



# Identifying the Unique Needs of the Aging Population

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## 2.1 Are Older Adults Really Different? Why Geriatric Medicine?

Should there be a field of geriatrics? Are older adults really that different from younger adults? There was a time when children were regarded, medically, as “little adults,” and the field of pediatrics did not exist. Gradually, there was recognition that children suffered from different diseases, had different problems, and needed a different approach than adults, and finally by the 1930s, the specialty of pediatrics was established. The same had been said about the care of the older patient. For many years, the care of the older adult was not felt to be so different from that of younger adults, and many questioned the need for a separate specialty of geriatric medicine. Over several decades, the contributions of researchers in *gerontology* (the multidisciplinary study of aging) and *geriatrics* (the study of health and disease in later life) left no doubt that the care of the older adult was a distinctive specialty. By the late 1970s, the field of geriatrics was established as a specialty of medicine. However, unlike pediatrics, geriatrics is not yet a mandatory part of medical training in the United States at most institutions.

Unfortunately, in part due to the lack of required teaching in geriatric medicine in many health professional training programs, many students find their first experiences caring for complex older patients to be overwhelming [1]. In fact, such experiences can result in negative attitudes toward the older patient and a desire to avoid having to care for such patients [1, 2]. However, studies have shown that if a trainee learns how to manage these patients, the care of the older patient can be seen not as overwhelming but rewarding [3]. The remainder this book will teach you how the care of the older patient is different and some approaches to help you when you encounter an older patient in your future practice of medicine.

Let’s preview some of what you’ll learn in this book by going over some of the following 15 aphorisms which many geriatricians use in their teaching and highlight some of what you will learn in more detail in this book.

### Care of the Older Patient: 15 Pearls of Wisdom

1. If You’ve Seen One 80-Year-Old, You’ve Seen One 80-Year-Old
2. Aging Is Not a Disease
3. It Takes a Lot of Energy to Tread Water!
4. The Atypical Presentation of Illness Is Typical
5. A Patient May Have as Many Diseases as He Pleases
6. A Single Presenting Symptom May Have Many Contributing Etiologies
7. Multifactorial Syndromes Need Multifactorial Solutions
8. Watch Them Walk!
9. Start Low, Go Slow... But Get There!
10. You Can Cure More Diseases by Stopping Medicines than by Starting Them

11. It Takes a Village
12. Hazards of Hospitalization: You Can Win the Battle but Lose the War
13. Transitions Are the Danger Zone
14. Screen the Strong and Will the Weak
15. Death and Dying Are Not 4-Letter Words

## 2.2 “If You’ve Seen One 80-Year-Old, You’ve Seen One 80-Year-Old”

There are varying definitions of what age delineates “younger” and “older” adults. In the United States, due to the age, a person qualifies for Medicare insurance coverage; the age 65 has often been used as an arbitrary dividing line defining “geriatric.” However, there are substantial differences between the average 65-year-old and average 85-year-old. Many geriatricians split the age over 65 group into two and define these as “young-old” and “old-old,” often with age 80 or 85 as the dividing line between these two groups. The “old-old” group is particularly vulnerable to frailty. One of the most striking features of taking care of a group of older patients is how much heterogeneity there is compared to a population of younger patients. For example, an 80-year-old patient you see could be in perfect health, on no medications, and still working. The next 80-year-old patient you see could be in a nursing home, completely dependent on care due to a stroke, and on multiple medications. This heterogeneity is the norm in geriatric medicine, and decisions must be made taking into account patient preferences, goals of care, life expectancy, functional status, and degree of frailty. Frailty can be defined as a condition of increased vulnerability to adverse outcomes from stressors due to the decline in physiologic reserves [4]. Frailty is often associated with weight loss, weakness (measured by grip strength), exhaustion, poor endurance, slowness (measured by gait speed), and low physical activity [4].

## 2.3 “Aging Is Not a Disease”

Aging by itself is not a disease. In ► Chap. 4, we will review some of the changes which occur with aging in all of the organ systems. In addition to these changes affecting how you interpret findings on history, physical exam, imaging, and labs, these changes significantly affect the older patient’s ability to respond to illness and stressors and maintain homeostasis. Unfortunately, many older patients will underreport symptoms thinking they are just a part of getting older rather than a disease that could be intervened upon. Urinary incontinence and cognitive problems such as dementia are two examples of common diseases in older patients that are not a normal part of aging as you will learn about in ► Sects. 2.3 and 2.5.

