You've just arrived to clinic, and you see your first patient of the morning is Betty. She is 71 years old, born and raised in the local community on a farm where she still works, and doesn't shy away from speaking her mind, which you love.

She is a robust human aside from recently diagnosed afib for which she is on anticoagulation and calcium channel blocker for rate control, allopurinol for her gout and a medication for anxiety as well as a 'sleeping' pill.

Objective One:
In the elderly patient taking multiple medications, avoid polypharmacy by:
• monitoring side effects.
• periodically reviewing medication (e.g., is the medication still indicated, is the dosage appropriate).
• monitoring for interactions.

There's no official standard for what 'polypharmacy' is, but we know that the more medications an older adult is taking, the more likely they are to experience adverse events as a result of their medications.

We also know that up to 40% of adult Canadians over 65 years, take 5-9 medications. And almost 20% take 10 or more. There are numerous risks that come with polypharmacy:

- More adverse drug reactions including side effects
- More drug interactions
- Higher cost for both the patient and the system
- Greater risk of non-adherence
- More likely to have medication errors
- More risk of worsening geriatric syndromes:
    - falls,
    - functional impairment,
    - cognitive impairment,
    - urinary incontinence,
    - impaired nutrition,
    - dehydration,
    - constipation

Betty is currently on five medications, but is this polypharmacy?

There is a great primer presentation from the Regional Geriatric Program of Toronto that we will link to, and includes the following approach.

<u>Assess Polypharmacy Risk</u>
Your radar should be up that your patient is at risk for polypharmacy if they have:

1. multiple medical issues requiring multiple medications

2. chronic organ dysfunction, such as renal impairment
   and
3. frailty, or acute illness requiring changes to medications

Annual Medication Review for all older (>65) adults

There are two well known resources available to you here, the Beer's list and the STOPP/START lists:

1. Beer's list
   The Beer's list was produced by Dr Mark Beers and colleagues. It's a consensus list of medications that are inappropriate for long-term care facility residents. Each has a related grade of 'A' to avoid in most elderly. 'C' to use with Caution, and 'H' is high risk in the elderly.

   Many warnings are listed for their: Risk of orthostasis, risk of SIADH such as from many antidepressants, and the anticholinergic effects from antipsychotics and antihistamines.
   We will of course link to this list in the shownotes.
   https://www.pharmacyquality.com/wp-content/uploads/2019/05/Beers-List-350301.pdf
2. STOPP/START
   The STOPP list is of medications that are potentially inappropriate for your elderly patient, categorized by body system affected.
   While the START list is for meds that should be considered for these folks, where there is no contraindication otherwise.

These lists of course can be helpful both when first prescribing for your elderly patient, but also when reviewing their medications annually, or reviewing as a result of changes in their quality of life.

Inform Caregivers of any Medication Changes

This helps to recognize any problems as early as possible and empowers any primary caregivers, including if it is the patient themselves, to be part of their medical care.
Of course if your patient has some memory issues, this should be a safety step to ensure the plan is communicated to those who need to know. That may include homecare or another provider.

Choose Medications with fewer side effects

This is covered by the two common lists that we discussed when reviewing before initiating, or annually.

But we should keep in mind that elderly patients are prone to some common geriatric presentations that can actually be a result of their medications, not just plain old effects of aging:

Table 3. Common Geriatric Presentations That Can Be Caused by Drugs

Signs or Symptoms	Common Drug-Related Causes
Falls	Sedatives, hypnotics, anticholinergics, antihypertensives, antidepressants, antidiabetics[10,42,43]
Cognitive impairment	Anticholinergics, benzodiazepines, antihistamines, tricyclic antidepressants[44,45]
Incontinence	Alpha-blockers, antidepressants, sedatives (eg, benzodiazepines), diuretics[46]
Constipation	Anticholinergics, opioids, tricyclic antidepressants, calcium channel blockers, calcium supplements[47]
Delirium	Antidepressants, antipsychotics, antiepileptics[48]
Diarrhea	Antibiotics, proton pump inhibitors, allopurinol, selective serotonin reuptake inhibitors, angiotensin II receptor blockers, psycholeptics (anxiolytics, antipsychotics)[49]
Gastrointestinal bleeding	Nonsteroidal anti-inflammatory drugs, oral anticoagulants[50]

Stop unnecessary Medications

This is accomplished by regularly doing medication reviews with your elderly patients. Discussing why they are taking a particular medication, and is it still needed?

