Frailty screening and assessment tools comparator
The Improvement Hub (ihub) is part of Healthcare Improvement Scotland

© Healthcare Improvement Scotland 2017

Published June 2017

This document is licensed under the Creative Commons Attribution-Noncommercial-NoDerivatives 4.0 International Licence. This allows for the copy and redistribution of this document as long as Healthcare Improvement Scotland is fully acknowledged and given credit. The material must not be remixed, transformed or built upon in any way. To view a copy of this licence, visit https://creativecommons.org/licenses/by-nc-nd/4.0/

http://ihub.scot
Frailty is described as “the most problematic expression of population ageing.”(1) A person with frailty can experience serious adverse outcomes following even a relatively minor illness. Timely identification of frailty can enable health and social care professionals (HSCPs) to prevent a poor outcome for an intervention (or avoid the intervention entirely) and support the long-term management of people’s health needs.(2)

Numerous tools are available to identify frailty. Health and Social Care Partnerships face time and resource pressures, and need support to appraise and select the tool that is most appropriate for their context.

This resource compares the features of different frailty screening and assessment tools at a glance, together with links to further information and research.

There are summaries of each tool, which include the level of expertise required to administer the test, together with a ‘stopwatch’ rating, which gives an indication of how time-consuming the different tests are.

Our resource aims to make it easier for people to access and use relevant research evidence. While we are aware that frailty identification tools may be used in different ways in different areas, for the purposes of our comparison we are using information from peer-reviewed papers and best practice guidance.

This resource has been developed with support from the Older People in Acute Care team, and it includes their Think Frailty tool.

---

## Features

<table>
<thead>
<tr>
<th>Tool</th>
<th>Requires data</th>
<th>Questionnaire</th>
<th>Self-assessment</th>
<th>Community</th>
<th>Primary Care</th>
<th>Acute Care</th>
<th>Population</th>
<th>Individual</th>
<th>Expertise</th>
<th>Time rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>IoRN</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Practitioner</td>
<td>2</td>
</tr>
<tr>
<td>SPARRA</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Analyst</td>
<td>5</td>
</tr>
<tr>
<td>eFI</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Analyst</td>
<td>5</td>
</tr>
<tr>
<td>FiND</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Public</td>
<td>1</td>
</tr>
<tr>
<td>SPICT</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Clinical</td>
<td>3</td>
</tr>
<tr>
<td>Easycare</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Social care</td>
<td>4</td>
</tr>
<tr>
<td>Think Frailty</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Clinical</td>
<td>3</td>
</tr>
<tr>
<td>Falls screening</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Social care</td>
<td>1</td>
</tr>
<tr>
<td>Gérontopôle</td>
<td>✓</td>
<td>Could be adapted</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Public (if adapted)</td>
<td>1</td>
</tr>
<tr>
<td>APOP</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Clinical</td>
<td>1</td>
</tr>
<tr>
<td>ISAR</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Clinical</td>
<td>1</td>
</tr>
<tr>
<td>PRISMA 7</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Public</td>
<td>1</td>
</tr>
<tr>
<td>Clinical Frailty Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Geriatrician</td>
<td>2</td>
</tr>
<tr>
<td>Edmonton Frail Scale</td>
<td>✓ plus 2 tests</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Clinical</td>
<td>4</td>
</tr>
<tr>
<td>Groningen Frailty Index</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Public</td>
<td>2</td>
</tr>
<tr>
<td>Frailty phenotype</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Clinical</td>
<td>2</td>
</tr>
<tr>
<td>FRESH-screening</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Clinical</td>
<td>1</td>
</tr>
<tr>
<td>TUGT</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Social care</td>
<td>1</td>
</tr>
</tbody>
</table>
The Indicator of Relative Need (ioRN) is a practice/clinical and management tool for people delivering and planning care and support services. Used by practice professionals (health and social care) the ioRN provides a concise summary, including an ioRN ‘Group’, which measures a person’s functional needs and/or their degree of dependence/independence. ioRN data can be easily aggregated for use at different levels.

The original community ioRN was developed in 2003 to support a growing demand for objective information, especially on behalf of older people living in at home. It has now been redesigned and a new more sensitive version (ioRN2) suitable for a wider range of uses, including outcome measurement, was launched in 2015.