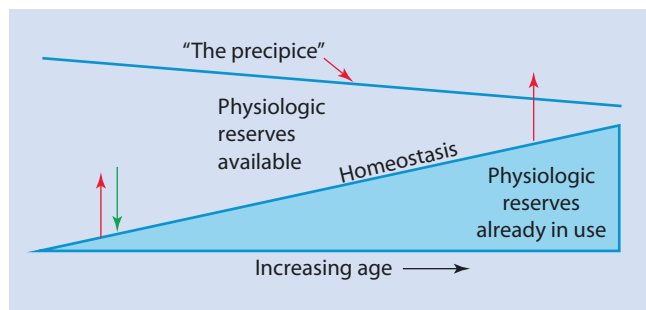


Fig. 2.1 Homeostenosis module. (Modified from Taffet [20])

## 2.4 “It Takes a Lot of Energy to Tread Water!”

When treading water in a pool, it takes considerable effort and energy expenditure just to stay afloat and remain in one place. Similarly, the maintenance of homeostasis requires more and more use of our physiological reserves as we age due to the cumulative effects of aging. This means that there is a decrease in the physiological reserves that are available to respond to a given stressor. This process is called *homeostenosis*, as illustrated in Fig. 2.1. The “precipice” in the figure is the point beyond which an individual is in physiologic “trouble,” has major symptoms, or dies. For example, a woman may have a urinary tract infection at age 25 which affects her homeostasis (depicted by the first red arrow), but since she has ample physiologic reserves she is able to fight the infection and return to homeostasis (depicted by the green arrow down) without any major symptoms other than dysuria affecting her. At age 85, the same woman can have the same urinary tract infection with the same organism, but due to homeostenosis, end up severely ill, delirious, and be admitted to the hospital, having crossed the “precipice” (second red arrow in the figure below) due to lack of available physiologic reserves.

## 2.5 “The Atypical Presentation of Illness Is Typical”

Indeed, due to these changes of aging, the classic or “text-book” illness presentation you may have learned is often not how the older person will present with a disease. For example, it is quite common for the 90-year-old nursing home resident to have only altered mental status as the presenting symptom of pneumonia rather than the classic pneumonia symptoms of fever and cough. This non-classic presentation of pneumonia has clinical implications, as failure to recognize that the cause of the patient’s altered mental status is pneumonia results in delayed time to antibiotics in the emergency room or inpatient setting, which is associated with worse outcomes, including increased mortality [5]. Indeed, the “atypical” presentation of diseases is so typical that many geriatricians teach that the “atypical presentation of illness is typical.” Due to this fact, providers must take careful and comprehensive histories and physical exams when an older

person presents with a symptom, especially when delayed diagnosis may substantially affect morbidity or mortality, such as infection, myocardial infarction, or stroke.

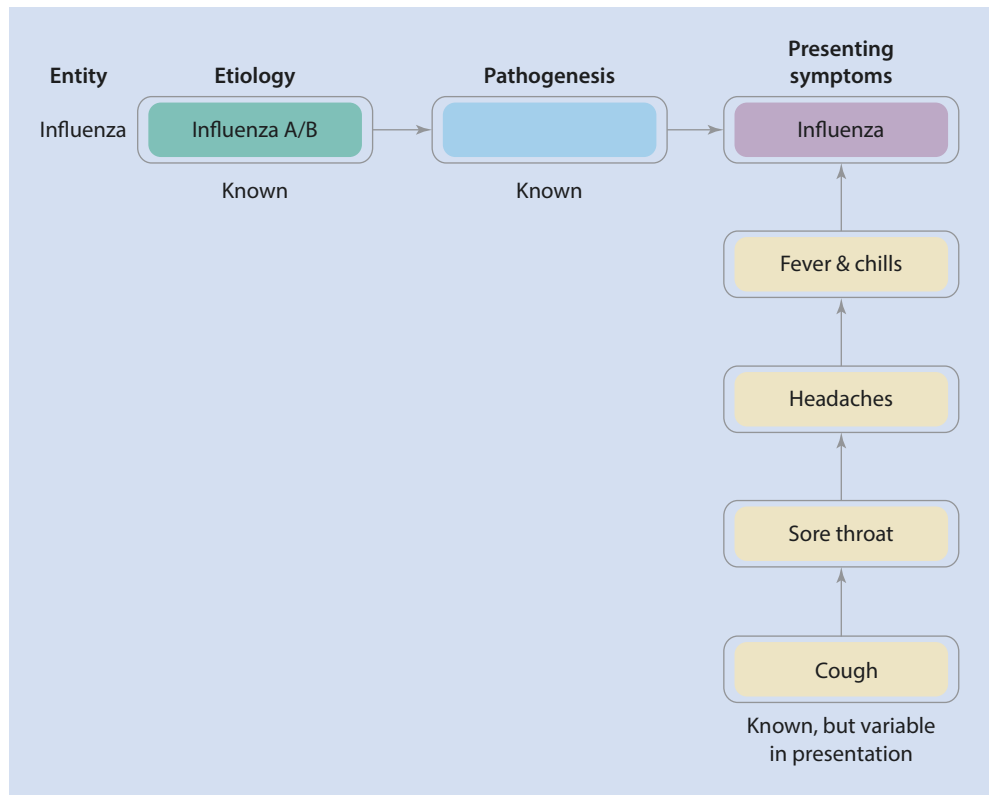
## 2.6 “A Patient May Have as Many Diseases as He or She Pleases”