Consider Medication Impact on their quality of life

Often medications layer onto more medications making things like dry mouth, or lightheadness worse.

Or long term medications mix with the effects of aging and these side effects seem to spring up spontaneously. If they could probably do with a slightly higher sBP in return for less dizzy spells, this could improve life for them quite a bit.

Consider patients ability to take medications

Swallowing difficulties?

Would they benefit from blister packs?

Consider whether there will be a benefit from preventative medications, or whether these should be stopped.

As alluded to, less stringent goals for blood pressure or glycemic control may have quality of life benefits by avoiding the risks like falls or hypoglycemia. However, also consider whether your patient is likely to live long enough to see the benefits from tight control of these things. Your perfectly healthy 75 year old with elevated cholesterol may see the benefit of being on a statin, but your other patient that's the same age but with a life limiting condition may not.

So looking at Betty with this approach, you note she does have multiple conditions requiring medications, but she doesn't have any chronic organ failure, and kidneys were last checked 3 months ago and looked good, and no new acute illnesses. You checked her meds against the Beer's list:

- *You're a kick-ass physician so you have her on Apixaban instead of Warfarin and Beer's only notes risk if her renal function goes below 25 mL/min.*
- *The Calcium channel blocker is listed as 'A' to avoid in the context of HFrEF. Betty has never shown any signs of HF, with good exercise tolerance, no fluid on the lungs or pedal oedema, so you decide to watch this closely in case.*
- *For the gout, her colchicine comes with multiple side effects if her renal function goes below 30, and they recommend corticosteroids as an alternate in this case. The allopurinol is not on the Beer's list and she is happy with the reduced flares since starting this, so you continue this*
- *Her anxiety med is Escitalopram, and there is a generic risk of SIADH, and anticholinergic effects*
- *Her sleeping pill is a carry over from her previous GP and is zopiclone. On Beer's this comes with similar warnings to benzodiazepines A/H avoid and high risk.*

Nonbenzodiazepine, benzodiazepine receptor agonists ("Z drugs;" eszopiclone, zopiclone[a] [Canada], zolpidem, zaleplon [U.S.]) (**A**, **H**)	Same concerns as for benzodiazepines. Unfavorable risk/benefit ratio for insomnia.	Of special concern in patient with **dementia**, **cognitive impairment**, **delirium** or **high risk of delirium**, or history of **falls** or **fractures**. Avoid combining with two or more other CNS-active drugs (fall risk). Consider reducing other concomitant medication(s) that can cause falls. Employ fall-prevention strategies. Consider nonpharmacologic interventions.[5] To help explain these to patients, use our patient education handout, *Strategies for a Good Night's Sleep*. Failing this, consider melatonin.[13]

More

you make a reminder for yourself to discuss sleep hygiene and alternate options with her at the next visit and asking around memory, delirium, falls and fractures.

Objective Two:
In the elderly patient, actively inquire about non-prescription medication use (e.g., herbal medicines, cough drops, over-the-counter drugs, vitamins).

This means asking them at each review appointment if they have started taking any supplements, herbals, vitamins.

In 2017 a systematic review was performed and included 22 studies that reported concurrent use of prescription medicines with herbal medicinal products in adults 65 years and older, they found the most commonly used were "Ginkgo biloba, garlic, ginseng, St John's wort, Echinacea, saw palmetto, evening primrose oil and ginger."

They noted that "potential risks of bleeding due to the use of Ginkgo biloba, garlic or ginseng with aspirin or warfarin was the most reported herb-drug interaction. Some data suggest being female, and having a lower household income and less than a high-school education were associated with concurrent use."
https://pubmed.ncbi.nlm.nih.gov/29196903/

Why don't we cover some particulars about why we might care about the top couple of them here:

- Ginko Biloba
  Often used for dementia, or memory enhancement based on mixed and inconsistent data. Any effect seen seems to disappear with higher quality studies.

    - A relative contraindication is with bleeding disorders, or those on anticoagulants or chronic NSAIDs. Of course in this same wheelhouse consider discontinuation perioperatively as well.

      Additionally note is made of theoretical MAOi potentiation, and so caution with concomitant SSRI use is suggested.

      Also, due to case reports of seizure, it should be avoided with seizure disorders.

- Garlic https://www.nccih.nih.gov/health/garlic
  Most often used by patients and marketed for the purported cardiovascular benefits such as hypertension and dyslipidemia.

