The Electronic Frailty Index

Guidance Notes

- The electronic frailty index (eFI) helps identify and predict adverse outcomes for older patients in primary care
- The eFI enables identification of older people who are at increased risk of future nursing home admission, hospitalisation, longer length of hospital stay, and mortality
- It is therefore useful to plan care at an individual and whole systems level
- Information for the eFI is collected using existing electronic health record information at no extra cost
- The eFI uses a 'cumulative deficit' model, which measures frailty on the basis of the accumulation of a range of deficits, which can be clinical signs (e.g. tremor), symptoms (e.g. vision problems), diseases, disabilities and abnormal test values
- The eFI is made up of 36 deficits comprising around 2,000 Read codes (see map and table 1 in appendix for list of 36 deficits).
- The score is strongly predictive of adverse outcomes and has been validated in large international studies.
- The full report of the development/validation of the eFI is available at http://ageing.oxfordjournals.org/content/early/2016/03/03/ageing.afw039.full
- The eFI is presented as a score (e.g. if 9 deficits are present out of a possible total of 36 the FI score = 0.25) - higher scores indicate increasing frailty
- Higher scores indicate increasing frailty and greater risk of adverse outcomes (e.g. on average, those with an eFI > 0.36 have a six-fold increased risk of admission to a care home in the next 12 months and a five-fold increased mortality risk, compared to fit older people).

The eFI score can be used to define frailty categories (to enable better targeting of evidence-based interventions)**:**

1. **Fit (eFI score 0 - 0.12)** – People who have no or few long-term conditions that are usually well controlled. This group would mainly be independent in day to day living activities.
2. **Mild frailty (eFI score 0.13 – 0.24)** – People who are slowing up in older age and may need help with personal activities of daily living such as finances, shopping, transportation.
3. **Moderate Frailty (eFI score 0.25 – 0.36**) – People who have difficulties with outdoor activities and may have mobility problems or require help with activites such as washing and dressing.
4. **Severe Frailty (eFI score > 0.36)** – People who are often dependent for personal cares and have a range of long-term conditions/multimorbidity. Some of this group may be medically stable but others can be unstable and at risk of dying within 6 - 12 months.

eFI Implementation

The eFI has been implemented into the SystmOne and EMISWeb GP electronic health records (EHRs). Implementation into the Vision EHR is at an advanced stage. The eFI is in the SystmOne GP EHR as a population level report; it is in EMISWeb GP EHR as a protocol and as a clinical template within the patient record. The tool will be developed further in the both SystmOne and EMISWeb to enable eFI functionality as both a patient and population level reports.

The eFI represents a major advance in frailty care because, for the first time, it enables identification of frailty using routinely available data, without the need for an additional clinical assessment. Implementation of the eFI in routine primary care is enabling better targeting of evidence-based interventions, improved planning of health services utilisation and development of more appropriate, proactive, goal-orientated care pathways for older people with frailty.

A frailty collaborative – the Healthy Ageing Collaborative (HAC) – is supporting the development of new, evidence-based models of care for older people with frailty as part of the Yorkshire & Humber AHSN Improvement Academy. The HAC is a programme of improvement in primary care to test the clinical utility of the eFI and engage clinicians to use the eFI to proactively identify and diagnose frailty. To date, the HAC has engaged with 57 of the 209 CCGs in England to support the use of the eFI to develop new models of care at a practice and population level. Further CCGs are lined up to use the eFI now it is available in EMISWeb.

GPs and CCGs are using the eFI to improve the quality of care for people with frailty through better targeting of evidence-based interventions, improved planning of health services utilisation and the development of more appropriate, proactive, goal-orientated care. The HAC engagement has been mapped on an interactive map at http://www.improvementacademy.org/improving-quality/efi-engagement.html and includes examples of new models of care developed using the eFI.

Examples of the interventions deployed in primary care after identifying people with frailty using the eFI include:

- Adding people with severe frailty to a GP practice top 2% at risk avoidable unplanned admissions register
- Medication reviews for people with severe frailty and care home residents
- Proactive falls prevention interventions for people with moderate frailty
- Nurse led frailty assessments for people with mild, moderate and severe frailty
- Adding people with severe frailty to practice palliative/Gold Standards Framework registers and offering advance care planning interventions
- Identifying patients with moderate and severe frailty for geriatrician led Frailty Clinics or comprehensive geriatric assessment (CGA) clinics
- Offering self-management support to people with mild frailty.