The clinical reasoning espoused by Dr. William Osler and in traditional teaching of clinical reasoning is to take all of a patient’s signs and symptoms and try to come up with a single unifying diagnosis. This is called *Occam’s razor* or “the simplest explanation is the likely correct explanation.” Although there is utility to this type of clinical reasoning in making diagnoses, this “diagnostic parsimony” can often cause problems in older patients due to the fact that older patients often have multiple chronic diseases, a condition called “multimorbidity” which we will discuss in Sect. 2.3. For some older patients, *Hickam’s Dictum* that “a patient may have as many diseases as he damn well pleases” is more appropriate [6] as it is quite common for the ill older person to have multiple diseases simultaneously or that one acute illness can cause worsening of the patient’s chronic diseases. For example, an 85-year-old patient may come to the hospital with a severe pneumonia, but due to his preexisting coronary artery disease, he may have a myocardial infarction during the hospitalization caused by hypotension from the pneumonia. The heart attack may be missed as the patient may have only worsening shortness of breath as a symptom (not have chest pain), and this symptom could be mistakenly attributed to the pneumonia. Indeed, this has been shown in the literature, with ~20% of older patients admitted for pneumonia at one hospital suffering either a myocardial infarction, congestive heart failure exacerbation, or new-onset arrhythmia during a pneumonia hospitalization [7].

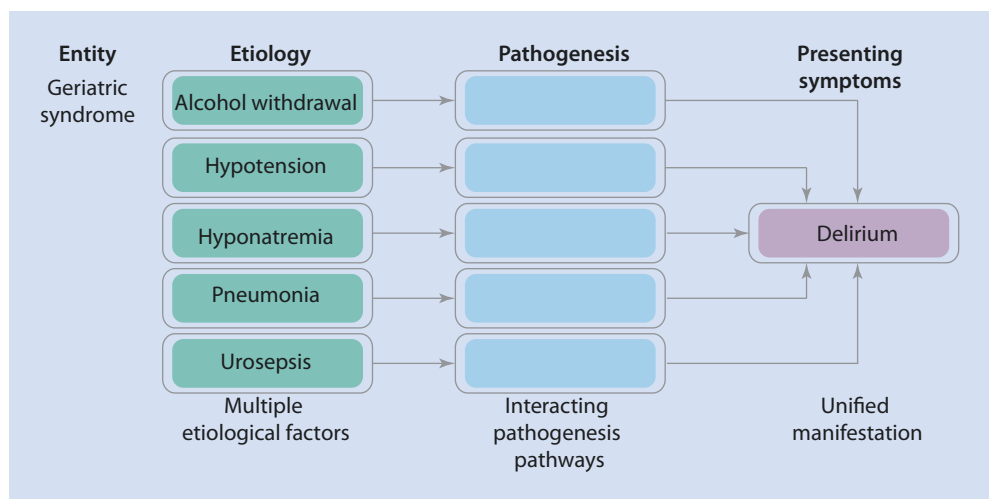
## 2.7 A Presenting Symptom May Have Many Contributing Etiologies: The Geriatric Syndrome

In addition to the possibility that the patient may have a few simultaneous illnesses, the older patient often presents with only one problem, but this problem may actually have multiple causes. These types of conditions are called *geriatric syndromes*. In a typical disease, such as influenza (see Fig. 2.2), there are a constellation of signs and symptoms which all have one underlying etiology with a known pathogenesis. In contrast, with geriatrics syndromes, just one presenting symptom, such as delirium (see Fig. 2.3), may be due to many possible etiologies, including the possibility that a patient could have two or more causes which may be interacting with one another to result in the final symptom of delirium. The approach to a patient with a geriatric syndrome presentation such as delirium or falls should be one which evaluates for multiple precipitating and predisposing factors as we will discuss in Sects. 2.5 and 2.6.

