Ageing Well

What are NHS England doing about frailty?

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NCD Older People

8 February 2017

Martin Vernon

NCD Older People

NHS England

‘Its not how old we are, but how we are old’

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Projected UK age structure

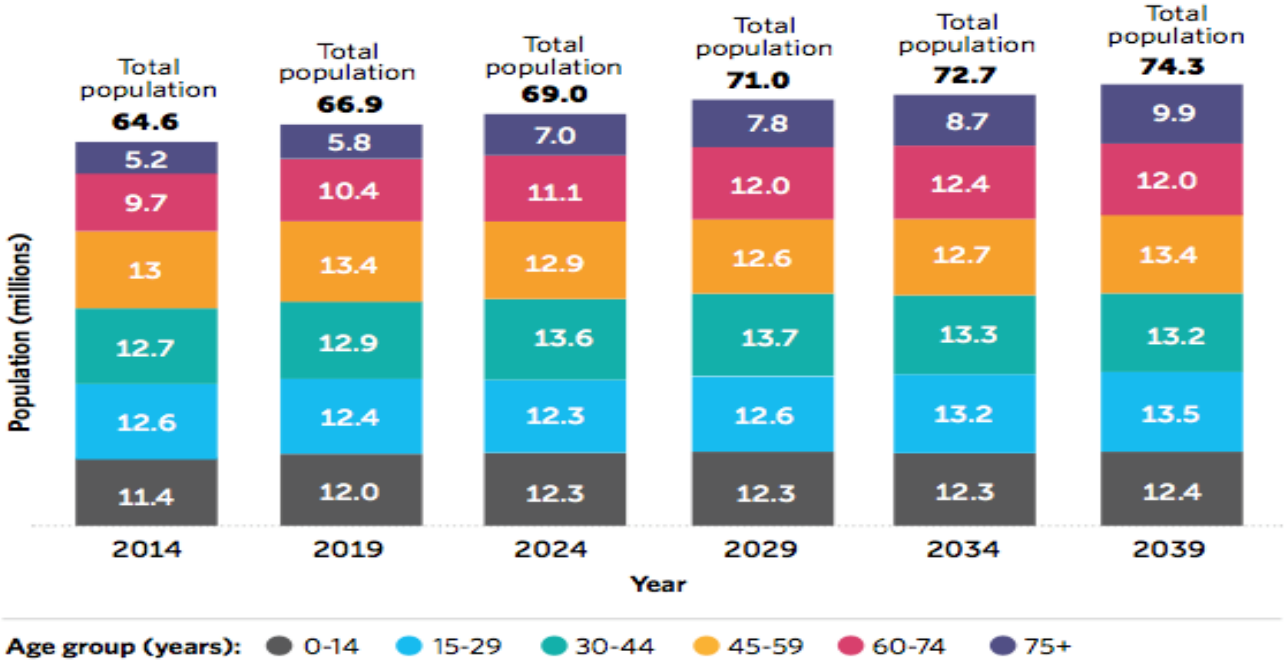

Figure 1.1: Population estimates and projections, based on ONS principal population projections, 2014[3].

Ageing population

- Older population expansion in England will **accelerate next 20 years**
- Over 65s will ↑ from **17%** (2010) to **23%** by 2035
- England in 2014: **9.5 million aged 65+**; 471K aged 90+
- **By 2035** there will be **14.5 million 65+** and 1.1 million 90+

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Ageing population: work & pensions

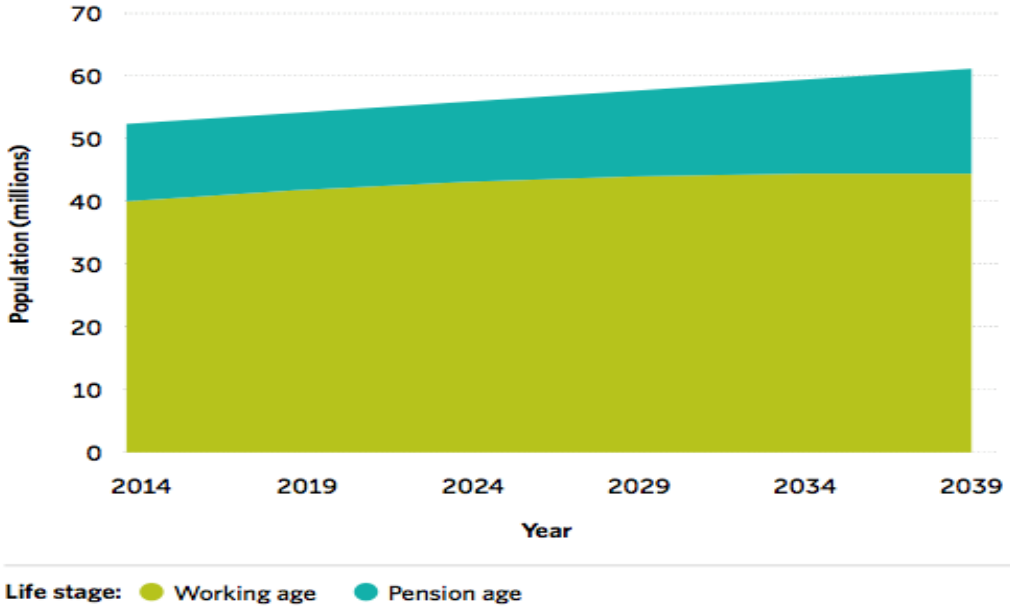


Figure 1.4: Estimates and projections of UK working and pensionable age populations, 2014-2039[9].

