025 will be 51,561 and 66,009 by 2035[106] and third of these projected over 65s falling would mean 17,187 people falling in 2025 and 22,003 falling in 2035. Amongst older people living in the community, 5% of those who fall in a given year will suffer from fractures and hospitalisation[49]. Hence, the rate per 100,000 in Ealing the future fractures could be estimated to be 1,665.98 (n=859) in 2025 and 1,666.43 (n=1,100) in 2035 i.e. a rise in hip fractures with a rise in over 65s population.

Figure 11 Hip fractures in people aged 65 and over - Ealing Error! Bookmark not defined.

3.5 Polypharmacy

Ealing appears to be above the national average for the average number of medicines prescribed to elderly people[83].

Figure 12 Polypharmacy[83]



3.6 Future need

3.6.1 By 2030 the following is expected in Ealing:

- Number aged 65 and over will increase by 53%
- 18,748 older people with limiting long-term illness predicted to rise to 21,002 (17.4%)
- Highest rise among older people aged 85 and over (40.8%)
- Increasingly diverse borough, with a rise projected for Black and Minority Ethnic (BAME) groups at 52% and the white ethnic group at 48% [107].

Frailty progresses with age and as the population ages the prevalence and impact of frailty is likely to increase[5]. Expected increases in people over 65, compounded with rise in long term illnesses and rise in BAME by 2020[107] and as yet unidentified frail over 65s[2] could mean a significant rise in frail people in Ealing. GP contract data shows that Ealing have assessed 24% (11,166) of their 65+ registered patients for frailty. The proportion of patients assessed for frailty at GP practices ranges from 5% to 95% across the CCG[83].

3.6.2 As a part of a sustainable approach everyone working with older people should understand the concept of IC and know that it is not a fixed entity: declines in an older person's IC can be identified and further progression delayed or stopped; effective interventions can also restore a person's IC. Health care professionals and researchers in geriatrics should move away from focusing on disease towards focusing on Healthy Ageing namely, maintaining and enhancing the IC and FA of older people. Enhancing IC is a way of preventing frailty[3]. A collaborative and complete system approach to prevention, response and treatment is recommended for local areas[49].

3.6.3 Likely increasing levels of falls and fractures due to expected changes in demographics by 2030[107] and potential gap between incidence and prevalence[2] could mean an enhanced focus on self-care prevention for over 65s may need to be considered by commissioners.

3.6.4 Commissioners may want to be assured that support for mental health of frail over 65s through Improving Access to Psychological Therapies (IAPT) addresses the unidentified and expected rising levels of frailty[2,5,107].

3.6.5 NWL STP frailty pilot in Ealing showed around 50 older people a week could benefit from a frailty model of care and 70% of the older people who were seen by the piloted service returned

home with another 22% being redirected into intermediate care services rather than being admitted to hospital. The STP is considering the learning from the pilot of the front door model to not only seeing older people at the point of crisis, but also supporting care and care planning before they reach that point, a shift out of hospital and transitioning away from emergency care towards a semi-planned service[108].

4. Evidence of what works

4.1 National guidance

NICE[59] recommends that national organisations and local government departments that influence public health should continue to develop and support population-level initiatives to reduce the risk of frailty (as well as dementia and disability) by making it easier for people to:

- stop smoking
- be more physically active

- reduce their alcohol consumption
- adopt a healthy diet

- achieve and/or maintain a healthy weight.

Use of local regulatory options and legal powers available to encourage population level initiatives for increased adoption of healthy behaviours, and risk reduction is also recommended. Brief advice which follows an 'ask, advise, assist' structure and brief interventions involving spoken advice, discussion, negotiation or encouragement, with or without written or other support or follow-up are recommended as part of behaviour change[59]. For the management of multiple morbidities using a screening tool (for example, the STOPP/START tool in older people) should be considered to identify medicine-related safety concerns and medicines the person might benefit from but is not currently taking[109].

NICE recommends that advice on physical activity is incorporated into care pathways for cardiovascular disease, type 2 diabetes, stroke, mental health, and groups that are particularly likely to be inactive[110]. This includes people aged 65 years and over, people with a disability and people from certain minority ethnic groups[110].

NICE also recommends that the joint strategic needs assessment, the joint health and wellbeing strategy and other local needs assessments and strategies consider opportunities to increase walking and cycling[111]:

- Public health directors, local authorities and clinical commissioning groups should also consider how impediments to walking and cycling can be addressed
- Ensure walking and cycling are considered, alongside other interventions, when working to achieve specific health outcomes in relation to the local population (such as a reduction in the risk of cardiovascular disease, cancer, obesity and diabetes, or the promotion of mental wellbeing)
- Ensure walking and cycling are included in chronic disease pathways
- Ensure all relevant sectors contribute resources and funding to encourage and support people[111]

Supporting active healthy lifestyles, reducing sedentary behaviour, and supporting people to remain active throughout a life course are crucial[3, Error! Bookmark not defined.22, 36, 49, 50, 52, 70, 112]. For success, this i nvolves not only about providing physical infrastructure but supporting behaviour change, supporting those who would like to increase their activity levels to become active as well as supporting those that wish to remain active. Being active (whether walking more frequently to the shops, dancing, playing bowls, taking part in led health walks, working on allotments or volunteering for work in the community) can be an important way for older adults to maintain independence and social engagement. This in turn can contribute to higher levels of mental well-being. Concerted action is needed to create environments and conditions that make it easier for people to be active, and this should feed into policy decisions by the council and CCG at all levels [112].

Guidance exists on the implementation of an integrated pathway:

- to ensure safe, compassionate care for older people for commissioners, providers and nursing, medical and allied health professional leaders
- summarize the evidence of the effects of an integrated pathway of care for older people
- suggest how the commissioning could be achieved through effective use of levers and incentives[113].

NICE has produced a quality standard that covers the management and secondary prevention of hip fracture in adults (18 years and older). The standard is designed to drive measurable improvements in the 3 dimensions of quality – patient safety, patient experience and clinical effectiveness for fragility fracture of the hip or fracture of the hip due to osteoporosis or osteopenia[114].

Promoting healthy and safe communities is a part of the national planning framework and it includes for example the promotion of social interaction, strong neighbourhoods, safe and healthy lifestyles[115,116]. Local Government is consulting on a green paper on care and support for older people in 2018.

4.2 Primary Prevention

4.2.1 Community physical activity

The maintenance of physical performance as we age is important not only to prevent a fall but in the event of a fall, to have the functional capability to get up from the floor, and in the long term, repair from injury and regain confidence and independence. Around a third of all people aged 65 and over fall each year, increasing to half of those aged 80 and over and there are around 255,000 falls-related emergency hospital admissions in England among patients aged 65 and older[49]. The routine identification of those most vulnerable to falling will allow targeting of those interventions at individuals which grant the best chances of avoiding injury and its potential consequences[49]. The optimum approach for many older people living in the community with a low to moderate risk of falls should include strength and balance exercise programmes. A Cochrane Collaboration systematic review found that group exercise reduced the rate of falls by 24% and the risk of falling by 15%. Home-based exercise reduced the rate of falls by 32% and the risk of falls by 22%. The review found that home hazard assessment and modification carried out by occupational therapists reduced the rate of falls by 19% and the risk of falling by 12%. Also, home hazard assessment and modification carried out by occupational therapists reduced the rate of falls among those at considerable risk of falling[117].

A structured moderate intensity physical activity programme compared with health education reduced major mobility disability over 2.6 years among older adults at risk of disability suggesting mobility benefits for vulnerable older adults[118].

The age standardised rate per 100,000 for emergency admissions due to falls in Ealing in 2016/17 was 2861 and the trend for people falling locally is worse than England and some statistical neighbours[119, 103].

