

# Safety in Numbers: How the Growing Older Adult Population Influences Medication Safety

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*Reimagining Pharmacy*

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# Disclosure Statement

- Chad Worz has no relevant financial relationship(s) with ineligible companies to disclose.  
*and*
- None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.

# Learning Objectives

At the completion of this activity, the participant will be able to:

1. Define the older adult population growth over the next 5-30 yrs
2. Discuss the dynamics of aging & its influence on medication use
3. Recognize simple approaches to medication management that improves safety for older adults
4. Describe the critical role of the pharmacist in health care in the next 30 years

# Meet the Speaker



Chad Worz, PharmD, BCGP, is the chief executive of ASCP. A board-certified geriatric pharmacist and graduate of the University of Cincinnati College of Pharmacy, his career has focused on the medication management of older adults. Prior to ASCP, he developed an innovative clinical practice in a long-term care setting in Ohio, directed the pharmacy practice of a regional, independent pharmacy serving 10,000 long-term care residents and established a senior care consulting company of 75 pharmacists servicing over 35,000 LTC residents in 635 nursing facilities across the country.

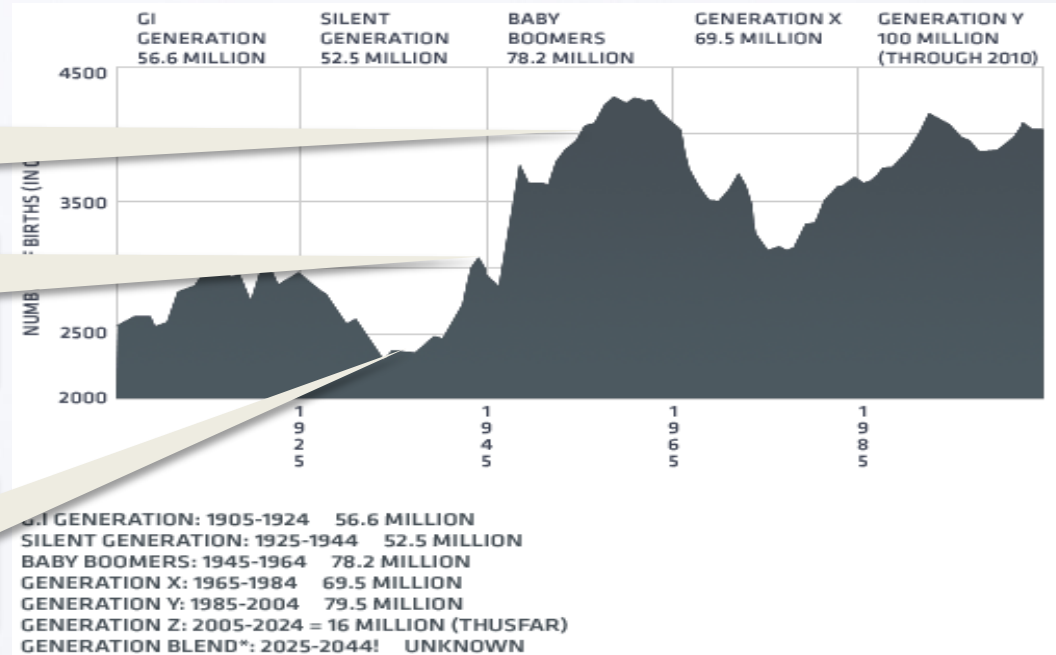


# US BIRTHS 1905-2002

**2040**  
Born 1960  
80 yoa

**2023**  
Born 1943  
80 yoa

**2018**  
Born 1938  
80 yoa



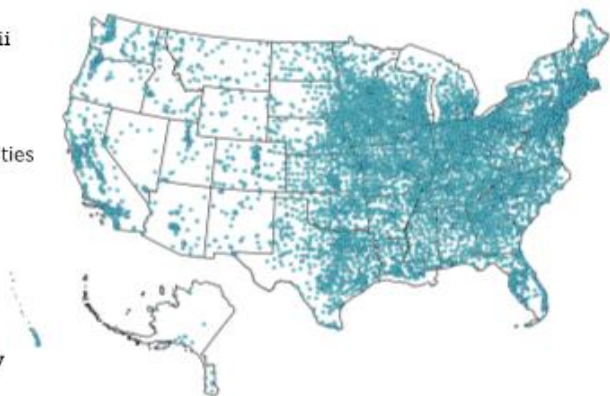
Source: National Center for Health Statistics



**15,655** centers **1.7 million** beds

### Location Breakdown <sup>ii</sup>

- 21%** in major cities
- 20%** in the outskirts of major cities
- 11%** in smaller cities
- 14%** in towns
- 15%** in rural areas



