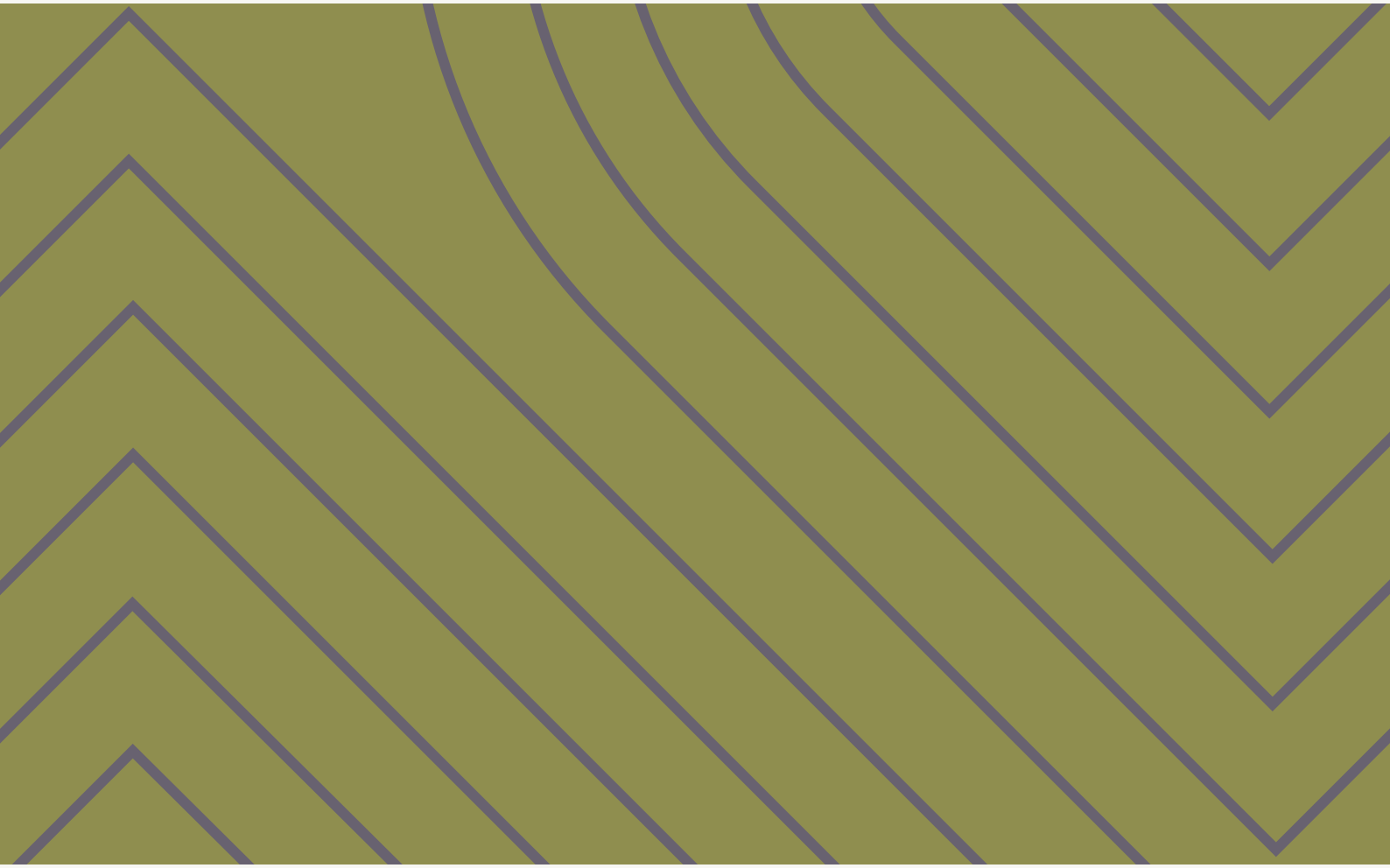
Royal College of Physicians

RCR The Royal College of Radiologists

Implementing frailty assessment and management in oncology services



November 2023

Produced in association with:

BGS British Geriatrics Society Improving healthcare for older people

SIOG INTERNATIONAL SOCIETY OF GERIATRIC ONCOLOGY

MACMILLAN CANCER SUPPORT

Contents

Foreword

Increasing numbers of people are living with both cancer and frailty. Frailty affects half of all older patients with cancer and many younger patients too. It is widely recognised that personalised cancer care is about holistically assessing a patient's needs, not just their cancer biology. The assessment and management of a patient's frailty is an essential component of this. If frailty is not adequately assessed and managed within cancer pathways, patients with frailty may be subject to inappropriate overtreatment, carrying the risk of an irretrievably impaired quality of life. Conversely, older people who are less frail and more robust risk being denied access to cancer therapy if age alone is used as a measure of their resilience, with unnecessarily adverse cancer outcomes.

Suboptimal care that fails to take account of frailty represents poor use of healthcare resources. However, frailty assessment is not a routine component of the cancer pathway in the UK, and patient frailty and wider needs may be overlooked. It is increasingly important – indeed essential – that frailty in patients with cancer is assessed, considered within shared decision-making and managed to promote better patient and carer experience and outcomes.

This guidance was commissioned by the Joint Collegiate Council for Oncology (JCCO) to raise awareness of the importance of frailty assessment and management in oncology services, and to provide practical guidance to oncology teams to ensure that it becomes a routine part of clinical care.

The JCCO would like to thank Dr Anthea Cree and Dr Jessica Pearce for their commitment and hard work in leading the development of this guidance. They were supported by a Working Group comprising representatives from the Association of Cancer Physicians, the Royal College of Physicians (RCP), The Royal College of Radiologists (RCR), oncology trainees, the NHS Acute Frailty Network, Macmillan, the International Society of Geriatric Oncology and the British Geriatrics Society. Patient/lay input was provided by a member of the RCP's Patient and Carer Network. Thanks also to Gillian Dollamore, Clinical Oncology Executive Officer at the RCR, without whose administrative, organisational and editing skills it would not have been possible to complete this project. I offer my thanks to all of them for their support, their time and their expert contributions.

Dr Tom Roques

Chair, Joint Collegiate Council for Oncology

Executive summary

> We're good at addressing specific, individual problems: colon cancer, high blood pressure, arthritic knees. Give us a disease and we can do something about it. But give us an elderly woman with high blood pressure, arthritic knees and various other ailments besides – an elderly woman at risk of losing the life she enjoys – and we hardly know what to do and often only make matters worse.
>
> — Atul Gawande, *Being mortal: medicine and what matters in the end*

The aim of this guidance is to encourage and support the implementation of frailty assessment and management in oncology services in the UK, to ensure the delivery of optimal and appropriate oncological care and to improve patient outcomes. Frailty is everyone's business and, although aimed primarily at oncologists, this guidance is relevant to everyone involved in the care of adult patients with cancer.

The first part of the guidance gives an abbreviated summary designed to inform and assist oncology teams with the routine introduction of frailty assessment into the patient pathway. It contains five sections.

- **Section 1** defines frailty and describes why it is important.
- **Section 2** addresses the practicalities of frailty assessment outlining **who** should be assessed, **how** and **when** this should be undertaken and **by whom**. The guidance describes a number of validated tools for assessing frailty to support teams to select the tool(s) that best suit local needs.
- **Section 3** addresses the management of frailty when identified, outlining the vital roles of primary care, the wider multidisciplinary team (MDT) and specialist geriatric/oncogeriatric and palliative care services.
- **Section 4** highlights the important role of staff training, clinical research, audit and service improvement in supporting the optimal care of those living with frailty.
- **Section 5** comprises a series of key recommendations for action at individual, local, regional and national levels that will help to improve the care and wellbeing of patients with cancer who experience frailty.

The second part of the guidance includes five Appendices providing more detailed information relating to each section and associated references.

Key messages

- Frailty is common in patients with cancer, is associated with worse outcomes and should be assessed and proactively managed throughout the cancer diagnosis and treatment pathway.
- Each step in the cancer pathway is an opportunity for assessing and managing frailty. Assessments should start as early as possible and should also occur whenever there is an unplanned admission and at subsequent points in the treatment pathway when there is a change in a patient's performance status or proposed cancer management. Key time points for frailty assessment are alongside two-week wait referral/diagnostic work-up, prior to MDT meeting discussions, alongside clinic appointments where an initial cancer treatment plan is made.
- A number of validated tools are available for assessing frailty, and frailty assessment should be embedded into electronic health records. Clinical Frailty Scale may be a good starting point. Patients identified with frailty should be flagged for more comprehensive, multi-domain frailty assessments.
- Frailty-informed care involves detecting frailty and considering it alongside shared decision-making, taking account of what really matters to patients and their families, as well as working to recognise and optimise potentially reversible frailty-related issues such as polypharmacy and problems with nutrition. This has been demonstrated to improve outcomes that matter to patients, including toxicity and tolerance of treatment and quality of life.
- Frailty is everyone's business. Everyone involved in caring for adults with cancer has a role. To succeed in optimising cancer care for older people and those living with frailty we must utilise and upskill the whole MDT, including doctors, nurses and other allied health professionals across a range of specialties, from primary care to oncology, surgery, geriatric medicine and palliative care.