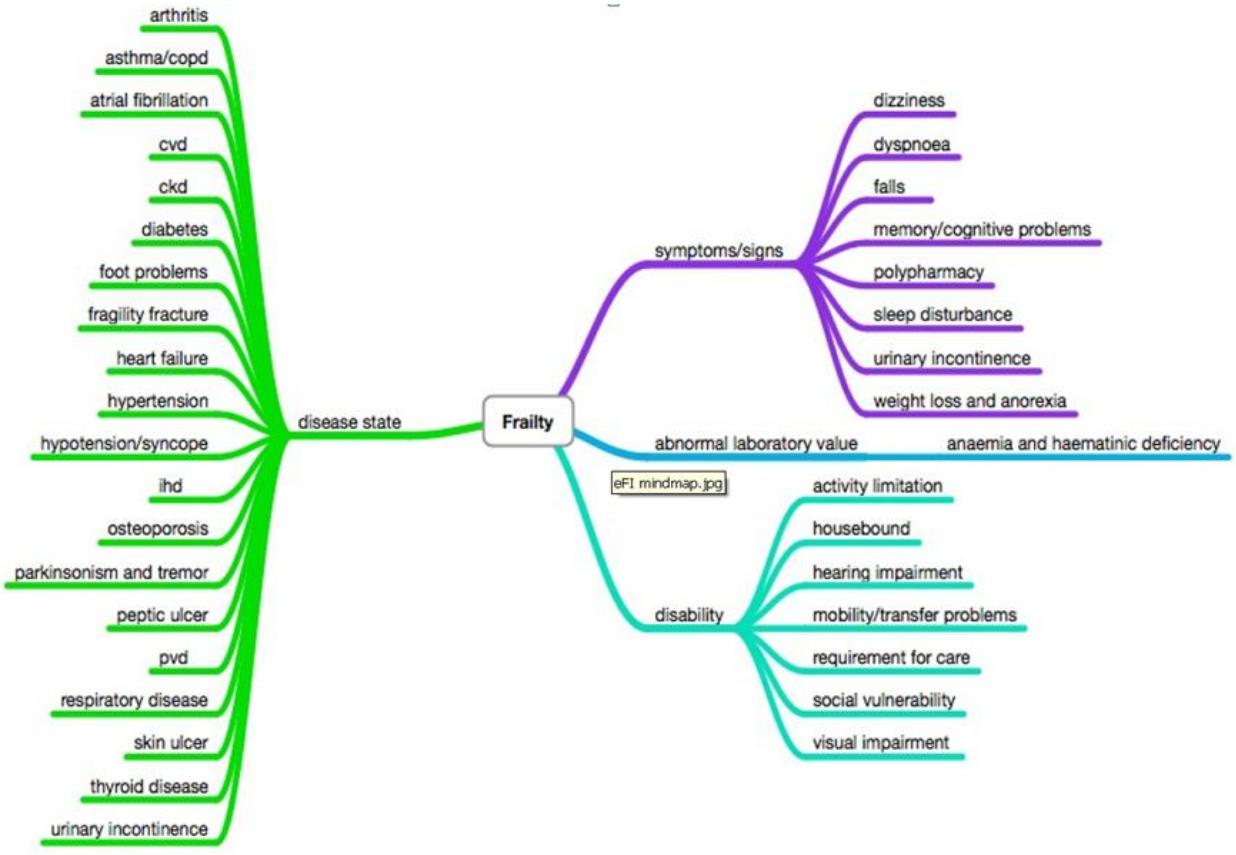
For more information on how the eFI is being used, and case examples, visit http://www.improvementacademy.org/improving-quality/healthy-ageing.html.

The eFI has been developed in a collaborative partnership between the University of Leeds, TPP/SystmOne, University of Birmingham and Bradford Teaching Hospitals NHS Foundation Trust. The work was funded by the National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care (NIHR CLAHRC) programme.

Authored by: Sarah De Biase
Improvement Programme Manager,
Healthy Ageing Collaborative
Improvement Academy part of the AHSN Yorkshire and Humber
Sarah.De-Biase@yhahsn.nhs.uk

Appendix

Figure 1 & Table 1: List of 36 deficits in the eFI



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