  There is limited evidence that it 'may' provide some reduction in LDL for those it is elevated in. Though the effect is quite small and can take 8 weeks to see.
  It does not appear to elevate HDL levels.
  It also has similarly limited evidence for blood pressure management.

    - Safety
      The main one here again appears to be bleeding risk. They recommend caution if you are taking an anticoagulant, or if going for surgery.

    - Side Effects
      Bad breath, body odour, heartburn, stomach upset

Lexicomp, if you or your institution have a subscription, also offers an interaction checker tool if you're concerned about specific herbs and medications.

The main takeaway here is to make you aware of some particulars of the three most commonly used supplements or herbs in the elderly, and what to watch for. It is also to ensure you ask about these things so that you can actually have this discussion and help to avoid side effects or interactions for these patients.

It's also important to advise them about the lack of regulation on many of these products to illustrate that they likely are not actually getting the dosage listed on the bottle.

This is a great prompt for you to ask Betty about whether she is taking any supplements like this. She admits she normally does not, but her daughter was suggesting she take Ginko daily for the past few months to ward off memory loss.

You're very glad you asked given she is on a blood thinner for her AFib, she is quite happy to hold off on continuing the Ginko.

Objective Three:
In the elderly patient, screen for modifiable risk factors (e.g., visual disturbance, impaired hearing) to promote safety and prolong independence.

More tools from the Toronto organization referenced earlier. They have a handy pocket guide that actually comes from the University of Buffalo.

They recommend screening vision with:

- one quick question "do you have difficulty driving, watching TV, reading or doing your daily activities because of your eyesight?
- If yes to this question, check with a Snellen chart, and then
- a glance at the pupil to assess for leukocoria, aka a white pupil, which would suggest the presence of cataracts, which of course are readily removed.

For hearing:

- Look in the ears, ask them about hearing aid use.
- Get audiometry if you think there is hearing loss, and with this info consider if ENT needs to be involved.

Betty jokes she might have 'selective hearing' with her husband, but otherwise no concerns driving including the tractor and she's been good about wearing ear protection when running the lounder farm equipment.

She notes the same for her vision, no concerns. You glance briefly at her eyes anyways and see no evidence of leukocoria with a nice red reflex bilaterally.

VISION

Visual loss in the elderly can lead to depression, and social isolation, and may precipitate falls.

1. Ask: "Do you have difficulty driving or watching TV, or reading, or doing your daily activities because of your eyesight?" If yes →→ Snellen chart
2. Check for cataract using beam of light (white lens {leukocoria} will replace the red reflex)

HEARING

Hearing loss in the elderly can lead to depression, social isolation, and disrupted communication.

1. Check both ear canals for wax using an otoscope
2. Ask about the use of hearing aids
3. Use audioscope set at 40 dB; use 1000 & 2000 Hz. Abnormal if unable to hear either frequency in both ears, or unable to hear frequencies in both ears
4. Assess the need for ENT referral

FUNCTIONAL STATUS

1. Does the patient use an assisting device (walker, cane) for ambulation?
2. Ask about a fall in the past year
3. "Get Up & Go Test" →→ Ask the patient to rise from hard-back chair, walk 10 feet (3 meters), turn, walk back to chair, & sit down. Increased risk of falls if unable to complete task in 10 seconds.

URINARY INCONTINENCE

1. Ask: "In the past year, have you lost urine and gotten wet?"

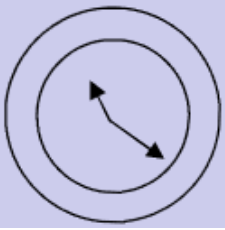
NUTRITION

1. Ask: "Have you lost 10 pounds over the past 6 months without trying to do so?"
2. Weight < 100 pounds? Positive Predictive Value = 0.99 for malnutrition

MEMORY

Undiagnosed cognitive impairment can result in mismanagement of associated comorbidity, depression, and family and caregiver stress. Overlooking this diagnosis can lead to missed opportunities for early treatment, and delays in recruitment of supportive community services.

1. One-minute three-item recall (ex: ball, flag, pen)
2. Clock-Draw Test (CDT): Ask patient to place numbers over clock face & set time at 20 after 11. SCORING: 3-item recall = 0, or 3-item recall = 1-2 + abnormal CDT →→ probable dementia. 3-item recall = 3, or 3-item recall = 1-2 + normal CDT →→ dementia unlikely.



https://pogoe.org/sites/default/files/geriatric_screening_pocket_guide_front.pdf

Objective Four:
In the elderly patient, assess functional status to:
• anticipate and discuss the eventual need for changes in the living environment.
• ensure that social support is adequate.