1 Introduction: what is frailty and why does it matter?

1.1 For whom is this guidance written?

This guidance is relevant to anyone involved in the care of adult patients with cancer. It is primarily aimed at oncologists, but the vital role and importance of primary care, the wider MDT and specialist geriatric/oncogeriatric and palliative care services are emphasised throughout.

1.2 What is frailty?

> A medical syndrome with multiple causes and contributors that is characterised by diminished strength, endurance, and reduced physiologic function that increases an individual's vulnerability...[1]

In the context of cancer, patients with frailty are vulnerable to higher rates of treatment toxicity and surgical complications, as well as worse quality-of-life and survival outcomes.[2]

Outcomes can and should be improved with targeted assessment, support and management of frailty.

1.3 Why is frailty important in cancer care?

Rates of both cancer and frailty increase with age. More than a third of cancer diagnoses and over half of cancer-related deaths are in people aged 75 years or older.[3] The prevalence of frailty increases with age and ranges between 4% and 59% in elderly people living in community settings.[4]

Many older patients are not frail and life expectancy in fit older people can be greater than in younger people, who may also be living with frailty. Survival rates for many common cancers are lower in the UK than in other countries and this gap is at least in part attributable to worse outcomes for older patients, who are less likely to receive surgery, chemotherapy and radiotherapy than younger patients.[5] There are risks of harm from over-investigation and overtreatment of patients with frailty and from undertreatment of fit older people.[6,7] Frailty assessment can support the optimal care of older and younger patients with cancer in three ways:

- To help assess the appropriateness of diagnostic investigations
- To help gauge the potential risks and benefits of cancer treatment and inform shared decision-making with patients
- To allow identification and optimisation of frailty-related issues, which have potential to improve patients' symptoms, quality of life and tolerance of cancer treatments.[8]

The benefits of assessing and managing frailty within cancer have been demonstrated through several randomised controlled trials (RCTs) and include improved health-related quality of life, reduced toxicity and improved adherence to curative-intent treatments (summarised in Appendix 2).[9–12] As well as obvious benefits to patients and their families, better frailty-informed care also has potentially significant cost and resource savings for teams and the wider health and social care system.

The following case histories illustrate how cancer treatment can be complicated by frailty and highlight the importance and benefit of recognising and optimising frailty within care pathways.

Case history 1: Radiotherapy without formal frailty review

Sarah is an 80-year-old patient with vulval cancer who had been referred for curative radiotherapy.

When she was seen in clinic, she and her family described isolation during the pandemic and being less able to cope as she lived alone. She was on a variety of medication and had two falls in the last year. Sarah decided to try seven weeks of radiotherapy, as a shorter course of treatment was unlikely to control her cancer.

The clinical nurse specialist and Sarah's family tried to arrange extra support but struggled to access help. Around halfway through her radiotherapy, she was unable to cope at home and carers were not available. She was admitted to the hospital but developed delirium and fell, breaking her hip. She had surgery but was unable to complete her curative radiotherapy treatment.

She was admitted to a nursing home for ongoing care and, despite an excellent initial response to radiotherapy, her cancer progressed. Despite palliative care, her pain was difficult to control and she died in the nursing home, having never regained her independence.

How could things have been different? If she was able to access more support at home and/or linking with social networks and charity support (had circumstances been different), she may not have required admission. Addressing polypharmacy may have stopped her falling. Addressing bone health may have reduced her fracture risk and she could have potentially avoided the fragility fracture and completed her radiotherapy treatment. The chances of cure would have been higher, but even more importantly for Sarah, she would have remained in her own home.

Case history 2: Lung cancer with specialist oncogeriatrics input

John, 82, was diagnosed with Stage 3C small cell lung cancer when he presented to hospital with a fall, dysarthria and left facial droop. A magnetic resonance imaging (MRI) scan of his brain confirmed an acute right temporal lobe infarct and he was hyponatraemic with a sodium level of 118. He had a past medical history of benign hypertrophy of the prostate, hypertension and peripheral neuropathy. He lived independently with his wife Betty and they enjoyed going out for walks.

John would have ideally had sequential chemoradiotherapy for the treatment of his lung cancer. However, given his recent stroke, he commenced on radiotherapy first. His priority of care was to remain at home where possible.

John was referred to the oncogeriatric service for optimisation and support during his cancer treatment. Comprehensive Geriatric Assessment identified the following issues and recommendations:

- Presence of mild frailty with a degree of reversibility via increased nutritional intake and an exercise programme with support from physiotherapy to optimise recovery from his recent stroke and improve fitness for cancer treatment.
- Polypharmacy: his medications were rationalised including stopping anti-hypertensives and reducing overall anticholinergic burden to prevent further cognitive decline or falls.
- Mild cognitive impairment with no evidence of dementia; this provided reassurance to his family who were concerned about dementia.
- Hyponatraemia and the complexity of managing this due to development of photosensitive rash with demeclocycline and falls secondary to postural hypotension from 1 litre fluid restriction. John was successfully managed as an outpatient with regular blood tests and reviews by the oncogeriatric service to prevent admission to hospital.
- Fatigue secondary to recent stroke, cancer and cancer treatment.

John completed his radiotherapy treatment and subsequently three cycles of chemotherapy with single-agent carboplatin. He was regularly reviewed in the oncogeriatric service, both in person and over the telephone. He had regular blood tests locally via his General Practitioner.

He died ten months later at home surrounded by his family and with support from the community palliative care team, with only one planned admission to hospital for a stent due to superior vena cava obstruction. This was only possible through close working relationships between the oncology teams, geriatric teams and palliative and community teams.

2 Frailty assessment in oncology: who, how and when?

2.1 Who should be assessed?

Clinical teams should consider frailty assessment in **all** adults with suspected or confirmed cancer. Frailty is most commonly seen with increasing age and should be assessed in all older adults. Most research into frailty is in the over 65 years cohort, but some people develop frailty at a younger age and assessments should also be considered in this younger population, at the discretion of the clinical team.

2.2 Who should perform frailty assessments?

Frailty is everyone's business.

Assessments may be undertaken and recorded successfully by any appropriately trained member of the healthcare team including doctors, nurses, pharmacists, therapeutic radiographers, dietitians, physiotherapists, occupational therapists and healthcare assistants. The most appropriate person will vary both between individual units and at different points on the pathway.

2.3 How should frailty be assessed?

While ECOG (Eastern Cooperative Oncology Group) performance status plays a central role in assessing fitness and suitability for systemic anti-cancer therapy (SACT) and radiotherapy in the UK, its limitations are increasingly recognised.[13] Frailty assessments, even in their simplest form, have been demonstrated to be more granular than, and have prognostic value beyond, performance status.[14–17]

There are a number of validated tools for assessing frailty, ranging from simple scales to comprehensive multi-domain assessments.

This guidance suggests a two-step approach to frailty assessment.

1. **Initial frailty assessment** using simple screening tools to provide a global impression of frailty and identify patients likely to benefit from more comprehensive assessment.
2. **Comprehensive multi-domain frailty assessment and management.**

Initial frailty assessment tools

Validated tools available to provide an initial assessment of frailty include:

- The Clinical Frailty Scale
- Frailty screening questionnaires (clinician and self-reported)
- Automated frailty measures (derived from routinely collected data in electronic health records).

The **Rockwood Clinical Frailty Scale (CFS)** is the simplest tool for assessing global frailty. Scoring is based on day-to-day functioning (1 'very fit' to 9 'terminally ill') and can be undertaken by any healthcare professional in a matter of minutes with minimal specialist training.[18] It is already widely used across the NHS after its successful implementation within a range of specialist services through the work of the Specialised Clinical Frailty Network (SCFN).[19]

The **Vulnerable Elders Survey-13 (VES-13)** is a function-based 13-item questionnaire to be completed by the patient and is validated in the oncology setting.[20,21]

Further screening questionnaires that have the advantage of assessing other frailty domains beyond functioning (for example, nutrition, polypharmacy) and being validated in the oncology field include the **Geriatric-8 (G8)**[22,23] and **Senior Adult Oncology Programme (SAOP3)**,[24,25] both of which have the option of clinician reporting or self-reporting.

The **G8** and **VES-13** are recommended in American Society of Clinical Oncology (ASCO) guidance for managing older patients undergoing chemotherapy, on account of being the most widely tested in cancer settings (predictive of functional decline and survival).

The **SAOP3** has the added benefit of using responses to direct referrals to individual professions within an MDT (physiotherapy, occupational therapy, dietetics, pharmacy, psychology, social work). This may be particularly helpful in teams without direct geriatric support.

These are all brief (≤5 minutes) and simple to use; teams should select the tool that fits best within their service. Self-reported tools and automated frailty measures may be helpful to minimise the time required by the clinical team. A more comprehensive overview of tools available is provided in Appendix 1, and examples of how some of these tools have been used with different service models can be found in Appendix 4. Patients identified as frail should go on to have more comprehensive assessment and management of frailty, as described in Section 3.2.

