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PrescQIPP Community Interest Company

Ensuring appropriate polypharmacy: Patients with frailty or moving towards end of life care

This bulletin considers the challenges of prescribing for patients with increasing frailty and those moving towards end of life care. It highlights the need to ensure that any polypharmacy is appropriate and identifies the risks of problematic polypharmacy. Evidence based tools are suggested to support the review process. Actions that health care professionals can take to minimise use of medicines adversely affecting these vulnerable patient groups are described. Polypharmacy can play an important role in increasing a person's life expectancy and quality of life, this needs to be balanced with any potential harms of medicines and the risks of non-adherence.

A briefing, training modules, audit, frailty referral checklist, case studies, a quiz and patient information leaflet are also available at: https://www.prescqipp.info/polypharmacy-deprescribing-webkit

Recommendations

- Older people should be assessed for the possible presence of changing frailty at each encounter with health or social care professionals.
- Consider frailty in younger patients, particularly those with multiple co-morbidities.
- Care is needed in prescribing for people with increasing frailty, due to potential physiological changes leading to a decrease in the function of various organ systems that may adversely affect the metabolism of medicines.
- Think about the harm to benefit profile of each medicine.
- Personalised medication reviews should be undertaken more regularly for patients with frailty, using evidence based review tools, e.g. PrescQIPP IMPACT tool, STOPP/START, Beers, or the NO TEARS tool.
- Ensure appropriate polypharmacy as patients move towards end of life.
- Practices should have a palliative care register that includes patients with increasing frailty.
- One clinician, or one clinical team, should take responsibility for all medicines a patient takes.

Background

There is an increasing recognition that older age itself should not mean that a patient has frailty, nor should it be a specific focus for holistic medication review. Instead, a more individualised approach is recommended. Frailty was thought to be irreversible, but this is not always the case, e.g. successful surgery may change the diagnosis. Many older people might not be frail (up to 75% of over 85 year olds), whilst younger people, often with an increasing prevalence of multiple-morbidities, may present with frailty. Frailty is a disorder of multiple inter-related physiological systems, with a rapid decline in physiological reserve and where homeostatic mechanisms start failing.[1]

It is now accepted that end of life care has extended beyond anticipatory prescribing for patients with cancer, to those living longer and who may have very complex health needs at this time. This includes the

challenges of prescribing for very elderly patients and those of all ages with frailty and/or multiple co-morbidities. Managing the last few months of life has become more complicated, demanding more time and input from the multidisciplinary team.[2]

Frailty

Defined in the Gold Standards Framework (GSF) as:[2]

Individuals who present with multiple co-morbidities with significant impairment in day-to-day living and:

- Deteriorating functional score (e.g. performance status such as described in the Barthel index for assessing activities of daily living (ADL), including bathing, dressing, coping with stairs,[3] Eastern Cooperative Oncology Group (ECOG) (score of 0 for fully active people through to 5 at death) or Karnofksy which measures performance status from 100 as fully active to 0 at death.[4] Although these scores were developed for specific conditions they can all be used to assess patients with suspected frailty.
- Plus a combination of at least three of the following symptoms:
  - Weakness
  - Slow walking speed
  - Significant weight loss
  - Exhaustion
  - Low physical activity
  - Depression.

A best practice statement from the British Geriatrics Society notes that:

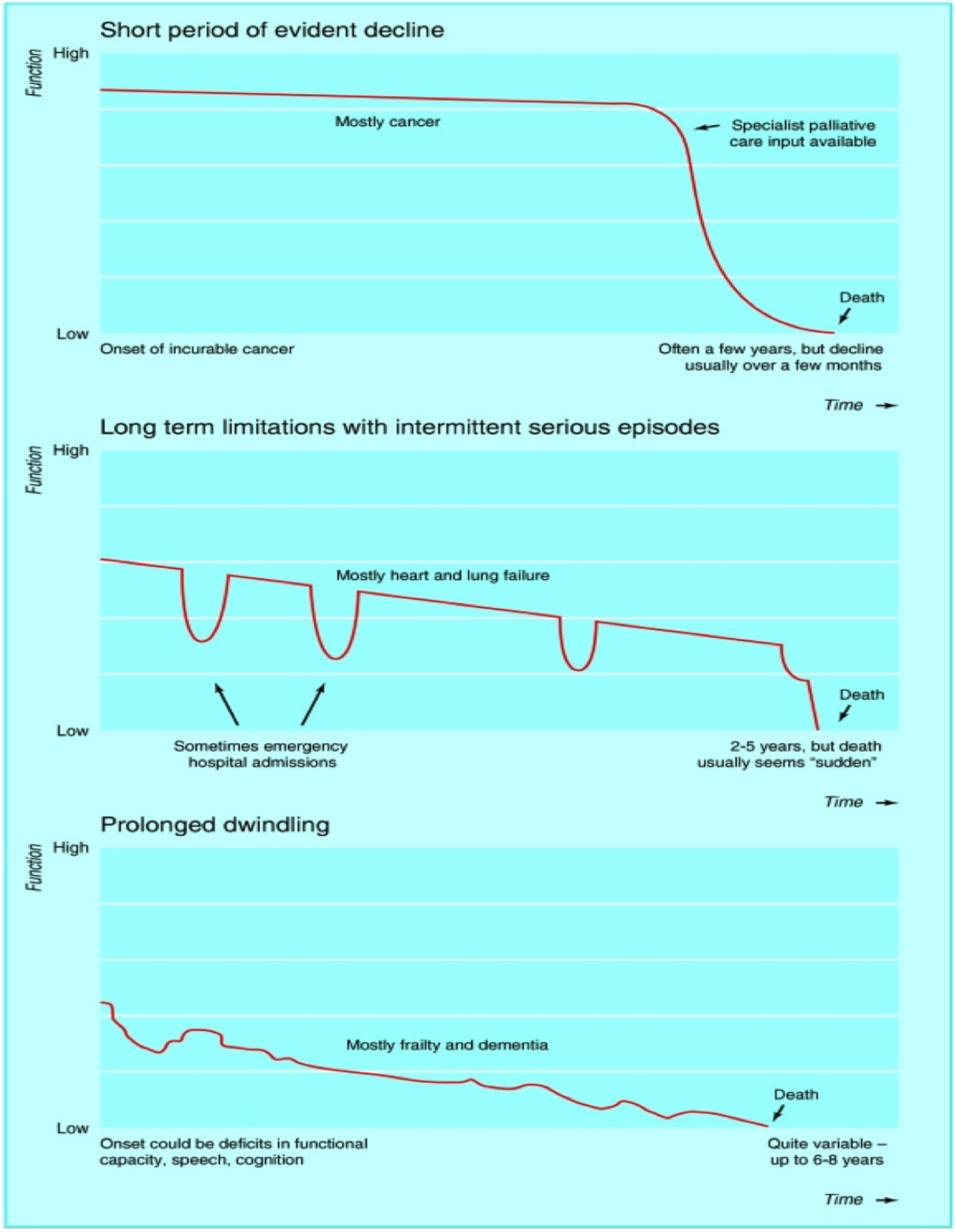
'Frailty is a clinically recognised state of increased vulnerability. It results from ageing associated with a cumulative decline in the body's physical and psychological reserves. Frailty varies in its severity and individuals should not be labelled as being frail or not frail, but simply that they have frailty. It should be recognised as a long term condition'.[5]

The degree of frailty of an individual is not static; it naturally varies over time and can become better or worse; this may also lead to the need for end of life care. Personalised care is essential, physical exercise and maintaining a healthy diet can help to prevent and minimise the impact of frailty.[6]

Increasing frailty can result in potentially inappropriate polypharmacy, leading to multiple hospital admissions, each resulting in a decline in function and the ability to continue an independent life. Adults who have increased frailty lack the reserve to deal with adverse events. Even minor physical and mental stressors, e.g. adding a new medicine (increased susceptibility to side effects or reduced metabolism), a urinary tract infection, minor surgery or a fall, can have a dramatic and disproportionate impact on their health, from which they may never fully recover (see diagram 1, page 3).[7] Reliance on health and social care interventions increases significantly.[2,6]

There are many opportunities to achieve the best possible quality of life for people with frailty, the balance of vulnerability and resilience impact on this, including medication and medicines use reviews to reduce any inappropriate polypharmacy. The 'frailty fulcrum' is an animated model for frailty that has been developed with these opportunities in mind.[8]

Diagram 1



Typical illness trajectories for people with progressive chronic illness. Adapted from Lynn and Adamson, 2003.[7] With permission from RAND Corporation, Santa Monica, California.