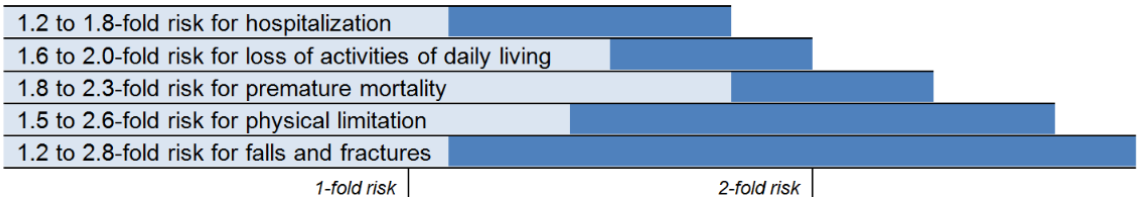
It's important to recognize that screening of everyone over 65 is NOT recommended to assess for function. However, if there are prompts that make you worry, then it is

recommended, such as accessing more and more social resources or supports, recent falls and hospitalizations, etc.

And why do we want to identify which of our patients are frail or becoming frail?

Because they are at increased risk for hospitalizations, loss of ADLs, premature mortality etc.

Figure 2: Increased risk of negative outcomes associated with frailty[13]



The gold standard is a Comprehensive Geriatric Assessment, but these are resource intensive and generally done by our fantastic colleagues who specialize in this area. For us, a few areas of screening are more reasonable.

Part of the importance of this is trajectory. As GPs we have the ability to add value of longitudinal assessments. A good record will allow you to catch any loss of function and get them the support they need before it becomes an issue.

So how do we assess function (and standardize our record of it) in the elderly patient?
A commonly used and validated tool for persons over 65 is the clinical frailty score. We've attached an image of this scale in the shownotes.

If you have some reading time, the Canadian Geriatrics Journal published a guideline on how to use the frailty score in a clinical setting
https://cgjonline.ca/index.php/cgj/article/view/463/577

the generEAList

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.

DALHOUSIE UNIVERSITY

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

Luckily they also produced a Ten Top Tips document to help guide appropriate usage of the frailty scale for your elderly patients, a version of which we will link to from Dalhousie University.

important to note that this is NOT validated for persons under 65 years old, even if living with a disability

CCFP Topic: Elderly

the generEAList

#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.

Kenneth Rockwood, Sherri Fay, Olga Theou & Linda Dykes
v2.0 5 June 2020

The previous chart we discussed in Objective Three actually also has a quick and dirty for assessing functional status in these folks and it looks like:

- Do they use a device to help with ambulation, such as a cane or a walker?
- Ask if they have had any falls in the past year
- And perform the 'get up and go' test. This is done by:
    - Timing how long it takes them to i) get up from the chair ii) walk 3 metres away iii) return to the chair and sit down
    - Anything longer than 10 seconds is considered deficient

Of course we're all familiar with the ADLs and iADLs and so won't review them here, just to prompt remember DEATH SHAFT, but these should be reviewed with your elderly patients on a regular basis to help identify any loss of function over time.

CCFP Topic: Elderly

For Cognitive function the BC Guidelines suggests starting with the clock drawing test ensuring they can:

- Draw the circle correctly
- Place all twelve numbers
- Space the numbers appropriately
- Put the hands at the suggested time correctly

If any difficulties with this you can plan to have them do either a MoCA or MMSE, and you'll want to review Delirium by going back and listening again to our prior episode on this.

Those are the biggies to screen for in your patient with symptoms of frailty: cognition, mobility, ADLs and iADLs, vision and hearing. But they do suggest a few other areas you should consider screening for your elderly patient with signs of frailty in the categories of medical, psychological, functional, social, support and safety:

Medical

Immunizations: considering annual influenza and pneumococcal vaccine, herpes zoster and Tetanus booster. We can also add COVID vaccinations and booster to this now.

