CLINICAL GUIDELINE

Polypharmacy Review in Adults Living with Moderate to Severe Frailty

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments

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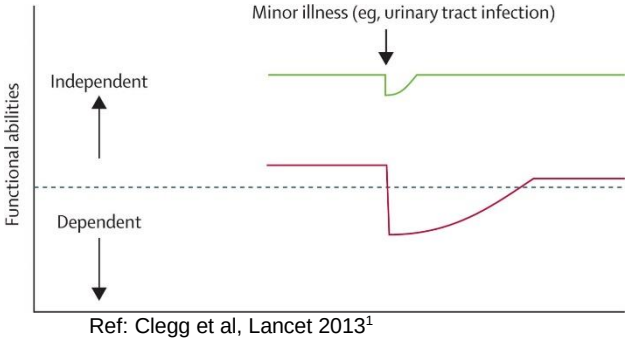
AIM OF GUIDELINE

The purpose of the guideline is to collate guidance relevant to patients living with frailty from various local, national and international guidance sources into one document for ease of access and to aid decision making in practice. This guideline offers advice on the realistic use of medicines in patients identified as moderately or severely frail, including practical advice on cut-off values and dosage schedules to facilitate de-prescribing or dose reduction where this is appropriate. The guidance can be applied to adults living with frailty regardless of their age. It is referenced throughout so that healthcare professionals can refer to the original reference source if needed for further information.

BACKGROUND

What is frailty and why is it important?

Frailty can be defined as state of increased vulnerability to a decline in function and adverse health outcomes in the context of an acute stressor (which may appear to be minor).



Ref: Clegg et al, Lancet 2013[1]

It is estimated that around 10% of people over the age of 65 years have frailty. This increases to between 25-50% in those over the age of 85 years.

There are two predominant models of frailty.[2] Firstly, the Phenotype Model which describes the five characteristics of reduced muscle strength, reduced gait speed, unintentional weight loss, low energy expenditure and exhaustion. People with three or more of these characteristics are said to have frailty.[3] The second model is the Cumulative Deficit Model which describes the accumulation of deficits which contribute to a 'frailty index'.[4]

Frailty should be regarded as a long-term condition. It is associated with an increased risk of disability,[5] hospitalisation,[6] care home admission[7] and mortality.[4] Importantly however, although frailty is an age associated state, it is not an inevitable part of ageing. Frailty is not a fixed entity and should not be regarded in binary form by simply describing a person as being frail or not. Rather, people should be regarded as having frailty. Importantly, it is a dynamic, modifiable, reversible and preventable state.

Frailty, comorbidity and disability

A further important point to note is that although there can be overlap between disability, comorbidity and frailty, frailty is a distinctive entity in itself.

There are many people with frailty who have a disability but similarly there are many with disability who do not necessarily have frailty. In some people frailty can be the cause of disability whilst in others it may be a consequence. With regards to multi-morbidity and frailty, many with multi-morbidity also have frailty. However, it may be that some people's only long-term condition is frailty.

Identification and management of people with frailty

There are several frailty assessment tools which can be used to help identify frailty. Some of the more familiar tools include the Clinical Frailty Scale,[8] Grip Strength,[9] Timed Up and Go Test[10] and Gait Speed.[10] The electronic Frailty Index has been shown to identify a cohort of people who are likely to be frail.[11]

Comprehensive Geriatric Assessment with care and support planning should underpin management of people with frailty. It is well recognised that timely medication review and de-prescribing are key components of this model of care, emphasising the need for guidance such as this. Clinical judgement, taking into account individual patient circumstances, should always be applied to prescribing decisions for adults living with frailty.

SCOPE

This guidance is for use by primary and secondary care prescribers/healthcare professionals and is intended for use in adults only.

This guidance is relevant to all clinicians in all practice settings where adult patients living with frailty may present. It may be particularly relevant (but is not limited to) clinicians treating older adults in community, care home and hospital settings.

This guidance is relevant to patients identified with moderate to severe frailty. Those identified as mildly frail are more likely to transition back to a robust state[12] and may be treated in the same way as the general adult population with an emphasis on promoting a healthy lifestyle and evidence based management of any disease and/or long-term condition. Patients with mild frailty should be monitored for progression of frailty and treated as per the following guidance, should that occur.

End-of-life and/or palliative care is outwith the scope of this guidance. Separate palliative care resources available here should be referred to for this group of patients.

Similarly, it is recognised that in those with very severe frailty who may be nearing the end of their life, it may be appropriate to tailor some individual decisions which may not necessarily fall in line with this guideline.

ROLES & RESPONSIBILITIES

All prescribers should familiarise themselves with the tools for assessing the level of frailty of their patients, and be willing to adjust prescribing decisions to account for the realistic risks and benefits of prescribing in patients with moderate to severe frailty.

Staff should be able and willing to discuss the risks and benefits of each medication with patients and carers and to describe this in the context of the patient's frailty. They should be confident that there is evidence of likely benefit from each prescribed medicine and should consider de-prescribing where appropriate. The Scottish Government has produced a Managed Medicines app which can help with these discussions.[13]. Instructions for downloading the app can be found here.