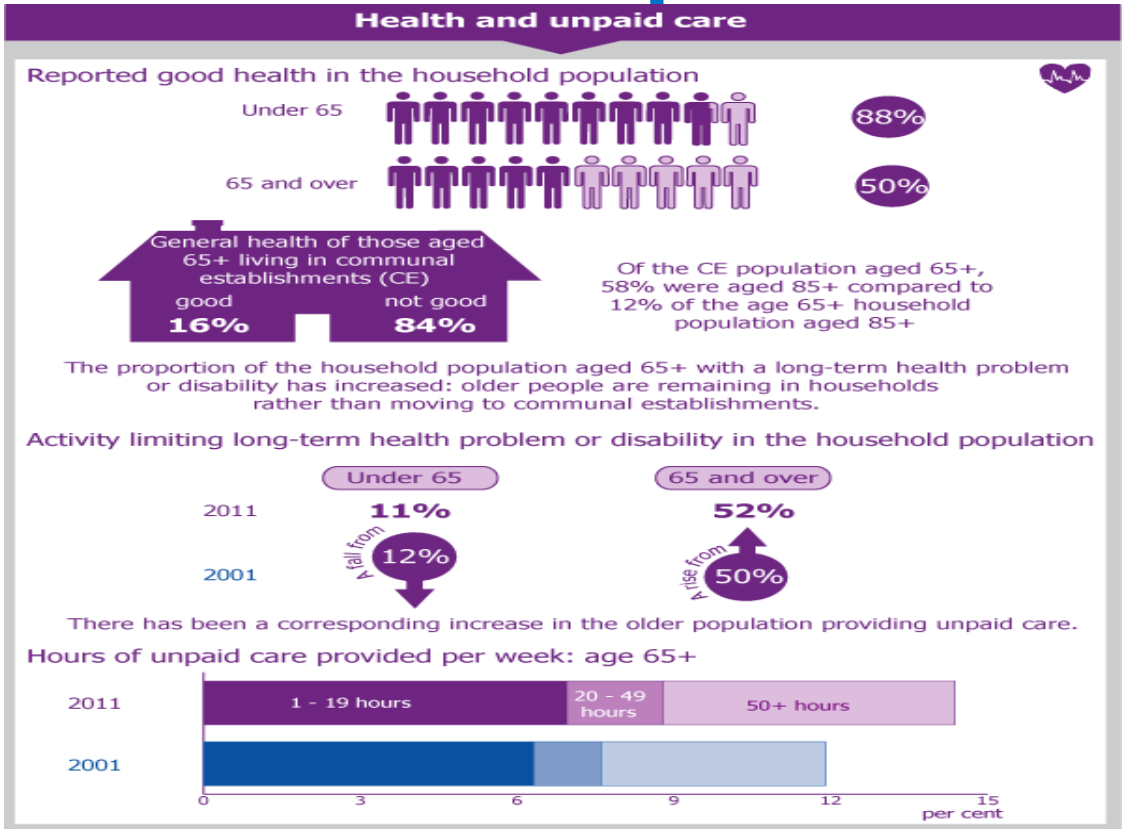
Foresight, 2016

Ageing impacts

- **15 million** live with a long term condition (LTC)
- **58% people with a LTC are over 60** (14% under 40)

- A&E attendances by people aged 60+ by two thirds 2007 to 2014
- 2010-15: ↑18% emergency hospital older people admissions

Health and unpaid care



- Over 65s **report poorer health** and provide a **growing amount of unpaid care**
- 73% people >65 with disability receive care from a family member
- **'Verticalised' families**: more generations are alive simultaneously
- 2007 to 2032 **people >65 who require unpaid care is projected to have grown by >1 million**
- For people >70 the primary challenge will be **maintaining physical connectivity**