### Individuals Served <sup>iii,iv</sup>

**3.9 million**

individuals for short-stay or post-acute rehabilitation and long term care

**22%** **Life Saver stays** (less than 100 days)

**78%** **LONG stays** (100 days or more)

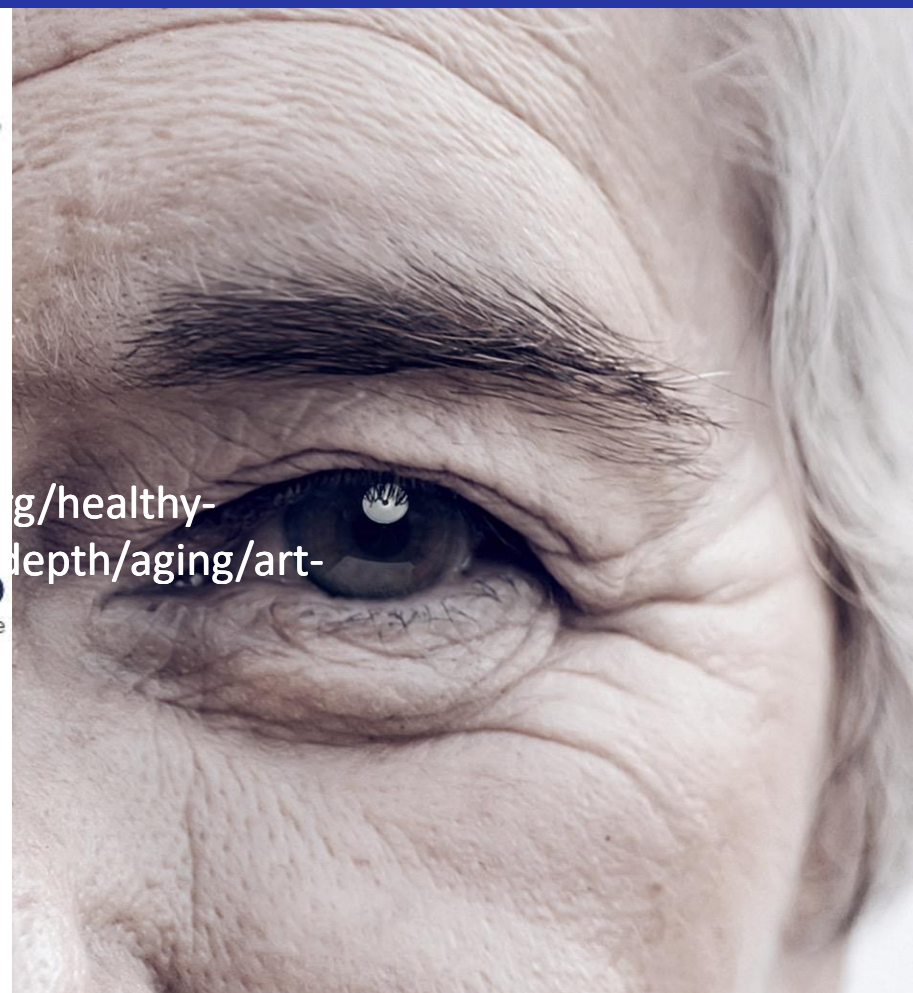
**44%**

recieve post-acute rehabilitative care

### SNCCs by Occupancy <sup>v</sup>



	Daily Census		Centers		Average Occupancy	
		N		%		%
All		15,658		100%		82%
0-30		1,265		8%		54%
31-50		2,490		16%		73%
51-100		6,900		44%		80%
>100		5,003		32%		87%



## 2020:

15,439 Skilled Nursing Homes

55 million people over the age of 65

1.7 million licensed beds

Occupancy rate is about 80%

3.9 million people stay in a SNF for  
some period each year

25% Medicare Part A transitional beds

7.0% of the population >65 years  
touch  
a SNF annually

## 2030:

15,439 Skilled Nursing Homes

74 million people over the age of 65

1.7 million licensed beds

7.0% of the population >65 years

= 5.2 million people using SNFs

Shortfall of almost 500,000 custodial beds in SNFs

- Assumes we hold transitional beds at 25% (likely to  
increase)

Increase of 900,000 transitional skilled stays in SNFs

- Requires government investment in ALF
- “at home services”
  - government investment





# Prescription Use in Older Adults

15% OF THE US POPULATION. 39% OF TOTAL RX.