2.4 When should the frailty assessment be performed?

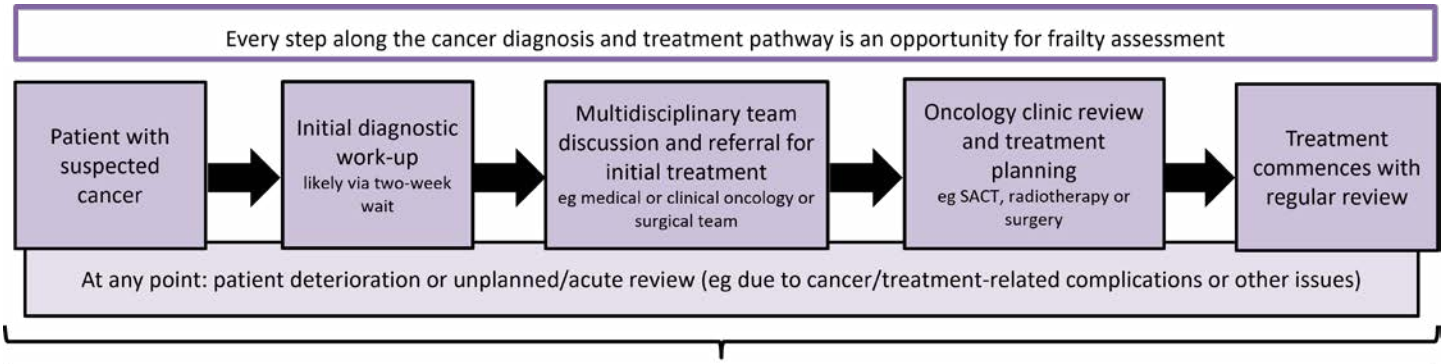
Every step in the pathway of cancer diagnosis and treatment provides a potential opportunity for assessing frailty (Figure 1). Frailty assessment should start early in the pathway and ideally be repeated regularly at key stages.

Key timepoints for frailty assessment are:

- When the patient initially presents with suspected cancer and is referred for diagnostic work-up, either from primary care or the referring hospital team, or at emergency presentation
- Before, or in parallel with, initial investigations, prior to MDT discussion
- Alongside assessment in clinic when making an initial cancer treatment plan
- Whenever there is a change in cancer, health or psychosocial status prompting changes to the treatment plan (as frailty may increase or decrease over time, potentially influenced by interventions including cancer treatments)
- During unscheduled care, including acute presentations and admissions, which could be a sign of frailty and issues needing management.

Different tools may have a role at different stages in the pathway, though it may be valuable to repeat the same tool to allow comparisons. Embedding frailty assessments within electronic health records can support routine assessment, documentation and consideration of frailty in care pathways.

Figure 1. Model for assessing and managing frailty throughout the cancer diagnosis and treatment pathway



Frailty assessments undertaken at each stage should inform further assessment, optimisation and goals of care – for example:

Fit/pre-frail eg CFS 1–3 or G8 'normal'	Mild frailty eg CFS 4–5, G8 'abnormal'	Moderate–severe frailty eg CFS 6+
Care as usual but address reversible issues: sarcopenia ('prehabilitation') and nutrition	Actively seek out and manage frailty-related issues eg falls, cognitive impairment, continence, polypharmacy Consider specialist geriatric/oncogeriatric input	Think about care versus cure, and advance care planning Consider specialist geriatric/oncogeriatric and/or palliative care input

Table adapted from the Specialised Clinical Frailty Network toolkit. Frailty assessment tool and thresholds for further assessment/referral should be tailored to each setting.

3 Management of frailty in oncology

For the benefits of frailty assessment to be realised by patients, findings must be acted upon. This may be through simple adjustments in the initial diagnostic work-up, in the cancer treatment plan or in the optimisation of frailty-related issues identified in the assessment. It is important to consider that older cancer patients and those living with frailty are often managed outside oncology settings and to ensure that all patients receive appropriate support from primary care, acute oncology and specialist geriatric/ oncogeriatric and palliative care teams.

3.1 Frailty-informed treatment decision-making

A recognition of frailty may prompt the oncology team to consider tailored treatments, such as dose adjustments. Accurate frailty assessment may also give confidence to proceed with standard treatments in fitter older patients.

Frailty assessments can be used to help inform shared decision-making with patients around cancer treatment options, enabling an open and informed discussion of priorities for the individual patient.

Services should resist the temptation to set a single numerical threshold in a frailty measure as a 'red light/green light' for cancer treatments, but rather see the score as indicative of frailty that may be dynamic (in both directions) and deserving of investigation and management.

3.2 Optimisation of frailty-related issues

Issues in a number of 'domains' can be associated with and contribute to frailty (Table 1), which may be reversible.

The gold standard for optimising frailty in older adults is Comprehensive Geriatric Assessment (CGA), which involves the assessment – and importantly the management – of these issues. This is traditionally undertaken by specialist geriatric teams, and it improves survival and functioning in secondary care settings.[26]

The principles of CGA can be applied to optimise frailty in patients with cancer across all age groups.

Table 1. Domains of frailty (geriatric assessment)

- Function
- Co-morbidity
- Polypharmacy
- Falls
- Nutrition
- Cognition
- Mood/mental health state
- Social support and activity

Identification and optimisation of frailty-related issues should be a core element of holistic oncological care, and every member of the MDT has a role. Simple changes that can be made to optimise reversible frailty-related issues include reviewing medicines, improving

nutrition and managing anaemia. Optimising frailty may increase the range of safe therapeutic options for the patient as well as addressing other issues that may affect their quality of life.

Appendix 3 summarises international guidance on frailty domain assessment tools[27,28] and the potential role of different healthcare professionals in assessment and management.

While services are not yet widely established to offer full CGA for all frail or older patients undergoing cancer treatments, teams must work to integrate appropriate assessments within existing cancer diagnosis and treatment pathways and develop links with local geriatric specialist colleagues for onward referral as required (see Section 3.5).

Appendix 4 describes different service models for assessing and managing frailty within oncology, with case studies.

3.3 Working with primary care

The primary care team is expert in holistic management and multimorbidity and has links with local community services. Clear communication from secondary care regarding a patient's diagnosis, prognosis and treatment intent/plan, and flagging of specific issues such as polypharmacy, are important to support holistic care.

Where prognosis is expected to be less than twelve months due to disease and/or frailty, oncology teams should highlight this to primary care teams so that the Gold Standards Framework[29] can be considered.

3.4 Role of the wider MDT

A wide range of healthcare professionals already have a fundamental role in managing issues across the various domains of frailty – for example, specialist nurses, occupational therapists, physiotherapists, dietitians, pharmacists, social workers and members of the palliative care team. Ideally, healthcare professionals with expertise to support the assessment and management of frailty should already be part of the cancer MDT. Where the relevant specialist is not a core member of the MDT, it is important that existing local services and pathways are mapped and utilised to enable timely patient referral/review and optimisation and avoid treatment delays.

3.5 Referral to specialist services

Where the management of frailty is beyond the skillset of the oncology team, patients benefit from referral to specialist geriatric or oncogeriatric services for CGA.

Where referral pathways to specialist services do not exist, oncology teams should build links with local geriatric services to develop referral pathways for complex frail/older patients undergoing cancer treatments.

Efforts to promote frailty-informed care are complementary to the goals of the NHS England Enhanced Supportive Care (ESC) initiative.[30] There may be overlap between the need to assess and optimise frailty and the need to provide supportive care and palliative symptom management. Local teams, with their own specific skills and focus, should work together to ensure patients get the right support at the right time. In particular, ESC requires proactive involvement of the palliative care team before supportive care needs are the predominant issue, to identify the right time to stop active anti-cancer treatment.

For patients identified as frail before or during treatment, particularly where their frailty may limit oncological treatment, referral to specialist palliative care (SPC) services in hospital or the community should be considered. SPC services have expertise in supporting oncologists with decisions about the appropriate direction of care, as well as assessing and managing symptoms, supporting patients and their families emotionally, ensuring they receive timely practical and financial support, and planning for the end of life so that patients have their choices communicated with others. SPC services should be involved early enough to ensure these plans are in place before the patient is dying, otherwise admission and death in hospital may be unavoidable regardless of the patient's wishes.

4 Education, research, audit and service improvement

4.1 Education

Multiple surveys have shown that oncologists lack specific training in managing patients with frailty,[31–33] which is a recognised barrier to frailty-informed care.[34] Equally, those from a geriatrics background may be unaware of the ongoing advances in oncology and palliative and supportive care, and the impact this has for patients. Education is therefore a vital component of the development of frailty-informed care within oncology.[35,36]

Training should be available for all members of the MDT to raise awareness of frailty, to improve understanding of the implications for optimal cancer care, to enable appropriate use of frailty assessment tools and to inform subsequent management approaches to patients identified as frail. All healthcare professionals involved in the care of patients with cancer may thus be empowered to lead change, bring their interventions earlier in the cancer pathway and have a stronger voice to support decision-making.

The simplest frailty assessments can be undertaken with minimal training. Examples of training available to upskill staff, including brief online training packages, can be found in Appendix 5.

A number of organisations including the International Society of Geriatric Oncology (SIOG), the European Society for Medical Oncology (ESMO) and the British Geriatrics Society (BGS) run educational meetings and courses (see Appendix 5), providing education as well as building links between professionals from different backgrounds.

