



Preparing for the Boom:

Is your Medical Management Program Primed
for America's Aging Workforce?



While research around the evolution of the American workforce age demonstrates that older adults often have an overall lower rate of job-related injuries, many employers are beginning to experience the early trends of a growing number of employees choosing to stay in the workforce well beyond the traditional Social Security retirement age of 66 years and two months¹. The maturing American workforce is making this decision for a myriad of centralized reasons: first, a greater number of older employees today hold advanced degrees and have overall better education than previous generations of employees. Therefore, working adults are more likely to stay in the workforce in order to realize their full professional and economic goals. Secondly, with overall advancements in healthcare, aging employees of today are healthier than earlier generations, and to that end, congruently, life expectancies are also expanding². Thirdly, another key contributing factor to the trend keeping older employees in the workforce longer are changes to Social Security benefits and employees' retirement needs to address the advancing life expectancies, thereby greater financial resources are required to maintain lifestyles for longer periods of time.

As of June 2019, the U.S. Census Bureau reported that the median age in the United States increased to 38.2 years of age in 2018. This is up from 37.2 years in 2010, a nearly 3% increase over an eight year period. The share of the U.S. population age 65 years and older was 16% in 2018, growing by 3.2% as compared to the year 2017 and continues to climb. Moreover, the

percentage of individuals age 65 years and older of our population has increased by an astounding 30.2% since 2010. In contrast, during the same period, the under 18 population has declined by 1.1%.

The Bureau of Labor and Statistics defines "labor force participation" as the percent of civilian non-industrial population, 16 years or older, that is working or actively looking for work. The labor force participation rate of the oldest age groups, 65 to 74 years of age and 75 years or older, have steadily increased since 1995 from a rate of 30%, followed by a peak in 2012 at 40.5%, and declined slightly to 40% in 2016. Notably, the overall labor force participation rate is projected to decline over the next decade as mature labor force participants begin to move into older age categories with lower participation rates as the population naturally ages through attrition³.

By the year 2024, the Bureau of Labor Statistics (BLS) expects that the labor force will grow to about 164 million. This includes approximately 41 million people who will be age 55 years and older, approximately 25% of the labor force of whom, 13 million individuals are expected to be 65 years and older in age or nearly 8%. In fact, the age groups between 65 to 74 years and 75 years and older are expected to have the fastest rates of growth annually than any other age groups. Of note, these increases are being fueled by "baby boomers," those individuals born between 1946 and 1964². It is important to point out that in just 10 years' time, during the year 2030, all Baby Boomers will be older than 65 years of age, making up 21% of the U.S. population, up from 15% in 2018.

¹National Academy of Social Insurance, What is the Social Security Retirement Age on the Internet at <https://www.nasi.org/learn/socialsecurity/retirement-age> (visited on October 23, 2019) Bureau of Labor and Statistics, U.S. Department of Labor, Monthly Labor Review, Toossi, M. (2002) A Century of Change: The U.S. Labor Force, 1950-2050 on the Internet at <https://www.bls.gov/opub/mlr/2002/05/art2full.pdf> (visited October 22, 2019) The U.S. Bureau of Labor Statistics, U.S. Department of Labor, Spotlight on Statistics, Toossi, M (2016), A Look At The Future Of The U.S. Labor Force to 2060 on the Internet at <https://www.bls.gov/spotlight/2016/a-look-at-the-future-of-the-us-labor-force-to-2060/home.htm> (visited October 10, 2019)
²Bureau of Labor Statistics, U.S. Department of Labor, The Economics Daily, Labor force participation rate for workers age 75 and older projected to be over 10 percent by 2026 on the Internet at <https://www.bls.gov/opub/ted/2019/labor-force-participation-rate-for-workers-age-75-and-older-projected-to-be-over-10-percent-by-2026.htm> (visited October 22, 2019). United States Census Bureau, The Graying of America: More Older Adults Thank Kids By 2035 on the Internet at <https://www.census.gov/library/stories/2018/03/graying-america.html> (visited October 22, 2019)

The below chart from the Bureau of Labor and Statistics details the projected trends of the labor force participation rates out to the year 2026⁴:

Civilian labor force participation rate by age, 1996, 2006, 2016, and projected 2026				
Age group	1996	2006	2016	Projected 2026
Total, 16 years & older	66.8%	66.2%	62.8%	61.0%
16 to 19	52.3	43.7	35.2	31.7
20 to 24	76.8	74.6	70.5	68.8
25 to 34	84.1	83.0	81.6	81.8
35 to 44	84.8	83.8	82.4	82.3
45 to 54	82.1	81.9	80.0	80.7
55 to 64	57.9	63.7	64.1	66.6
65 to 74	17.5	23.6	26.8	30.2
75 and older	4.7	6.4	8.4	10.8

As depicted above, by the year 2026, individuals aged 65 to 74 are projected to represent 30.2% of the labor force, up 3.4% as compared to 2016 and the age group 75 and older alone is projected to represent 10.8% of the labor force, which is also estimated to increase by 2.6% as compared to the year 2016.

Expanding further, by the year 2030, the U.S. Census Bureau projects that one in five citizens, or 20% of the U.S. population, will be over the age of 65. By the year 2060, one in four, or 25% of the population, will be 65 years and older. During this same time, the number of individuals age 85 and older will triple and the country is expected to add a half million centenarians (individuals aged 100 years and older) to the population.

The pillar graph on page three generated by the U.S. Census Bureau depicts the projected changes of the U.S. population shifts over a century's time, from 1960

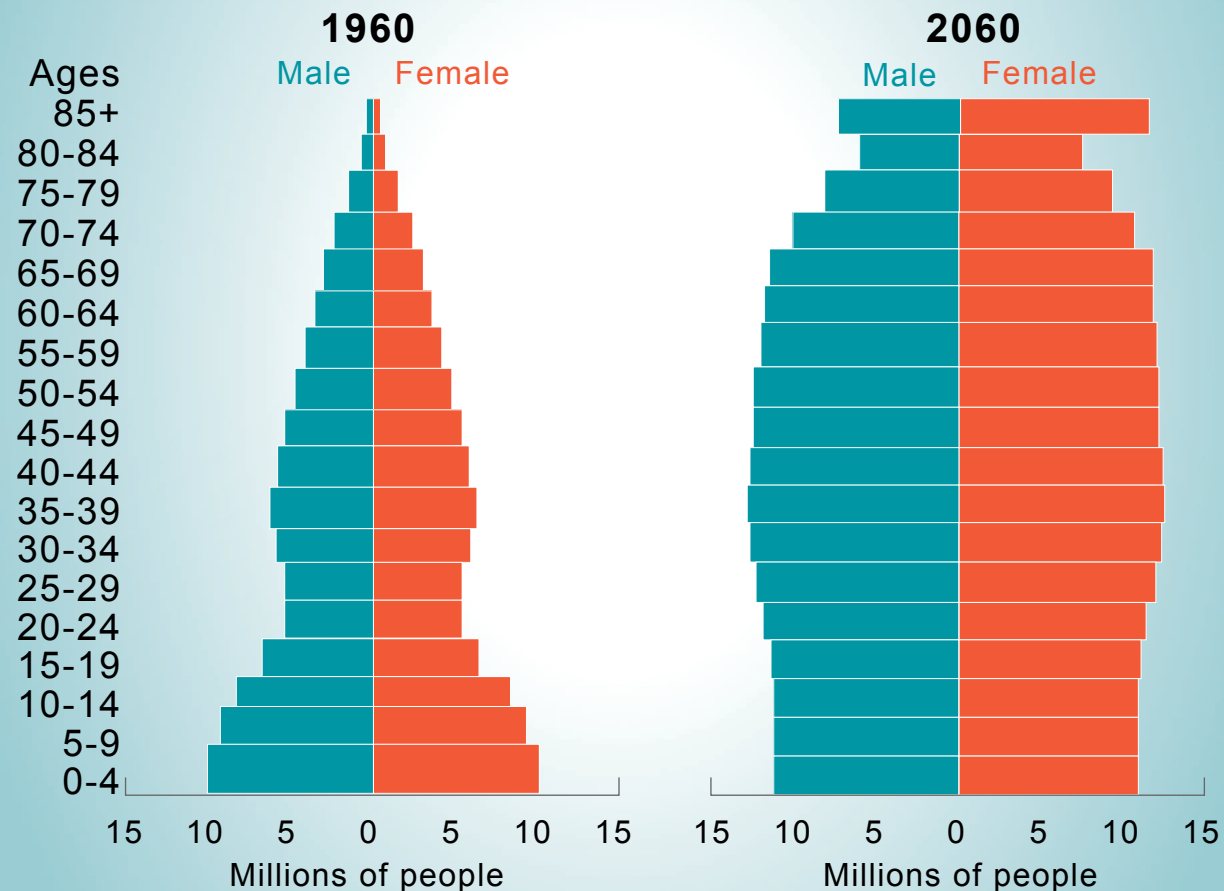
through 2060⁵. As projected in 2017, for the first time in America's history, the number of citizens aged 65 years and older will outnumber those 18 years and younger by the year 2035. While declining fertility rates in the child-bearing age individuals are having a direct impact on America's aging population, the advancing age of baby boomers is causing the greatest influence. Japan, the world's oldest population, began to experience similar shifts in population age nearly 10 years ago, and today and for years to come, their populace is expected to decline by tens of millions of individuals annually.