**Fig. 2.2** Classic disease orientation presentation of an illness



**Fig. 2.3** Geriatric syndrome



### 2.8 “Multifactorial Syndromes Need Multifactorial Solutions”

If a patient has a multifactorial geriatric syndrome, such as falls, it is unlikely that addressing just one contributing factor will be successful. Multifactorial etiologies need to be addressed by a multifaceted approach or the solution may not be effective. For example, for interventions to help nursing home patients with recurrent falls, a meta-analysis showed that multifactorial interventions significantly reduced falls by 33% and number of recurrent fallers by 21%, whereas single-intervention-type trials which addressed just one cause or risk factor for falling did not reduce falls [8].

Another example is delirium in hospitalized inpatients. As will be discussed in ▶ Sect. 2.5, delirium can be prevented in hospitalized older patients with multifactorial interventions which include addressing sleep, hydration, immobility, and visual/hearing impairment all at the same time [9].

### 2.9 “Watch Them Walk!”

Maintenance of independence and function is a key goal of the aging patient. For this reason, assessment of functional status and mobility is very important. Two simple tests can be very helpful. The Timed Get-Up-and-Go test involves

watching a patient get up from a chair to a standing position and then walking 3 meters and sitting back down. The second test is measurement of the person's gait speed. Decreased gait speed is a marker of frailty and has been correlated with increased perioperative mortality after cardiac surgery [10]. Simple gait speed measurements can help surgeons make decisions about who might be too frail for an operation and help patients make informed decisions about the risk for elective, non-emergent surgeries. Poor performance on the Get-Up-And-Go test can identify those who are frail and those who are at risk for falls and also has been correlated with risk for functional decline after an emergency room visit [11–13]. The importance of functional assessment, self-care ability, and assessment of home safety will be discussed in ► Sect. 2.6.

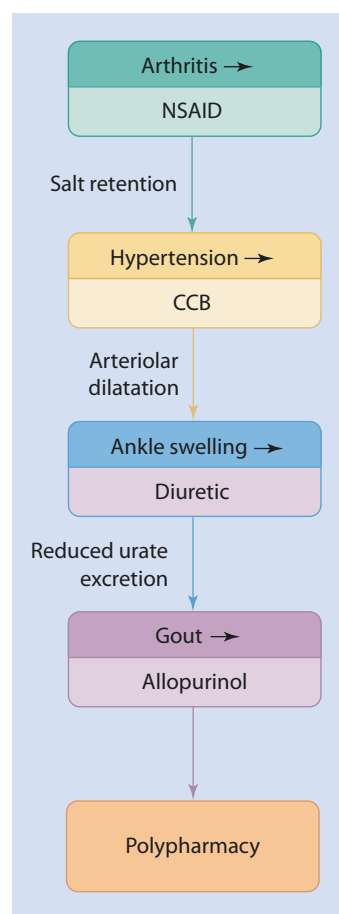
### 2.10 “Start Low, Go Slow.... But Get There!”

When starting a new medication, this adage is a good one to follow. When starting a patient on medications such as thyroid hormone or warfarin, it is better to start at a lower dose and monitor frequently until therapeutic range has been achieved. The traditional starting dose may be too high for the older patient with decreased renal function and altered body composition and volume of distribution of drug, as will be discussed in ► Sect. 2.6.

### 2.11 “You Can Cure More Diseases by Stopping Medicines than by Starting Them”

This adage is a bit of an overstatement, but it is true that polypharmacy and medication side effects are common problems for the older patient, as will be reviewed in ► Sect. 2.4. It is important to carefully review all of the medications a patient takes, including over-the-counter medications and supplements. It is estimated that one-third of all older patients have polypharmacy (are on 5 or more prescription medications) and about two-thirds are on 5 or more medications of all types (prescription/over-the-counter/supplements). In a nationally representative sample, about 15% of the adults were on medication combinations with the potential for a major drug-drug interaction [14]. Older adults have over three times as many emergency room visits as the general population for adverse drug events, with common medications such as diabetes medications and anticoagulants as the main offenders [15, 16]. Of course, many of these medications are indicated and beneficial. However, others can cause side effects or may have been started to treat the side effects of another medication (called the “prescribing cascade”).

■ Figure 2.4 shows an example of this in which a patient is started on a non-steroidal anti-inflammatory drug (NSAID) for arthritis, which causes salt retention and worsening blood pressure. A calcium-channel blocker (CCB) is then added which then causes the patient to have ankle swelling and edema, for which a diuretic is started. This results in



■ Fig. 2.4 The prescribing cascade (NSAID non-steroidal anti-inflammatory drug, CCB calcium-channel blocker)

increased uric acid level and episodes of gout, and eventually, the patient ends up on allopurinol.