GUIDELINE

Identifying frailty

There is an NHSGGC workstream of the Frailty and Falls steering group looking at identification of frailty and sharing of information across sectors. Use of the methods below to identify patients living with frailty are not currently in consistent use. There are a number of ways to identify people with frailty. Broadly speaking these can be divided into two categories:

- Population-level assessments
- Individual assessment

eFrailty Index (eFI)[14]

The eFI is a population level assessment tool for identifying people with frailty which is available to Primary Care Teams across NHSGGC. Of the options for population-level assessments in Scotland, the benefit of the eFI is that it uses existing primary care data, as opposed to acute data, and is therefore more likely to identify people earlier in their progression of frailty before they experience an acute insult or injury. The eFI is based upon a person's needs rather than their service use.

As individuals interact with GPs, their GP records accumulate a list of Read Codes and community prescriptions. The eFI searches for Read Codes in patient notes that are seen to increase the likelihood of frailty and uses a subset of these Read Codes to interpret any number of up to 36 potential deficits. The number of deficits that an individual is considered to have is then divided by the total (36) to produce a score which allows patients to be categorised as fit, or having mild, moderate, or severe frailty[14]

The eFI is a robust, predictive validated tool that helps to identify adverse outcomes of mortality, hospitalisation, and nursing home admission.[14]

NHSGGC endorses the use of the eFrailty Index (eFI) to identify patients in general practice who may have frailty. However, in order to be effective in identifying frail patients within a practice population, individuals require to have contact with their GP and have accurately recorded Read Codes applied when they do so.

Other prediction tools used in Scotland include the Scottish Patients at Risk of Readmission and Admission (SPARRA) tool and the High Health Gain (HHG) tool, which use predominately acute data to judge level of risk, such as accident and emergency attendances, outpatient appointments, and prescribing information.

Using the eFI in practice

It is recommended that eFI reports are generated via SPIRE software available in practices across NHSGGC. The eFI is available through GP systems such as Vision and EMIS, however, the benefit of using the eFI through SPIRE is that it includes additional reports which enable practices to identify people who have experienced significant change in their frailty risk over a six-month period. These definitions of change were developed with GP practices following feedback that being presented with simply total frailty numbers produced too great a list to consider and act on.[14] The Read Code to record frailty index is **38QI.**

Detailed instructions on how to generate reports in practice are available here.

Individual assessment of frailty

The Rockwood Clinical Frailty Scale (CFS) is a validated tool for medical staff and other healthcare professionals to use when carrying out opportunistic assessments of frailty e.g. on admission to hospital, in community or out-patient clinical settings.[15] It was designed to summarise the results of a Comprehensive Geriatric Assessment but is now commonly used as a triage tool to make important clinical decisions so it essential that those using it are suitably familiar with its limitations:

- The CFS has only been validated in older people.[15]
- It has not been widely validated in younger populations (below 65 year of age), or in those with learning disability. It may not perform as well in people with stable long term disability such as cerebral palsy, whose outcomes might be very different compared to older people with progressive disability. We would advise that the CFS is not used in these groups.[15]
- If a patient is acutely unwell the assessment should use baseline function (2 weeks ago) not current clinical presentation.[15]
- Professor Rockwood has recently published some top tips for the use of the Rockwood CFS in practice (with particular relevance to patients presenting with COVID19 symptoms) which are available here and are included with the Rockwood CFS as in Appendix 1 to this guideline.

The Think Frailty Triage Tool was developed as part of Health Improvement Scotland's "Frailty at the Front Door" collaborative to improve the experience and outcomes of people with frailty who present to unscheduled care. The aim is to identify patients with frailty, to streamline them into the right beds and to ensure that a Comprehensive Geriatric Assessment is undertaken where appropriate. It is available on Trakcare and has been piloted in NHSGGC.

Method for reviewing patients

Patients identified as living with moderate or severe frailty should have a holistic review of their care including a discussion around anticipatory care planning, completion of a Key Information Summary in primary care (which should be updated on the GP system whenever a review takes place) and a polypharmacy medication review where appropriate. The general principles for carrying out a polypharmacy review using the 7 steps approach suggested in the Scottish Government's Polypharmacy Guideline[16] applies equally to frail patients. A reminder of the 7 steps is included in Appendix 2.

Why is a medication review needed for patients living with frailty?

Up to 11% of unplanned hospital admissions are considered to be due to harm from medicines, with over 70% of these being due to elderly patients on multiple medicines. Moreover, it is estimated that up to 50% of hospital admissions due to adverse drug reactions are considered preventable for patients over 65 years old on 5 or more medicines. Therefore, there are significant opportunities to reduce this burden by timely and effective intervention by undertaking a 7-steps polypharmacy medication review. Appropriate polypharmacy review may involve deprescribing, particularly for patients living with frailty, i.e. stopping or reducing the dose of prescribed medications in partnership with the patient. This is in line with the aims of Scottish Government Polypharmacy Guidance and Realistic Medicine[16].

It has also been highlighted that "nutrition is a factor closely related to the frailty syndrome: all frailty criteria are more or less affected by poor eating habits, whereas frailty itself may have a negative effect on eating and, thus, on the nutritional status". Malnutrition is a preventable and reversible factor within the frailty pathway and it is important that a patient's nutritional status is also assessed as part of the review process[17].

Medicines and Falls Risk

Certain drug classes, individual medications and combinations of medicines confer greater risk for frail patients than the general adult population. Any medicine which can cause sedation, hypotension or hypoglycaemia can increase falls risk. Patients with frailty should be assessed for risk of falls including review of any medicines which can increase this risk. Resources to aid decision making regarding falls and medicines can be found here and in the table below This list is not exhaustive.