Risk (harm) to benefit profile

Consider the balance for each medicine, people with frailty are at particular risk of:

- Adverse drug reactions (ADRs), often due to physiological changes.
- Drug:drug interactions.
- Rapid deterioration if essential medication is not optimised, e.g. for replacement therapy, such as thyroxine, or for the treatment of heart failure or Parkinson's disease.[9]

Risk of guidelines

Guidelines are unlikely to take the presence or absence of frailty into account when making recommendations. They often only consider single pathologies, whereas many people may have multiple co-morbidities, making prescribing challenging. Hence the need to individualise the interpretation of national guidelines for single, long term conditions (LTCs) in the context of multi-morbidity in general, and in patients with frailty in particular.[10] NICE are currently developing a multimorbidity guideline.[11]

Medicines likely to cause adverse drug reactions in patients with frailty[6,9,10,12]

These medicines require more frequent review than usual and include:

- Non-steroidal anti-inflammatory drugs (NSAIDs).
- Diuretics.
- Angiotensin-converting enzyme (ACE) inhibitors (but these may be appropriate in heart failure)[5].
- Angiotensin II receptor blockers (ARBs).
- Beta blockers.
- Medicines that affect the central nervous system, e.g. antidepressants (particularly tricyclic antidepressants), antipsychotics, benzodiazepines, opioids and other analgesics.
- Dihydropyridines, e.g. nifedipine.
- Digoxin in doses over 125 micrograms daily.
- Anticholinergics.
- Phenothiazines, e.g. prochlorperazine.

Conversely some drugs, which would offer symptomatic benefit, are omitted. This is because of concerns about use in frailty, when with careful monitoring they would be safe to use, e.g. ACE inhibitors in heart failure.[5]

Medication review

More frequent reviews are recommended for patients with frailty. Healthcare providers can use one of the evidence based tools, e.g. the STOPP/START Guidelines,[13] Beers criteria,[14] NO TEARS,[15] or the PrescQIPP IMPACT document[16] to help in the evaluation of medicine safety, particularly in older patients. They can be used for any patient with frailty, particularly where there is polypharmacy. The criteria in each tool should not serve as a substitute for professional judgement. The information presented in each tool should serve only as a guide, with care tailored to each individual patient's needs.

Physiological changes

With ageing the metabolism of medicines may change. If renal and/or hepatic function decline, dose or frequency adjustments may be needed.[8] It should be remembered that this is individually variable.[17]

Deprescribing in frailty and end of life

Consider stopping preventative chronic disease medication at end of life, e.g. statins, warfarin for atrial fibrillation, sedatives and antihypertensives. In the discussion with the patient, include the potential impact on desired long term outcomes for them.[6] Any potentially inappropriate polypharmacy should be reduced.[16]

Principles of deprescribing to improve the risk to benefit profile:

- Review all current medicines.
- Plan deprescribing in partnership and agreement with the patient (and carer if needed).
- Identify any medicines that can be stopped, substituted or the dose reduced.
- Offer frequent reviews and support for the patient from a healthcare professional.
- Ensure dose optimisation to reduce 'pill burden', i.e. number of medicines taken.

End of life care

Approximately 1% of the population die each year; therefore in an average-sized GP's list of around 2,000 patients, about 20 will be coming towards the end of their life.[2] Care has extended beyond anticipatory prescribing for patients with cancer (only 25% of all deaths) to those with other diagnoses who are living longer and may have very complex health needs at this time, demanding more time and input from the multidisciplinary team.

The General Medical Council, the Department of Health NHS End of life care strategy and the National Institute for Health and Care Excellence (NICE) define patients approaching the end of life when they are likely to die within the next 12 months.[18-20] Therefore end of life includes not only patients whose death is imminent (expected within a few hours or days), but also those with:

- Advanced, progressive and incurable conditions.
- General frailty and co-existing conditions that mean they are expected to die within 12 months.
- Existing conditions, if they are at risk of dying from a sudden acute crisis in their condition.
- Life-threatening acute conditions caused by sudden catastrophic events.