4.3 Secondary prevention

4.3.1 Primary Care The recommended evidenced based approach for older people with frailty and multimorbidity in primary care[120] is outlined below:

- Assess for frailty during all healthcare encounters
- Record frailty and frailty severity, using READ codes
- In people with moderate or severe frailty, carry out a comprehensive geriatric assessment to- a) diagnose medical illnesses and optimise treatment b) conduct a medication review c) generate a personalised care and support plan
- Refer for specialist assistance in complex or uncertain diagnoses
- Share health record information between primary care, emergency services, secondary care and social services
- In people with very severe frailty, offer Advance Care Planning

The use of eFI has been introduced in the GP contract in 2017-18 to identify frail over 65s through assessment. The validation of the tool revealed that 35 per cent of the population aged 65 and over have 'mild' frailty. The benign language is in this case misleading as these individuals have double the in-year mortality of their fit counterparts at the same age. The point being that these are people who while not overtly 'frail', do in fact have a significantly higher, but potentially modifiable, mortality risk[121].

The eFI assessment could be used to not only to ensure those with dementia and disability are supported with appropriate treatments and referrals but also to encourage all patients with frailty to take up flu and pneumococcal vaccinations to prevent infections which lead to falls and hospitalisation[122, 83].

4.3.2 Compared with a sedentary reference group mild **physical activity** was insufficient to significantly slow the progression of frailty, moderate physical activity reduced the progression of frailty in some age groups (especially among 65year olds and above) and vigorous physical activity significantly reduced progression of frailty in all older adults [123]. GPs, practice nurses and physiotherapists should identify inactive people opportunistically and offer advice on increasing physical activity. The NHS Health Check programme is an opportunity to encourage people to change behavioural risk in mid-life[59]. The Chief Medical Officer's report[112] recommends:

Older Adults (65+ years)

1. Older adults who participate in any amount of physical activity gain some health benefits, including maintenance of good physical and cognitive function. Some physical activity is better than none, and more physical activity provides greater health benefits.

2. Older adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of 10 minutes or more – one way to approach this is to do 30 minutes on at least 5 days a week.

3. For those who are already regularly active at moderate intensity, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or a combination of moderate and vigorous activity.

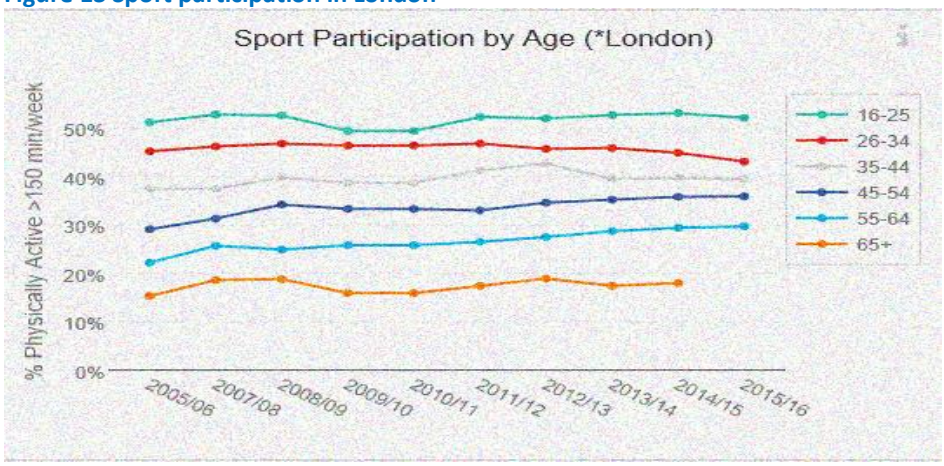
4. Older adults should also undertake physical activity to improve muscle strength on at least two days a week.

5. Older adults at risk of falls should incorporate physical activity to improve balance and co-ordination on at least two days a week.

6. All older adults should minimise the amount of time spent being sedentary (sitting) for extended periods.

Consideration of how this recommendation is reflected locally shows that participation in sport among over 65year olds has been lower across London between 2005-16 (Figure 13)[124].

Figure 13 Sport participation in London[124]



Data from London Sport maps shows levels of ***in*activity** among different ages and levels among 55+ year olds in Ealing with a higher level of *in*activity among 55-64-year olds at 33% and 44% among those aged 65+ years compared to *in*activity in London in the same age groups[124].

Levels of physical activity show an association with ethnicity. Except for Black Caribbean and Irish populations, all other minority ethnic groups have lower rates of adherence to the CMO's recommendations on physical activity for adults. Of relevance in Ealing, are the low levels of participation in physical activity in certain wards (Southall, west Greenford, Northolt and East Acton) [125,126]. Many minority ethnic groups have lower rates of physical activity participation and do not achieve the recommended levels of physical activity. This is most pronounced for Bangladeshi and Pakistani women, with only 11% of Bangladeshi and 14% of Pakistani women reportedly undertaking the recommended amounts of physical activity compared to 25% in the general population[127].

Physical activity and strength and balance training is necessary to the maintenance of musculoskeletal (MSk) health[128, 70].

Exercise has been showed to improve outcomes of mobility and functional ability in two systematic reviews of home-based and group-based exercise interventions for frail elderly people[117,53].

Muscle power is a more discriminant predictor of functional performance among older adults than muscle strength and exercise interventions targeted at improving lower extremity muscle power have been well tolerated, safe and effective even among frail older people[129, 130].

High intensity progressive regimen of resistance exercise training has been demonstrated as being effective in improving muscle power output, muscle mass, and functional capacity in frail elderly[131, 53]

Finally, exercise intervention which includes resistance training may help to improve muscle functional capacity in elderly at a polypathological condition and severe functional decline, including those with diabetes complications[129].

4.3.3 All the factors that characterise frailty (low muscle strength, unintentional weight loss, feeling of exhaustion, poor physical performance, and reduced physical activity) may be influenced by poor **nutrition**. Optimal levels of nutrients to prevent frailty and decreases in physical performances, remain to be determined for the elderly. Such levels exist in routine food as shown in Mediterranean diet for cardiovascular prevention[132]. For the overs 50s, vitamin D supplementation improves muscle strength and function[46]. Vitamin D supplementation does not appear to reduce falls but may be effective in people who have lower vitamin D levels before treatment[117]. A recent systematic review showed that:

- Physical intervention alone or combined with nutritional supplementation should improve the frailty status.
- The role of nutritional intervention alone or in combination is still uncertain and recent data suggest that rather than making interventions based on the supplement of some nutrients, it should be more appropriate a global approach based on a healthy diet[133].

4.3.4 Polypharmacy is recognized as a possible major contributor to the origins and effects of frailty. Reducing medication could reduce costs and incidence of frailty among elderly subjects[21]. It is important to review patients' medications regularly, whether they are young or old, to determine how appropriate, they are, especially (although not only) if they are taking many drugs. There are many conditions in which the combined use of three or more drugs is beneficial and appropriate for example diabetes mellitus. However, inappropriate polypharmacy is common and is associated with an increased risk of adverse drug reactions and interactions[134,14].

While it is recognised that polypharmacy can be beneficial, there is considerable potential for harm, particularly through drug interactions, adverse drug events and non-adherence. Such harms are

amplified in people who are frail and who may require interventions to be tailored to their individual needs rather than strictly following guidance designed to manage single diseases. It is important to develop an approach that allows patients to make informed decisions and prioritise medicines for continuation or discontinuation, to maximise benefit and minimise harm[135]. Polypharmacy is also related to cognitive decline and delirium. Persons with cognitive decline have decreased self-management skills and this creates increased risks when they are on multiple medications. Reduction in inappropriate polypharmacy leads to reduction in costs without creating any increase in harms and in fact reducing potential for harm[14]. 6 studies have suggested a reasonable cut-off for polypharmacy's relationship to frailty is more than 6 medicines as changes in metabolism and clearance of drugs with aging increases the chances of drug toxicity and drug-drug interaction[136]. Overall, polypharmacy has been associated with a reduction in walking speed and gait strength, disability and mortality[136]. An issue for health services and healthcare professionals is that treatment regimens (including non-pharmacological treatments) can easily become very burdensome for people with multimorbidity, and care can become uncoordinated and fragmented. Polypharmacy in people with multimorbidity is often driven by the introduction of multiple medicines intended to prevent future morbidity and mortality. However, the case for using these medicines weakens if life expectancy is reduced by other conditions or frailty[137].