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³The U.S. Bureau of Labor Statistics, U.S. Department of Labor, Spotlight on Statistics, Toossi, M (2016), A Look At The Future Of The U.S. Labor Force to 2060 on the Internet at <https://www.bls.gov/spotlight/2016/a-look-at-the-future-of-the-us-labor-force-to-2060/home.htm> (visited October 10, 2019)
⁴Bureau of Labor Statistics, U.S. Department of Labor, The Economics Daily, Labor force participation rate for workers age 75 and older projected to be over 10 percent by 2026 on the Internet at <https://www.bls.gov/opub/ted/2019/labor-force-participation-rate-for-workers-age-75-and-older-projected-to-be-over-10-percent-by-2026.htm> (visited October 22, 2019).
⁵United States Census Bureau, The Graying of America: More Older Adults Thank Kids By 2035 on the Internet at <https://www.census.gov/library/stories/2018/03/graying-america.html> (visited October 22, 2019)

From Pyramid to Pillar: A Century of Change

Population of the United States



United States™
Census
Bureau

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
[census.gov](https://www.census.gov)

Source: National Population Projections, 2017
www.census.gov/programs-surveys/popproj.html

As these expected trends begin to unfold in America, how should employers prepare for this **shift in population** and workforce age?

How are the **needs of an aging workforce** varied from a younger population?

What can be done to better position an employer for the **onslaught of this unique labor force**?

As mentioned at the outset, while it should be reassuring to know that older adults often have lower overall rates of job-related injuries, often linked to the fact that these employees are generally in less hazardous work settings as compared to younger adults. Unfortunately, when older adults do experience a work-related injury, this population tends to experience higher levels of injury severity and increased rates of fatal injuries on the job. For non-fatal injuries, older adults tend to have slower rates of recovery and longer delays in returning to work, thereby increasing potential indemnity and medical expenses for employers.

Healthcare concerns unique to individuals 65 years and older include⁶:

- Exacerbating common chronic conditions including arthritis, cancer, heart disease and diabetes
- Increase vulnerability and susceptibility to broken bones during a slip, trip, or fall
- Greater likelihood of contracting pneumonia as a consequence of influenza
- Increased limitations in performing activities of daily living (ADL's) as compared to younger adults due to higher rates of physical and cognitive disabilities.
- Greater consumption of prescription medications, which may contribute to adverse side effects potentially precipitating a workplace injury
- Increased use of hospital, home health and ambulatory services as compared to younger workers

Across the myMatrixx book of business, injured employees between the age of 55 and over 65 represent 40.8% of all patients. Within the 55-64 patient population, the prescription cost per patient averages \$1,663 and for those age 65 years and older, the cost per patient was \$2,592 in 2019. These figures, as compared to younger injured employees is significantly higher, for example, as compared to the prescription cost per patient for the patient population age 45-54, prescription costs were nearly 50% higher, which represents an average cost of more than \$1,300 per patient in the age cohort of 65 and older. Similarly, the average prescription cost for patients between the ages of 55 to 64 are 30% higher than the next youngest cohort age grouping, those individuals between 45 to 54 years of age. Even more staggering are these differences as compared to the prescription costs of the youngest working populations; patients age 19-24 cost per prescription in 2019 was \$268, those age 25-34 were \$424, and patients 35-44 cost per prescription was \$791.