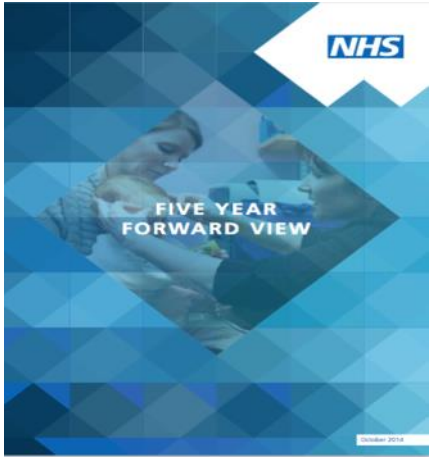
2011 Census & Foresight Report 2016

Find ➔ Recognise ➔ Assess ➔ Intervene ➔ Long-term

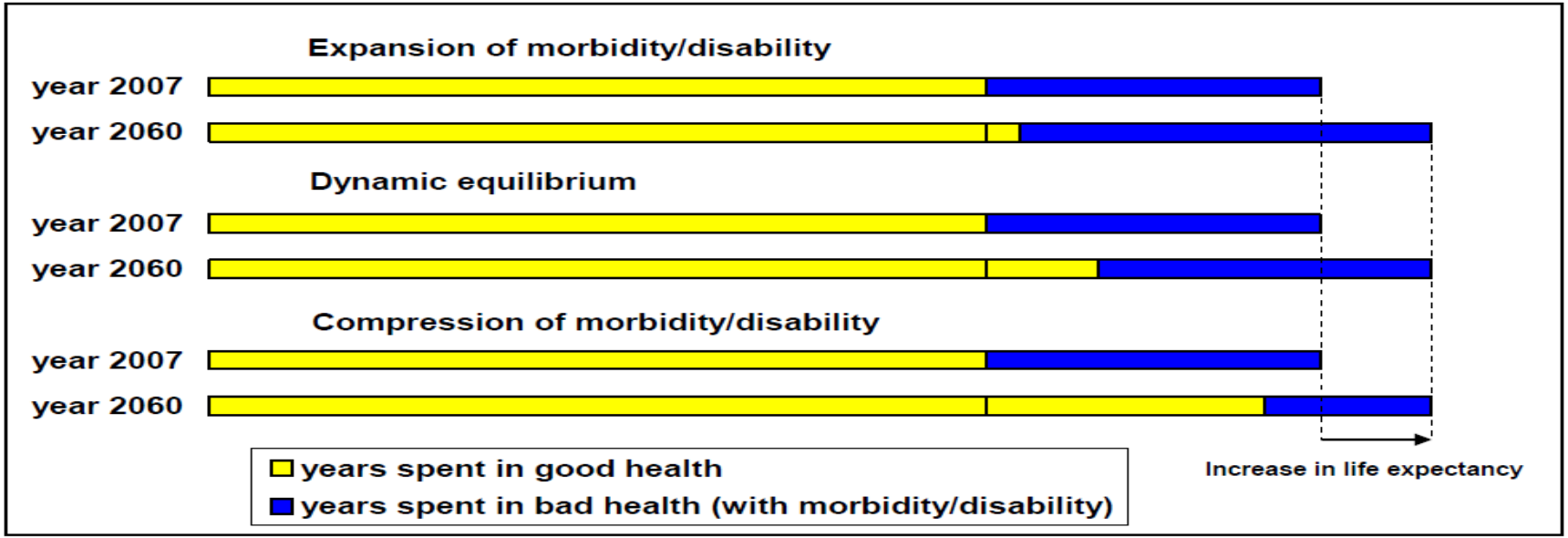
5YFV: Older People

- ❑ **Focus on prevention**
- ❑ **Integration of care**
- ❑ **Stronger community services**
- ❑ **Lead role of GPs**

- ❑ **Prevent *modifiable* aspects of unhealthy ageing & *unnecessary* hospital admission**
- ❑ **Enabling people *greater control* of their care**: shared health & social care budgets
- ❑ **Support unpaid carers with partnerships:** NHS, voluntary organisations, communities
- ❑ **Break down barriers** to support people with multiple health conditions: ***older people living with frailty***
- ❑ Support communities to choose **effective new care delivery options** which **integrate out of hospital care, primary care & other community based providers**
- ❑ **Improve support to older people in care homes**



Hypotheses: evolution of healthy life expectancy



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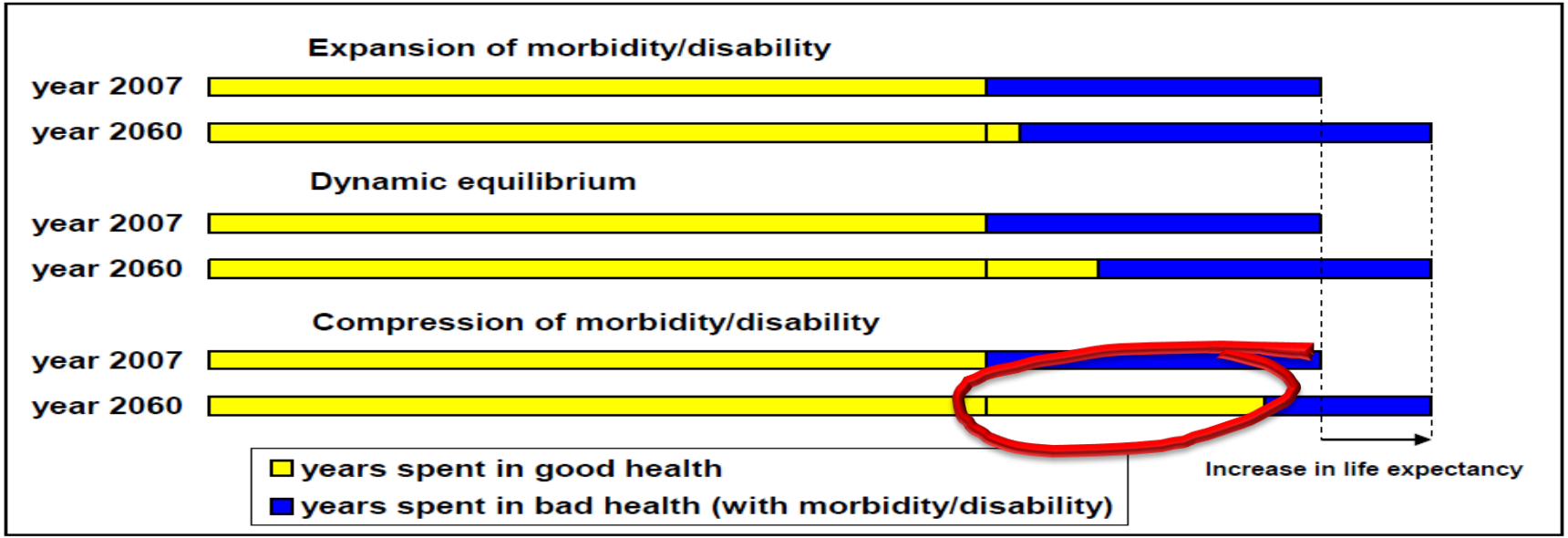
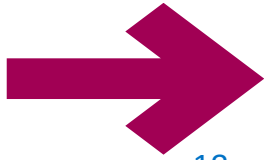
Policy: increase disability free life