Life expectancy and prescribing

The simple question: "Would I be surprised if this person were to die in the next 12 months?" ('The surprise' question) is accurate seven times out of ten.[2]

If a patient is moving towards end of life consider the harm to benefit profile of each medicine. It may not be appropriate to start some medicines, or to continue others. The aim of the PrescQIPP Improving Medicines and Polypharmacy Appropriateness Clinical Tool (IMPACT) is to help prescribers understand which medicines should be continued and those that can be considered for stopping at this time.[16] If using the principles of the Ensuring Appropriate Polypharmacy Tool (page 8), this will already have been discussed with patients (and possibly their carers) so should not come as a surprise; both starting and stopping medicines, ideally as a trial, will have already been fully considered as a partnership.

The value of advance care planning (ACP) for these patients is increasingly recognised, but brings more challenges to consider what might happen and how to deal with it, as well as working with families and their expectations. The Gold Standards Framework (GSF) provides a validated foundation for delivering quality end-of-life care.[21] The potential for inappropriate polypharmacy should always be considered and the medicines that need to be continued identified.[16]

Patients, particularly older people and those with multiple co-morbidities, are often prescribed too many medicines from too many specialists who don't work as a team or consider the whole person. Clinicians may work in isolation, ideally one clinician should take overall responsibility for a patient's medicines. This is particularly important at end of life and should usually be their GP.[22]

Pharmacological care for adults in the last few days of life

NICE published the first evidence-based guideline for the NHS to consider and improve the clinical care for adults in the last days of life (judged by the multi-professional clinical team to be within a few (two to three) days of death).[23] This is different from other NHS initiatives labelled 'end of life care' which are aimed at improving care for people in the last year or so of a chronic condition.

The NICE guideline suggests pharmacological care should be considered, with shared decision making communicated to patients (and sometimes their carers), far earlier than the last few days of life. This is especially the case for those in a gradual decline.

When it is recognised that a person may be entering the last days of life, the NICE guideline recommends reviewing their current medicines. After discussion and agreement with the dying person (and their carers as appropriate), stop any previously prescribed medicines that are not providing symptomatic benefit, or that may be causing harm.

Patients may be taking medicines for long-term conditions, when they reach the last days of their life, they might not need to keep taking them all, especially if the medicine isn't helping them to stay comfortable. Their doctor should talk with them about which medicines they might stop taking that may no longer be helpful.[23]

Quality and Outcomes Framework (QoF) Palliative Care Register

Identifying patients is key to developing a Palliative Care Register, which forms part of the QOF palliative care points in the GMS contract.[24]

The National Primary Care Snapshot Audit (2010) in England[25] demonstrated three key findings:

- Only about 25% of patients who died were included on the GP's Palliative Care/GSF register.
- Only 25% of these had non-cancer conditions.
- Most importantly, those patients identified early and included on the register received better quality, coordinated care.

The outcomes of the audit support the need for earlier recognition and identification of people nearing the end of life where possible, i.e. the 1% of the population who die each year. It also recommends greater representation of patients with non-cancer, organ failure, and those with frailty and dementia, including those from care homes, should be included in the register.

Costs and potential savings

Possible savings will depend on your baseline and the change in culture and practice locally; the following points highlight the current national problem:

- 5-8% of unplanned, emergency hospital admissions are due to adverse reactions to medicines (ADRs); up to two thirds of these are preventable.[26] In 2007 the NPSA estimated the cost of medication safety incidents to the NHS as £770 million.[27]
- 20% of patients re-admitted to hospital within 1 year of discharge from their index admission are re-admitted due to an ADR, with risk factors highlighted as admission to a medical ward, elderly age and prescription of anti-platelet agents or diuretics; up to 50% of these reactions were possibly avoidable.[28]

It is estimated that 30-50% of medicines prescribed for long term conditions are not taken as anticipated, resulting in the loss in health gain of billions of pounds.[29]

Many patients newly started on a chronic medication quickly become non-adherent. Ten days after starting a medicine, 30% of patients are already non-adherent, of these 55% don't realise they are not taking their medicines correctly. Only 16% of patients who are prescribed a new medicine are taking it as prescribed, experiencing no problems and receiving as much information as they need.[30]

In primary care, wasted medicines are estimated to cost at least £300 million per year, of which half is avoidable;[31,32] the reasons behind this need to be explored.