4.3.5 Older patients account for more than half the caseload of district nurses and there is concern that number of district nurses is falling and the workforce is ageing. District nurses are being replaced by general qualified nurses and care assistants and, indeed, untrained care assistants deliver most care in patients' own homes[65]. There appears to be scope in the commissioned nursing services for older people to be appropriately trained to frail older people with secondary prevention through the 'complete and holistic assessment of patient's need covering in details of physical, psychological, social and spiritual functioning; written care plan to meet assessed need with interventions not only to reduce incidence of admissions and re-admission but also for **health promotion and lifestyle advice** as apart of ongoing nursing care[138].

A National Institute for Health Research (NIHR) survey in the UK concluded that self-care support for people with long term conditions, is more likely to be part of a care plan provided by a nurse practitioner and not as a single response provided by other means[139]. Modest evidence of benefit from these self-care interventions was identified, with some improvement in self-efficacy, knowledge of illness and physical functioning. Also noted was the improvement in treatment adherence and reduced health service use[139].

4.4 Tertiary prevention

In acute medical units, greater use of geriatric liaison services should increase the proportion of older people able to be managed in the community setting and approximately 25% should be discharged home who would otherwise have been admitted. In all settings, staff need to develop their understanding and confidence in managing common frailty syndromes, such as confusion, falls and polypharmacy as well as issues such as safeguarding in older people. Making Every Contact Count (MECC) is the public health strategy to support competence development among the workforce to deliver prevention and lifestyle behaviour change[59, 140]. Falls in hospitals are the most commonly reported patient safety incident with more than 240,000 reported in acute hospitals and mental health trusts in England and Wales[141]. Finally, commissioning evidence based integrated health and

social care systems that address care across the continuum will help deliver safe, efficient, effective and a high-quality holistic care for frail older people in the years to come[142].

It is understood that Accident and Emergency (A&E) teams are not well equipped to review the complex needs of older people and that they often medicalise the reduced physical, mental and social resilience of frail older people with the aim of making their condition better when this is not achievable, or treatment of a condition or symptom may be debilitating. Older admitted people having an early assessment by a multi-disciplinary team not only starts care delivery sooner but also commences planning for the older person's discharge, thereby reducing the chance of a long stay in hospital in circumstances where community-based packages of care need to be arranged. The NWL pilot project set up revealed that where older people had been seen by **frailty teams**, a larger proportion of them returned home than were admitted. For example, at Northwick Park, over two weeks:

- 59 people were seen by the frailty team
- 18 of whom were discharged directly home and
- 39 of whom were redirected into short stay wards rather than extended stay medical wards.

In Ealing, around 50 older people a week could benefit from the type of care offered through the frailty unit and 70% of the older people who were seen by the service returned home with another 22% redirected into intermediate care services rather than being admitted to hospital[108].
Increasing numbers of older people are undergoing elective surgery. Studies examining older patients undergoing elective procedures have reported frailty prevalence of 40-50%. It is important to identify frailty preoperatively to manage risk, inform shared decision making and highlight areas for potential modification[1]. For example, cognition and nutrition could be optimised preoperatively using the frailty assessment as well exercise to improve preoperative gait velocity, postoperatively. It requires surgeons, anaesthetists and geriatricians working as a part of a multidisciplinary team and such systematic and proactive care of frail older undergoing elective surgery would have to be factored into the commissioning of the surgical pathway[1]. Preoperative frailty assessment can predict in-hospital complications and mortality rates as well as long term needs for institutionalisation[143]. With patients undergoing major intra-abdominal operations lead to easy classification of patients into discrete low, intermediate and high-risk categories, with a corresponding increase in risk for 30-day postoperative complications[144]. A score resulting in "intermediately frail or frail" (Hopkins Frailty Score) was predictive of a patient experiencing a postoperative complication[145]. Frailty risk assessment preoperatively also independently predicts length of stay[146].

5. Current interventions and assets

5.1 Service mapping

Ealing Primary Care Standard[147]

Ealing CCG commissioned the Primary Care Standard through the 75 general practices with an aim to cover:

- To have equity of offer and access to patients registered with an Ealing GP
- To reduce the unwarranted variation in general practice and improve outcomes for individuals
- To address the concerns and feedback received from patients regarding access to general practice and drive ongoing improvement
- To address the needs of the population as identified in the Joint Strategic Needs Analysis (JSNA) and ensure the primary care standards deliver a full, holistic offer of care for patients

- To support and improve resilience and sustainability within general practice whilst meeting the strategic requirements as set out in the NWL STP, 5YFV, and the Strategic Commissioning Framework (SCF).
- To utilise the opportunity that Primary Care Delegation has provided in enabling the CCG to direct the use of the headroom within the primary care allocation for Ealing GPs.
- Commission an equitable offer on an equitable financial basis from practices.

Specifically,[147]

- **Standard 5 MSk** expectation to assess patients with frailty for risk of falling as part of primary prevention and health promotion

- **Standard 7 Care Planning and Co-ordination** expectations of identification and management of frailty, use of eFI, creating a register for patients with moderate and severe frailty, delivering a clinical review including annual medication review and where clinically appropriate discussion on falls in the last 12 months and provision of any other clinically relevant interventions and, reviewing via face to face/telephone consultation any patient identified as living with moderate and severe frailty on the eFI register with an unplanned admission into hospital within five working days of notification of discharge

- **Standard 8 End of Life Care** expectation to add to palliative risk register if clinical indicators of frailty of i.e. limited self-care and interest in life: in bed or a chair more than 50% of their time, breathless at rest or on minimal exertion, progressive weight loss over last 6 months and history of recurring or persistent infections and/or pressure ulcers

- **Standard 12 Prevention Immunisation and Vaccination** practices will be expected to provide access to flu and pneumococcal vaccination for at risk groups and people aged 65 and over, have systems for call and recall and, plan to meet national targets

- **Standard 19 Medicines safety and optimisation** work with pharmaceutical advisors to review patients and action appropriately

The **electronic Frailty Index** (eFI) helps primary care providers to identify older people with frailty and who face an increased risk of care home admission, hospitalisation and mortality by using information within a patient's electronic health record[148]. Practices in Ealing have been collecting data on frailty successfully. The eFI was rolled out to general practices from July 2017 to identify patients aged 65 and over who are living with **moderate** and **severe** frailty. For those with severe frailty, the practice will deliver a clinical review providing an annual medication review and where clinically appropriate discuss whether the patient has fallen in the last 12 months and provide any other clinically relevant interventions. Examples of the eFI in action include: falls prevention interventions for people with moderate frailty; adding people with severe frailty to practice palliative/Gold Standards Framework registers and offering advance care planning interventions: offering self-management support to people with mild frailty; medication reviews for people with severe frailty and care home residents[147].

Ealing CCG, in conjunction with Ealing Community Education Provider Network, has developed a new website template for general practices in Ealing in 2017. GP websites offer **self-care advice and self-help** options, guides patients to see the right person at the practice for appointments and provides a directory of local support services available in Ealing[149].