However, to make a frailty-informed approach universal and ensure all patients receive appropriate cancer care, it must be embedded in both undergraduate and postgraduate curricula for all relevant members of the MDT (including medical and clinical oncologists, surgeons, nurses, pharmacists and allied healthcare professionals).

4.2 Research

Older adults make up the majority of people with cancer but are under-represented in clinical trials. Although specific age limits are no longer common, the stringent criteria for trial entry means that older patients, especially those with frailty, are excluded. This makes it difficult to apply trial findings to real-world patients.

It is important not only to ensure recruitment of older adults into clinical trials but also to design studies to specifically cater for older adults or those living with frailty.[35,36] These studies may utilise real-world data and take into account outcomes of importance to patients including maintenance of independence, quality of life and treatment tolerability as well as survival. Patient and community co-design is vital.

Individual clinicians have an important role to play in offering all patients access to any appropriate clinical trials.

4.3 Audit

Making frailty assessment part of ‘business as usual’ for cancer services is not only important for individual patients but also facilitates regular, real-world data collection to support service improvement and research.

This builds on mandatory recording of performance status, with the CFS successfully incorporated into the breast cancer sections of the Cancer Outcomes and Services Dataset (COSD)[37] maintained by the National Cancer Registration and Analysis Service (NCRAS) in England.

The BGS advice on commissioning frailty services[38] provides a basic dataset recommended for assessing frailty quality improvement. Examples of potential outcome measures and/or audit standards used to assess services are shown in Table 2.

Table 2. Potential measures to assess frailty-informed care in cancer services

Process measures	Outcome measures	Patient feedback
Numbers of frailty assessments completed in a defined population	Urgent or unplanned care usage as well as emergency admissions and length of stay	Patient and care satisfaction surveys
Numbers of patients referred for CGA on the basis of frailty assessment	Severe adverse events during the course of cancer treatments	Quality of life and Patient Reported Outcome Measures

On a network level, broader economic and healthcare measures should be considered. For example, early frailty assessment could reduce unnecessary invasive investigations in patients with severe frailty or those who would not want to undergo cancer treatment, reducing demand on diagnostic services.

It is also important to consider that older patients may be less likely to be admitted to or managed by tertiary cancer services[9] and therefore it is important to audit care wherever it is delivered.

4.4 Service development

Limited resources are a barrier to the development and delivery of services. However, even without specific funding it is possible to apply the principles of frailty-informed care within cancer care and by linking with existing services.

Business cases for additional resources can be supported by an audit of local need, individual patient stories and RCT evidence demonstrating the benefit of frailty-informed care.[9–12] Pilot projects may be funded by local or national charities, or by cancer alliances, to provide evidence of cost effectiveness and improvement in service quality. Examples of existing services are included Appendix 4.

As the evidence for both the benefits and cost effectiveness of frailty-informed approaches builds, there is a growing argument for universal access to these services in line with acute oncology services and specialist services for teenagers and young adults. There may be an opportunity as specialist services are brought into local commissioning for a more value-based approach to cancer treatments.

5 Recommendations

Effective care of adults living with frailty and with a diagnosis of cancer requires tailored services with the following characteristics:

- **Patient focus** regardless of the location or structure
- **Strong clinical leadership** of multi-professional teams, with distinct roles and responsibilities for all members
- **Strong working relationships** between oncologists, geriatricians and all members of the healthcare team, including primary care
- **Clearly defined clinical pathways** for onward referral
- Systems to enable **comprehensive data collection**
- Ongoing **service evaluation and development** utilising patient feedback and patient-reported outcomes.

To improve cancer care for people living with frailty across the UK, recommendations are provided at individual, local, regional and national levels:

Individual

All healthcare professionals involved in the care of older and frailer adults with cancer should:

- Have the basic knowledge and skills to assess frailty and manage common frailty-related issues (or flag to someone that can) – and apply these skills in their routine practice.
- Consider frailty alongside other assessments and patient values when making decisions about cancer investigation and treatment.

Local

Local cancer teams/services should:

- Ensure patient frailty is assessed at key time points in the cancer pathway when making decisions about cancer investigation and management, including alongside secondary care referral MDT discussions and during or ahead of clinic appointments (for all patients, but especially for older patients).
- Develop local processes and pathways for patients with frailty to undergo multi-domain frailty assessment and ensure targeted proactive (rather than reactive) management of frailty-related issues and palliative care needs. Frailty pathways and/or specialist oncogeriatric services should be developed and delivered alongside expert geriatricians and patients, to meet local needs and service requirements, with support from senior leadership teams.
- Ensure that the whole MDT, including medical, surgical and nursing teams (acute oncology, chemotherapy and site-specific specialist nurses), pharmacists and allied health professionals are upskilled and empowered to recognise and assess frailty, optimise frailty-related issues and support shared decision-making.
- Integrate frailty assessments into electronic patient records, which must be facilitated by NHS Trusts and IT teams.
- Design and support audit, service improvement and research that addresses important issues and answers important clinical questions for people living with frailty and with a diagnosis of cancer.

Regional

Cancer alliances (and their equivalents) should:

- Make optimising care and research for adults living with frailty a priority by developing a dedicated multidisciplinary group, with input across primary and secondary care (including palliative care) and patient representatives, to lead and coordinate regional improvements in cancer care for older adults and those living with frailty.
- Develop an ongoing programme of educational events to highlight the importance of frailty assessment and management in cancer care and upskill the MDT.
- Expand the inclusion of frailty measures within two-week wait referral forms (or equivalent) to prompt the assessment of frailty alongside the work-up of a patient with suspected cancer, so it can be considered within decision-making around appropriate early investigation and management.
- Mandate frailty assessment (Rockwood CFS or an alternative) and documentation prior to the MDT for all patients aged over 65 at diagnosis to facilitate the consideration of frailty during initial care planning.
- Audit uptake of frailty assessments and prevalence and outcomes of frailty within their services.

National

National bodies and policy makers should:

- Ensure frailty and the needs of older adults with cancer are considered in national cancer plans to optimise holistic cancer care and better meet the needs of an aging population.
- Work to ensure that older people and those living with frailty are included in research and are involved in its design, to truly reflect the needs of real-world cancer populations.
- Make assessment of frailty (using the Rockwood CFS or similar) a measured key performance indicator (KPI) in all tumour groups.
- Consider embedding automated frailty measures such as the Electronic Frailty Index (eFI) and the Hospital Frailty Risk Score (HFRS) into cancer registries.
- Ensure training in frailty and geriatric oncology is incorporated within undergraduate and postgraduate curricula and professional competencies for all members of the MDT involved in caring for older patients with cancer.
- Continue to provide and expand funding opportunities relating to improving care and meeting the complex needs of people living with frailty with a diagnosis of cancer.

Appendix 1 Frailty assessment tools

There are a number of tools available for frailty screening that have been validated across a range of settings. Four key simple frailty assessment tool formats and notable examples for cancer teams are described below:

1. Global frailty assessment scale
2. Healthcare professional-administered questionnaires
3. Self-assessment tools that utilise patient-reporting
4. Automated frailty assessment measures.

These can be used to supplement other information when assessing patients and making treatment decisions; they should not be used alone as a substitute for clinical judgement.

1. Global frailty assessment scale

The **Rockwood Clinical Frailty Scale (CFS)**[18] is arguably the simplest frailty assessment tool. It is easily incorporated into consultations and has been adopted by the Specialised Clinical Frailty Network in England for frailty screening across a range of NHS specialist care settings.[19] It is extensively validated across a range of settings for use in patients aged 65 and older, and there is emerging evidence validating its prognostic value in cancer settings.[39,40] The tool scores against nine named descriptors detailing increasing levels of frailty accompanied by patient pictographs and has been recommended as more granular than ECOG.[16,17] The tool mostly focuses on functional status; it lacks assessment of cognitive function, mood and nutrition, and it may be perceived as more subjective.

The CFS is available at: www.dal.ca/sites/gmr/our-tools/clinical-frailty-scale.html

2. Healthcare professional-administered questionnaires

The **Geriatric-8 (G8)**[22,23] is an eight-item questionnaire originally designed to identify older (age 70 or over) cancer patients likely to benefit from a full geriatric assessment. Total scores range between 0 and 17, with lower scores representative of worse health status and a score of 14 or less being categorised as 'abnormal' and highlighting a patient likely to benefit from CGA. There is extensive evidence that results are predictive of mortality, as well as survival and treatment complications in cancer populations,[23] and it is recommended in the ASCO guidelines.[27] G8 is also now available as self-report.[41]

G8 is available at: www.siog.org/files/public/g8_english_0.pdf

The **Senior Adult Oncology Programme 3 (SAOP3) tool**[25] is a comprehensive but pragmatic, validated multi-domain assessment, which is mostly self-reported by patients, maximising its utility in the busy oncology clinic setting. It is an updated version of the SAOP2, incorporating clinician-assessed cognition (via Mini-COG) which is lacking in many assessments. SAOP2 is validated in the oncology setting and there is some evidence it has better sensitivity to detect frailty than G8.[42]

Patients with no vulnerabilities documented on the SAOP3 tool are suitable for standard oncological interventions. Within the tool, the detection of vulnerabilities prompts referral to specific MDT members for interventions.