A separate version of the ioRN is used in care homes within a staffing model. This version has been tested for use within hospitals, augmented by other key information.

With the Community Indicator of Relative Need questionnaire a practitioner can report a person’s summary level of functional need in five minutes using questions that cover:

- Activities of daily living and mobility
- Personal care and food/drink preparation
- Mental wellbeing, behaviour and risk
- Bowel management

It is recommended that completion of the ioRN is carried out after an assessment or by someone who knows the person well.

Further reading

Information Services Division have developed Scottish Patients at Risk of Readmission and Admission (SPARRA), a risk prediction tool which predicts an individual's risk of an emergency hospital admission or readmission within the next year.

SPARRA is informed by a number of service-based criteria and statistical models to predict an individual’s risk of admission based on recent healthcare resource use.

SPARRA data can be used to inform a preventative and anticipatory approach to service planning and help to prioritise patients with complex care needs who are most likely to benefit from this approach.

**Further reading**

The electronic frailty index uses existing electronic health record data to detect and assess the severity of frailty. It uses a cumulative deficit model of frailty, in which frailty is defined through the accumulation of deficits, which can be clinical signs, symptoms, diseases and disability.

The eFI comprises 36 deficits, which have been developed using GP read codes. A person’s frailty score is calculated by dividing the total number of deficits that they have by the total number of possible deficits. The score is a reliable predictor of those who are at risk of adverse outcomes, such as care home admission, hospitalisation and mortality.

The eFI enables services and treatments to be targeted on the basis of people’s frailty status, rather than their chronological age and has the potential to transform care for older people living in the community.

Further reading


The Frail non-Disabled (FiND) questionnaire is a frailty screening tool for self-completion which is designed to differentiate frailty from disability. It has two questions related to physical disability (the ability to walk 400m and climb a flight of stairs) and three on symptoms, signs and conditions generally considered components of the frailty syndrome:

- Weight loss
- Exhaustion
- Sedentary behaviour

Mobility disability is defined as ‘a lot of difficulties’ or ‘inability’ to walk 400m or climb a flight of stairs. People who report one or more of the frailty criteria in the absence of mobility disability are classed as frail. A study found broad consensus between the questionnaire results and independent assessment of frailty according to Fried et al’s frailty phenotype.

**Further reading**


Cesari, M. et al. *A Self-Reported Screening Tool for Detecting Community-Dwelling Older Persons with Frailty Syndrome in the Absence of Mobility Disability: The FiND Questionnaire* *PLoS ONE* 2014;9:7 e101745
The **Supportive & Palliative Care Indicators Tool (SPICT)** is a guide to identifying people who are at risk of deteriorating and dying. It lists general indicators of deteriorating health to look for, and advises looking for clinical indicators of one or more advanced conditions:

- Cancer
- Dementia/frailty
- Neurological disease
- Heart/vascular disease
- Respiratory disease
- Kidney disease
- Liver disease

It also makes recommendations to review current care and care planning.

SPICT can help to identify people at risk of deterioration or dying at an earlier stage so that they can benefit from well-coordinated, supportive and palliative care, combined with appropriate treatment of their illnesses.

**Further reading**


Boyd, K., Murray, S. A. *Recognising and managing key transitions in end of life care*. *BMJ* 2010;341:c4863
The Easycare assessment provides a record of an individual's needs and priorities for health and care. People record their personal details and the medicines that they are taking, and are asked questions about their current needs and priorities in the following areas:

- Communication
- Looking after yourself
- Your mobility
- Safety and relationship
- Accommodation and finance
- Staying healthy
- Your mental health and well-being

Responses can be used to calculate an overall score for need for assistance in activities of daily living, the risk of breakdown in care leading to emergency admission to hospital, and the risk of falls.