# Medication Use as we Age

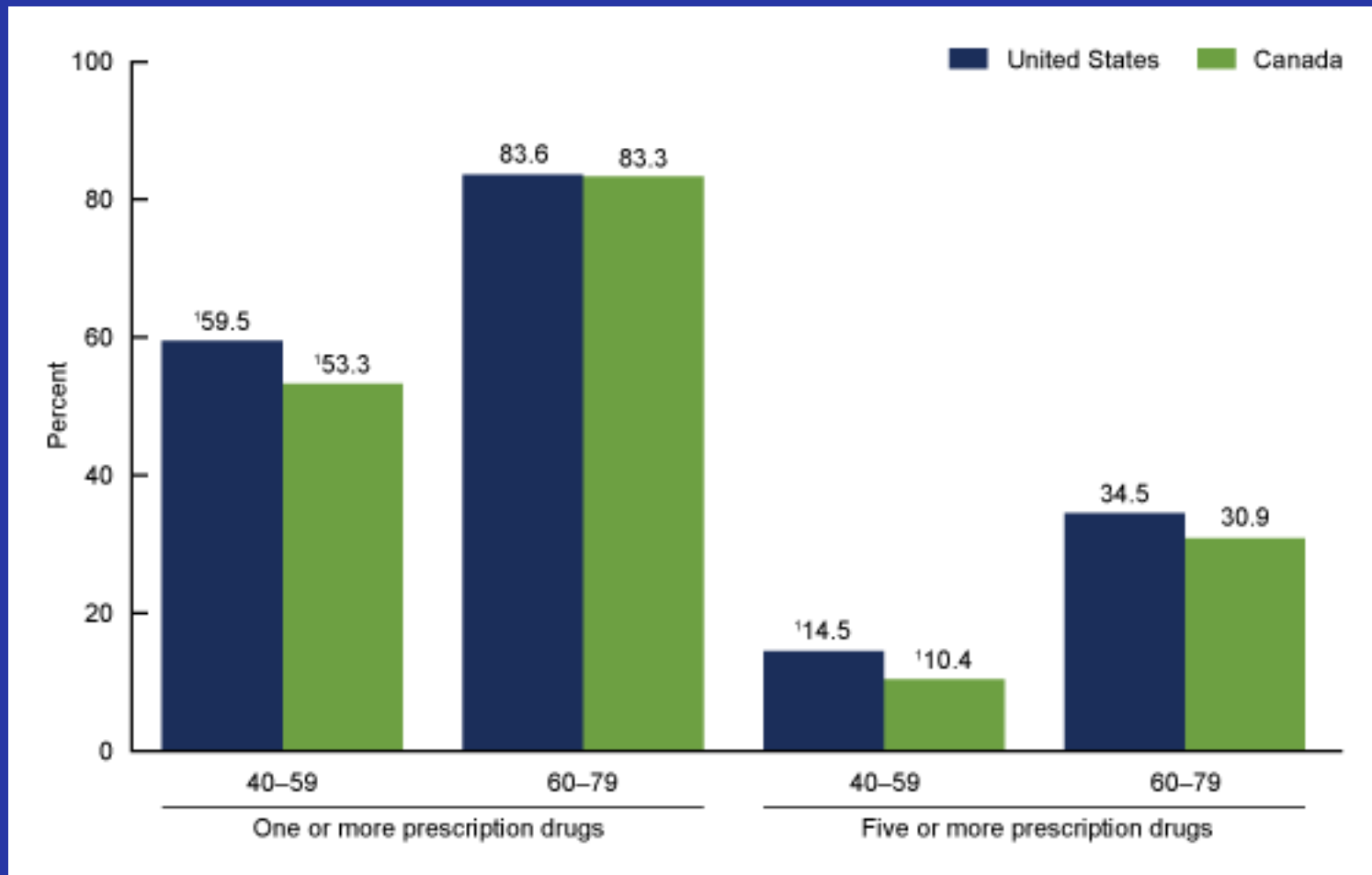
- Chronic disease
- More sensitive to medications
- Faster or slower absorption
- In general, lower required doses to maintain effects
- Increase in drug-drug interactions
- Increase in drug-diet interactions
- Compliance and adherence changes

## CHANGE

# The Aging of the Body

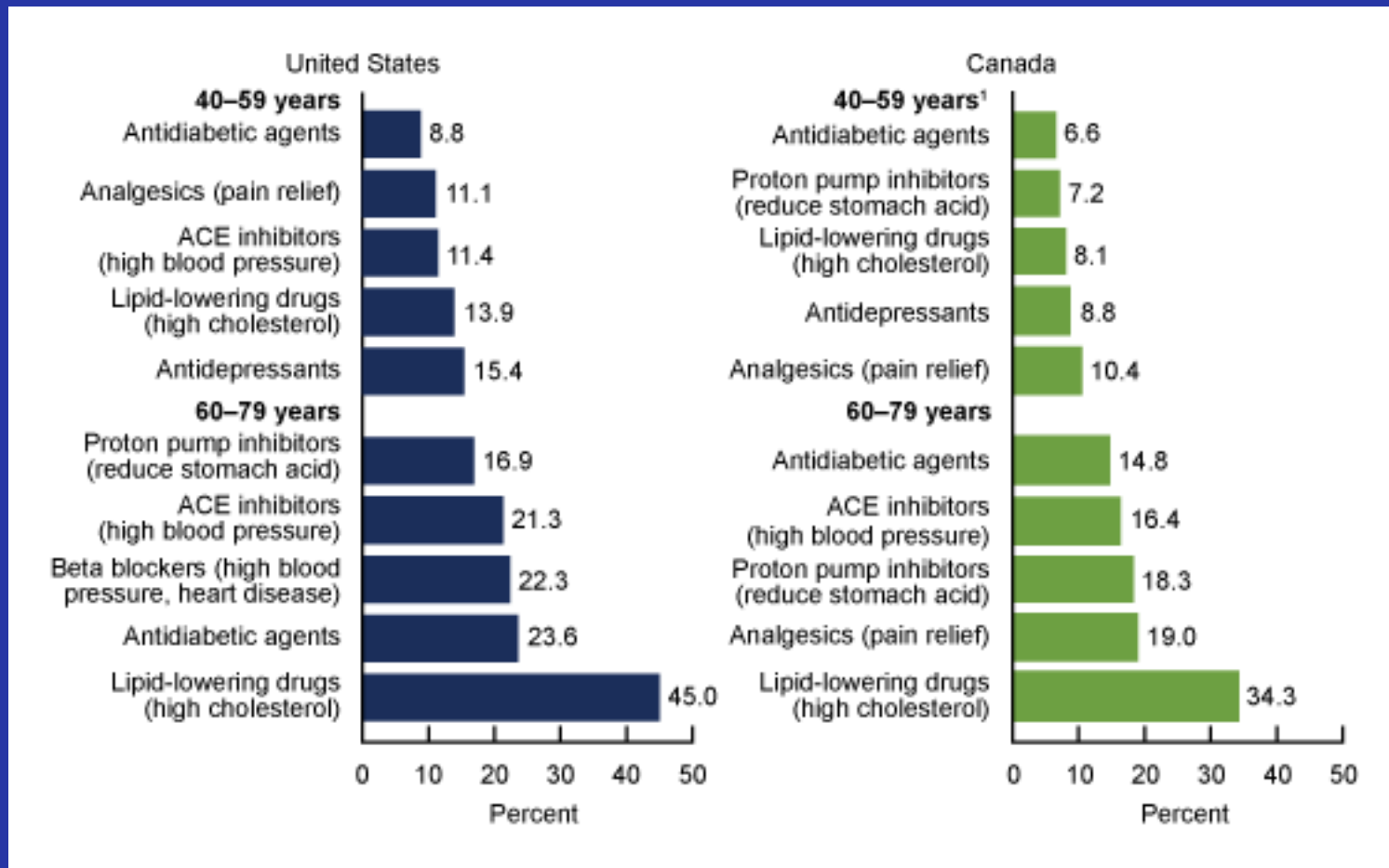
- Stiffening of the blood vessels and arteries
- Heart muscles “flex” to adjust to the increased workload
- Bones shrink in size and density
- Muscles lose strength
- Bladder loses elasticity
- Structural changes in the gut
- Cognitive decline (memory)
- Vision loss, sensitivity to glare
- Slowed metabolism
- Less elasticity in skin
- Renal function decline
- Liver function decline