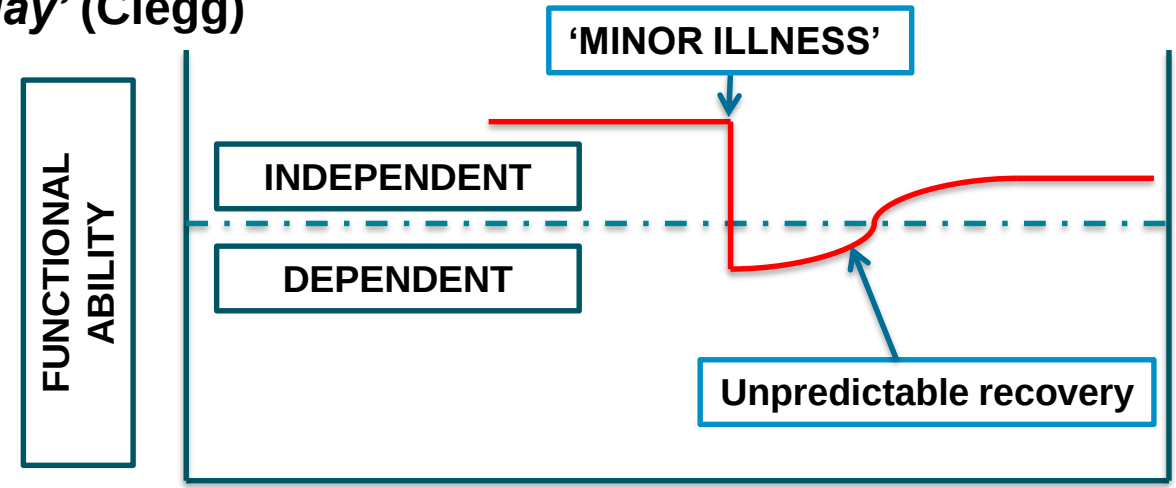


Frailty as a long term condition



What is frailty?

- ***A long-term condition characterised by lost biological reserves across multiple systems and vulnerability to decompensation after a stressor event***
- ***'The most problematic expression of human ageing facing the NHS today'* (Clegg)**



The Frailty phenotype

Not all old people are frail: not all people with frailty are old

Easily recognisable when advanced: '*know it when you see it*'

Syndrome characterised by 3 or more criteria

- Unintentional weight loss (4.5kg in last year)
- Self reported exhaustion
- Weakness (grip strength)
- Slow walking speed (<0.8 metres/second)
- Low physical activity

Fried et al. J Gerontol A Biol Sci Med Sci (2001) 56 (3): M146-M157

The Frailty phenotype

- **People aged >60: 14% & those >90: 65%**
- More common in **women** (16% v 12%)
- In England1.8m people >60 and 0.8M people>80 live with frailty
- 93% frail people have **mobility problems**
- 63% need a **walking aid**
- 71% frail people **receive help**

Fried et al. J Gerontol (2001) 56(3): M146-M157
Gale et al. Age Ageing 2015;44:162-165

The Frailty phenotype

Over 3 years it is independently predictive of:

- **Falls**
- **Death** (twice as likely)
- Worsening mobility or ADL disability
- Hospitalisation

Fried et al. J Gerontol (2001) 56(3): M146-M157
Gale et al. Age Ageing 2015;44:162-165

Frailty identification

- **Distinguishing fit from frail & frail from fit…**
- ***…is the most pressing clinical task of our age***
- Frailty is linked to acquisition of multiple Long Term Conditions
- Can be achieved for individuals or populations
- Can therefore help **target interventions** more effectively

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Instruments to identify frailty

	Sensitivity	Specificity
Gait Speed <0.8m/s	99%	64%
Gait Speed <0.7m/s	93%	78%
TUGT >10s	93%	62%
PRISMA 7	83%	83% (wide CIs)
Self-reported Health	83%	72% (wide CIs)
Groningen Frailty Indicator	58%	72%
Polypharmacy (>5 meds)	67%	72%
GP clinical assessment	58%	72%

Frailty instruments assessed against a reference standard: *Clegg et al Age Ageing 2014 (Systematic Review)*

PRISMA-7*

1. Are you >85
2. Are you male?
3. Do you have health problems limiting activities?
4. Do you need someone to help you regularly?
5. Do your health problems generally require you to stay at home?
6. In case of need can you count on someone close to you?
7. Do you regularly use a stick, frame, wheelchair to get about?

SCORE>3=Need for Review

**Raiche et al (2008) Arch Gerontol 47(1) 9-18*

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Clinical Frailty Scale

Clinical Frailty Scale*

1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 Well – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.

3 Managing Well – People whose **medical problems are well controlled,** but are **not regularly active** beyond routine walking.

4 Vulnerable – While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up", and/or being tired during the day.

5 Mildly Frail – These people often have **more evident slowing,** and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 Moderately Frail – People need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.

7 Severely Frail – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9. Terminally Ill - Approaching the end of life. This category applies to people with **a life expectancy <6 months**, who are **not otherwise evidently frail.**

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging. Revised 2008.
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

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Routine frailty identification

Routine frailty identification

- Routine frailty identification in primary care has 2 potential merits:

1. **Population risk stratification**
2. **Targeted individualised interventions for optimal outcomes**

Deficit accumulation

Frailty Index (FI)

- **Not all people at same age have same risk of death**
- Deficit accumulation: more things go wrong, more likely you are to die
- **The index measures cumulative deficits**
- A person with 7/70 measureable deficits...has index score 7/70=0.1
- Baseline FI>0.45 associated with 100% 7 year mortality
- **There is a limit to frailty of FI=0.7**

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Electronic Frailty Index (eFI)

Characteristic	Development cohort ($n = 207,814$)	Internal validation cohort ($n = 207,720$)	External validation cohort ($n = 516,007$)
Age (years)	75.0 (7.2)	75.0 (7.3)	75.0 (7.3)
Gender			
Male	45%	45%	44%
Female	55%	55%	56%
FI score: mean (SD)	0.14 (0.09)	0.14 (0.09)	0.15 (0.10)
Males: mean (SD)	0.13 (0.09)	0.13 (0.09)	0.14 (0.10)
Females: mean (SD)	0.15 (0.10)	0.15 (0.10)	0.16 (0.10)
FI score 99th centile	0.49	0.49	0.42
Frailty category[a]			
Fit	50%	50%	43%
Mild	35%	35%	37%
Moderate	12%	12%	16%
Severe	3%	3%	4%
Number of comorbidities	2.1 (1.2)	2.2 (1.1)	2.3 (1.3)
Number of medications	8 (8.0)	8 (8.1)	9 (6.8)
Townsend quintile (social deprivation)[b]			
1 (least deprived)	28%	28%	27%
2	18%	18%	24%
3	23%	23%	20%
4	16%	16%	16%
5	15%	15%	11%