Care co-ordinators in primary care aim to improve patient outcomes by co-ordinating support across health and social care to ensure patients with frailty and complex needs can maintain their optimum independence and wellbeing[150]. Their role is to provide:

- home visits for a holistic assessment linked to needs identified by the GP
- timely integrated care
- support across all aspects of patient journey to help avoid admissions, A&E attendance, ambulance call outs and urgent care use
- support for self -care and self- management
- feedback on gaps identified to relevant commissioners and stakeholders
- sharing of good practice

In 2013 Ealing CCG and partners signed up to the NWL Integrated Care Programme as a part of the Five Year Forward plan with a roll out across all GP practices. Ealing's Intermediate Care Service, **Homeward**[151, 107], launched in 2015, provides intensive support to patients who are at risk of admission to hospital, or following discharge for a period of rehabilitation at home, preventing avoidable re-admissions and releasing capacity in acute services for those who need acute hospital care. It is jointly commissioned by Ealing CCG and the local authority. A range of conditions or situations can be catered for, and typically include falls without apparent injury, urinary and/or respiratory tract infections, exacerbations of chronic obstructive pulmonary disease (COPD) or congestive heart failure (CHF), carer illness, unstable diabetes, frail elderly people at risk of admission. is a consultant-led integrated care service which comprises of professionals across health and social care as well and mental health (Figure 14).

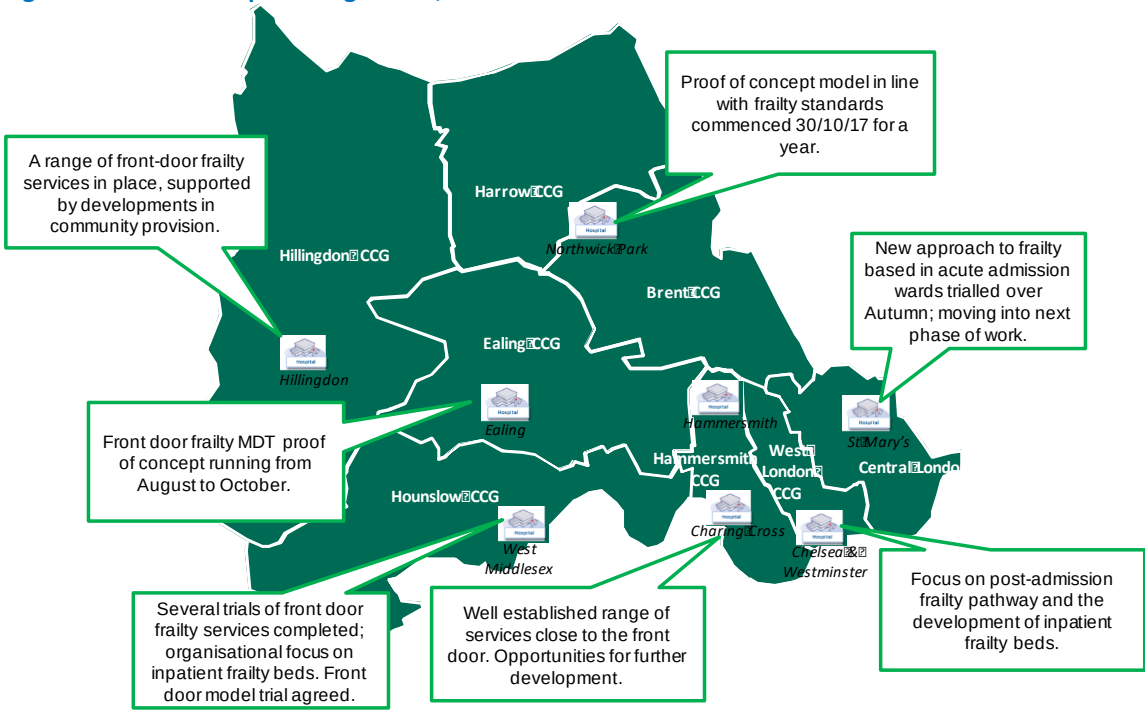
Figure 14 Homeward[107] in Ealing

Improving the **hospital-based response** for older people who go into crisis was identified in the wider context of older people's improved care in 2017[Error! Bookmark not defined.]. Across NW London, in 2016/17 t here were around 23,000 admissions for people aged 65+ who stayed in hospital for less than two nights with admissions' cost of £22.8m. It is likely that a proportion of these people did not need to be admitted to hospital as their length of stay was so short[108]. During 2017/18 there were around 5,648 non-elective admissions for people aged 65+ who stayed in hospital for less than two nights with an associated cost of £4.9m in Ealing[152]. A frailty model was piloted in the NWL and Ealing hospital was part of this development. The recommendations from the pilot were:

There are opportunities for intermediate care services to be involved in the care of frail older people in A&E; the use of frailty scoring tools to identify this cohort could support this earlier intervention – the use of these tools should continue[153].

Figure 15 shows the front door model that has been operating in Ealing since November 2017.

Figure 15[108] Older People's Programme, front door model



London North West Healthcare NHS Trust, and its predecessor organisations have provided **community musculoskeletal services** in Ealing since 1995. The service provides assessment and treatment for adults with problems with their muscles, ligaments, tendons, joints, discs or nerves. Most referrals come from General Practitioners. Two services are provided: a musculoskeletal physiotherapy service and musculoskeletal interface service[70].

Falls prevention via physiotherapy service helps people to regain movement and strength following illness, accident, injury, or because of the ageing process. The physiotherapists assess how the condition affects the person's health and well-being and will work with them to help set and achieve personal goals to support return to fitness[70]. 60 referrals are received monthly and the service has a waiting list. Patients with high to medium risk of falling are offered 8 weeks of physiotherapy on a one to one basis before discharge. Those with medium to low risk are referred to the **strength and balance programme** commissioned by public health in Ealing Council. During 2017/18 strength and balance programme had around 130 referrals from falls prevention service. CCG and the provider are reviewing how best to reduce waiting times whilst maintaining clinical outcomes, for instance by making more use of group exercise classes in accordance with NICE guidelines[70]. Main referrals to the strength and balance programme are from residents themselves with 3% (60) referrals from GPs and 9% (171) from primary care and other NHS staff of a total of 1967 referrals in 2016/17[154]. In 2016/17, 1300 residents were admitted as emergency admissions with a 'fall' noted within the primary or secondary diagnoses[155].

Fracture liaison services are being developed as part of the NW London Sustainability and Transformation Plan (STP). Detailed modelling and a business case are being developed with support from the National Osteoporosis Society. The services are expected to roll out across NW London during 2018[70].

The **Ealing IAPT service** offers support for common mental health problems such as depression, anxiety and panic. The service is provided by West London Mental Health NHS Trust for anyone over the age of 18 who is registered with a GP in Ealing. Patients can be referred by a health professional or self-refer. The service has therapists who speak several languages (Urdu, Punjabi, Polish, Hindi,

French and Spanish) and can also provide interpreters. Of relevance, the IAPT service offers cognitive behavioural therapy (CBT) to help change the unhelpful patterns of thoughts and behaviours that could be perpetuating low mood, depression, anxiety, catastrophizing and somatising conditions. The IAPT service also runs several groups including stress control, overcoming low self-esteem and a long-term condition (LTC) for patients with anxiety and depression who also suffer from an LTC[70]. The Ealing mental health and wellbeing strategy includes new targets from 2017 to improve access to talking therapies for older people; people with long term conditions; carers, black and minority groups[156]. Data for IAPT support for over 65s is shown below.

IAPT	Number of people accessing IAPT (had at least an assessment)	Number and percent of over 65s accessing IAPT
April 2017- March 2018	6447	475 (7.2%)
April 2018- March 2019	3481 (Oct 2018)	221 (6.3%) (Oct 2018)

To improve access to IAPT for older people, the service plans to work with care homes in Ealing to give older people more opportunities for group and individual therapies. Current IAPT performance reporting is based on access rates per prevalence of common mental health needs, recovery rates, referral rates and waiting times.

The Quality Premium from NHS England that providers can gain for IAPT expects -

Proportion of people accessing IAPT services aged 65+; to increase to at least 50% of the proportion of adults aged 65+ in the local population or by at least 33%, whichever is greater in 2017/18; to increase to at least 70% of the proportion of adults aged 65+ in the local population, or by an additional 33% in 2018/19, whichever is greater.

A further 55 (total of 701) residents aged over 65 years accessed the Ealing Abbey Counselling Consortium, a council grant aided voluntary organisation, during 2017-18 {Val ref].