Polypharmacy reviews can be expected to deliver long-term direct reductions, e.g. cost of medicines prescribed and less waste, and indirect economic benefits. For example a patient stabilised on fewer medicines will potentially require less contact with health professionals. They may also require fewer unscheduled hospital admissions due to ADRs. In Scotland in 2015, the expected health economic impacts of polypharmacy reviews in the older population, including those in care homes, estimated overall savings in the range of £3.7m and £10m. For the upper estimate this includes: medication change; switching to more cost-effective drugs and cost-avoidance measures using the base-case of £90 per medication stopped.[9] The cost of staff to implement reviews needs to be considered; it is estimated a maximum of £5.4m to achieve the higher savings. This is based on: assessment by the pharmacist, consultation with the GP and pharmacist, and follow-up by the nurse or pharmacist.

Summary

- Older people should be assessed for the possible presence of changing frailty at all encounters with health or social care professionals, however up to 75% of all over 85 year olds are physiologically well and frailty is not an inevitable part of ageing. Younger patients, particularly those with multiple co-morbidities, may also have frailty.
- Prescribing in people with increasing frailty needs particular attention due to potential physiological changes; consider the harm to benefit profile of each medicine.
- Conduct personalised medication reviews more regularly than normal for patients with frailty, taking into account the number and type of medicines they are prescribed or may buy, using an evidence based review tool.
- Ensure appropriate polypharmacy towards the end of life, deprescribing should not be a surprise to either a patient or their carer, who will be informed partners in the process. Patients may be taking medicines for long-term conditions, when they reach the last months of their life, if the medicine isn't helping them to stay comfortable, they are unhappy with their pill burden (medicine) or the time to reach benefit is many years ahead, deprescribing may be appropriate.[33]

Ensuring appropriate polypharmacy tool

This tool has been designed to support decision making at different stages of the prescribing and medication review. Considerations for each stage are listed and as this resource is further developed will be supported by decision aids and e-learning. The 2015 NHS Scotland Polypharmacy Guidance and the 2014 All Wales Medicines Strategy Group Polypharmacy: guidance for prescribing also offer definitions, examples and guidance to support the headings in this tool.

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Before initial treatment

Consider:

- Life expectancy
- Frailty
- Time to benefit
- Net benefit
- Magnitude of benefit
- Risk vs. benefit

Agree treatment targets with patient and/or carer

Examples include:

- Primary prevention
- Symptom control for acute problems
- Outcome expected
- Stopping criteria
- Required tests

Consider alternative approaches

Consider:

- Lifestyle change(s)
- Self care (OTC medicines)
- Non-pharmacological options

Agree time period of treatment(s)

Discuss:

- Defined short period with action plan
- Expected outcomes
- Continuation criteria
- Stopping criteria
- Refer to community pharmacy New Medicines Service (NMS)

Planned re-assessment and Medication Review

- Assess outcomes vs. expectations
- Continuing response to treatment
- Compliance with dose and frequency
- Dose titration (up or down)
- Change in frailty
- Defined treatment period reached
- Condition resolved

Agree continuing treatment

Defined period with review plan

Discuss:

- Expected outcomes
- Continuation criteria
- Stopping criteria
- Need for tests and frequency

Transferring to End of Life Care

- Evaluate benefit to the patient of current medications
- Discuss revised treatment objectives with patient and/or carers
- Exception reporting

Benefit not achieved
Risk increases or benefit decreases
Adverse event
Defined treatment period reached
Condition resolved

- Stop medicine and remove to history
- Withdraw (possibly re-introduce if non delivery of benefit is due to external factors)

Discuss treatment options with patient and/or carers

- Prescribe an alternative if available
- Non-pharmacological alternatives
- Coping strategies
- No further treatment options

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Additional PrescQIPP resources

Briefing

Implementation resources and training materials

Available here: https://www.prescqipp.info/resources/category/299-polypharmacy-frailty

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