# By the Numbers



NCHS, National Health and Nutrition Examination Survey, 2015–2016,  
and Statistics Canada, Canadian Health Measures Survey, 2016–2017.

# By the numbers



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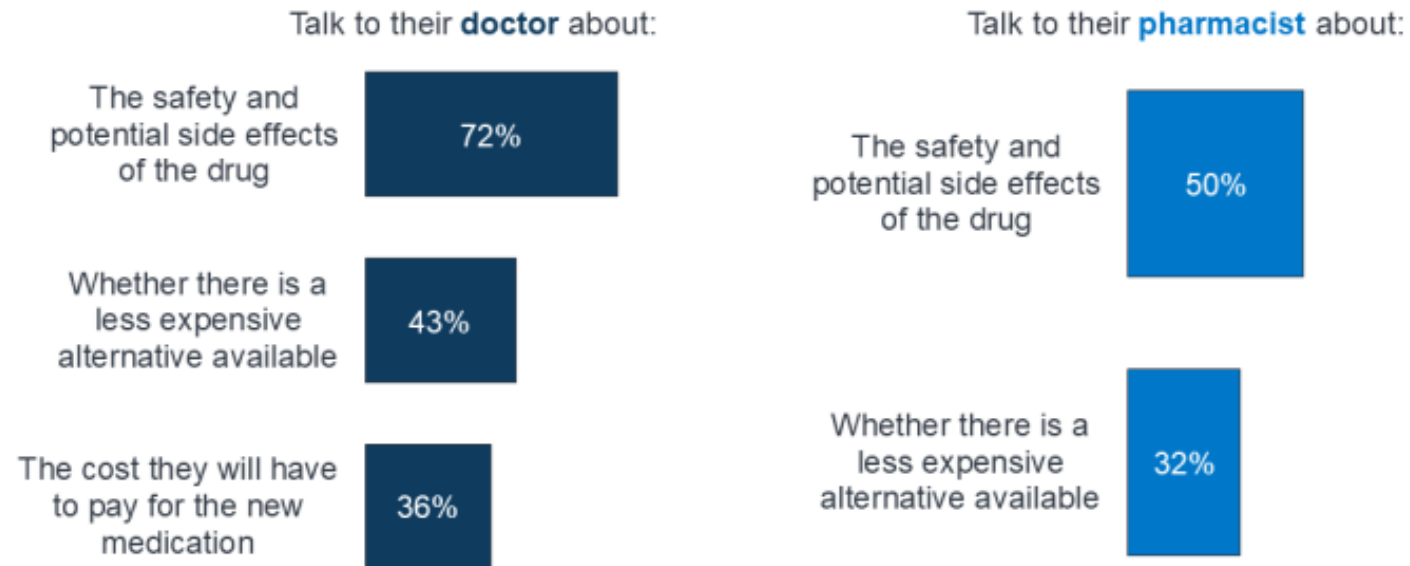


# Safety

Figure 5

## More Seniors Say They Talk About Safety, Side Effects Of A New Drug Than About The Cost Of The Drug

Percent who say they usually do each of the following:

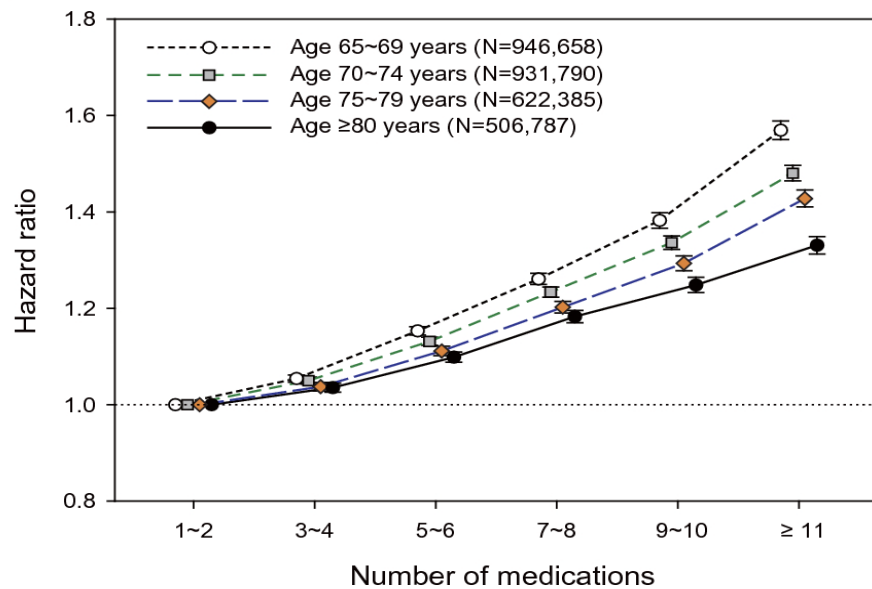


NOTE: Among adults, 65 and older.