PlusBus for Health (PBH) is a community transport service commissioned by the CCG and in 2017/18, it transported 821 patients to 3,390 appointments. Results of the evaluation of the initiative show:

- PBH benefits the loneliest and most isolated older people in the community;
- Patients attend more surgery appointments after they start using PBH;
- PBH improves the quality of health care that these patients receive;
- PBH reduces the rate of missed appointments;
- PBH reduces the amount of home visits; and
- PBH has a positive impact on wellbeing.

Ealing council promote **physical activity** through a wide range of interventions including Active Ealing, One You, Let's Go Southall. Other schemes include:

- The Ealing Health Walks Programme is for a range of abilities and targeted giving people who are sedentary the opportunity to get more active in a social setting. The programme is run by the One You Ealing Service with funding from the Ealing Council Public Health Team.
- Ealing Everyone Active Exercise on Referral is a 12-week tailor made package of exercise sessions, especially for people with, or at risk of developing health problems. Participants work with fully qualified instructors and an activity programme suitable to their conditions. Referrals are from GPs or other healthcare professionals.
- Direct Support for Cycling is a cycling promotion programme and includes on road cycle training, maintenance classes and bike buddying. It deals with obstacles to everyday cycling

such as the lack of ability to achieve correct positioning on the road, be aware of basic rights and responsibilities, and locate and use local bike shops[70].

Ealing Planning team have recognised the need for consideration of specialist older person housing in partnership with other agencies, in particular those responsible for older person support needs[157, 158].

Smoking prevalence in adults in Ealing is 15.4%, close to the London (15.2%) and England average (15.2%)[159]. **Smokefree Ealing** is commissioned as a part of the 'One You Ealing' suite of healthy lifestyle interventions promoted by Ealing Council. The service provides stopping smoking services from pharmacies and clinics, as well as some specialised services such as working with young people and people with mental health problems. The service trains health professionals to deliver the smoking cessation programmes. The service is currently being considered along with others within the local review of future funding reductions coming into play by 2020 for all councils, nationally.

Ealing NHS health checks programme aims to help prevent heart disease, stroke, diabetes and kidney disease. Everyone between the ages of 40 and 74, who has not already been diagnosed with one of these conditions, is invited (once every five years) to have a check to assess, raise awareness and support them to manage their risk of cardiovascular disease. A high take up of NHS Health Check is important to identify early signs of poor health leading to opportunities for early interventions. Total number of Health Checks (HCs) completed by Ealing GPs and in 2016-17 were 11,403, which at 70.5% is higher than London at 48.3% and England at 48.7%. 53% of people who received the NHS health check were overweight or obese and one in five people had raised blood pressure[160].

Local authorities have a legal duty to decide to provide the NHS Health Check programme to 100% of the eligible population over a five-year period and to achieve continuous improvement in uptake. **Drugs and Alcohol services** are commissioned by Ealing council to encourage sensible drinking, provide support, treatment and recovery for residents (aged 18 and above) and their family and friends. Alcohol clinics were offered in GP practices to ease access and joint working is being developed with mental health services to support people with alcohol addiction and mental health problems including over 65s who may have drink problem. Referrals to the alcohol clinics from general practice are low at present with 15 of 58 over 65year olds being referred by GPs. This is being reviewed.

The **Ealing reablement service** is based on evidence which show a positive impact of reablement, especially on health-related quality of life and service utilization[161]. Additional Reablement support is required to support the integrated Home Ward service. The reablement service provides short-term intensive support usually up to six weeks. The service is designed to assist individuals regain and/or maximise their independent living skills after a period of illness or incapacity and reduces their reliance on services. Referral route is the Ealing council brokerage team from the Home Ward team or through the Hospital Assessment Teams. Ealing project an increase in demand for reablement service over the coming years. The service aims to promote independence by active reablement in accordance with the following:

- To undertake focussed, planned and individualised rehabilitative interventions to prevent avoidable and inappropriate admissions to hospital or residential care,

- To assist service users to regain optimal independence and functioning, and
- To assist service users to reduce or eliminate unnecessary dependence on long term home care services.

In 2016-17 there were 5213 people over the age of 65 receiving adult social care support. This is an increase of 343 from the previous year. During the same period, external care agencies provided support to 1752 older residents. In addition, the Ealing Council reablement service provided support to 661 older residents in the borough. The overall rating by CQC in Jan 2018 for the service was 'Good' which was also the rating at the last inspection. The report highlighted that people receiving the service (n=80) were assessed and a plan put in place to meet their needs and to promote and regain their independence.

The local **strength and balance programme** is a successful 10 week evidenced based Otago strength and balance[49,53,111]programme and is commissioned for 500 residents who have had falls. **75%** of those completing (475 completers) of completers improved sit to stand scores, **68%** of completers improved balance test outcomes and **80%** of completers improved time up and go scores[162]. A Cochrane Collaboration systematic review found that group exercise reduced rates of falls by 29% and risk of falling by 15%. Home based exercise reduced the rate by 32% and the risk of falls by 22% with one study showing such exercise was cost saving for those aged 80 and older[49].

A joint **falls prevention task group** has developed the falls risk assessment tool (FRAT) for use by professionals to assess risk of falls, carried out an equity audit, set up Careline, local telecare support and, developed and distributed information about falls prevention widely to all relevant professional groups and organisations and, run training sessions to raise awareness from 2016. Impact on residents as well as on utility of NHS resources is being assessed. Falls MECC briefing has been developed and offered to staff during 2017. Residents can access falls prevention information on the council website and on the Ealing CCG website.

Healthy Homes Ealing supports local residents living in fuel poverty, with low incomes or on benefits and those with a long-term condition or an illness to improve their wellbeing by preventing fuel poverty, alleviating impact through adaptations and sign posting /referring into services that support wellbeing[163].

Health and Social Care Grants Programme - funds a diverse range of preventative community based services to support older people and their carers including access to information and advice, counselling services, befriending services , respite care services providing support for carers through peer support groups and activities for cared for, social and recreational activities as well as self- care provision such as walking programmes and healthy cooking and eating courses, a wide range of supportive activities offering people increased sense of health and wellbeing.

A number of voluntary and community sector organisations signed up to **The Loneliness Charter** and made pledges as part of the Social Café event, on small actions to help combat loneliness.

The new **Carers' Support Service** provides support to all carers, including those of people with long term conditions.

Dementia Concern provides a range of community support services for people with dementia and their carers including home based, outreach and day activities.

The forthcoming **Voluntary Sector Grants Programme** with the Community Connections category includes befriending and encouraging intergenerational work to reduce social isolation for older people; as well as activities enabling older people to remain independent and active within their local

communities. These grants start in April 2019 for a four-year period and will be delivered across the four localities of Ealing, with tailored approaches to the different communities and needs of our population[164].

5.2 Patient and resident experience

Satisfaction survey completed by the Reablement service[165] shows the results seen in Figures 16, 17, 18 and 19. Feedback from members of the Older People's Long-Term Conditions Partnership Board on frailty and falls and at the Health and Adult Social Services Scrutiny Panel (Dec 2018) is shown in figure 20.