Further reading


Healthcare Improvement Scotland has developed a [frailty screening tool](http://www.healthcareimprovementscotland.org/his/idoc.ashx?docid=8abd8530-48f3-4152-bbfb-d0918b870ec9&version=-1) for use in acute care settings. It is for use with individuals aged 75 and over, or those over 65 who live in nursing or residential care or have been admitted from community hospital. The first part of the assessment asks whether the person would benefit from Comprehensive Geriatric Assessment, based on the following criteria:

- Functional impairment in context of significant multiple conditions (new or pre-existing).
- Resident in a care home.
- Acute confusion (Think Delirium), for example the 4AT screening tool - is there a diagnosis of dementia or a history of chronic confusion?
- Immobility or falls in last 3 months.
- List of six or more medicines (polypharmacy).

If any of these criteria are met, the second part of the assessment prompts clinicians to consider whether the person would be better managed by another acute speciality team. If any of these criteria are met, the person should receive specialist multidisciplinary review while in their current unit. If the criteria are not met, the person should be prioritised for transfer of care to a specialist geriatric assessment service.

**Further reading**

The Scottish Government publication, *The Prevention and Management of Falls in the Community*, has a conversation pro forma to identify people who would benefit from further assessment following a fall. It asks whether the person has fallen in the past 12 months, and if yes, there are further questions on:

- Whether the person has fallen more than once in the past 12 months.
- Whether the person feels unsteady, or has problems with walking or balance.
- Whether the person experienced a black out when they fell, or did not know why they fell.
- Whether the person has experienced difficulties carrying out usual activities.

If any of these questions is yes, the person should be referred for a multifactorial risk screen.

**Further reading**

The Gérontopôle in Toulouse has developed and implemented a screening tool in primary care for identifying frailty. It is aimed at people over the age of 65 with no physical disability or acute illness. It consists of a series of questions for identifying signs and/or symptoms indicative of frailty, then the physician is prompted to make his or her own assessment of the patient’s frailty status.

The tool has proved successful in identifying patients who are frail or pre-frail according to criteria identified by Fried et al.

**Further reading**


The APOP study has developed an evidence-based screening tool to predict adverse health outcomes in older people who present at the emergency department. The screener can be completed online and calculates a person’s risk of functional decline within three months and risk of mortality within three months.

The screener records age (over-70s only), gender, whether the person lives in a care home or nursing home, and the medications he or she is taking. It contains questions covering:

- Activities of daily living.
- Whether the person has been admitted to hospital in the past six months.
- Whether the person is visiting the ED because of a fall.
- Whether there is an indication for blood tests.
- Whether the person has a diagnosis of dementia.
- Cognition.

**Further reading**


Identification of Seniors at Risk (ISAR)

Features

- Questionnaire
- Acute
- Individual

Expertise

- Clinical

Time

-  

The ISAR is a self-report screening tool for use in the emergency department comprising six yes or no items questions on functional dependence, recent hospitalisation, memory and visual impairments, and polypharmacy. It is for use on people aged over 65, and aims to identify those with severe disability at the time they visit the ED, and those at risk of developing adverse outcomes in the six months following the visit to ED.

A study indicates a strong correlation between ISAR and a deficit accumulation index-based definition of frailty. A systematic review found ISAR had modest predictive accuracy in in identifying older adults at risk of adverse outcomes after ED discharge or hospitalisation and could be used to support decision making when determining which older adults can be safely discharged.

Further reading


Edmans, J. The Identification of Seniors at Risk (ISAR) score to predict clinical outcomes and health service costs in older people discharged from UK acute medical units. Age and Ageing 2013;42:6 747-753

The PRISMA 7 questionnaire has seven questions and has been developed to identify older people in the community with moderate to severe loss of autonomy.

The questions cover
- Age
- Gender
- Whether the person limits his or her daily activities
- Whether the person requires regular assistance
- Whether the person has health problems that confine him or her to the house
- Whether the person has someone who could help him or her in times of need
- Use of wheelchairs or walking aids.
- Three or more yes answers indicates that the person is frail.

A paper comparing the diagnostic test accuracy of different instruments found that PRISMA 7 questionnaire, slow gait speed and the timed get up and go test have high sensitivity but limited specificity for identifying frailty, meaning that many fitter older people could be identified as frail.