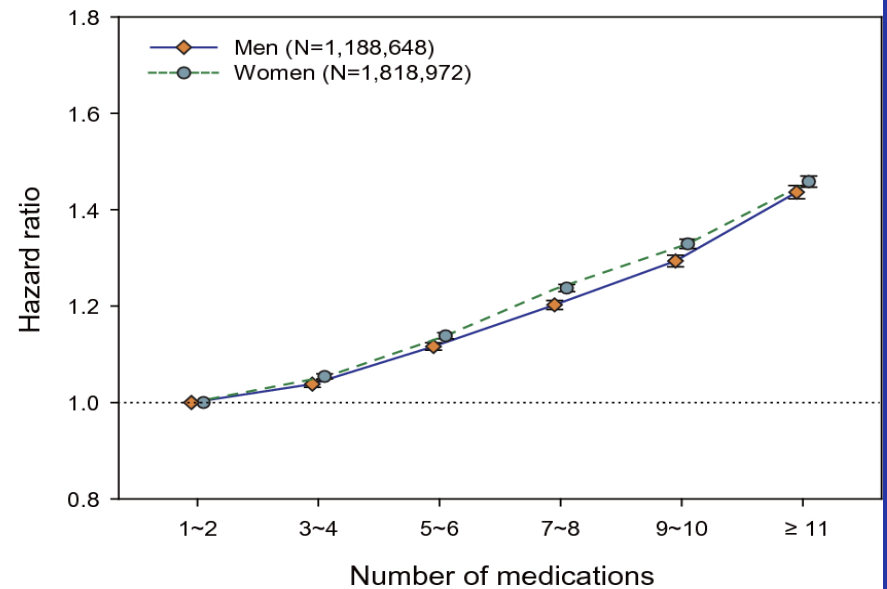
SOURCE: KFF Health Tracking Poll (conducted February 14-24, 2019). See topline for full question wording and response options.