Figure 16[165]

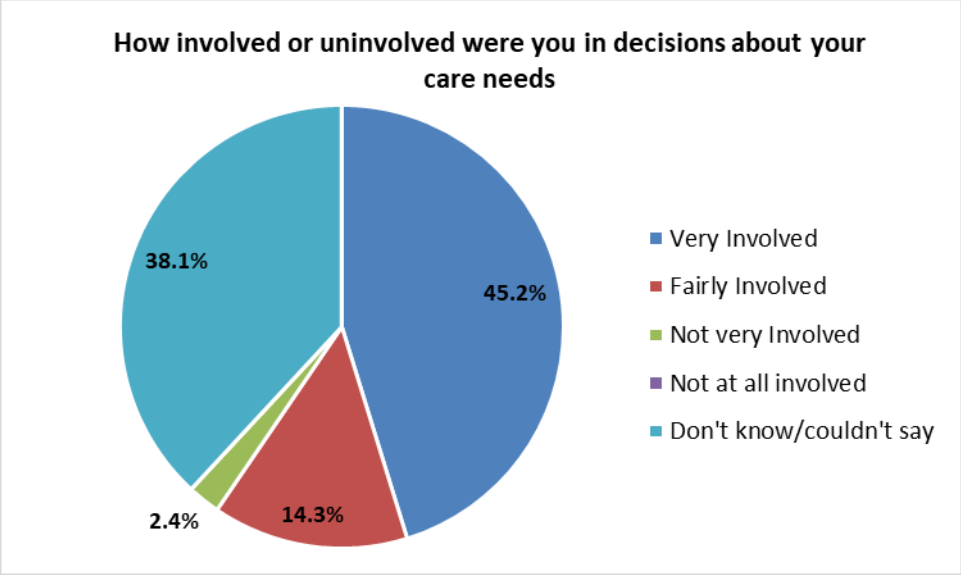


Figure 17[165]

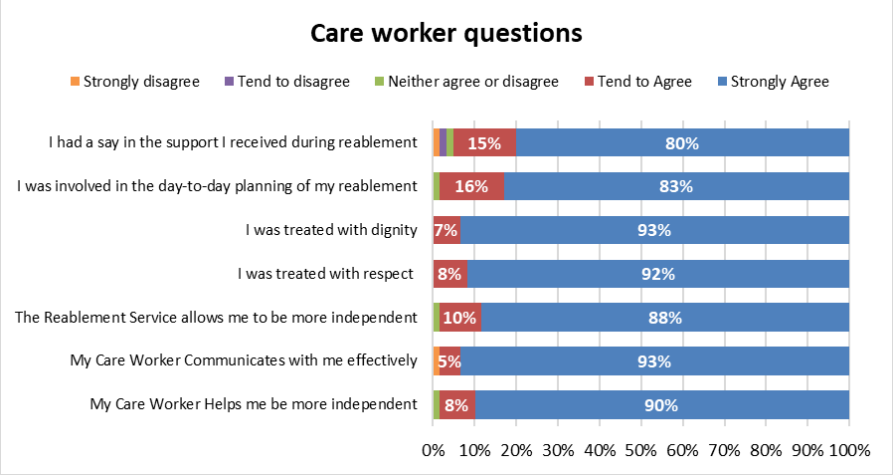


Figure 18[165]

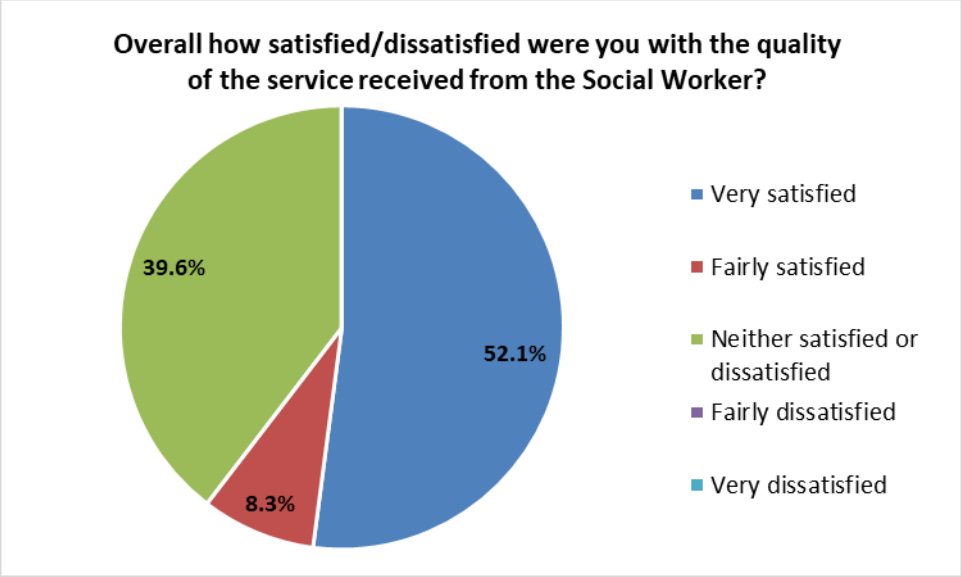


Figure 19[165]

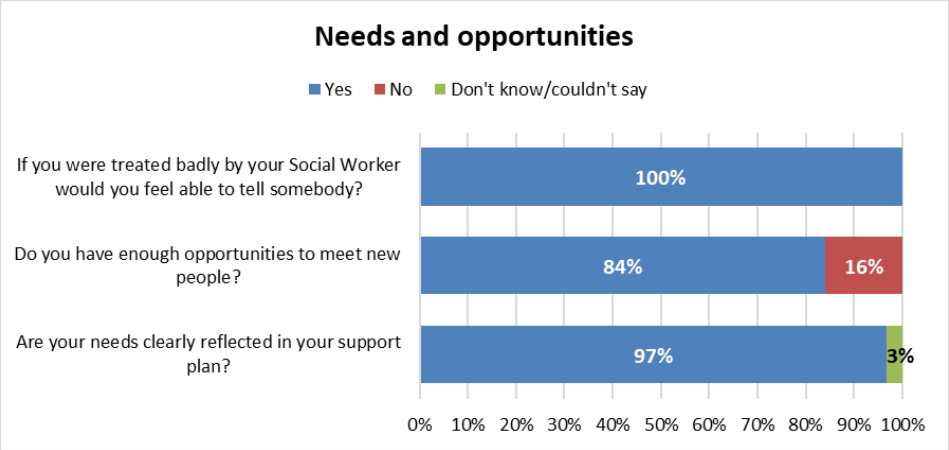


Figure 20 Feedback from Older People's Long-Term Conditions Partnership Board on frailty and falls and at the Health and Adult Social Services Scrutiny Panel

5.3 Future developments

The STP aims to develop an **older persons (frailty) service** for Ealing and Charing Cross Hospitals, as part of a fully integrated older person's service. Delivery Area 3 (DA3) in the STP aspires to 'Achieving better outcomes and experiences for older people[166].

A hospital-based model based on principles and standards agreed at the NWL STP level, addressing the needs of older people who attend at A&E to assess and score frailty was piloted in various sites NWL STP during 2017. The future vision, as interventions in the acute and community settings become more effective, was for the model to shift out of hospital to not only seeing older people at the point of crisis but supporting care and care planning before they reach that point, transitioning away from emergency care towards a semi-planned service[108].

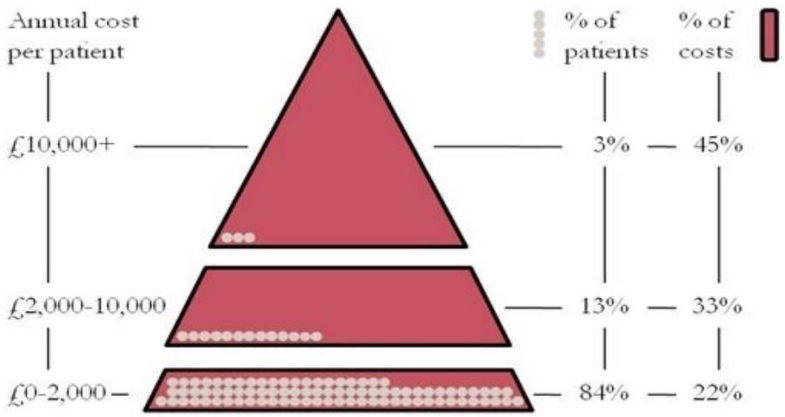
A frailty design group meets regularly to support the development of Ealing hospital to achieve the improved outcomes for older people with governance arrangements. Pathway and model, staffing, data, metrics, evaluation, communications, joint working arrangements, risks and governance along with hypothesis for potential outcomes were developed by the frailty design group and presented to the NWL STP [167].

