

# BMJ Open Quality Testing a proactive approach to frailty identification: the electronic frailty index

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## INTRODUCTION

Frailty is the manifestation of ageing that is associated with poor outcomes, including increased risk of disability, hospital admission, institutional care or death.<sup>1</sup> It can have a considerable impact on a person's quality of life, and lead to increased use of primary care and unplanned secondary care services.

However, frailty is not an inevitable part of ageing, and an individual's frailty state is not constant: it can be improved or exacerbated.<sup>2</sup> Identifying people with frailty in primary care, and targeting them with appropriate interventions, can delay the progression of this condition.<sup>3</sup>

## Aim

In order to improve outcomes for people with frailty, we needed to develop and test a consistent method to identify people, which could be used in a community setting and implemented at a national scale throughout Scotland.

## METHODS AND RESULTS

### Understand

We selected the electronic frailty index (eFI) as the method to explore in Scotland, as it had been validated in England against a population of 900 000 and uses existing data to identify a person's condition.<sup>1</sup> It was unclear whether it would accurately identify people with frailty using Scottish data and IT infrastructure.

### Test and refine

We tested the eFI on a population of 75 311 (12 496 aged ≥65) across nine general practitioner (GP) practices in three health and social care partnerships in Scotland. Read code data from the participating GP practices was used to stratify the population into mild, moderate or severe frailty. More information

on eFI deficits and cut-offs can be found in the appendix.

We reviewed a sample of the eFI results for three practices, totalling 135 people. The GP in each practice compared the eFI result against the Rockwood clinical frailty scale<sup>4</sup> and marked whether they agreed with the assessment or not. [Table 1](#) compares our results with the external validation cohort in the original study.

We then refined the presentation of the results to focus on individuals experiencing the greatest change in their frailty status, in order to ensure that those with greatest need were identified for review by community teams. This ensured that the numbers of individuals identified for a frailty case review could be matched with the capacity of professionals to conduct assessments. The Scottish Clinical Information Management in Practice GP group independently reviewed read codes used in Scotland and added these to the tool to ensure that codes commonly used in Scotland were included under the relevant deficits.

### Implement and spread

Following successful testing, we wanted to make this tool available to all GP practices in Scotland to identify people with frailty in their population who could benefit from community-based support.

We worked with Information Services Division to make the adapted eFI available through the Scottish Primary Care Information Resource (SPIRE).<sup>5</sup> SPIRE is a portal that facilitates the management of information at a practice level.

As well as providing a list of people in the GP practice who are living with frailty, SPIRE can highlight the following groups of people:

- People who escalate to being moderately frail during the previous 6 months.



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**Table 1** Original eFI study external validation cohort results compared with our testing

	Original study external validation cohort (65–95)	Our testing (age 65+)
No. male	227 043	5460
No. female	288 964	7036
Male (%)	44	44
Female (%)	56	56
Mild frailty (%)	37	35
Moderate frailty (%)	16	15
Severe frailty (%)	4	5

- ▶ People who are moderately frail and have experienced the greatest change during a 6-month period.
- ▶ People who escalate to being severely frail during a 6-month period.

## DISCUSSION

We tested and adapted a clinically validated tool to reflect the capacity of community-based teams. This adaptation was crucial to successful adoption of the tool by the test practices.

Working in partnership with colleagues in National Services Scotland, we have now made this tool available through infrastructure that enables its implementation at scale.

Our test practices were concentrated in urban areas and areas of greater deprivation. This may have skewed the eFI results, as the validation demonstrated higher eFI scores in areas with higher levels of deprivation.<sup>1</sup> However, Dollar Health Centre, a semi-rural GP practice with low levels of deprivation, is also seeing the benefit of using the eFI with their population. This practice uses the tool at their multidisciplinary team meeting to highlight people who may need additional support. This is often a referral to an anticipatory care planning (ACP) nurse, who will visit the patient at home, conduct a holistic assessment and initiate ACP discussions. The team expect that this will increase the number of completed ACPs and reduce hospital admissions, although at present there is insufficient data to demonstrate this.

The implementation of a robust frailty identification tool will enable teams, organisations and national programmes to focus preventative support on those people who are likely to benefit the most. This will improve the quality of life of people who become frail and reduce demand on unplanned services that are associated with crisis moments.

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**Contributors** ND is the Improvement Advisor who led this improvement project. ND supported GP practices to test the eFI. GE provided clinical expertise to the project. LD provided communications support to the project and drafted the article. PB tested the eFI in his GP practice and provided information on how his practice is using the tool. TM is the Programme Team Lead and is the guarantor for the content of the paper. TM supported GP practices to test the eFI.

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