Table 1- Medicines and Falls Risk (adapted from the Scottish Government's Polypharmacy Guidance) [16]

DRUG	FALLS RISK	INFORMATION
Antidepressants	HIGH	Tricyclic antidepressants with high anti-muscarinic activity, e.g. amitriptyline increase falls risk due to drowsiness and hypotension.
Antipsychotics	HIGH	Risk of hypotension is dose related reduced by the 'start low go slow' approach. Second generation antipsychotics have similar falls risk to traditional ones. Attempted withdrawal MUST always be gradual. Prochlorperazine is often inappropriately prescribed for dizziness and causes drug induced Parkinsonism.
Anti-muscarinic drugs	HIGH	Oxybutynin may cause acute confusional states in older patients especially those with pre-existing cognitive impairment.
Benzodiazepines & Hypnotics	HIGH	Associated with drowsiness and hang-over effects the next day. Newer hypnotics are associated with reduced hangover effects but are licensed for short-term use only.
Dopaminergics in Parkinson's disease	HIGH	Sudden excessive daytime sleepiness can occur with levodopa and other dopamine receptor agonists. Dose titration is important in initiation due to risk of inducing confusion. Maintenance doses may need to be reduced with aging (normally by a specialist in movement disorders).
Anti-arrhythmics	MODERATE	Dizziness and drowsiness are possible signs of digoxin toxicity. Flecainide has a high risk for drug interactions and can also cause dizziness.
Anti-epileptics	MODERATE	High risk for potential drug interactions. Important side effects include: dizziness, drowsiness and blurred vision (dose related).
Opiate analgesics	MODERATE	Drowsiness is common with initiation, but tolerance develops with continuous treatment. Confusion reported with tramadol.
Antihistamines	MODERATE	Somnolence may affect up to 40% of patients with older antihistamines. The newer antihistamines cause less sedation and psychomotor impairment.
Alpha-blockers	MODERATE	Doses used for treatment of BPH are less likely to cause hypotension than those required to treat hypertension.
ACEI/ARB	MODERATE	Risk of hypotension is potentiated by concomitant diuretic use. Incidence of dizziness affects twice as many patients with heart failure than hypertension.
Diuretics	MODERATE	Postural hypotension, dizziness and nocturia are problems seen in the elderly. Diuretics should not be used in the long-term treatment of gravitational oedema.[16]
Beta-blockers	MODERATE	Postural hypotension can affect up to 10% of patients. Can accumulate in renal impairment and therefore dose reduction is often necessary.

The Scottish Therapeutics Utility (STU)[18] tool, available for use in all GP practices across NHSGGC provides a search function to help prioritise patients on certain high risk drugs and combinations for review.

The following tabulated guidance focuses on individual classes of drugs in frailty but the risk of combinations of medicines across classes must also be considered e.g. multiple medicines with anticholinergic side effects, or multiple medicines which increase bleeding risk. Bearing in mind that frailty is essentially loss of reserve resulting in greater vulnerability to insult, it is clear that frail individuals will be more susceptible to harm resulting from such combinations

of medicines, hence the importance of reducing polypharmacy.

When reviewing medication in patients with frailty there may be some specific circumstances which will need more careful consideration. Two key examples are:

- Swallow dysfunction – this is not uncommon in patients with frailty and particularly in those with advanced dementia. It should be noted that simply switching medications to liquid form is often not the answer and a multi-disciplinary approach should be taken including pharmacy, possibly speech and language therapy and of course the patient and carer. It may be appropriate to stop the medication altogether, switch to another drug in the same class available in a suitable formulation or consider crushing tablets for administration if safe to do so.[19]

- Covert administration of medication – in some instances it may be appropriate to administer medications covertly for patients who have a valid Adults with Incapacity Act (AWIA) section 47 certificate in place. This is likely due to a refusal of medication but where the medication is deemed necessary enough for the patient's physical and/or mental wellbeing that they should receive it without their knowledge. Guidance should be taken from the NHS GGC Policy on Covert Medication [20] and the https://www.mwcscot.org.uk/sites/default/files/2019-06/covert_medication.pdf[21]

Polypharmacy review process – practical tips

A multidisciplinary approach to medication review involving doctors and pharmacists can be beneficial in both primary and secondary care settings. A national patient information leaflet explaining the process is available for download here

- Perform medication reconciliation, to ensure an accurate list of all medications is obtained including over-the-counter medications and specialist/hospital only prescriptions. Also take account of the patient's history and previous changes to medicines.
- Ensure there are indications for all medicines.
- Discuss the indications and side effects of medicines with the patient/carer taking into account the patient's wishes regarding changes to medicines - "What matters to me".
- Consider drug/drug and drug/disease interactions when assessing medication risks. Where renal function influences dosage of a medication, calculate CrCl using Cockcroft Gault calculator rather than basing decisions on eGFR.
- Where multiple medications require to be discontinued, it is preferable to take a step-wise approach. Where possible limit the number of changes made concurrently so that outcomes from each change are clear. The order for carrying out changes is a matter of clinical judgment, however the following factors should be considered:
    a) Stop medications causing actual harm unless the benefit outweighs the risk.
    b) Stop, or taper and stop where necessary, medications that have the greatest risk of harm.
    c) Stop medications with no or little benefit.
    d) Consider the safest/best way to implement change i.e. stop suddenly, gradual dose reduction, switch to as required, or switch to alternative therapy.
- Record the plan for medication changes, including: the reason for change; any tapering instructions; and any follow-up or monitoring required.
- Where necessary consider providing a written plan for the patient including advice should they experience any changes in symptoms.
- Where medication changes have been made ensure a follow-up review is undertaken and benefits assessed.