SAOP3 is available at: https://moffitt.org/for-healthcare-professionals/clinical-programs-and-services/senior-adult-oncology-program/senior-adult-oncology-program-tools

The **Comprehensive Risk Assessment and Needs Evaluation (CRANE) tool** is another example of a multi-domain frailty assessment, developed by the Geriatric Oncology Liaison Development (GOLD) service at Guys and St Thomas' NHS Foundation Trust. Patients self-assess in the domains of physical health, social wellbeing and psychological, practical and environmental needs using a questionnaire. Like SAOP3, the questionnaire highlights issues that require action, but the CRANE tool has not yet been formally validated.

3. Self-assessment tools that utilise patient reporting

There are a number of validated tools that allow a person to self-assess frailty. These can be completed prior to an appointment and are therefore very efficient, although some patients will require support.

The **Vulnerable Elders Survey-13 (VES-13)** is a patient-reported tool investigating functioning.[20] The tool is extensively validated in cancer settings and recommended in ASCO guidelines.[27]

VES-13 is available at: www.rand.org/health-care/projects/acove/survey.html

Other tools that can utilise self-report include the G8,[41] SAOP3[25] and the CRANE tool.

4. Automated frailty assessment measures

It is possible to obtain a frailty 'index' from health data routinely collected and coded in patients' electronic health records. Indices have been developed that utilise data from both primary care (eFI[43] and QMortality[44]) and secondary care (HFRS[45]). These indices use a 'cumulative deficits' model of frailty based on a principle that frailty increases as a person accumulates more problems within physiological systems. They may overestimate frailty by weighting towards hospital admission.

The Secondary Care Administrative Records Frailty Index (SCARF)[46] also makes use of data within UK cancer registration records.

These measures are very useful on a population level, to guide service development and research. They are less reliable on an individual level but can be helpful as a prompt to perform an individual frailty assessment.

Note 1: Local teams may also be able to integrate other frailty assessments (such as those described in 1–3) within electronic health records. There are a number of freely available apps that can be used to undertake frailty assessments, including the Clinical Frailty Scale app (available at: www.acutefrailtynetwork.org.uk/Clinical-Frailty-Scale/Clinical-Frailty-Scale-App) and the ONCOassist mobile app (via https://oncoassist.com), which includes a number of the frailty scores listed above (G8, VES-13) and others. As assessments are increasingly available digitally, it is important to consider inequality in digital access.

Note 2: Many palliative care teams use the Australian Karnofsky Performance Status as part of the Palliative Care Outcomes Collaborative suite of measures, as well as symptom and psychological assessments and discussion of advanced care planning. None of these are part of routine frailty assessment but are essential in the assessment of adults living with frailty with a diagnosis of cancer.

Appendix 2 Evidence for frailty-informed care in oncology

RCT evidence for the benefit of frailty and geriatric assessments and interventions in patients commencing SACT is summarised in the table below.

Study	Population	Intervention (all versus standard oncological care)	Primary outcome
Completed trials			
GAIN[11] Li 2021	Age ≥65, diagnosed with a solid malignancy and starting a new chemotherapy regimen (n=600)	GA-driven intervention (GAIN)	**Reduced grade 3+ toxicity** (10.1% lower in GAIN arm; 95% CI, −1.5 to −18.2%; p=0.02)
GERICO[10] Lund 2021	Aged 70+ receiving adjuvant or first-line palliative chemotherapy for colorectal G8 questionnaire ≤14 points (n=142)	CGA-based interventions	**More interventional patients completed scheduled chemotherapy** compared with controls (45% versus 28%, p=0.0366)
GAP70+[12] Mohile 2021	Aged 70+ with incurable solid tumours or lymphoma and at least one impaired geriatric assessment domain (n=718)	Oncologists received a tailored geriatric assessment summary and management recommendations	**A lower proportion of patients in the intervention group had grade 3–5 toxic effects** (relative risk [RR] 0.74; 95% CI 0.64–0.86; p=0.0001)
INTEGRATE[9] Soo 2022	Aged 70+ with solid cancer or diffuse large B-cell lymphoma planned for SACT (n=154)	Integrated oncogeriatric care	**Better health-related quality of life in intervention group**

Ongoing trials

PROGNOSIS-RCT[47]	Age 70+ years, with solid malignancies and G8 frailty (G8 ≤14), undergoing anti-neoplastic treatment (planned n=322)	CGA	Physical decline at 3 months (palliative setting) Unplanned hospital admissions at 6 months (curative setting) **Study ongoing; results not reported at time of publication**
GOSPEL[48]	Older adults aged above 65, with a Geriatric-8 score ≤14, with plans for high-dose radiotherapy and/or curative chemotherapy (planned n=200)	CGA supportive care	Primary outcome: quality of life 12 weeks after recruitment **Study ongoing; results not reported at time of publication**

Appendix 3 Domains of frailty and MDT role

SIOG[8,28] and ASCO[27] guidance recommend older patients with cancer are assessed across key frailty domains. The table below summarises the domains and validated tools recommended in the two guidelines.

A column has been added to highlight the potential roles of different members of the MDT. Management could range from providing simple advice to implementing interventions or referring onwards. Multi-professional services caring for older patients with cancer should have input from a geriatrician.

Domain of frailty	ASCO	SIOG	Details/tool recommended	Potential role of different members of the MDT								
				O=oncologist, N=nurse, H= healthcare assistant, PT=physiotherapist, O=occupational therapist D=dietitian, Ph=pharmacist, S= social worker, G=general practitioner *= potential role in domain assessment **= potential role in assessment and management of domain-related issues								
				O	**N**	**H**	**PT**	**OT**	**D**	**Ph**	**S**	**G**
Function	x	x	**ASCO recommends**: instrumental activities of daily living **SIOG recommends**: assessment of functional status, fatigue, social status and support	**	**	**	**	**	*	*	**	**
Co-morbidity	x	x	**ASCO recommends**: history or validated tool (e.g. Charlson)	**	**	*	*	*	**	**		**
Polypharmacy		x	**SIOG recommends**: Beers criteria or STOPP and START criteria	**	**	*	*		*	**		**
Falls	x	x	Single question	**	**	**	**	**	*	**	**	**
Nutrition	x	x	**ASCO recommends**: assessment of unintentional weight loss	**	**	**	*	*	**	*		**

Cognition	x	x	**ASCO recommends**: Mini-Cog or the Blessed Orientation-Memory-Concentration	**	**	*	*	**	*	**	**	**
Mood/mental health state	x	x	**ASCO recommends**: Geriatric Depression Scale	**	* *	*	*	*	*	**		**
Social support and activity		x	**SIOG recommends**: Medical Outcomes Study (MOS) Social Support Survey and Social Activity Survey	* *	* *	*	*	* *	*	*	* *	* *
Toxicity risk prediction tools	x		**ASCO recommends**: CARG (Cancer and Aging Research Group) or CRASH (Chemotherapy Risk Assessment Scale for High-Age Patients)	**	*					**		
Mortality prediction tools	x		**ASCO recommends**: Geriatric-8 or Vulnerable Elders Survey-13 *Note: these questionnaires cover a number of frailty domains*	**	**		*	*	*	*		*
Estimates of non-cancer-based life expectancy ≥4 years	x		**ASCO recommends**: ePrognosis	**	**	*	*	*	*	*	*	**

Appendix 4
Oncology frailty service development: fundamentals and models of care

The provision of high-quality care for all people with cancer requires recognition and management of frailty. Clinical teams should analyse local workforce and treatment pathways to plan the most efficient and effective implementation of frailty assessment within their service and care pathways.

Frailty services should be tailored to local need, demographics and workforce but do not necessarily need large-scale investments. The majority of UK cancer services are closely linked to, or based within, acute hospital trusts that will already have multiple services available for frailty. Making appropriate links with existing services can improve signposting and make patient pathways more efficient without significant investment.

Fundamentals of a service are outlined in the table below, but it is possible for any clinical team to start to measure and record frailty immediately.

Fundamentals of an oncology frailty service

Essential	Desirable
Basic staff training in elements of frailty (see Appendix 1)	Team-wide training in domains of frailty and CGA
Frailty scoring and recording; baseline assessment at first treatment planning as a minimum	Frailty tools selected to suit cancer type and local setting; repeated assessments at key timepoints during cancer pathways
The wider cancer MDT should be aware of the frailty assessments in use and their utility, and should work to optimise patient frailty where possible within their own practice	Dedicated team to support the multi-domain assessment and management of frailty, potentially including nursing, physiotherapy, occupational therapy, dietitian, pharmacy and social work
Awareness that existing treatment protocols may not adequately consider frailty, and using best available evidence relating to the optimal management of people living with frailty with a diagnosis of cancer	Risk-adapted treatment protocols based on frailty
Stocktake of local geriatric, frailty and palliative care services to signpost appropriately	Working relationship between oncology, geriatrics/CGA service (oncogeriatrics) and palliative care teams
Supporting routine data collection and championing the representation of older people in research	Research activity based on treatments for people living with frailty with cancer

Frailty assessment and management in oncology: models of care and case studies

There are multiple examples of UK cancer services adapting to deliver optimal therapy to patients with frailty in the context of an aging population.[49]

Below are simple descriptions and case examples of three levels of service, which can be applied in different settings. At each level, routine data collection of frailty assessments can demonstrate patient need and inform service development, and patient outcomes data (such as admission avoidance and the reduction in treatment complications) can be used to support business cases for funding to move to the next level where required.