5.4 Cost-effectiveness and return on investment

On average, an inactive person spends 38% more days in hospital than an active person, and has 5.5% more family doctor visits, 13% more specialist services and 12% more nurse visits than an active individual[168,125]. Physical inactivity places a significant economic burden on the NHS for the treatment of long term conditions and associated acute events (such as heart attacks, strokes, falls, and fractures) in addition to the costs of social care arising from the loss of functional capacity[125]. Cost of inactivity in Ealing is £19.1m compared to the average of £17.9min London[169]. 18% of over 65s participate in the recommended 150mins/week with 47% of men participating compared to 30% of women[169, 110, 112].

3% of patients are responsible for 45% of hospital costs[170] seen in figure 20. It is highly likely that frail older people are represented in the 3% of patients[5]. In NW London, people 85 years or older, have a 70% chance of being admitted to hospital if they attend A&E, and are then likely to have an average unplanned stay of just over 10 days. Over this period, an older person whose resilience is reduced can be exposed to potentially life-threatening infections, experience reduced mobility resulting in pressure sores and a significant loss of their muscle mass, and overall have their chances for continuing living independently diminished[108].

Figure 20 Hospital costs[170]

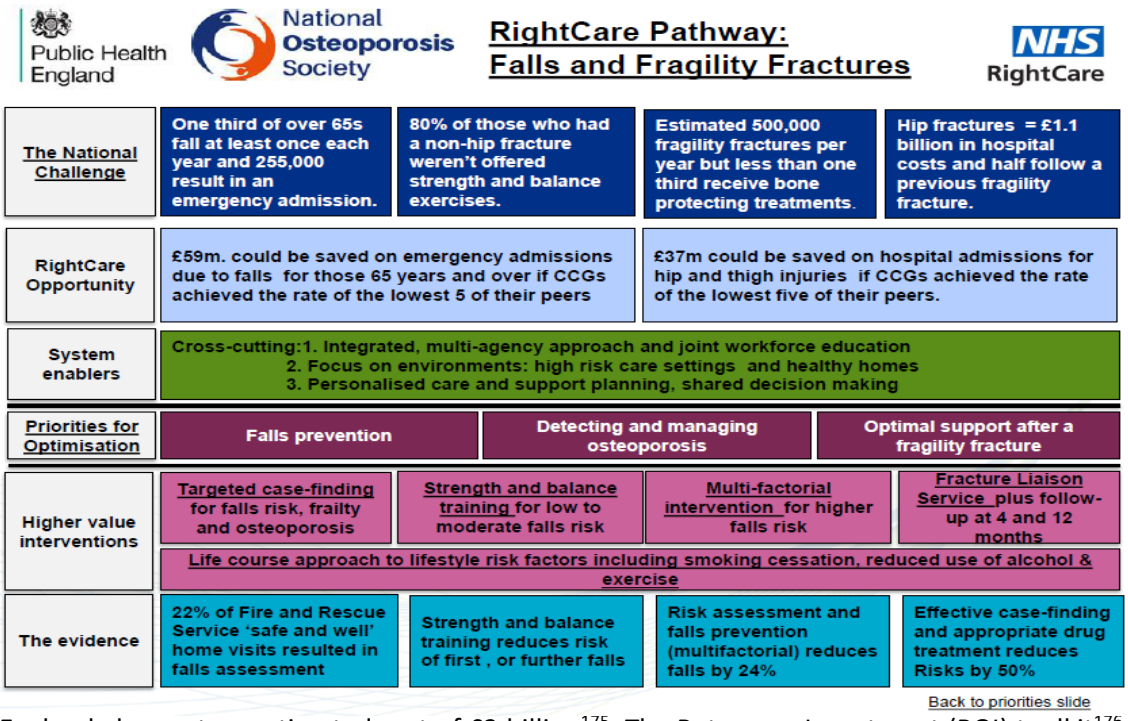


In Ealing, during 2016-17, 5,646 non-elective admissions were for patients who were aged 65+ at a cost of £15.9m. Main causes for admission were urinary tract infection (UTI), pneumonia and falls at a cost of £3.1m. Spend for social services in the same period on clients aged 65+ was £31.3m[171].

Frailty is a progressive condition that develops over five to ten years, which suggests that more could be done before a health crisis occurs. Older people living with frailty can be identified sooner and are usually known to local health and care professionals. As with any other long-term conditions, when older people living with frailty are supported to live well independently and to manage their long-term condition(s), they are less likely to reach a crisis, require urgent care or experience poor outcomes[172]. The need for a future system with proactive care focussing on self-care, wellbeing and community interventions is recognised as being critical to a sustainable future[107].

A concerted effort to provide support and opportunities for physical activity can maintain independence and lessen the costly burden of social care[173]. Return on investment (ROI) for falls and fractures can be seen in figure 21 [174].

Figure 21 RightCare Pathway: Falls and Fragility Fractures[174]



r in England alone, at an estimated cost of £2 billion[175]. The Return on Investment (ROI) toolkit[176] shows financial ROI of Otago strength and balance programme of £0.95 to £1.00 benefits to cost ratio and societal ROI of all falls prevention in Ealing would be:

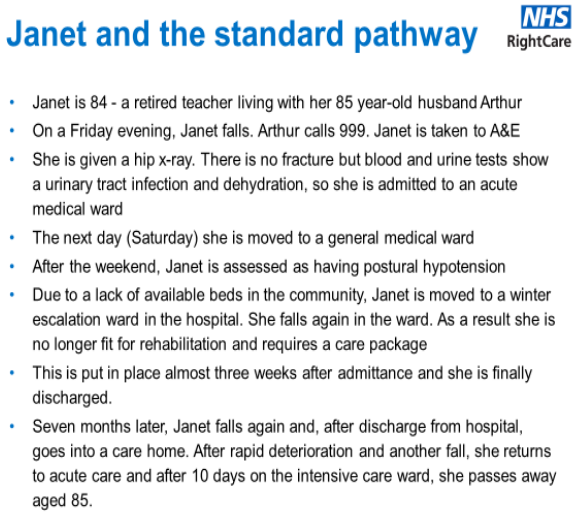
- **Strength and balance** programme **ROI of £2.20 per £1** spent. The Otago programme is a home-based exercise programme in which participants are encouraged to perform exercises three times a week at home and walk indoors and outdoors at a moderate pace. Otago is recommended for at least one year and participants receive support from trained staff through home visits and follow up telephone calls.
- **Falls Management Exercise (FaME) ROI of £2.28 per £1** spent on (programme community-based group programme delivered by a postural stability instructor (PSI). The programme consists of weekly classes lasting between 45 and 75 minutes with additional home exercises)

- **Tai Chi ROI £1.97 per £1** spent. Tai chi and Tai Ji Quan exercises combine deep breathing and relaxation with flowing movement. It can be performed in a community-based group on a weekly basis, with additional exercises at home. Tai Chi should be considered as a type of physical activity rather than a clinical falls prevention intervention.
- **Home Assessment and Modification ROI of £7.34 per £1** spent. Home assessment and modification (HAM) is a service in which relevant experts risk assess a person's usual residence to identify environmental hazards and carries out actions to reduce these. Typical environmental hazards are loose mats, poor lighting and no handrails.

5.4.1 Commonest emergency admissions from care homes are due to pneumonia, flu and UTIs which may all be avoidable[83].

5.4.1 NHS Right Care presents the comparison of the frailty care a sub-optimal but typical scenario against an ideal pathway. At each stage, the costs of care, both financial to the commissioner and the impact on the person and their family's outcomes and experience were modelled. The fictional case study is outlined in the following text and figures 22 and 23[172,177].