The 7 steps approach provides further information on clinical decision making when carrying out Polypharmacy review (see Appendix 2)

Guidance for reviewing medicines for patients living with moderate to severe frailty

The following tables arranged by BNF category provide guidance on prescribing and de-prescribing medicines in patients living with moderate to severe frailty. They are referenced throughout so that healthcare professionals can refer to the original reference source if needed for further information.

BNF Class	Drug/ Drug Class	Prescribing issues/recommendations in moderate to severe frailty
GASTRO-INTESTINAL DISORDERS	**Antispasmodics**	Drugs with anticholinergic effects contribute to cholinergic burden. [16] **Recommendations:** Avoid long term use particularly of hyoscine and dicycloverine due to anticholinergic activity. [22]
	PPIs	Older adults are at higher risk of consequences associated with long term PPI use such as diarrhoea, impaired B_{12} absorption, hypomagnesaemia, C. diff. infection, hip fracture and pneumonia.[23] **Recommendations:** Continue for Barrett oesophagitis, severe esophagitis grade C or D, or documented history of bleeding gastrointestinal ulcers. [23] Continue gastroprotection (especially if > 65 years) if need to remain on drug with bleeding risk e.g. NSAID, anticoagulants, SSRI.[16] Consider discontinuing if there has been no proven peptic ulcer, GI bleeding or dyspepsia for 1 year. [24] For patients experiencing persistent symptoms consider "as needed" PPI. [25] For those on higher doses step down the PPI dose to stop.[25] Consider co-prescription of antacid and/or alginate to reduce rebound hypersecretion. [16, 25]
CV DISEASE (CONT.)	**Drugs for atrial fibrillation**	Anticoagulants to reduce the risk of stroke are effective even in patients with frailty. **Recommendations:** Usual treatment unless adverse effects outweigh benefit. [16] Reduce heart rate limiting medication if pulse consistantly <60.[16] Avoid combining blood thinners unless exceptional case and recommended by cardiology. [16] Review DOAC dose to account for weight, age, CrCl. [16]
	Antiplatelets	**Recommendations:** Aspirin not recommended for primary prevention. [16] The use of aspirin or clopidogrel for secondary prevention of IHD or stroke should usually continue unless problematic **Additional Considerations in Severe frailty** Consider if benefit still outweights risk in severly frail patients, especially if approaching end of life. [16]
	Anti-anginal drugs	Consider reducing anti-anginal treatment if mobility/exertion has decreased and no symptoms for more than 6 months and low risk of residual coronary heart disease. [16] **Additional Considerations in Severe frailty:** Consider if benefit of statin and/or aspirin still outweights risk in severly frail patients, especially if approaching end of life [16]

BNF Class	Drug/ Drug Class	Prescribing issues/recommendations in moderate to severe frailty
CV DISEASE (CONT.)	**Drugs for hypertension**	There may be increased risk of harm/mortality when reducing blood pressure to very low levels in the frail elderly.[16] **Targets:** In most circumstances avoid blood pressure < 130 systolic and/or < 65 diastolic.[16, 26] **Recommendations:** • Use clinical judgement when considering starting antihypertensives in addition to lifestyle measures for people aged over 80.Consider monotherapy in low-risk grade 1 hypertension or in patients ≥ 80 years, or frailer patients.[27] • Antihypertensives may need continued if prescribed for another condition i.e. heart failure, symptomatic coronary artery disease. [27] Avoid treatments to prevent progression of proteinuria unless sufficient life expectancy to see benefit. [27]
	Drugs for heart failure	Doses are likely to be more conservative than in younger, fitter adults and titrations more cautious Careful consideration before altering/stopping Diuretics, Beta Blocker/ACEI or other medicines to treat heart failure. [16] **Recommendations:** Usual treatment - continue unless problematic[16] Diuretics usually ineffective for ankle oedema caused by calcium channel blockers e.g. Amlodipine. [16]
	Lipid regulating drugs	Treatment of frail or very elderly people with statins should be guided by individual circumstances and co-morbidities and need not follow guideline recommendations.[28] **Recommendations:** Review statin if limited life expectancy or if falling due to weakness. [28] **Additional Considerations in Severe frailty:** Review statin/don't initiate if limited life expectancy or if the priority is symptomatic relief. [28]
RESPIRATORY	**COPD**	Confirm prior to review patient if patient receiving ongoing input from specialist respiratory team **Recommendations:** Inhaled therapy: - Ensure able to use device – Consider use of MDI with spacer as alternative to DPIs if poor inspiratory flow or recurrent oral candida infection. If unable to use any inhaled therapy, consider stopping. Where possible reduce high dose steroids slowly.[29] Theophylline: - In COPD without co-existing asthma consider stopping theophylline:[30] Monotherapy not appropriate. [30] Oral salbutamol: - Stop as limited evidence for efficacy. [31] Steroids • Review oral steroids - long term use is rarely indicated. Withdraw gradually if used for more than 3weeks or dose >40mg prednisolone/day. [13] • Risk of osteoporotic fracture in long term use (or high dose inhaled steroids).[29] Antihistamines - rarely indicated long term and add to anticholinergic burden. Review and stop where possible. [16] Mucolytics - continue only if symptomatic improvement.[29] If continuing - reduce to maintenance dose. **Additional Considerations in Severe frailty:** Review need for bone protection as per bone metabolism guidance below – consider stopping.[32, 33]