**KFF**  
HENRY J KAISER  
FAMILY FOUNDATION

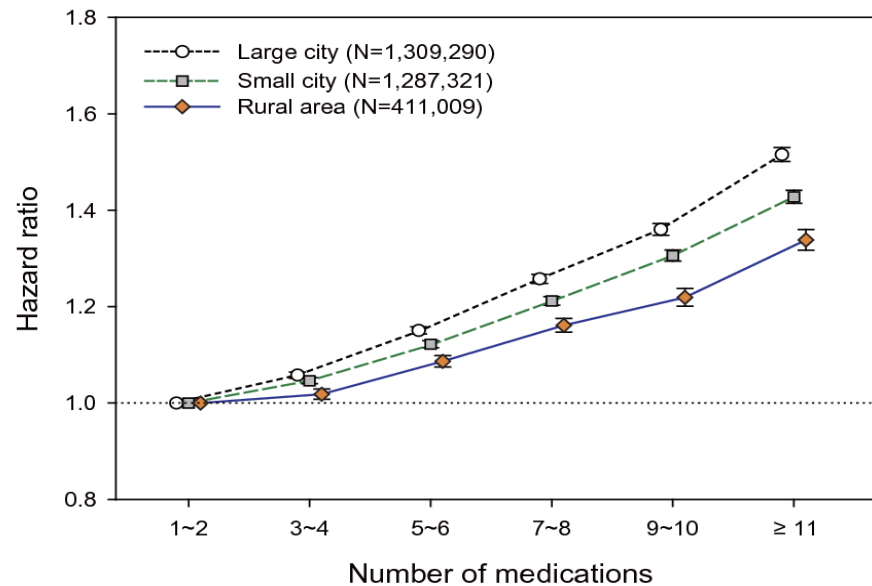
A



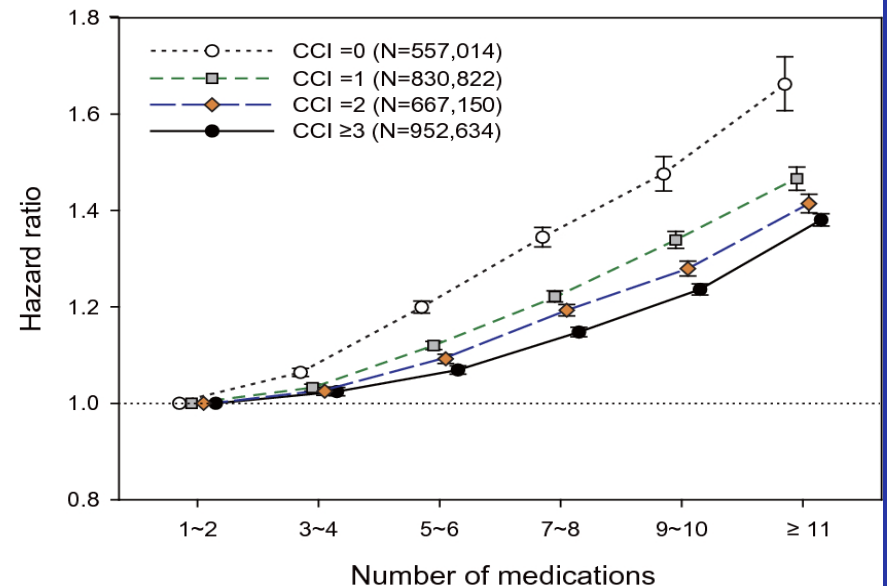
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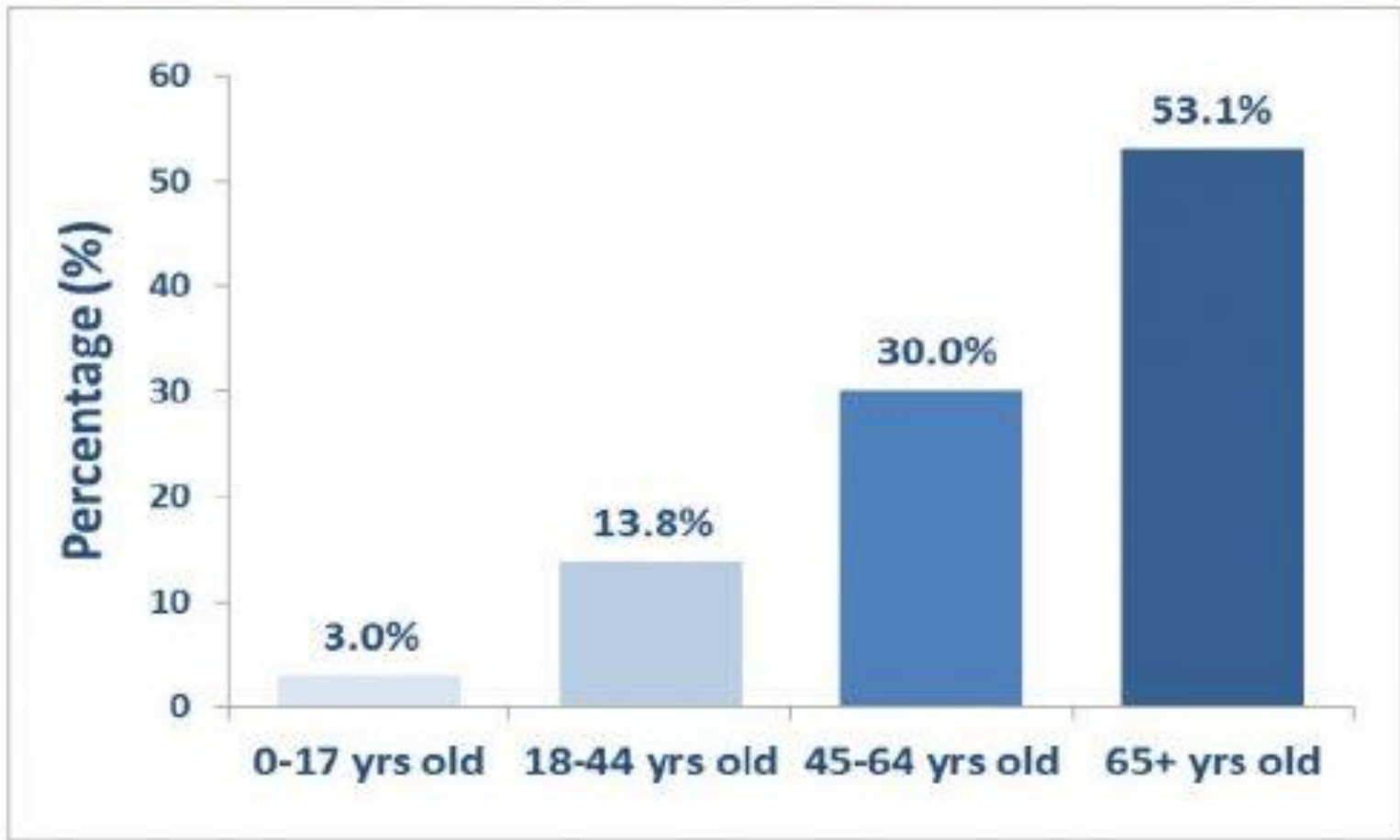