Frailty service models of care	Details and examples
Level 1: Upskilled healthcare professionals Upskilled healthcare professionals taking account of frailty in existing pathways *This is a good starting point for all individuals caring for older people with cancer*	More clinicians looking after people with cancer are learning about frailty and more proactively assessing and managing frailty, providing better frailty-informed care in their day-to-day practice. Level 1 case study provides an example.
Level 2: Onward frailty referral pathway Routine assessment of frailty and onward referral of patients with frailty *This is a good starting point for clinical teams looking to develop a service, and a good model for smaller centres where a dedicated oncogeriatric service may not be possible*	A simple option for service development is to screen for frailty within the existing cancer care pathway and use that screen to trigger further assessment when frailty is identified. UK examples include: ▪ The Leeds Oncology Frailty Initiative (LOFrI) pilot, where patients with gastro-intestinal (GI) cancer are screened for frailty in their oncology new patient appointment. Patients identified as frail to be referred to existing frailty services for comprehensive geriatric assessment (Level 2 case study 2). ▪ The lung cancer clinics at the Christie NHS Foundation Trust and Newcastle upon Tyne Hospitals NHS Trust. Patients considered for chemotherapy undergo frailty assessments and those identified as frail are flagged for input and optimisation by occupational/physiotherapists within the team (case studies available on the Specialised Clinical Frailty Network website.[19] The Christie has since secured funding to set up a dedicated oncogeriatrics service).

Level 3: Specialist services Specialist oncogeriatric services *This should be the ultimate aim for larger centres where there are sufficient patient numbers to justify a dedicated team/service*	In some centres, specialist oncogeriatric services have been developed. Routine assessment of frailty is followed by assessment/optimisation by a dedicated oncogeriatric team, with input from a range of healthcare professionals and in some cases geriatricians. Exemplar specialist oncogeriatric services in the UK include (but are not limited to): ▪ The Guys and St Thomas' NHS Foundation Trust Geriatric Oncology Liaison Development service (GOLD[50]) ▪ The Beatson West of Scotland Cancer Centre Cancer Older Patient Service (COPS[51]) ▪ The Royal Marsden NHS Foundation Trust Senior Adult Oncology Programme[52–54] ▪ The Christie NHS Foundation Trust Senior Adult Oncology Service

Level 1 case study: Oncologist supplementing performance status with Clinical Frailty Score assessment, West Suffolk Hospital

Why was this done?

To improve assessment of fitness and optimise SACT treatment decision-making within the oncology clinic, inspired by work undertaken in Newcastle as part of the Specialised Clinical Frailty Network chemotherapy pilot and elsewhere.

What was done and how?

The lead medical oncologist at West Suffolk Hospital has supplemented performance status with CFS scores when reviewing patients in his thoracic and GI medical oncology clinics, and has begun to use this to inform decision-making around SACT.

Laminates of the Rockwood CFS were placed in all clinic rooms for ease of reference and clinic letters now routinely mention both performance status and CFS.

What worked?

Information gained through CFS assessment improved judgements around fitness for SACT, particularly for borderline performance status patients, as CFS has more categories with more detailed descriptors. CFS scores have helped to better recognise where risks of SACT may outweigh benefits or a dose modification may be valuable due to frailty. In some cases, deeper exploration of fitness using CFS demonstrated that a patient was fitter than the performance status alone implied, allowing patients who might have otherwise been denied treatment to commence dose-modified therapy with good outcomes.

CFS assessment has been particularly useful for older patients and those with multiple co-morbidities. Better recognition of frailty has also led to patients with frailty being more likely to receive specialist support – for example, from palliative care, dietitians and occupational and physiotherapy.

What were the challenges?

Encouraging uptake of frailty assessment across the whole department and earlier in the treatment pathway via the MDT. Wider adoption could be supported by local data collection regarding frailty and the impact of assessment, but this has not yet been possible due to time/resources limitations. The publication of this guidance and recommendations may help to drive change.

Level 2 case study: Leeds Oncology Frailty Initiative gastrointestinal clinic pilot

Why was this set up?

To improve care for those living with frailty with GI cancer.

How was it established?

In 2021, a multi-disciplinary group called the Leeds Oncology Frailty Initiative (LOFrI), including an oncologist, two registrars, an oncology clinical nurse specialist and geriatrician, came together to develop and pilot a pathway for referral of frail GI cancer patients from oncology to the geriatric team for CGA.

What was done?

CFS was used to screen for frailty in all patients with GI cancer from the oncology clinic. Any patient with a CFS of ≥4 or clinical concern for frailty could be considered for referral to the geriatric team. Patients referred were triaged by a geriatrician and either had a CGA in clinic or, in some cases, email advice was offered (for example, regarding medications).

What worked?

CFS 4 worked well as a threshold for considering specialist input and oncologists who utilised the referral pathway found it helpful. A common intervention after geriatric review was medication changes and the LOFrI group has since worked with palliative care and other professional groups to develop a medicines optimisation tool for use with patients with limited prognosis due to age, advanced disease and/or frailty, which is now freely available online.[55] The multi-disciplinary effort has been a key success of this work.

What were the challenges?

Voluntary uptake of frailty assessment was variable. The LOFrI group is working with MDT colleagues and local cancer alliances to further demonstrate the value of frailty assessment (for example, through presentations at meetings) and is hoping to embed frailty assessments within care pathways (two-week wait and MDT proformas, electronic health records) to improve uptake and bring frailty assessment earlier in the cancer treatment pathway. Further pilot work has involved older patients (>75) referred via the two-week wait upper GI pathway having a nurse-led telephone CFS undertaken. Those with CFS 6+ are seen in a specialist geriatric clinic as their first point of contact instead of following the traditional two-week wait pathway. In most cases alternative diagnoses were identified and invasive investigations were avoided.

Capacity within specialist geriatric services has been a challenge, but pilot scheme data are being used to build a business case for increasing local capacity to support closer working between oncology and geriatrics.

A steering group has been established to create a trust-wide strategy to optimise care for older people and those with frailty throughout the cancer diagnosis and treatment pathway in Leeds.

Level 3 case study: The Royal Marsden Senior Adult Oncology Programme (SAOP)

Why was this done?

To personalise the management of patients aged 70 years or over being considered for SACT, to reduce adverse outcomes including unplanned hospitalisations and severe toxicities, to improve their quality of life and to enhance shared decision-making.

How was it done?

With the support of the cancer alliance, the SAOP MDT – including a dedicated medical oncologist, clinical nurse specialist, physiotherapist, occupational therapist, dietitian and pharmacist, with secretarial support – was recruited to accept referrals for patients aged 70 years and over seen in the medical oncology clinics for consideration of SACT, and selected based on SAOP3 geriatric screening.

What was done?

Patients being considered for SACT are screened with SAOP3 in the medical oncology clinics during the new patient consultation or follow-up if a change in SACT is being considered. They are referred to the SAOP multi-disciplinary clinics if found to have ≥1 geriatric impairment on the screening tool. Based on individual needs highlighted on SAOP3, patients undergo a CGA including personalised geriatric assessment-driven interventions. The SAOP team works in close collaboration with the palliative care team, the adult psychology support service team, the welfare rights adviser, the speech and language therapy team and the safeguarding team, who all convene to discuss complex cases during a weekly MDT meeting. The clinical nurse specialist and the pharmacist complete chemotherapy toxicity prediction tools if patients are being considered for cytotoxic therapy. A letter is sent to the GP and the referring medical oncology teams to outline outcomes of geriatric assessments and interventions.

KPIs being collected at baseline and reported every quarter include: unplanned hospitalisations, SACT toxicities, quality of life, patient experience, staff experience, patient feedback and shared decision-making (collaboRATE tool).

What worked?

The implementation of SAOP was welcomed with enthusiasm by all clinical teams and patients. The SAOP has brought closer collaboration among various teams including medical, nursing and allied healthcare professions. The SAOP implementation was also welcomed by patients. Among KPIs, rates of SACT toxicity and unplanned hospitalisations are being monitored and a reduction in both endpoints has been documented during the first twelve months. An improvement in quality of life has also been observed nine months after patients were reviewed by the SAOP team.

What were the challenges?

The capacity of the SAOP MDT has been a key concern from the early days of clinical implementation. Therefore, the Programme is being rolled out gradually among specific tumour cohorts and based on data obtained by service evaluations scoping the burden of frailty in specific cohorts. Currently, the service is accepting referrals for patients under the care of the breast, lung, GI and renal/melanoma units, with plans to expand and accept referrals from additional units and hospital sites.

Buy-in from specific teams has been a challenge in the initial phases of the service expansion but has improved over time.

Finally, data collection and analysis for the business case development has been a time-consuming activity for the clinicians involved. However, the transition to a new electronic patient record system (EPIC) and input from the hospital analytics team is supporting this specific aspect.

Appendix 5 Training and resources

Some frailty and geriatric oncology training opportunities and resources are signposted below. These can be used to:

- Upskill healthcare professionals in assessment and management of frailty within cancer care
- Provide guidance to teams on the integration of frailty-informed care within cancer pathways.