BNF Class	Drug/ Drug Class	Prescribing issues/recommendations in moderate to severe frailty
CENTRAL NERVOUS SYSTEM	**Hypnotics and anxiolytics**	Confirm prior to review if patient is receiving ongoing input from specialist mental health team. Benzodiazepines and z-drugs: Half-lives are generally lengthened in older adults – associated with falls risk, cognitive impairment and decreased psychomotor performance.[34] **Recommendation** If initiation absolutely necessary, only use short term.[34] Lorazepam first line choice in frailty.[35] Review patients on regular long term or high dose treatment (>4 weeks). Consider switch to equivalent dose of diazepam if appropriate (see BNF for equivalences) and then reduce by 10% every 4 weeks using a planned reduction schedule in line with NHSGGC Guidance.[34]
	Psychosis and related disorders - Antipsychotics	Antipsychotics have limited benefit in treating symptoms of stress and distress in older people with dementia and carry significant risk of harm e.g. delirium, cerebrovascular events, falls and all-cause mortality. Use may be appropriate for psychosis, delirium and physical aggression. NHSGGC has clear guidance on prescribing of antipsychotics in dementia[35, 36] **Recommendation** Medication should be used as a last resort. [34]Antipsychotics for dementia should be reviewed every 3 months by the Multidisciplinary Team (MDT) and withdrawn gradually by the initiating team or in consultation with mental health.[34] Priority groups for reducing antipsychotics medicines include: people in care homes, people with vascular dementia, people with dementia plus cardiovascular disease.[37] Reduce dose slowly by approx. 25% every 2-4 weeks with close monitoring for relapse.[34, 36] Note: antipsychotics should not be stopped in those with co-morbid mental illness such as schizophrenia. Refer patients with new psychotic symptoms to specialist. If suspicion of delirium treat as a medical emergency in line with NHSGGC guidance.[35]
	Psychosis and related disorders – Mood stabilisers.	Confirm prior to review if patient is receiving ongoing input from specialist mental health team. Ensure antiepileptic are not stopped if prescribed for seizures. **Recommendation** Lithium: • Levels at the lower end of the range may be sufficient – levels up to 0.8mmol/l considered safe in the elderly without pre-existing renal impairment. • Monitor lithium levels (3monthly), renal and thyroid function (minimum 6 monthly). Consider ECG if cardiovascular risk. • Note - risk of toxicity if dehydrated.[38, 39, 40] Carbamazepine: Not well tolerated in older people- dose requirements are unlikely to changed but be aware of potential drug interactions if stopping and starting other drugs.[39] Valproate: – Pharmacokinetics are altered in the elderly but in practice this has limited clinical significance. Dose should be based on response Lamotrigine: Half-life increased in older adults. Reduced sleep duration, vivid dreams and weight loss common. Review ongoing benefit vs risk.[39]

BNF Class	Drug/ Drug Class	Prescribing issues/recommendations in moderate to severe frailty
CENTRAL NERVOUS SYSTEM (CONT)	**Antidepressants**	SSRIs are preferred antidepressants in frailty.[38, 39, 41] Sertraline has the safest cardiac profile. [38, 39, 41] Citalopram is contraindicated in patients with known QT-interval prolongation and should be avoided in combination with QTc prolonging drugs. Maximum dose is 20mg in over 65 year olds.[42] Consider gastroprotection if SSRI prescribed, especially if in combination with drugs which increase bleeding risk.[43] Mirtazapine is a possible 2nd line agent for depression. On initiation, 15mg dose is more sedating than 30mg therapeutic dose. [41, 44] Sertraline, citalopram or trazodone may help symptoms of distress in dementia and may be considered in line with guidance.[34] If prescribing trazodone refer to NHSGGC guidance for an appropriate formulation.[45] If patient suicidal, psychotic, there is suspicion of bipolar illness or fails to respond to trials of 2 antidepressants, refer to Psychiatry.[46] **Recommendations:** If appropriate, slowly reduce long-term antidepressants (decrease incrementally 4 weekly from higher doses) in line with NHSGGC guidance.[34,47]
	Anti-emetics	Metoclopramide[48] and Domperidone[49]: longest recommended treatment duration is 5 days and 7 days respectively. Prochlorperazine and Metoclopramide: can cause or exacerbate Parkinsonism.[50] Antihistamines contribute to anticholinergic burden.[16] **Recommendation** Only appropriate for short term relief of symptoms. Review and stop long term treatment.
	Analgesics	Use minimum effective dose of analgesics for minimum duration. Never initiate fentanyl patch in opiate naïve; 25mcg patch is equivalent to 90-120mg daily morphine.[51] Use Abbey pain scale for pain assessment.[52] **Recommendation:** Paracetamol - Reduce dose if patient <50kg.[53] NSAIDS - Poorly tolerated in frail adults[16], responsible for 30% of hospital admissions for adverse drug reactions (ADRs), mainly due to bleeding, heart attack, stroke and renal damage.[54] Avoid if possible and especially if CrCl <30.[55] If essential, use ibuprofen or naproxen short term, lowest effective dose and avoid with other medicines which increase risk of side effects.[56] Consider PPI cover with NSAID.[16] Opioids: - Review long-term treatment, consider trial dose reduction to avoid side effects/toxicity e.g. confusion, drowsiness, falls and respiratory depression.[57] If altering dose, reduce gradually using taper calculator available here.[58] If switching opiates do with caution and use Scottish Palliative Care Guideline for dose equivalents. [59] Neuropathic pain (tricyclic antidepressants and gabapentinoids) [60]- Assess efficacy using LANSS.[61] Ongoing review every 6-12 months, consider gradual dose reduction and stop. Reduce gabapentinoid dose in renal impairment.[62] Toxicity more likely in frail patients - e.g. dizziness, poor balance, blurred vison, cognitive impairment (TCAs & gabapentinoids)[62]; oedema (gabapentinoids)[62]; arrhythmias (TCA)[16]