Habits:

- Smoking
- Alcohol use
- Other substance use
- Sexual function

Nutrition

- Diet and appetite
- Weight loss
- Obesity
- Dentition
- Swallowing difficulties

Bowel and Bladder

- Any incontinence of either
- Constipation or diarrhoea

Pain

Psychological/Psychiatric

On top of cognition, we need to screen our frail elderly patients for mental health concerns

- Depression
- Anxiety
- Sleep issues

Functional

Falls:

- Fall history
- Fall prevention
- Osteoporosis
- Drugs that can increase risk of falls

Physical activity:

- They should still be encouraged to aim for moderate-vigorous activity on a daily basis

Social

- Hobbies and interests
- Social opportunities
- Spiritual needs
- Isolation or loneliness

Support

- Caregiver stress
- Needs and access to formal support
- Informal support from friends and family

Safety

- Feels safe at home
- Signs of elder abuse
- Financial or legal worries
- Medical equipment and supplies available at home

You ask Betty about her ADLs and iADLs she laughs and says her grandkids are a bit lazy so maybe I should ask them about their function, but that she is still working every day. She admits it takes her a little longer, but she is spreading hay, and feeding the cows just like she ever has. You laugh with her, and plant the seed to make her feel comfortable telling you if anything does change.

Objective Five:
In older patients with diseases prone to atypical presentation, do not exclude these diseases without a thorough assessment (e.g., pneumonia, appendicitis, depression).

Pneumonia

On necropsy reviews, pneumonia was found to be the most frequently missed diagnosis in the elderly. This may be a result of elderly patients showing significantly fewer symptoms with community-acquired pneumonia. This includes less cough, dyspnoea, chills, chest pain, headache myalgia. In the elderly patient, TACHYPNEA with or without shortness of breath was the most reliable sign of an acute pulmonary condition. In fact, the only signs you might get are:

- Altered mental status, confusion, or a sudden decline in functional status with pneumonia in the elderly.

A 2016 paper from Canadian Geriatrics journal postulated a number of reasons why the aging body seems to be more predisposed to pneumonia:

- Decreased chest wall expansion and decreased cough reflex
- Decreased alveolar elasticity
- And increased functional residual capacity, causing collapse of the small airways and resulting air trapping

https://canadiangeriatrics.ca/wp-content/uploads/2016/11/Atypical-Manifestations-of-Medical-Conditions.pdf

*its worth mentioning that specific signs and symptoms of infection are just less evident in the elderly population in general, and you might only get general history and exam items like: fatigue, falls, altered mentation, anorexia, incontinence and the like**

Appendicitis

A very recent paper in September 2021 reviewed the literature around appendicitis in the elderly. They found that instances of **complicated** appendicitis increased with age with good correlation.

A review of the Alvorado score https://www.mdcalc.com/alvarado-score-acute-appendicitis did find that it was useful in the elderly, but recommended increasing the cutoff score up to five in this population.

Similar to pneumonia, the specific signs we sometimes look for may be less pronounced with the researchers finding "Elderly patients may not have conclusive clinical signs of acute appendicitis, but signs of peritonitis—abdominal distention, reduced abdominal wall movement, severe tenderness, localized and generalized guarding—are more pronounced"

Depression

Of course we won't recap Depression again, you can review the Depression episode for that.

The fantastic Regional Geriatric Program of Toronto resources simply advise that aside from the usual features of depression we expect to find "Older adults are more likely to report physical symptoms than report feeling sad or "blue", (e.g. may report aches, pain, and discomfort even though they are being treated for those symptoms)."

https://www.rgptoronto.ca/wp-content/uploads/2020/06/Mental-Illness-and-Dementia-Guide-2nd-ed-Spreads-Digital-1.pdf

Resources Used

- https://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/geriatric-medicine
- https://choosingwiselycanada.org/geriatrics/
- https://canadiem.org/approach-to-geriatric-patients/
- https://caep.ca/wp-content/uploads/2016/03/geri_ed_guidelines_caep_endorsed.pdf
- https://www.rgptoronto.ca/wp-content/uploads/2019/07/sfCare-Learning-Series-Polypharmacy-Intro-for-Clinicians.pptx
- https://www.rgptoronto.ca/wp-content/uploads/2018/11/SF7-Toolkit-Polypharmacy.pdf
- https://canadiangeriatrics.ca/wp-content/uploads/2016/11/Polypharmacy-Optimizing-Medication-use-in-Elderly-Patients.pdf

- https://www2.gov.bc.ca/assets/gov/health/practitioner-pro/bc-guidelines/frailty-full_guideline.pdf