Also impacting employers' total pharmacy spend across all groups, particularly for employees between the ages of 55 to 64 and 65 to 74, is the growing use and cost of specialty medications. These are pharmaceuticals generally associated with high-cost, high-complexity and typically requiring high-touch based upon the disease state or indication for use. According to the 2018 Drug Trend Report provided by myMatrixx, payers spent an average of \$5,130.57 per injured worker on specialty medications, which was an 18.5% increase year over year as compared to 2017, despite representing only 1.7% of injured worker population⁹. In particular, injured workers between the ages of 65 to 74 saw a 5.5% increase in total specialty spend during 2018 as compared to 2017, representing on average a 25% increase in the cost per patient for specialty medications even while the total number of injured employees receiving a specialty medication declined 16% in 2018.

Taking a closer look at overall prescription drug utilization in older adults, the Centers for Disease Control reports as of January 2019 that more than 90% of all older people, those aged 65 years and older, are utilizing at least one prescription daily, while more than 66% of older people use three or more medications on any given day¹¹. What this means to employers is that older employees should be expected to place

⁶Willis Towers Watson, How An Aging Workforce and Population Will Impact Health Care In The U.S. on the Internet at <https://www.beckershospitalreview.com/pdfs/The%20Aging%20Workforce%20and%20Health%20Care%20.pdf> (visited October 20, 2019). myMatrixx 2018 Workers' Compensation Drug Trend Report. (2018). Available on the Internet at <https://www.mymatrixx.com/pbm-solutions/clinical/drug-trend-report/dtr2018/> (visited November 14, 2019). National Center for Health Statistics. (2018). Table 79. In Health, United States, 2017 available on the Internet at <https://www.cdc.gov/nchs/data/hsu/2017/079.pdf> (visited October 11, 2019).

⁹myMatrixx 2018 Workers' Compensation Drug Trend Report. (2018). Available on the Internet at <https://www.mymatrixx.com/pbm-solutions/clinical/drug-trend-report/dtr2018/> (visited November 14, 2019).

¹¹National Center for Health Statistics. (2018). Table 79. In Health, United States, 2017 available on the Internet at <https://www.cdc.gov/nchs/data/hsu/2017/079.pdf> (visited October 11, 2019).

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greater demands on both the group health and work comp industries due to drug-drug and drug-disease interactions which may precipitate increased needs for in-home care and assisted living facilities.

In reviewing compensable or accepted disease states of the older working population across the myMatrixx book of business, the most common are cardiovascular diseases including hypertension, hyperlipidemia, and arrhythmias. Other disease states of higher frequency were benign prostate hyperplasia (BPH), hypothyroidism and platelet disorders. myMatrixx data demonstrates that while opioids are the number one class of medications utilized by injured employees 65 years and older, anti-hypertensive agents followed by lipid lowering medications are also among the top 10 medication classes for this patient population. Typical prescribing cascades should also be expected with these disease states as well as prescription transaction history. This includes the use of one or more hypertensive medications, branded thyroid and anti-depressant medicines. Clinically, dual therapy with cardiovascular agents as well as medications to manage BPH may lead to an increased risk of hypotension, which may lead to falls or fractures. Moreover, medications used to treat hypothyroidism are commonly associated with a slowing of the gastrointestinal tract, which could lead to severe constipation. This side effect, coupled with long-term opioid use, may result in a significant bowel obstruction or ileus if not monitored closely. Finally, through long courses of therapy, prescribers and patients may exhaust the use of generic medications due to failure of desired

outcome or adverse drug reactions, leading to greater use of brand name products thereby increasing overall drug costs for individuals of advancing age.

Pain, acute or intermittent in nature initially is an all too common concern for aging individuals as a result of arthritis, osteoporosis, neuropathy, or cancer potentially leading to chronic pain, which can also present new challenges in managing medical care for patients 65 years and older given the potential co-administration of opioids with maintenance medications. As prescribers work to balance the need for pain relief along with potential drug-drug, drug-disease, and drug-age considerations, Buprenorphine, a mixed opioid agonist-antagonist which is a centrally acting agent that partially binds to the mu-opioid receptors while providing antagonism at the kappa and delta sites may be a non-conventional alternative for this patient population. Buprenorphine, generally known for its use in the treatment of opioid dependency, which is available in various dosage forms, including sublingual, transdermal, and intravenous, provides significant pain control due to the strong affinity for the mu-opioid receptor site while also maintaining a long duration of effect¹². Clinical studies have shown that buprenorphine has no analgesic ceiling effect while maintaining a respiratory depression ceiling that can be identified early in therapy¹³, meaning that closely monitored dose escalations can be achieved in the absence of potentially fatal side effects seen with other opioids. Additional pharmacological advantages of this medication include primary hepatic metabolism, with minimal renal excretion, which for the aging