BNF Class	Drug/ Drug Class	Prescribing issues/recommendations in moderate to severe frailty
CENTRAL NERVOUS SYSTEM (CONT)	**Drugs for dementia**	Stopping cognitive enhancers worsen cognitive decline and/or symptoms of stress or distress. [34] Withdrawal of cognitive enhancers should be avoided, even in severe dementia, unless they are clearly contra-indicated or significant side effects have developed.[63] **Recommendations:** Cholinesterase inhibitors – (specialist initiation) If patient has responded but side effects are experienced e.g. hallucinations, nausea/GI bleeding, seizures, syncope, and bradycardia) consider an alternative cholinesterase inhibitor or formulation. [34] Memantine - (specialist initiation) may be beneficial for stress and distress if cholinesterase inhibitors not tolerated.[34] If it has been agreed with medical staff (specialist if under care of MH services), family and carers that the cognitive enhancer is to be withdrawn altogether, decrease gradually allowing four weeks between dose changes with ongoing assessment and monitoring of function and cognitive decline. If any cognitive decline occurs increase dose to avoid further decline.[34] **Additional Considerations in Severe frailty:** Review cognitive enhancers and consider stopping if they may be contributing to agitation and/or the patient is palliative. If mental state worsens on withdrawal, consider re-starting.[63]
ENDOCRINE SYSTEM	**Diabetes**	Aim of treatment is symptom control whilst avoiding hypoglycaemia.[64] **Target:** HbA1c target of 65-75. [64] **Recommendations:** Use single agent if possible.[50] Metformin is first line with maximum daily dose of 1000mg if eGFR is 30- 44 ml/min. Contraindicated by manufacturer if eGFR <30ml/min.[65] **Sulphonylureas**: avoid if possible – risk of prolonged hypoglycaemia.[16, 64] **SGLT2s**: Use with caution in those with renal impairment or those at risk of dehydration or hypotension e.g. in combination with antihypertensives or diuretics. Efficacy for glycaemic control is reduced in moderate to severe renal impairment. Note - Canagliflozin should not be initiated if CrCrl<30mls/min but can be continued if already on.[66] Avoid treatments (e.g. ACE inhibitors) that aim to maintain renal function and/or progression of proteinuria unless sufficient life expectancy to see benefit. [16] **Additional Considerations in Severe frailty** Avoid HbA1c < 65 especially if on gliclazide or insulin.[16]

BNF Class	Drug/ Drug Class	Prescribing issues/recommendations in moderate to severe frailty
ENDOCRINE SYSTEM (CONT.)	**Bone metabolism**	**Recommendations:** Standard treatment as per guidelines. [32, 33] Review use of oral bisphosphonates if patient unable to comply with safe administration – risk of oesophageal reaction.[67] Consider stopping bisphosphonate (discuss with specialist if high fracture risk) if eGFR < 35ml/min. [33] Patients with osteoporosis who have been on bisphosphonates for 5 years should be referred back to Direct Access DXA Service (DADS) for review.[32] All patients over 80 years who have been on oral bisphosphonate for 10 years should have treatment stopped. [32] **Additional Considerations in Severe frailty:** Where a patient is thought to have limited life expectancy, consideration should be given as to whether continuing bisphosphonate therapy is of significant clinical benefit. [32,33]
URINARY TRACT DISORDERS	**Anticholinergics for urinary frequency**	Adverse drug reactions e.g. postural hypotension, urinary retention, constipation, dry mouth and cognitive impairment may outweigh benefits.[16] Combinations of medicines with anticholinergic effects such as antihistamines, antispasmodics, tricyclic antidepressants increase the risks so consider anticholinergic burden[16] **Recommendation** If continence pads are also used or the patient has a catheter review whether concomitant use necessary and consider a trial off medication. [68] Review effectiveness every 4–6 weeks until symptoms stabilise, and then every 6–12 months.[69]