Online training

- **British Geriatrics Society (BGS) 'Fit for Frailty' online training.** Freely available at: www.bgs.org.uk/resources/resource-series/fit-for-frailty
- **Clinical Frailty Scale online training module.** Freely available at: https://rise.articulate.com/share/deb4rT02lvONbq4AfcMNRUudcd6QMts3#/lessons/07kjAp--OngOuNH1ko514Y4XL28y4w1-
- **eLearning for Healthcare (elfh) online frailty training.** Freely available (after registration) at: www.e-lfh.org.uk/programmes/frailty
- **SIOG educational resources.** Available for members at: https://siog.org/educational-resources
- **ESMO geriatric oncology eLearning.** Available for ESMO members at: https://oncologypro.esmo.org/education-library/esmo-e-learning-and-v-learning/geriatric-oncology-an-introduction
- **ESMO Virtual Preceptorship on Cancer Care in Elderly Patients** (held online in 2021, recordings available (ESMO members only) at: www.esmo.org/meetings/past-meetings/esmo-virtual-preceptorship-on-cancer-care-in-elderly-patients-2021)

Face-to-face/hybrid courses and events

- **SIOG Advanced Course in Geriatric Oncology** (annual face-to-face three-day course held in Treviso, Italy, Canberra, Australia, and Mumbai, India): https://siog.org/programmes/education/advanced-geriatric-oncology-courses
- **SIOG Masterclass in Geriatric Oncology Clinical Trials Design** (annual meeting): https://siog.org/events/siog-events
- Various courses and events arranged by the BGS and Oncology Special Interest Group. Details available at: www.bgs.org.uk/oncology

Resources

- **Acute Frailty Network Clinical Frailty Scale app:** www.acutefrailtynetwork.org.uk/Clinical-Frailty-Scale/Clinical-Frailty-Scale-App
- **Specialised Clinical Frailty Network (SCFN) toolkit:** Outlines ten principles for integrating frailty assessment and management within specialised services. Freely available at: https://static1.squarespace.com/static/5b5f1d4e9d5abb9699cb8a75/t/615d5ab05ddb966586395e01/1633508113819/SCFN+Frailty+Toolkit+-+September+2021+-+FINAL.pdf

- **SIOG clinical practice guidelines** are intended to provide the user with a set of recommendations for the best standards of cancer care in older adults, based on the findings of evidence-based medicine. A full list of published guidelines, which cover topics including management of breast, colorectal and prostate cancer in older adults, are at: https://siog.org/resources/resources-siog/siog-guidelines
- **SIOG Designation Centres for Geriatric Oncology Working Group.** SIOG has established a working group to accredit geriatric oncology centres following a rigorous review process consistent with international standards. Information available at: https://siog.org/programmes/siog-working-groups/siog-designation-centers-for-geriatric-oncology-working-group
- **Cancer and Aging Research Group (CARG).** A range of resources for both patients and staff are available at: www.mycarg.org. The Clinical Implementation Core of CARG can be contacted to provide consultations and to support healthcare professionals interested in developing geriatric oncology practices: www.mycarg.org/?page_id=3014
- **Moffit Cancer Centre.** Senior Adult Oncology Programme. Various tools available at: https://moffitt.org/for-healthcare-providers/clinical-programs-and-services/senior-adult-oncology-program/senior-adult-oncology-program-tools

Acknowledgements

The JCCO would like to thank the following people and services for their invaluable support and expertise in compiling this guidance.

Members of the Working Group

Dr Anthea Cree	Chair (The Royal College of Radiologists) and co-lead author
Dr Jessica Pearce	Trainee representative and co-lead author
Dr Nicolò Matteo Luca Battisti	Royal College of Physicians / President, SIOG
Dr Mark Baxter	Trainee representative
Professor Janet Brown	Royal College of Physicians (Joint Specialty Committee for Medical Oncology)
Professor Simon Conroy	NHS Elect Acute and Specialised Frailty Networks
Dr Fabio Gomes	Royal College of Physicians and SIOG
Dr Niraj Goyal	The Royal College of Radiologists
Professor Ray Jones	Patient/lay representative (RCP Patient and Carer Network)
Dr Ashling Lillis	Macmillan Cancer Support
Dr Cassandra Ng	British Geriatrics Society
Professor Richard Simcock	The Royal College of Radiologists and Macmillan Cancer Support
Dr Daniel Sommer	Consultant geriatrician
Dr Daniel Swinson	Association of Cancer Physicians
Dr Nicky Thorp	The Royal College of Radiologists

Additional thanks are due to Dr Dan Patterson, West Suffolk NHS Foundation Trust, for providing the Level 1 case study in Appendix 4.

The JCCO would also like to thank the following organisations for providing feedback on the guidance during stakeholder consultation.

Age UK	International Society of Geriatric Oncology
Association for Palliative Medicine	Macmillan Cancer Support
British Association of Surgical Oncology	Royal College of General Practitioners
British Geriatrics Society	Royal College of Occupational Therapists
British Oncology Pharmacy Association	Society and College of Radiographers

Special thanks also to Gillian Dollamore (Executive Officer for Clinical Oncology, The Royal College of Radiologists) without whose unerring support, diligence and assiduity this project would not have been possible.

References

1. Morley JE, Vellas B, van Kan GA *et al*. Frailty consensus: a call to action. *J Am Med Dir Assoc* 2013; **14**(6):392–7.
2. Handforth C, Clegg A, Young C *et al*. The prevalence and outcomes of frailty in older cancer patients: a systematic review. *Ann Oncol* 2015; **26**(6): 1091–101.
3. Cancer Research UK. Cancer incidence statistics: all cancers combined by age. www.cancerresearchuk.org/health-professional/cancer-statistics/incidence/age (accessed 23/12/22).
4. Rohrmann S. Epidemiology of frailty in older people. *Adv Exp Med Biol* 2020; **1216**: 21–27. doi: 10.1007/978-3-030-33330-0_3. PMID: 31894543.
5. Arnold M, Rutherford MJ, Bardot A *et al*. Progress in cancer survival, mortality, and incidence in seven high-income countries 1995–2014 (ICBP SURVMARK-2): a population-based study. *Lancet* 2019; **20**(11): 1493–505.
6. DuMontier C, Loh KP, Bain PA *et al*. Defining undertreatment and overtreatment in older adults with cancer: a scoping literature review. *J Clin Oncol* 2020 Aug 1; **38**(22): 2558–2569. doi: 10.1200/JCO.19.02809. Epub 2020 Apr 6. PMID: 32250717; PMCID: PMC7392742.
7. Loh KP, Soto-Perez-de-Celis E, Hsu T *et al*. What every oncologist should know about geriatric assessment for older patients with cancer: Young International Society of Geriatric Oncology position paper. *J Oncol Pract* 2018 Feb; **14**(2): 85–94. doi: 10.1200/JOP.2017.026435. PMID: 29436306; PMCID: PMC5812308.
8. Wildiers H, Heeren P, Puts M *et al*. International Society of Geriatric Oncology consensus on geriatric assessment in older patients with cancer. *J Clin Oncol* 2014 Aug 20; **32**(24): 2595–603. doi: 10.1200/JCO.2013.54.8347. PMID: 25071125; PMCID: PMC4876338.
9. Soo WK, King MT, Pope A *et al*. Integrated geriatric assessment and treatment effectiveness (INTEGERATE) in older people with cancer starting systemic anticancer treatment in Australia: a multicentre, open-label, randomised controlled trial. *Lancet Healthy Longev* 2022; **3**(9): e617–e627.
10. Lund CM, Vistisen KK, Olsen AP *et al*. The effect of geriatric intervention in frail older patients receiving chemotherapy for colorectal cancer: a randomised trial (GERICO). *Br J Cancer* 2021; **124**(12): 1949–58.
11. Li D, Sun CL, Kim H *et al*. Geriatric assessment-driven intervention (GAIN) on chemotherapy-related toxic effects in older adults with cancer: a randomized clinical trial. *JAMA Oncol* 2021; **7**(11): e214158.
12. Mohile SG, Mohamed MR, Xu H *et al*. Evaluation of geriatric assessment and management on the toxic effects of cancer treatment (GAP70+): a cluster-randomised study. *Lancet* 2021; **398**(10314): 1894–1904.
13. Simcock R and Wright J. Beyond performance status. *Clin Oncol* 2020; **32**(9): 553–61.
14. Hurria A, Togawa K, Mohile SG *et al*. Predicting chemotherapy toxicity in older adults with cancer: a prospective multicenter study. *J Clin Oncol* 2011; **29**(25): 3457–65.
15. Hurria A, Mohile S, Gajra A *et al*. Validation of a prediction tool for chemotherapy toxicity in older adults with cancer. *J Clin Oncol* 2016; **34**(20): 2366–71.
16. Denholm M, Corrie P, Qian W *et al*. The Rockwood geriatric Clinical Frailty Scale is a more discriminatory tool for assessing older cancer patients compared with standard oncology performance status scales. *Eur J Surg Oncol* 2017; **42**(11): 2236 (abstract).
17. Pearce J, Swinson D, Cairns D *et al*. Frailty and treatment outcome in advanced gastro-oesophageal cancer: an exploratory analysis of the GO2 trial. *J Geriatr Oncol* 2021; **S1879-4068**(21): 00273-3.
18. Rockwood K, Song X, MacKnight C *et al*. A global clinical measure of fitness and frailty in elderly people. *CMAJ* 2005; **173**(5): 489–95.
19. The Specialised Clinical Frailty Network (SCFN). Resources: SCFN toolkit. www.scfn.org.uk/resources (accessed 23/12/22).
20. Saliba, S, Elliott M, Rubenstein LA *et al*. The Vulnerable Elders Survey (VES-13): a tool for identifying vulnerable elders in the community. *J Amer Geriatr Soc* 2001; **49**: 1691–9.