In other cases, a medication may be a poor choice for the altered physiology of the older patient. For example, use of a long-acting sulfonylurea such as glyburide should not be used due to the significantly increased risk for hypoglycemia compared to a shorter half-life medication such as glipizide. Sometimes, appropriate medications or medication doses can become inappropriate as the patient ages. For example, a patient may have needed digoxin 0.25 mg (a high dose), but after as the patient's renal function declines over time, the patient can become toxic on this medicine without dose adjustment. Careful medication “deprescribing” or “medication debridement” can often help the older patient. Use of non-pharmacologic measures to treat common geriatric problems, such as insomnia and urinary incontinence, can also help to reduce polypharmacy and medication side effects by avoiding medication initiation in the first place.

### 2.12 “It Takes a Village”

Care of a complex, frail, geriatric patient almost never can be done successfully without an interdisciplinary approach. This interdisciplinary approach has been at the heart of

geriatrics since its inception. In addition to physicians in other specialties, geriatricians often work with nurses, social workers, pharmacists, physical therapists, occupational therapists, speech therapists, care coordinators, home health aides, hospice workers, dietitians, and others to provide for the care needs of the older patient. Some older patients will end up moving from their homes to assisted living facilities or nursing homes for ongoing care. It is very important to work with the interdisciplinary teams at these institutions to provide the optimal care for your patient as will be discussed in ► Sects. 2.8 and 2.9.

### 2.13 “Hazards of Hospitalization: You Can Win the Battle but Lose the War”

Hospitalization has long been recognized as a particularly dangerous period for the older patient [17]. Take, for example, a 95-year-old patient with hip fracture. Unfortunately, although the medical team may be successful in “winning the battle” by successfully fixing the patient’s hip fracture, the functional decline caused by bedrest and immobility may result in “losing the war” and a downward spiral of debility and dependency from which the patient may never recover, in spite of the primary problem being fixed. In ► Sect. 2.8, we will discuss some of the hazards of hospitalization such as pressure ulcers and use of physical and pharmacological restraints. Methods to reduce or prevent some of the risks of hospitalization will be discussed along with care models to avoid hospitalization in the first place, such as hospital-in-home.

### 2.14 “Transitions Are the Danger Zone”

A time of particular vulnerability for the older patient is when the patient changes sites of care, such as upon discharge from the hospital. The older patient often faces many changes in location of care. For example, after a hospitalization, a patient may experience significant loss of function and go to a subacute rehabilitation facility before being able to go back home. In ► Sects. 2.8 and 2.9, you will learn how to help patients navigate these transitions, including the importance of discharge planning and medication reconciliation during care transitions.

### 2.15 “Screen the Strong and Will the Weak”

The approach to the preventative care and decision making about invasive interventions may not differ that much from younger patients when the older patient is in good health, has good functional status, and is not frail. For example, a top-quartile 80-year-old male has an average life expectancy of greater than 10 years, and so a procedure such as a screening colonoscopy or elective knee replacement surgery would be reasonable and likely well-tolerated. In contrast, a bottom-quartile 80-year-old male has a life expectancy of

about 3 years, and so cancer screening or an elective procedure could result in significant harm [18]. When caring for a frail older patient with limited life expectancy, it is more important to discuss goals of care, advance care planning, and patient preferences about the intensity of medical intervention he or she would like.

### 2.16 “Death and Dying Are Not 4-letter Words”

Geriatric medicine also includes caring for patients who are nearing the end of life. Doing so in a skilled way can result in the patient experiencing end-of-life without unwanted aggressive interventions or needless suffering. This requires those caring for the older patient to be comfortable addressing goals of care, prognostication, and skill at transitioning the patient from preventative or curative intent care to care focused on the patient’s symptoms and quality of life. As will be discussed in ► Sect. 2.10, in addition to addressing medical problems and physical pain, the holistic care of the patient’s psychological, social, and spiritual needs is required to help patients achieve a “good death.” Finally, the older person is often cared for by others in his/her last years, and addressing the needs and expectations of family and caregivers is a key skill in the care of the geriatric patient as caregiver burnout can adversely affect the patient.

### 2.17 Geriatric Practice: Mastering Subtlety and Complexity

Geriatricians have been described as masters of subtlety and complexity who work in interdisciplinary teams to care for older patients by respecting and addressing the physical, social, and psychological factors to make them unique individuals [19]. You too can provide such competent and masterful care of the older patient you encounter in your practice by using the approaches discussed in this book and remembering some of the key “pearls of geriatric wisdom” described in this chapter.

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