Figure 22



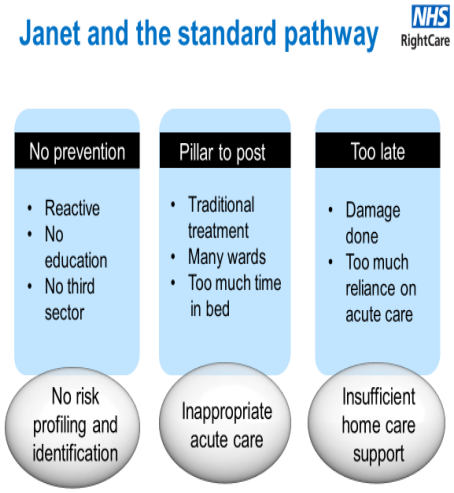
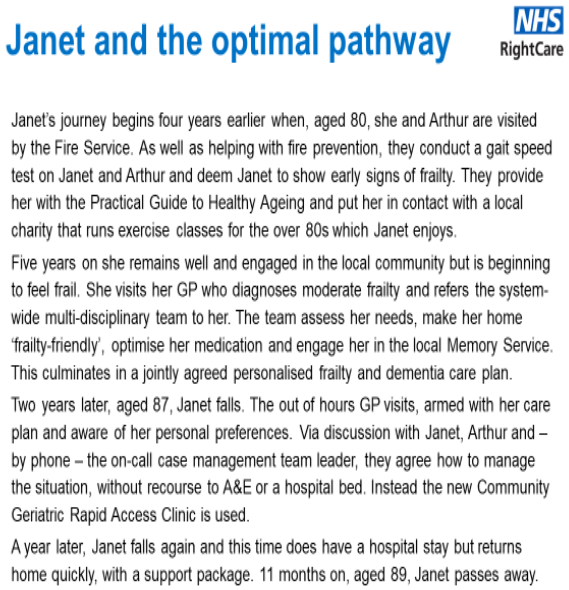
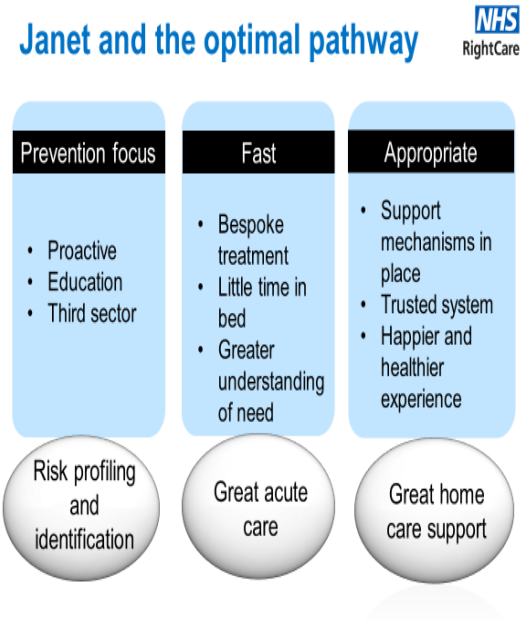


Figure 23





Details of the standard and optimal pathways are displayed on the following page.

Figure 24 RightCare scenarios: The variation between standard and optimal pathways for frailty[177]

Analysis by Cost Category	Standard	Optimal
Prevention and Public Health	£0	£2,239
Detection	£0	£20
Primary Care Management	£176	£59
Urgent and Emergency Care	£699	£233
Non-elective Admissions	£28,838	£0
Intermediate Care	£2,735	£4,979
Community Care	£2,766	£11,856
Miscellaneous	£60	£0
Grand total	**£ 35,274**	**£ 19,386**

Analysis by Provider	Standard	Optimal
Fire Service - Safe & well visits	£0	£60
Community teams	£0	£903
3rd Sector	£0	£4,400
Primary Care	£176	£370
Ambulance Service	£699	£233
Rapid access assessment unit	£0	£314
Acute	£28,830	£0
Acute frailty unit	£0	£1,200
Ambulatory Care unit	£0	£157
Community Hospital	£0	£2,993
Mental Health Provider	£0	£272
Social Services	£2,842	£8,483
Care Home	£2,727	£0
Grand total	**£ 35,274**	**£ 19,386**

6. Gap analysis

Table 7 Gap analysis

Theme	Intervention	How identified
Prevention across all domains	· Healthy neighbourhoods not Ealing wide · Addressing stigma not consistent in the population and among professionals · Lack of healthy ageing awareness among communities and professionals · Low levels of physical activity levels · No tailored MECC for staff · Limited referrals for mental wellbeing and IAPT from nursing, dementia and care homes, including for people with dementia · Limited referrals to and capacity in strength and balance · Planning for changes in demographics	National Planning Policy Framework[115], Housing LIN[73], Inclusive design[74], PHE[49,] Fair Society, healthy lives[13] NICE[59] BGS[1], WHO[3,7] , Public Health Outcomes Framework[77], NICE [110,111, 112,] NHSE[5]
Primary Prevention	· Capacity for wide spread warm, adaptable homes lower than need · Patchy safe facilities	Same as above

	· Lower levels of physical activity among over 65s including women and minority groups	
Secondary Prevention	· No link between eFI, care coordinators and Care homes · Variation in use of eFI · Gaps likely in comprehensive assessment for those with frailty · Lower number of referrals to alcohol clinics · Variation in polypharmacy · Low vaccination uptake · Synergy not present between eFI and NHS health advice on behaviour change	As above. Primary Care Standard[147], Poypharmcy[134], RightCare[83, 172]
Tertiary Prevention	· Lower understanding of frailty and confidence among hospital staff · Lack of frailty assessments for all over 65s attending accident and emergency · Potential lack of preoperative frailty assessment · Variation in prevention of in-hospital falls · Potential variation in polypharmacy · Limited fracture liaison service · Lower uptake of in –hospital vaccinations	As above, Poypharmcy[134], RightCare[83, 172]

7. Current strategies, policies and action plans

A range of local strategies and action plans underpin the overall CCG and the local authority ambitions for the future. They are:

- Ealing CCG Sustainability and Transformation Programme
- Future Ealing Programme
- Ealing Corporate Plan 2018-2022
- Ealing Health and Wellbeing Strategy 2016-2021

7.1 Recommendations

The recommendations identified in Table 8 are built on the gap analysis in Table 7 and are a combination of stretch and aspirational targets. They are set out from a population wide perspective through to the individual and workforce. Lead organisations to act are also suggested. Adoption of the recommendations and associated plans are for stakeholder organisations consideration. Key responsible organisations will need to be assess the likelihood of achieving the recommendations, timescales and the impact on frailty.

Table 8 Recommendations

High Priority Recommendations	Actions by
1) Increase healthy living spaces in Ealing to support healthy ageing	London Borough of Ealing
2) Raise population wide awareness of healthy ageing, combatting stigma and support self-care and prevention	London Borough of Ealing & Ealing Clinical Commissioning Group
3) Reverse *in*activity among older people including women and minority groups starting early with mid life	London Borough of Ealing & Ealing Clinical Commissioning Group

4) Increase commitment to strength and balance through every interaction between health, care and wider workforce to build and maintain intrinsic capacity and functional ability	London Borough of Ealing & Ealing Clinical Commissioning Group
5) Reduce variation in numbers of frailty assessments carried out in practices, optimise treatment including appropriate and measured polypharmacy, care and support plans for frail patients	Ealing Clinical Commissioning Group
6) Improve provision and access to falls prevention programme and in hospital to reduce injuries, further frailty, ambulance callouts, A&E attendances and admissions for falls in the elderly	Ealing Clinical Commissioning Group
7) Ensure patients with dementia and those living in residential or nursing homes are identified and appropriately referred, if they might benefit from mental wellbeing and IAPT services, physical therapies to improve muscle strength and power, or for help to reduce harmful drinking	London Borough of Ealing & Ealing Clinical Commissioning Group
8) Frailty assessments in hospital for all over 65s A&E attenders and pre-operative patients and, early discharge and advance care plans	Ealing Clinical Commissioning Group
9) Provide staff training to support risk behaviour change (Making Every Contact Count – MECC) and include healthy ageing targets in existing health and care contracts	London Borough of Ealing & Ealing Clinical Commissioning Group

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