All values are mean (SD) unless otherwise stated. Comorbidities defined using Health Survey for England definition (cardiovascular disease; diabetes; cancer; chronic lung disease; asthma; arthritis; osteoporosis; Parkinson's disease; any emotional, nervous or psychiatric disease).
FI, frailty index.
[a]FI scores of 0–0.12 = fit; >0.12–0.24 = mild frailty; >0.24–0.36 = moderate frailty; >0.36 = severe frailty.
[b]2% missing data on social deprivation in external validation cohort.

- International guidelines recommend **routine frailty identification**
- Currently available tools require additional resource and may be inaccurate
- The eFI has been developed and externally validated using **routine primary care data**

Clegg et al Age & Ageing (2016)

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Electronic Frailty Index (eFI)

Box 1. List of 36 deficits contained in the eFI.

Activity limitation	Memory and cognitive problems
Anaemia and haematinic deficiency	Mobility and transfer problems
Arthritis	Osteoporosis
Atrial fibrillation	Parkinsonism and tremor
Cerebrovascular disease	Peptic ulcer
Chronic kidney disease	Peripheral vascular disease
Diabetes	Polypharmacy
Dizziness	Requirement for care
Dyspnoea	Respiratory disease
Falls	Skin ulcer
Foot problems	Sleep disturbance
Fragility fracture	Social vulnerability
Hearing impairment	Thyroid disease
Heart failure	Urinary incontinence
Heart valve disease	Urinary system disease
Housebound	Visual impairment
Hypertension	Weight loss and anorexia
Hypotension/ syncope	
Ischaemic heart disease	

Clegg et al: Age Ageing2016: 45:353-360

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Ischaemic heart disease	

Depression?

Clegg et al: Age Ageing2016: 45:353-360

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Electronic Frailty Index (eFI)

- The eFI has robust predictive validity for predicting outcomes (age 65-95)
- 1,3 5 year risk mortality, hospitalisation, nursing home admission
- The prevalence of people who were fit, had mild, moderate or severe frailty was 50%, 35%, 12% and 3% respectively
- Severe frail had on average 2.2 comorbidities and were taking 8 medications
- One year risk almost doubles for mild frailty and quadruples for severe frailty
- ce-based

One year outcome (hazard ratio)	Mild frailty	Moderate frailty	Severe frailty
Mortality	1.92	3.1	4.52
Hospitalisation	1.93	3.04	4.73
Nursing home admission	1.89	3.19	4.76

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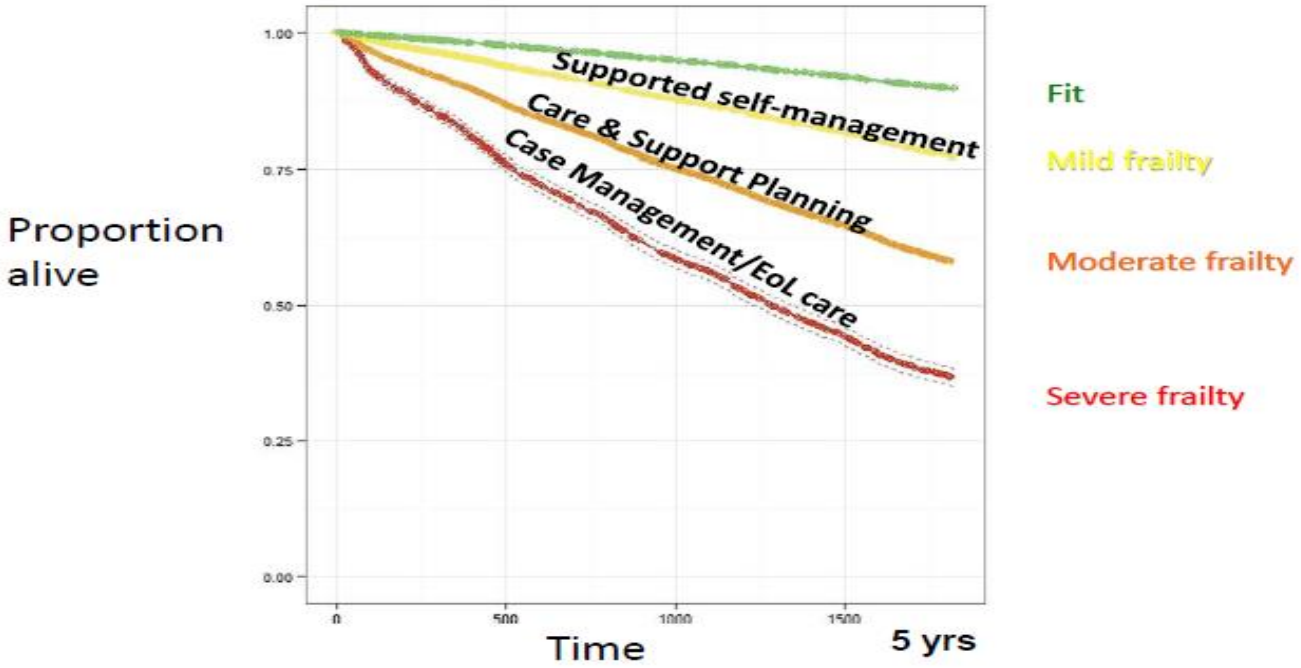
Primary care electronic Frailty Index (eFI)