workforce experiencing chronic pain and age related co-morbid conditions including diabetes mellitus, heart disease, or renal insufficiency, buprenorphine may be safely prescribed without adjustments for renal impairment, thereby optimizing pain control in this patient population. Most other opioids including morphine, hydrocodone, and oxycodone, as examples are cleared by the kidneys, commonly requiring reduced doses or frequency changes for patients over 65 to overcome potential toxic or enhanced side effects such as sedation and respiratory depression due to an accumulation of the medication from reduced clearance. The availability of multiple dosage forms, as mentioned earlier, cannot be understated as a particular administration advantage in a population of patients that may be taking multiple medications daily as the CDC suggests and at varying times throughout the day; due to the long half-life of buprenorphine, is typically dosed twice daily for the treatment of pain with the oral formulations, while a single transdermal patch can remain in place for 7 days at a time. Of note, the sublingual film, transdermal patches, as well as naloxone containing combination products are all commercially available in multiple strengths and have generically available formulations. As with all opioids, once the clinical determination has been made to initiate therapy, weighing the risk-reward of a particular treatment, close assessment prior to initiation and throughout the course of therapy should be taken, the use of buprenorphine is no exception. When buprenorphine is selected as the agent of choice for patients 65 years and older, baseline liver function tests should be conducted if

suspected or probable hepatotoxicity is a risk factor for the intended patient and then periodically thereafter. As well, blood pressure monitoring is recommended prior to the start of therapy for those patients at risk for hypotension, and repeated following each dose escalation. Finally, in patients with QT prolongation electrocardiogram (ECG) testing should be completed. The side effect profile for buprenorphine includes nausea, vomiting, euphoria, papillary constriction, respiratory depression, elevated liver enzymes with high doses, and delayed gastric emptying¹⁴, although due to the kappa and delta receptor site antagonism the incidence of adverse effects is low; however, this should not negate the proper monitoring for potential signs and symptoms of adverse effects. Monitoring for respiratory depression is particularly important within the first 24-72 hours following the initiation of buprenorphine therapy and subsequently following all dose escalations. As well, caution should be taken with concomitant benzodiazepine use, similar to all opioids, co-administration of buprenorphine with the benzo medication class can cause synergistic CNS sedation and respiratory depression, which may be fatal.

To support clinicians in the prescribing, administering, and dispensing of medications for older adults, the American Geriatrics Society (AGS) established the Beers Criteria, originally created by geriatrician, Mark Beers, population aged 65 years or older due to increased risk of mental status changes and falls hazard as a result of co-administration.

¹²Clinical Interventions in Aging. Department of Anesthesiology, Yale University of Medicine, New Haven, USA. Management of chronic pain in the elderly: focus on transdermal buprenorphine. N. Vadivelu, R. Hines (2008).

¹³Dahan A, Yassen A, Bijl H, et al. Comparison of the respiratory effects of intravenous buprenorphine and fentanyl in humans and rats. Br J Anaesth. 2005;94:825-34

¹⁴Endo Pharmaceuticals. (1981). Belbuca: Highlights of prescribing information. Malvern, PA: Author.

Below is a high-level overview of the Beers Criteria as it relates to traditional Workers' Compensation Medications¹⁶:

Medication Classes to be Avoided	Brief Rationale
Anticholinergics	Reduced renal clearance with advanced age leading to potential tolerance effect. Risk of confusion, dry mouth and constipation
Antiparkinsonian Agents	Not recommended over other agents to address extrapyramidal symptoms of antipsychotics
Antispasmodics	Highly anticholinergic with uncertain effectiveness
Antithrombotics	Risk of orthostatic hypotension including lightheadedness, dizziness and potential fall
Select Cardiovascular Agents • Peripheral alpha-1 blockers • Central-alpha agonists	High risk of orthostatic hypotension leading to lightheadedness, dizziness and potential fall
Central Nervous System Agents	Highly anticholinergic, sedating, orthostatic hypotension
Benzodiazepines and Sleep Aids	Increased sensitivity and reduced metabolism leading to increased risk of cognitive impairment, delirium, falls, fractures and MVA accidents
Hormonal Modulators • Exogenous testosterone • Estrogens • Grown hormone	Potential cardiac problems associated with edema, arthralgia and impaired fasting glucose
Select Pain Medications • NSAIDS (non-COX selective inhibitors) • High-dose Aspirin (>325mg/day) • Meperidine	Long-term use should be avoided due to increased gastrointestinal bleeding, peptic ulcer disease
Skeletal Muscle Relaxants	Poorly tolerated in older adults due to anticholinergic effects, sedation and increased risk of fractures
Barbiturates	High ratio of physical dependence, tolerance to sleep benefits and risk of overdose at low dosages
Proton-pump Inhibitors	Risk of C. difficile infection, bone loss and fractures with prolonged use

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Of particular importance, the American Geriatrics Society recommends the avoidance of the co-administration of opioids and benzodiazepines in this patient population due to the increased risk of overdose due to physiological changes in those 65 years and older, including declines in renal and hepatic function. The American Geriatrics Society also cautions prescribers with close management of medications in the following disease states in patients 65 years of age and older¹⁷:

- Heart Failure
- Syncope
- Dementia and cognitive Impairment
- History of falls or fractures
- Parkinson's disease
- History of gastric ulcers
- Chronic kidney disease, urinary incontinence and benign prostatic hyperplasia

As myMatrixx continues to advance clinical consultation services to address the growing needs of workers' compensation payers, the American Geriatrics Society's Beers Criteria was added to our proprietary Clinical Analysis Criteria to assess high-risk patients on medication therapy for potential clinical intervention. Moreover, the AGS' Beers Criteria has been incorporated into our clinical tools available to clients including One Drug Reviews (ODR), as well as CASE RX or Drug Regimen Reviews. By analyzing the prescription patterns of injured employees aged 65 and older based upon the recommendations of the Beers Criteria, looking back to 2018, we identified that one in three, or 33.9% of patients over the age of 65 were being prescribed and dispensed a medication directly addressed for avoidance by the Beers Criteria, and our clinical pharmacists are taking action to intervene on these prescribing patterns. While the AGS clearly states that the Beers Criteria recommendations should not supersede the clinical judgment of the prescriber, nor disregard the risk-reward of a particular therapy based upon the overall treatment goals, caution and close monitoring is advised to ensure patient safety while on continued therapy and should remain paramount by all associated with care. At myMatrixx we take the American Geriatric Society's recommendations into close consideration during our prescriber discussions to ensure patient

age, co-morbidities, and medication regimens across practitioners are not overlooked. Future initiatives within our clinical program will include prescriber and patient outreach when Beers Criteria concerns arise, to further raise awareness of the aging work force.

As employers of today begin to embrace the aging workforce population of the future, it will be critically important to ensure that the organization's workers' compensation medical management program remains cognizant and ever-vigilant regarding the distinct needs of this growing sect of employees. Taking additional steps to ensure that potential work-related injuries are mitigated whenever possible in this population is especially important due to increased severity and expense related to care. In those instances when employees age 65 years and older do become injured while at work, considering alternative treatment modalities such as buprenorphine for the treatment of chronic pain where appropriate as well as weaving in valuable clinical resources such as the American Geriatrics Society's Beers Criteria into the daily clinical monitoring program either with your Pharmacy Benefit Manager or nursing teams will be critical in safeguarding against additional injury, exacerbation of chronic disease states, or adverse effects as it pertains to medication management.

¹⁶The American Geriatrics Society 2019 AGS Beers Criteria. (2019). Table 1. 2019 American Geriatrics Society Beers Criteria for Potentially Inappropriate Medication Use in Older Adults.
¹⁷The American Geriatrics Society 2019 AGS Beers Criteria. (2019). Table 2. 2019 American Geriatrics Society Beers Criteria for Potentially Inappropriate Medication Use in Older Adults Due to Drug-Disease or Drug-Syndrome Interactions That May Exacerbate the Disease or Syndrome.



myMatrixx.com | (877) 804-4900

Corporate Office
3111 W. Dr. Martin Luther King Jr. Blvd.
Suite 800
Tampa, Florida 33607

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