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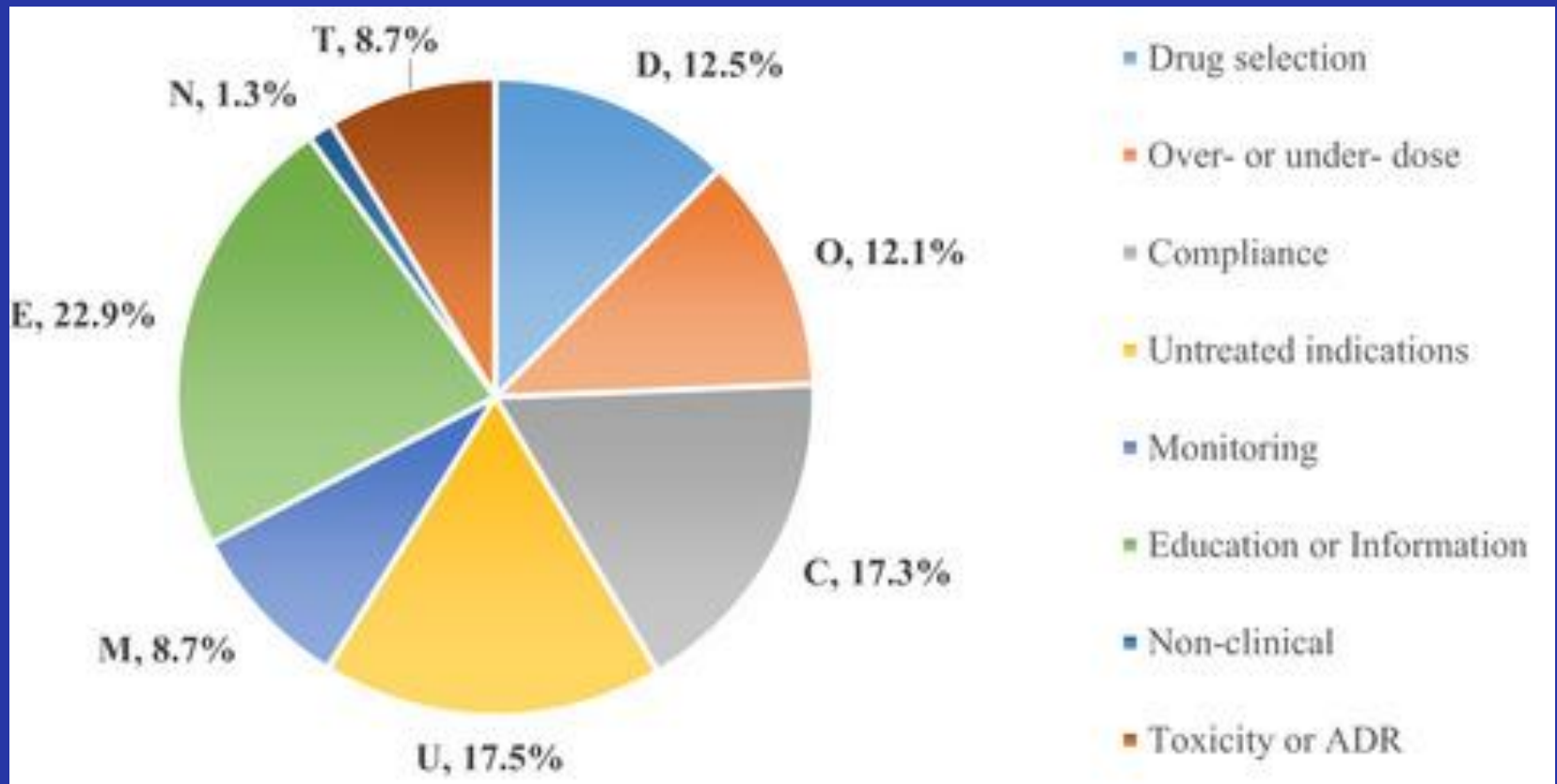
# Safety

Figure 2. Hospital Stays Complicated by Adverse Drug Events, Distribution by Age [11]\*



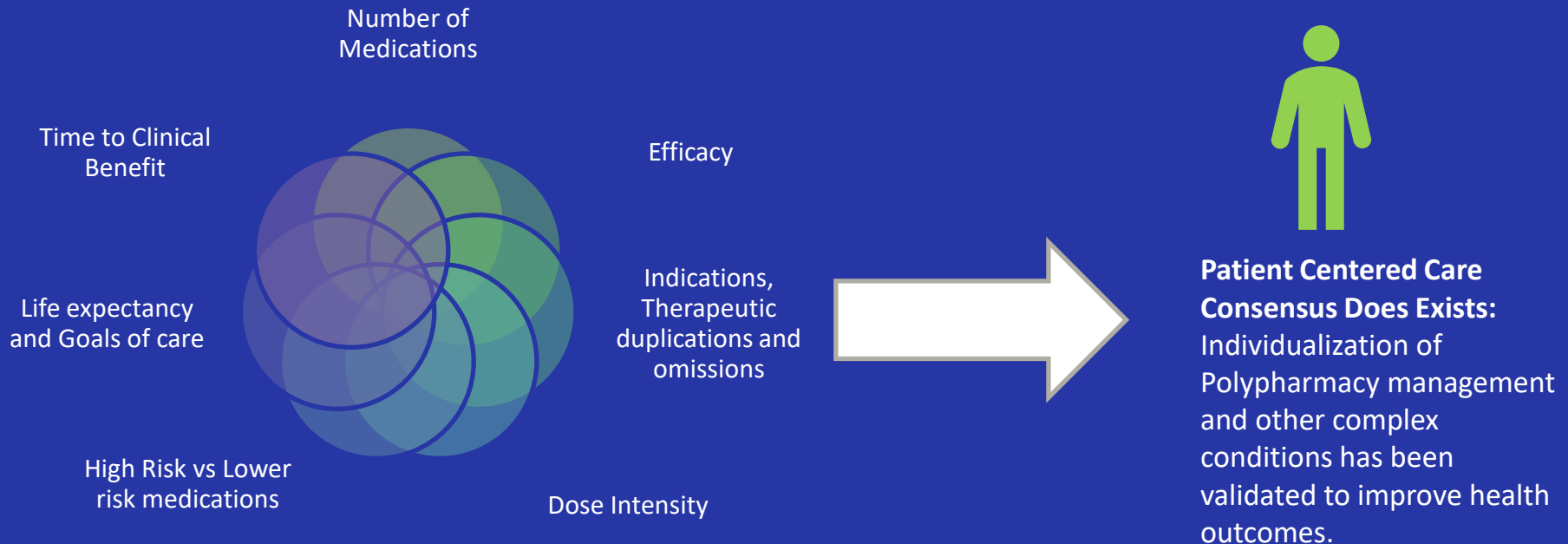
\*2008 data analyzed from the Healthcare Cost and Utilization Project, AHRQ

# Safety



Shahrami, B, Sefidani Forough, A, Najmeddin, F, et al. Identification of drug-related problems followed by clinical pharmacist interventions in an outpatient pharmacotherapy clinic. *J Clin Pharm Ther.* 2022; 47: 964– 972. doi:[10.1111/jcpt.13628](https://doi.org/10.1111/jcpt.13628)

# Ways to Study and Approach Polypharmacy



(By the American Geriatrics Society Beers Criteria Update Expert 2015) (O'Mahony, O'Sullivan et al. 2015) (Hanlon, Semla et al. 2015) (Tjia and Lapane 2017) (Roth, Ivey et al. 2013) (Crisp, Burkhart et al. 2011)



# Optimization

## Unnecessary polypharmacy

- No indication
- Ineffective
- Therapeutic duplications
- Treat the **side effects of another drug** that could be changed or adjusted.