Survival plots *(n=227,648; >65y) (Clegg et al)*

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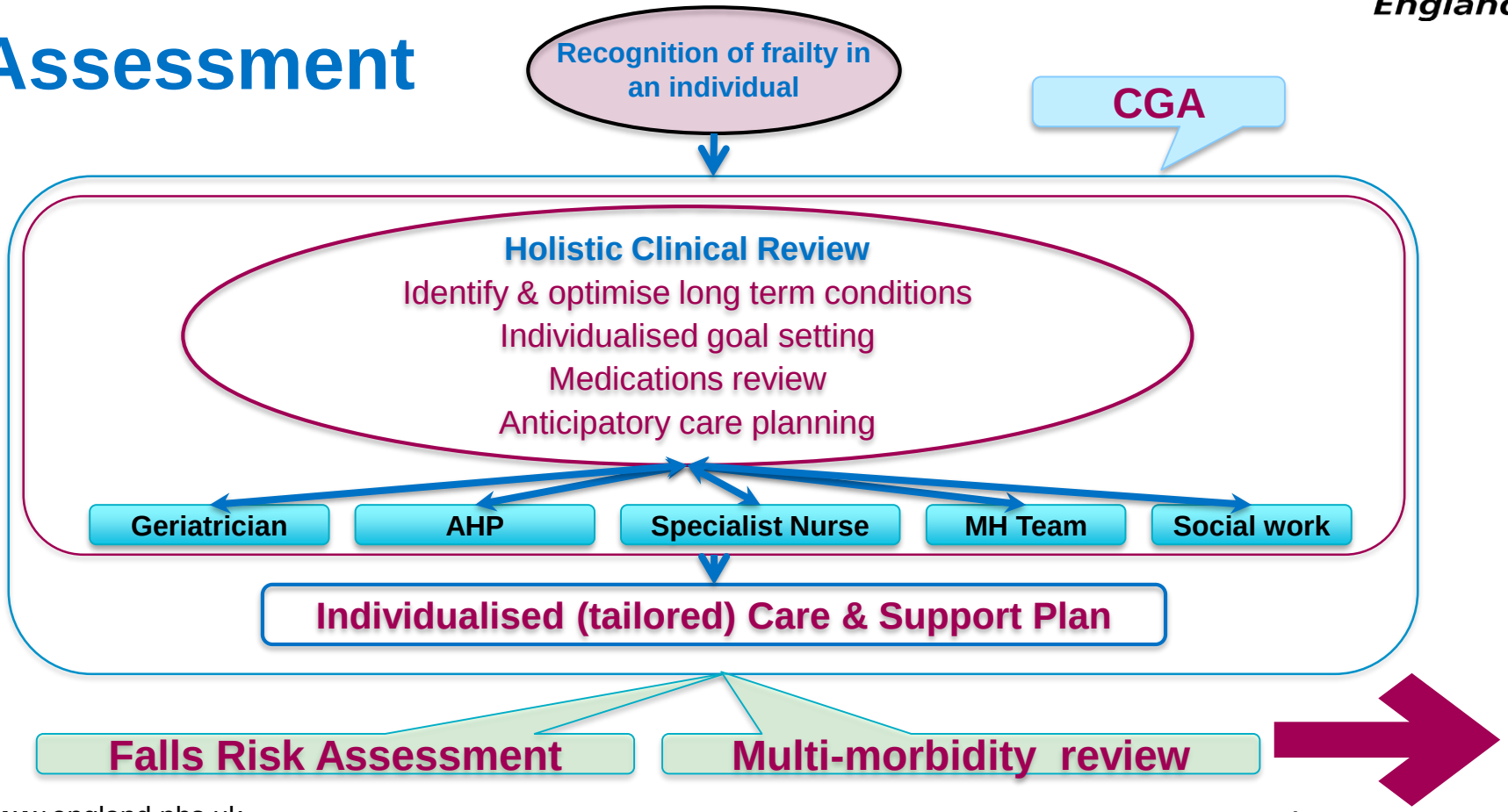
Assessment



Adapted from BGS: Fit for Frailty (2014)