21. RAND Corporation. Vulnerable Elders Survey 13 (VES-13). www.rand.org/health-care/projects/acove/survey.html (accessed 23/12/22).
22. Bellera CA, Rainfray M, Mathoulin-Pélissier S *et al*. Screening older cancer patients: first evaluation of the G-8 geriatric screening tool. *Ann Oncol* 2012; **23**(8): 2166–2172.
23. van Walree IC, Scheepers E, van Huis-Tanja L *et al*. A systematic review on the association of the G8 with geriatric assessment, prognosis and course of treatment in older patients with cancer. *J Geriatr Oncol* 2019; **10**(6): 847–858.
24. Extermann M. Evaluation of the senior cancer patient: comprehensive geriatric assessment and screening tools for the elderly. In: D Schrijvers, M Aapro, B Zakotnik, R Audisio, H van Halteren, A Hurria (eds). 2010. *Handbook of cancer in the senior patient*. New York, London: Informa Healthcare, 13–21.
25. Moffit Cancer Centre. Senior Adult Oncology Programme tools: SAOP3. https://moffitt.org/for-healthcare-providers/clinical-programs-and-services/senior-adult-oncology-program/senior-adult-oncology-program-tools
26. Veronese N, Custodero C, Demurtas J *et al*. Comprehensive geriatric assessment in older people: an umbrella review of health outcomes. *Age Ageing* 2022; **51**(5). doi:10.1093/ageing/afac104.
27. Mohile SG, Dale W, M. Somerfield M *et al*. Practical assessment and management of vulnerabilities in older patients receiving chemotherapy: ASCO guideline for geriatric oncology. *J Clin Oncol* 2018; **36**(22): 2326–2347.
28. Decoster L, Van Puyvelde K, Mohile S *et al*. Screening tools for multidimensional health problems warranting a geriatric assessment in older cancer patients: an update on SIOG recommendations. *Ann Oncol* 2015 Feb; **26**(2): 288–300.
29. National Gold Standards Framework Centre. The GSC Centre in end of life care. https://goldstandardsframework.org.uk (accessed 23/12/22).
30. NHS England. *Enhanced supportive care: integrating ESC in oncology*. www.england.nhs.uk/wp-content/uploads/2016/03/ca1-enhncd-supprtv-care-guid.pdf (accessed 23/12/22).
31. Loh KP, Soto-Perez-de-Celis E, Hsu T *et al* What every oncologist should know about geriatric assessment for older patients with cancer: Young International Society of Geriatric Oncology position paper. *J Oncol Pract* 2018 Feb; **14**(2): 85–94. doi: 10.1200/JOP.2017.026435. PMID: 29436306; PMCID: PMC5812308 (accessed 23/12/22).
32. Dale W, Williams GR, MacKenzie AR *et al*. How is geriatric assessment used in clinical practice for older adults with cancer? A survey of cancer providers by the American Society of Clinical Oncology. *JCO Oncol Pract* 2021; **17**(6): 336–44.
33. Dearden H, Baxter M, Martin S *et al*. Frailty assessment in oncology services across the United Kingdom. Poster presentation at British Geriatrics Society OncoGeriatrics Meeting 16/03/21. https://twitter.com/onctrainees/status/1372312341879078913/photo/1
34. McKenzie GAG, Bullock AF, Greenley SL *et al*. Implementation of geriatric assessment in oncology settings: a systematic realist review. *J Geriatr Oncol* 2021; **12**(1): 22–33.
35. Soto-Perez-de-Celis E, de Glas NA, Hsu T *et al*. Global geriatric oncology: achievements and challenges. *J Geriatr Oncol* 2017 Sep; **8**(5): 374–386. doi: 10.1016/j.jgo.2017.06.001. Epub 2017 Jun 20. PMID: 28642040.
36. Extermann M, Brain E, Canin B *et al*. Priorities for the global advancement of care for older adults with cancer: an update of the International Society of Geriatric Oncology priorities initiative. *Lancet Oncol* 2021 Jan; **22**(1): e29–e36. doi: 10.1016/S1470-2045(20)30473-3. PMID: 33387502.
37. National Disease Registration Service. Cancer outcomes and services data set (COSD). https://digital.nhs.uk/ndrs/data/data-sets/cosd (accessed 23/12/22).
38. British Geriatrics Society. Commissioning services for people with frailty. www.bgs.org.uk/resources/commissioning-services-for-frailty (accessed 23/12/22).
39. Church S *et al*. A scoping review of the Clinical Frailty Scale. *BMC Geriatr* 2020; **20**(1): 393.

40. Welford J, Rafferty R, Hunt K *et al*. The Clinical Frailty Scale can indicate prognosis and care requirements on discharge in oncology and haemato-oncology inpatients: a cohort study. *Eur J Cancer Care (Engl)* 2022; **31**(6): e13752.
41. van Walree IC, Vondeling AM, Vink GR *et al*. Development of a self-reported version of the G8 screening tool. *J Geriatr Oncol* 2019; **10**: 926–930.
42. Russo C, Giannotti C, Signori A *et al*. Predictive values of two frailty screening tools in older patients with solid cancer: a comparison of SAOP2 and G8. *Oncotarget* 2018; **9**(80): 35056–68.
43. Clegg A, Bates C, Young J *et al*. Development and validation of an electronic frailty index using routine primary care electronic health record data. *Age Ageing* 2016; **45**(3): 353–60.
44. Hippisley-Cox J and Coupland C. Development and validation of QMortality risk prediction algorithm to estimate short term risk of death and assess frailty: cohort study. *BMJ* 2017; **358**: j4208.
45. Imam T, Konstant-Hambling R, Fluck R *et al*. The Hospital Frailty Risk Score: outcomes in specialised services. *Age Ageing* 2021; **50**(2): 511–8.
46. Jauhari Y, Gannon MR, Dodwell D *et al*. Construction of the secondary care administrative records frailty (SCARF) index and validation on older women with operable invasive breast cancer in England and Wales: a cohort study. *BMJ Open* 2020; **10**(5): e035395.
47. Giger AW, Ditzel HM, Jørgensen TL *et al*. Predictive value of geriatric oncology screening and geriatric assessment of older patients with cancer: a randomized clinical trial protocol (PROGNOSIS-RCT). *J Geriatr Oncol* 2022; **13**(1): 116–123.
48. Goh WY, Neo HY, Teo HL *et al*. Protocol for a randomised controlled trial on impact of comprehensive geriatric and supportive assessment versus standard care in older adults with cancer undergoing curative treatment: the Geriatric Oncology SuPportive clinic for ELderly (GOSPEL) study. *J Geriatr Oncol* 2022; **S1879-4068**(22)00168-0.
49. Gomes F, Lewis A, Morris R *et al*. The care of older cancer patients in the United Kingdom. *eCancer* 2020; **14**: 1101.
50. Guys and St Thomas' NHS Foundation Trust. Geriatric Oncology Liaison Development (GOLD). www.guysandstthomas.nhs.uk/our-services/geriatric-oncology-liaison-development-gold (accessed 24/01/23).
51. The Beatson. Cancer Older Peoples Service (COPS). https://www.beatson.scot.nhs.uk/patients-and-visitors/information-support-services/cancer-older-peoples-service-cops (accessed 24/01/23).
52. RM Partners. New project to improve care for older cancer patients. https://rmpartners.nhs.uk/new-project-to-improve-care-for-older-cancer-patients
53. Biomedical Research Centre at The Royal Marsden and the ICR. Help us create a Senior Adult Oncology Programme. https://patients-voice.cancerbrc.org/senior-adult-oncology-programme
54. Milton M, Jethwa J, Murphy J *et al*. Beyond standard care: identifying the needs of older adults receiving systemic treatment for breast cancer. The Royal Marsden Senior Adult Oncology Programme experience. *J Geriatr Oncol* 2022; **13**(8): S45.
55. Leeds Teaching Hospitals. Medicines optimisation guidance for adult patients with a limited prognosis. 2022. http://lhp.leedsth.nhs.uk/detail.aspx?id=7628 (accessed 28/06/2023).

The Royal College of Radiologists
63 Lincoln's Inn Fields
London WC2A 3JW

+44 (0)20 7405 1282
enquiries@rcr.ac.uk
www.rcr.ac.uk
@RCRadiologists

The Joint Collegiate Council for Oncology (made up of the Royal College of Physicians and The Royal College of Radiologists). *Implementing frailty assessment and management in oncology services*.
London: The Royal College of Radiologists, 2023.