## Safer Alternatives

- Beers Criteria Guide (i.e. loratadine instead of diphenhydramine)
- STOPP (START and STOPP Guide) (i.e. ASA 81mg daily instead of 325mg daily)

## De-intensify

- Low, moderate and high intensity **within same class** (i.e. Statins)
- Dosage of multiple medications sharing **similar adverse effects** (i.e. SSRI with tramadol with an antipsychotic agent)

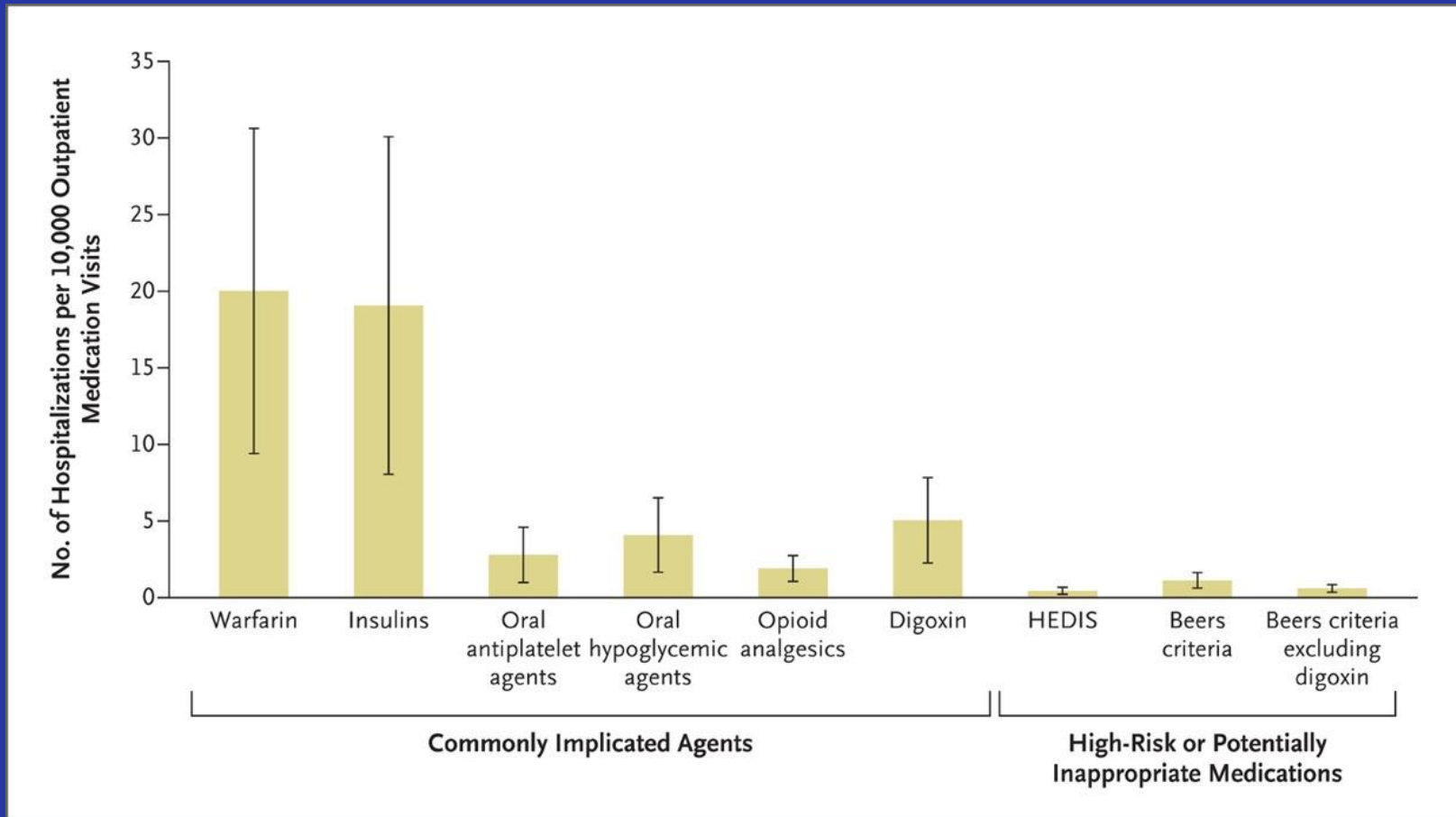
## Avoid De-Rxing Harm

- Reduction in polypharmacy should occur **without increasing therapeutic failure**.
- Reduction in polypharmacy **should not cause adverse drug withdrawal effect**.

# ED Visits by Older Adults for MRPs

ED visits in older adults: <b>Most Commonly Implicated Medications</b>	<b>Number of cases:</b> 58 non-pediatric hospitals participating in National Electronic Injury Surveillance System – Cooperative ADE Surveillance (2004-2005)
Warfarin	854
Aspirin	616
Clopidogrel	232
Digoxin	130
Metformin	130
Glyburide	98
Acetaminophen-hydrocodon	76
Phenytoin	78
Glipizide	57
Levofloxacin	63
Lisinopril	62
Trimethoprim-Sulfamethoxazole	52
Furosemide	48

# ED Visits by Older Adults for MRPs



# Questions

# Need More Information?

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