APPENDICES

Appendix 1 - Rockwood CFS and using Rockwood Top Tips

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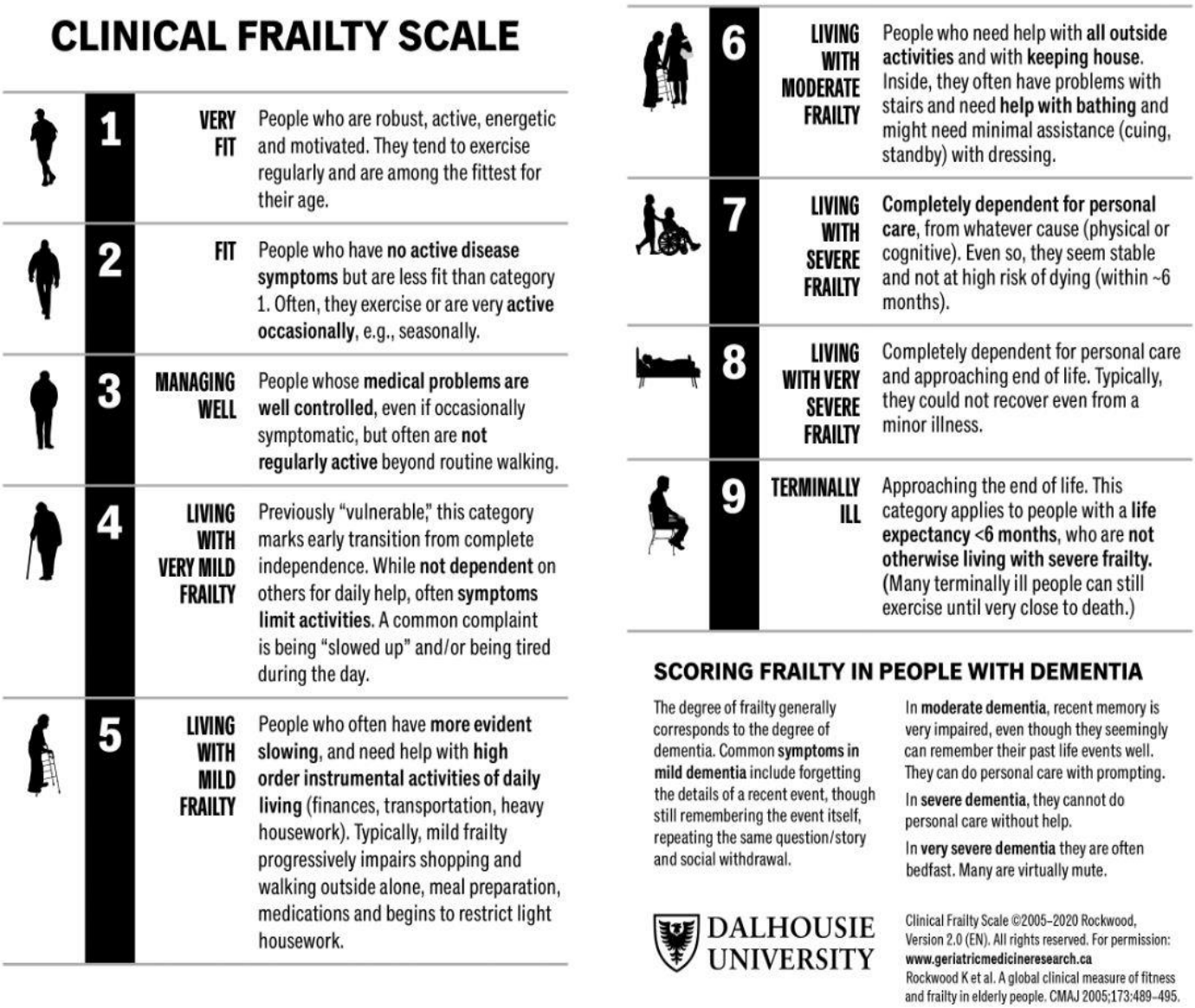

CLINICAL FRAILTY SCALE

1	VERY FIT	People who are robust, active, energetic and motivated. They tend to exercise regularly and are among the fittest for their age.
2	FIT	People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g., seasonally.
3	MANAGING WELL	People whose **medical problems are well controlled**, even if occasionally symptomatic, but often are **not regularly active** beyond routine walking.
4	LIVING WITH VERY MILD FRAILTY	Previously “vulnerable,” this category marks early transition from complete independence. While **not dependent** on others for daily help, often **symptoms limit activities**. A common complaint is being “slowed up” and/or being tired during the day.
5	LIVING WITH MILD FRAILTY	People who often have **more evident slowing**, and need help with **high order instrumental activities of daily living** (finances, transportation, heavy housework). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation, medications and begins to restrict light housework.
6	LIVING WITH MODERATE FRAILTY	People who need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.
7	LIVING WITH SEVERE FRAILTY	**Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~6 months).
8	LIVING WITH VERY SEVERE FRAILTY	Completely dependent for personal care and approaching end of life. Typically, they could not recover even from a minor illness.
9	TERMINALLY ILL	Approaching the end of life. This category applies to people with a **life expectancy <6 months**, who are **not otherwise living with severe frailty.** (Many terminally ill people can still exercise until very close to death.)

SCORING FRAILTY IN PEOPLE WITH DEMENTIA

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

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

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

In **very severe dementia** they are often bedfast. Many are virtually mute.

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Rockwood K et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489–495.