Further reading


The Clinical Frailty Scale is a measure of frailty based on clinical judgment. It has been designed to grade the severity of frailty following a comprehensive geriatric assessment. The scale classes people as:

- very fit
- well
- well, with co-morbid disease
- apparently vulnerable
- mildly frail
- moderately frail
- severely frail

A study has shown that it is an effective measure of frailty and provides similar predictive information similar to other established tools about death or the need for an institution.

This judgment-based scale may be more appropriate in contexts where clinicians who are experienced in the care of older people are available.

**Further reading**

The Edmonton Frail Scale is designed to identify frailty in clinical settings. It can be administered in less than five minutes and has the following domains:

- Cognition
- General health status
- Functional independence
- Social support
- Medication use
- Nutrition
- Mood
- Continence
- Functional performance.

Two are performance-based items: the timed get up and go test for functional performance, and the clock test for cognitive impairment.

A study found that the Edmonton Frailty Scale was a valid measure of frailty when compared with the clinical impression of geriatric specialists after they had carried out more comprehensive assessment. It is a brief and reliable tool that can be used by people who have not had special training in geriatric medicine.

An adapted version of the scale has been developed for use in acute hospitals, which substitutes the timed get up and go test for a report of physical function prior to the current illness.

Further reading


The Groningen Frailty Index is a 15-item questionnaire which is suitable for postal completion, with questions in the following domains:

- Physical
- Cognitive
- Social
- Psychosocial

A score of 4 or higher indicates moderate to severe frailty. One paper has recommended an initial screen for frailty using primary care data, followed by a GFI questionnaire for those with a high frailty index score.

Further reading


Fried et al have developed a phenotype for the frailty syndrome, with the following indicators and measures:

- **Weight loss.** Self-reported weight loss of more than 4.5 kg or recorded weight loss of ≥5% per year.
- **Self-reported exhaustion.** Self-reported exhaustion on US Center for Epidemiological Studies depression scale (3–4 days per week or most of the time).
- **Low energy expenditure.** Energy expenditure less than 383 kcal/week (men) or less than 270 kcal/week (women).
- **Slow gait speed.** Standardised cut-off times to walk 4.57 m, stratified by sex and height.
- **Weak grip strength.** Grip strength, stratified by sex and body-mass index.

The presence of three or more factors indicates that the person is frail, those with one or two factors are pre-frail, and those without any factors are not frail.

**Further reading**


The FRESH frailty screening instrument was developed for use in the emergency department to identify frailty in a few minutes without the use of tests or measurement. It comprises five questions in the following areas:

- Mobility tiredness.
- Fatigue.
- Risk or fear of falling.
- Whether the person needs assistance with shopping.
- Whether the person has had three or more visits to the emergency department in the past 12 months.

Answering yes to two or more questions indicates that the person is frail.

A paper has concluded that it has good clinical value, although further study is required to assess its potential in other settings, such as primary care.

**Further reading**

Timed Up and Go test

Features

- Primary care
- Community
- Acute care
- Individual

Expertise

- Social care staff

Time

The Timed Up and Go test (TUGT) is a test of functional mobility. It measures, the time taken to stand up from a standard chair, walk three metres, turn, walk back to the chair and sit down. It is quick and simple to apply in any setting, and no specialist equipment is needed.

A study found that it is good at identifying frail members of the population, but less effective at discriminating the non-frail from the pre-frail or frail populations. A paper comparing the diagnostic test accuracy of different instruments found that PRISMA 7 questionnaire, slow gait speed and the timed up and go test have high sensitivity but limited specificity for identifying frailty, meaning that many fitter older people could be identified as frail.

Further reading

Savva, G. M. et al. Using timed up-and-go to identify frail members of the older population. Journals of Gerontology: Biological Sciences and Medical Sciences. 2013;68:4 441-446

The Improvement Hub (ihub) is part of Healthcare Improvement Scotland

You can read and download this document from our website. We are happy to consider requests for other languages or formats. Please contact our Equality and Diversity Advisor on 0141 225 6999 or email contactpublicinvolvement.his@nhs.net

Edinburgh Office
Gyle Square
1 South Gyle Crescent
Edinburgh
EH12 9EB

0131 623 4300

Glasgow Office
Delta House
50 West Nile Street
Glasgow
G1 2NP

0141 225 6999

http://ihub.scot