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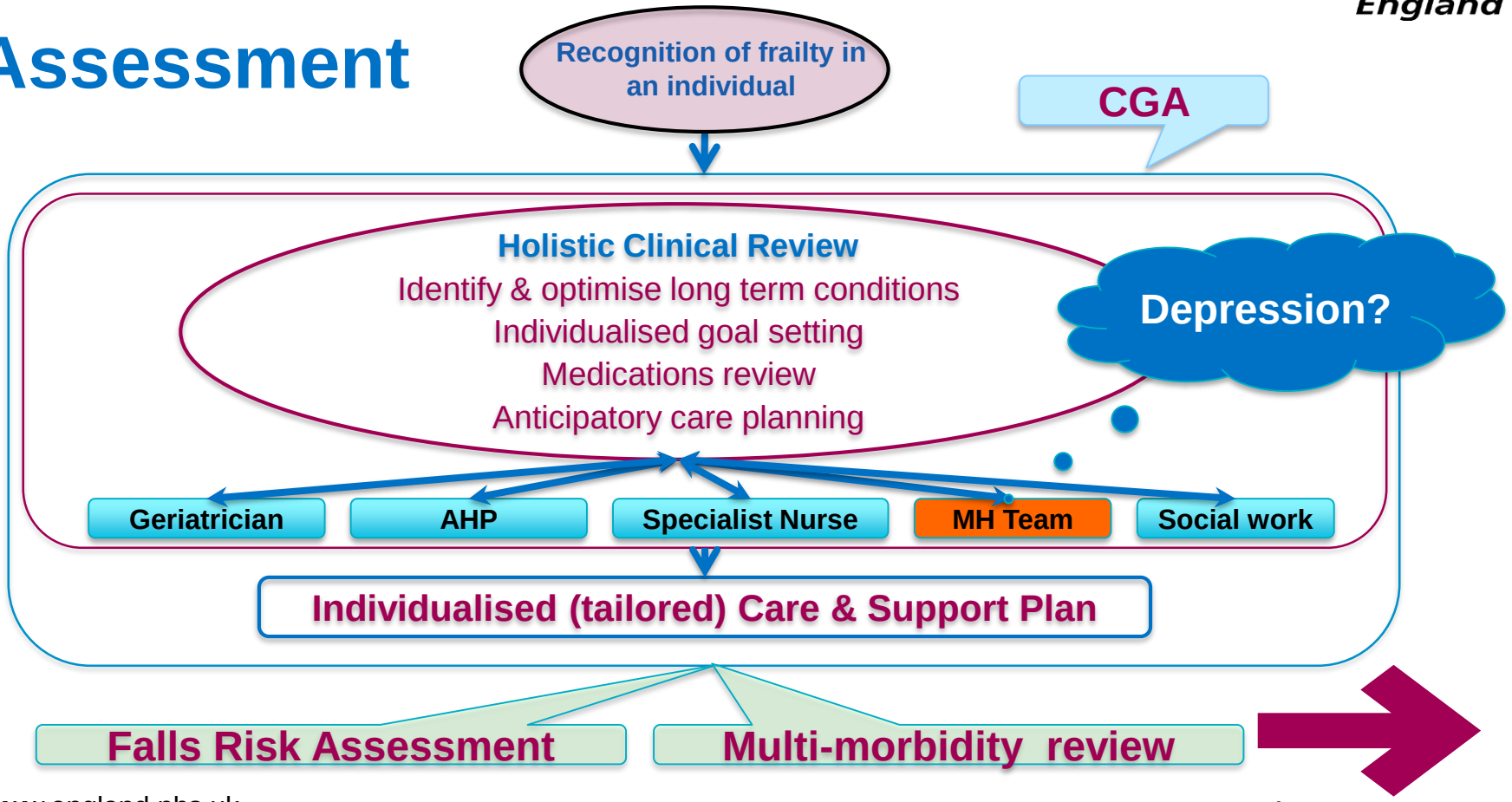
Assessment



Adapted from BGS: Fit for Frailty (2014)

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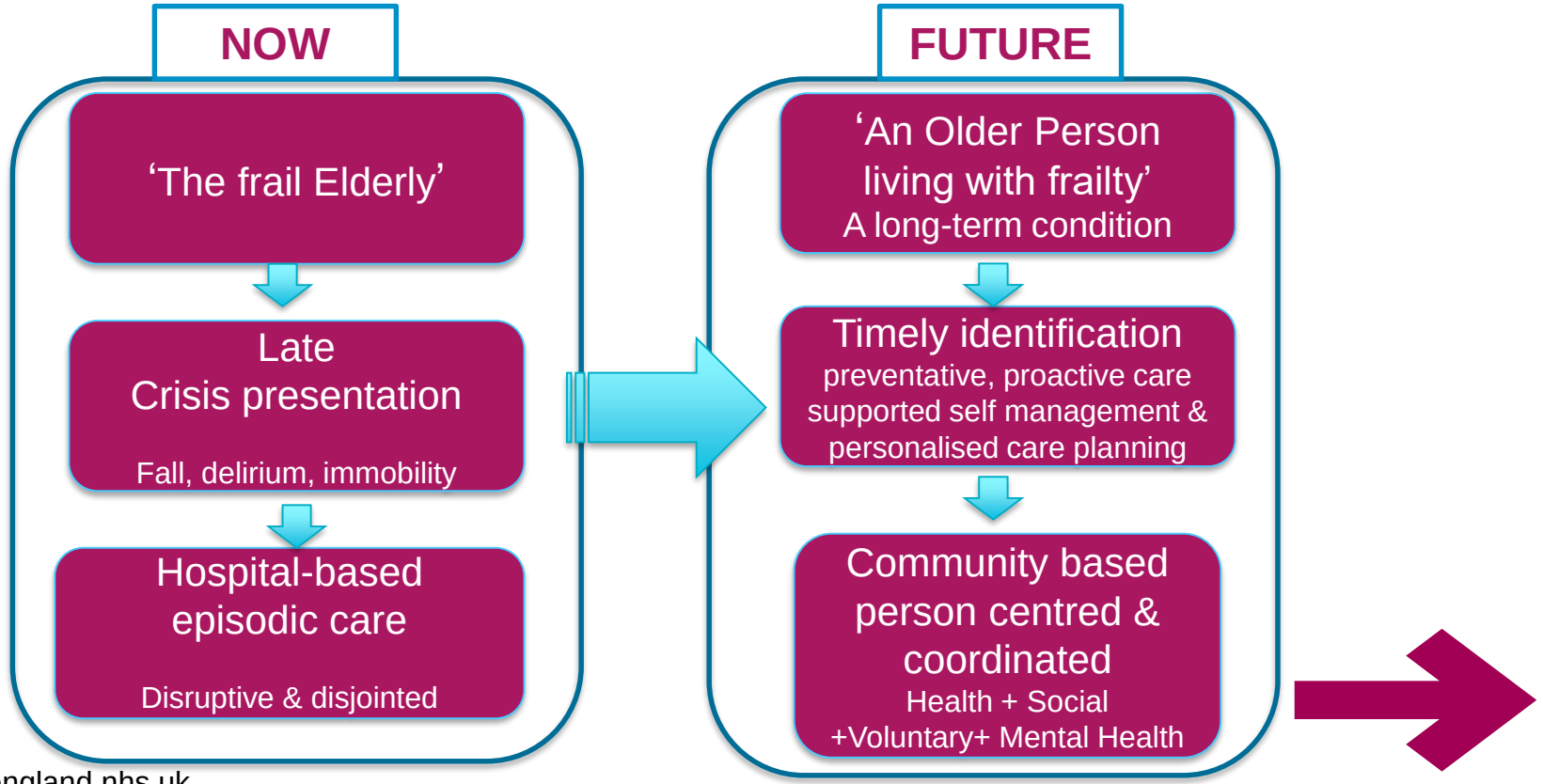
Frailty as a Long Term Condition