Top Tips to help you use the Clinical Frailty Scale

The Clinical Frailty Scale (CFS) was designed to summarise the results of a Comprehensive Geriatric Assessment. It's now commonly being used as a triage tool to make important clinical decisions, so it is imperative that it is used correctly.

#1 It's all about the baseline
If the person you are assessing is acutely unwell, score how they were 2 weeks ago, not how they are today.

#2 You must take a proper history
The CFS is an objective clinical assessment tool. Frailty must be sensed, described, and measured - not guessed.

#3 Trust, but verify
What the person you are assessing says is important, but should be cross-referenced with family/carers. The CFS is a judgement-based tool, so you must integrate what you are told, what you observe, and what your professional clinical experience tells you from dealing with older adults

#4 Over-65s only
The CFS is not validated in people under 65 years of age, or those with stable single-system disabilities. However, documenting how the person moves, functions, and has felt about their health may help to create an individualised frailty assessment.

#5 Terminally ill (CFS 9)
For people who appear very close to death, the current state (i.e. that they are dying) trumps the baseline state.

#6 Having medical problems does not automatically increase the score to CFS 3
A person who isn't bothered by symptoms and whose condition(s) doesn't limit their lives can be CFS 1 or 2 if they're active and independent.

#7 Don't forget "vulnerable" (CFS 4)
People in this category are not dependent (though they may need assistance with heavy housework), but often complain of "slowing down". They're becoming sedentary, with poor symptom control.

#8 Dementia doesn't limit use of the CFS
Decline in function in people living with dementia follows a pattern similar to frailty: mild, moderate and severe dementia generally map to CFS 5, 6 and 7 respectively. If you don't know the stage of dementia, follow the standard CFS scoring.

#9 Drill down into changes in function
When considering more complex activities of daily living (such as cooking, managing finances, and running the home) the focus is on *change* in function. A person who has always relied on someone else to perform a particular activity should not be considered dependent for that activity if they've never had to do it before and may not know how.

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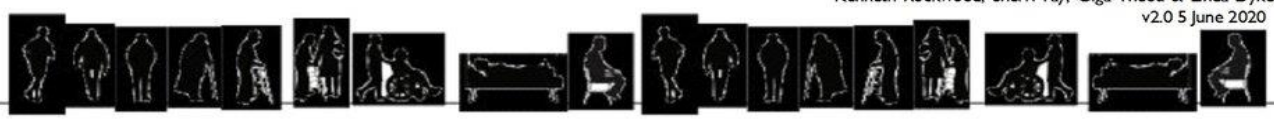

Appendix 2 – 7 Steps approach to polypharmacy review

Step 1: (Aim) - What matters to the patient?
- Identify aims and objectives of drug therapy by asking the patient what matters to you?
- Explain any key information such as laboratory markers
- Establish treatment objectives with the patient through shared decision making

Step 2: (Need) - Identify essential drug therapy.
- Separate the list of medicines which the patient is taking
- Ensure the patient understands the importance of essential drug therapy
- All medication whether herbal, prescribed or traditional remedies should be included

Step 3: (Need) - Does the patient take unnecessary drug therapy?
- For the remaining drugs, it should be verified that each has a function in achieving the therapeutic goals or outcomes that matter most to the patient
- Review preventative treatment to ensure the patient is able to continue taking medicine for required time to gain benefit (Drug Efficacy (NNT) table).
- Can lifestyle changes replace any unnecessary drug therapy?

Step 4: (Effectiveness) - Are therapeutic objectives being achieved?
- Check treatment choice is the most effective to achieve intended outcomes
- If this is not the case, the possibility of patient non-adherence should be investigated as a potential explanation. Otherwise, the need for dose titration may also be considered. 50% of patients taking four or more medicines don't take them as prescribed (Medication Adherence: WHO Cares?).

Step 5: (Safety) - Is the patient at risk of ADRs or suffers actual ADRs?
- The presence of ADRs can sometimes be identified from laboratory data (e.g. hypokalaemia from diuretic use)
- The patient may report such symptoms (including drug-drug and drug-disease interactions, but also the patient's ability to self-medicate)
- Ask the patient specific questions (e.g. about the presence of anticholinergic symptoms, dizziness or drowsiness). If patient is experiencing ADRs, use Yellow Card Reporting

Step 6: (Efficiency) - Is drug therapy cost-effective?
- Opportunities for cost minimisation should be explored, but changing drugs for cost reasons should only be considered if effectiveness, safety or adherence would not be comprised
- Ensure prescribing is in line with current formulary recommendations

Step 7: (Patient-centred) Is the patient willing and able to take drug therapy as intended?
- Does the patient understand the outcome of the review?
- Ensure drug therapy is tailored to patient preferences
- Agree and communicate plan with patient and/or welfare proxy
- Even if adult lacks capacity, adults with Incapacity Act still requires that the adult's views are sought. Ensure "Adults with Incapacity Documentation" in place.

Appendix 3 - Members of SLWG

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Specialist Interest Groups contacted for comments

NHS GGC Frailty and Falls Steering Group

NHS GGC Falls Steering Group

NHS GGC Diabetes MCN

NHS GGC Heart MCN

NHS GGC Pain MCN

NHS GGC Respiratory MCN

NHS GGC Osteoporosis Group

Prescribing Management Group – Mental Health

NHS GGC Pharmacy Care Homes Group

NHS GGC Prescribing Support Dieticians

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