- A long term condition can be **diagnosed**, is **not curable** but **can be managed** and **persists**
- As resilience is lost, care and support planning assumes greater importance through to the end of life

Frailty as a Long Term Condition



Frailty identification & Prevention

Can we use frailty for prevention?

Potentially modifiable risk factors

- ❑ Alcohol excess
- ❑ **Cognitive impairment**
- ❑ **Falls**
- ❑ **Functional impairment**
- ❑ **Hearing problems**
- ❑ **Mood problems**
- ❑ **Nutritional compromise**
- ❑ **Physical inactivity**
- ❑ **Polypharmacy**
- ❑ Smoking
- ❑ **Social isolation and loneliness**
- ❑ **Vision problems**

Targeted interventions for those at most risk :

- ❑ **Good foot care**
- ❑ **Home safety checks**
- ❑ Vaccinations
- ❑ Keeping warm
- ❑ **Readiness for winter**

Stuck et al. Soc Sci Med. 1999(Systematic review of 78 studies)

Frailty Interventions

- Systematic review 2011: 98 articles; 11 met criteria*
- 8 high quality studies focused on improvement
- **6 exercise based interventions**
- **5 showed improvement in 2 or more frailty indicators**
- Cochrane are in process of undertaking a systematic review

- Systematic review of RCTs 2008: 89 trials, 97984 people**
- **Community-based multifactorial intervention** in older people (mean age 65)
- Interventions reduced risk of:
  - Not living at home
  - Nursing home admission
  - Hospital admissions
  - Falls
- **Physical function improved with intervention**

*Journal of Clinical Gerontology and Geriatrics Volume 3, Issue 2 , Pages 47-52, June 2012

**Lancet 2008 (371): 725-735

Falls

Falls and older people

- Older people have highest risk of falling*
- **30%** people aged **65+** fall at least once/year
- **50%** of people aged **80+**
- Globally 37 million falls/year need medical attention
- 424 000 worldwide deaths/year: 80% in low/middle income countries

*NICE CG161

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Falls impacts

- Causes **pain, distress, injury, lost confidence/independence**
- NWAS (2013): 10.5% all ambulance call outs were falls related
- **1 in 2 women, 1 in 5 men in UK will suffer fracture after age 50**
- Most fractures in older people follow a fall: 10% falls result in fracture
- Causes ↑ **mortality:** adults 65+ suffer greater number of fatal falls

*NICECG161

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Falls mortality

- Falls associated with ↑ **mortality** in adults 65+
- Ground level admitted falls +65: only 33% went home without assistance*
- 1 year mortality 33% for all admissions
- 1 year mortality for those discharge alive 24%
- Those discharged to nursing facility had 3X risk of death in 1 year (HR=2.82)

*Ayoung-Chee et al (2014) Long term outcomes of ground level falls in elderly. J Trauma & Acute Care Surgery: 76 (2) 498-503

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What next…?

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Opportunities of frailty

- Embed a **consistent approach to routine frailty identification**
- **Target** care & support planning better
- **Use of frailty status to improve quality of care** across different settings
- Fits with **NICE guideline on multi-morbidity**
- **Evidence based interventions targeted** at those with greatest risk
- **System capability** to support rising number of older people with frailty
- **Informing treatment decisions based on condition not age**
- Fit with 5YFV and GPFV visions: developing more **engaged relationships** with patients and carers to **promote well being & prevent ill health**

Challenges presented by frailty

- eFI so far only validated in **primary care** (not secondary care)
- **Frailty diagnosis requires clinical assessment & judgement** to validate
- The frailty evidence base is still developing
- Interventions evidence not subject to large scale RCT (and may never be)
- Economic & trajectory impacts of known interventions not yet understood
- Other health system priorities

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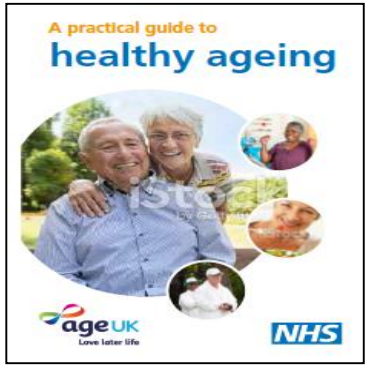
What we've done so far

- Read codes for mild, moderate and severe frailty
- **Healthy Aging and Caring Guides**
- Handbooks for Care & Support Planning, Risk Stratification and Multi-Disciplinary Team Working
- **Discharge to Assess Quick Guide**
- **Safe and well visits by Fire Service**
- Commitments to Carers
- Frailty toolkit for primary care
- Frailty CQUIN
- Integrated pathway of care
- Commitments to end of life care
- Standard outcomes set for older people
- **Rightcare Frailty Scenario**



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What we're doing

- **Promotion of electronic frailty index** and additional information within summary care record
- **Economic modelling** of impact of frailty
- **Care homes commissioning guidance**
- **NICE multi-morbidity clinical guideline**
- **Serious illness care programme**
- **Rightcare LTC** Commissioning for Value
- **Falls consensus statement**


Thank you