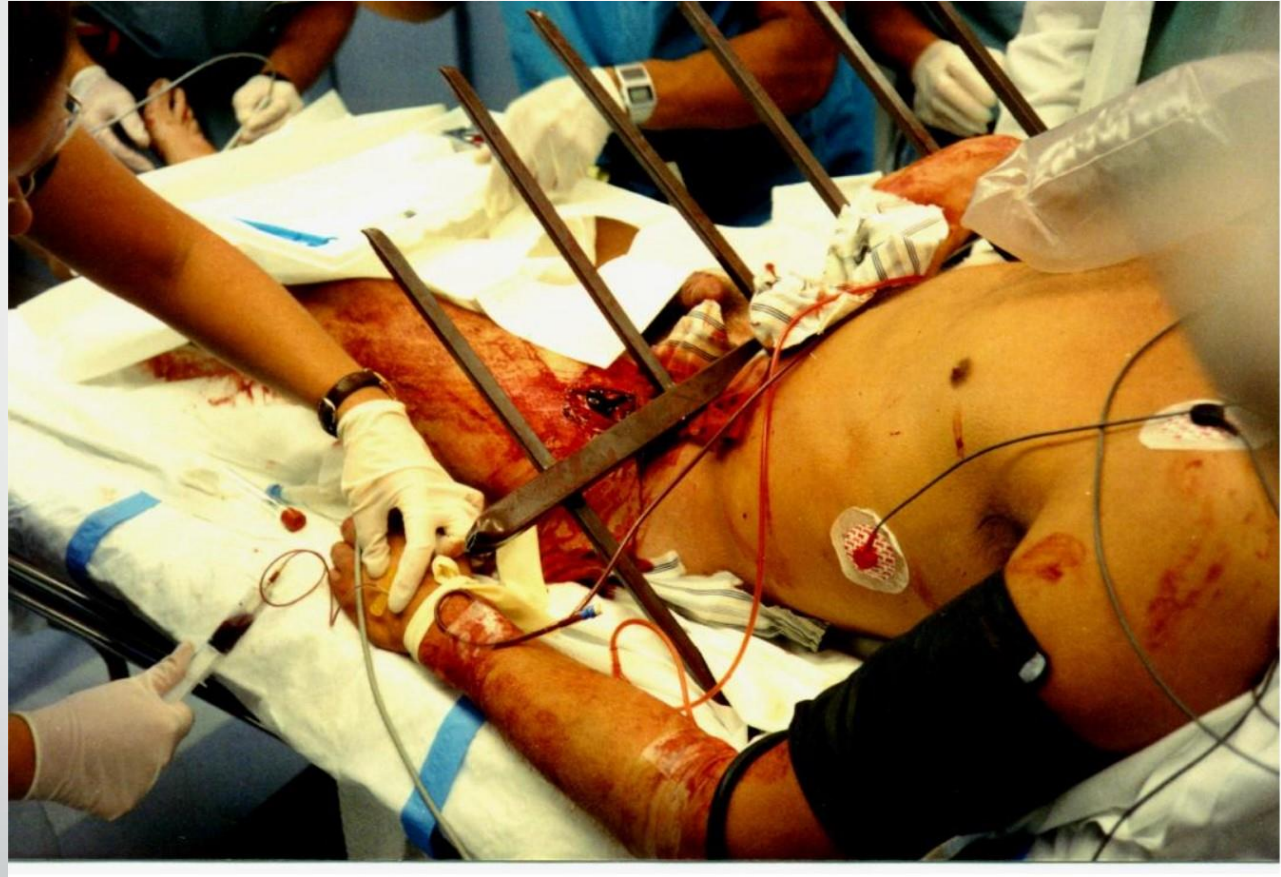


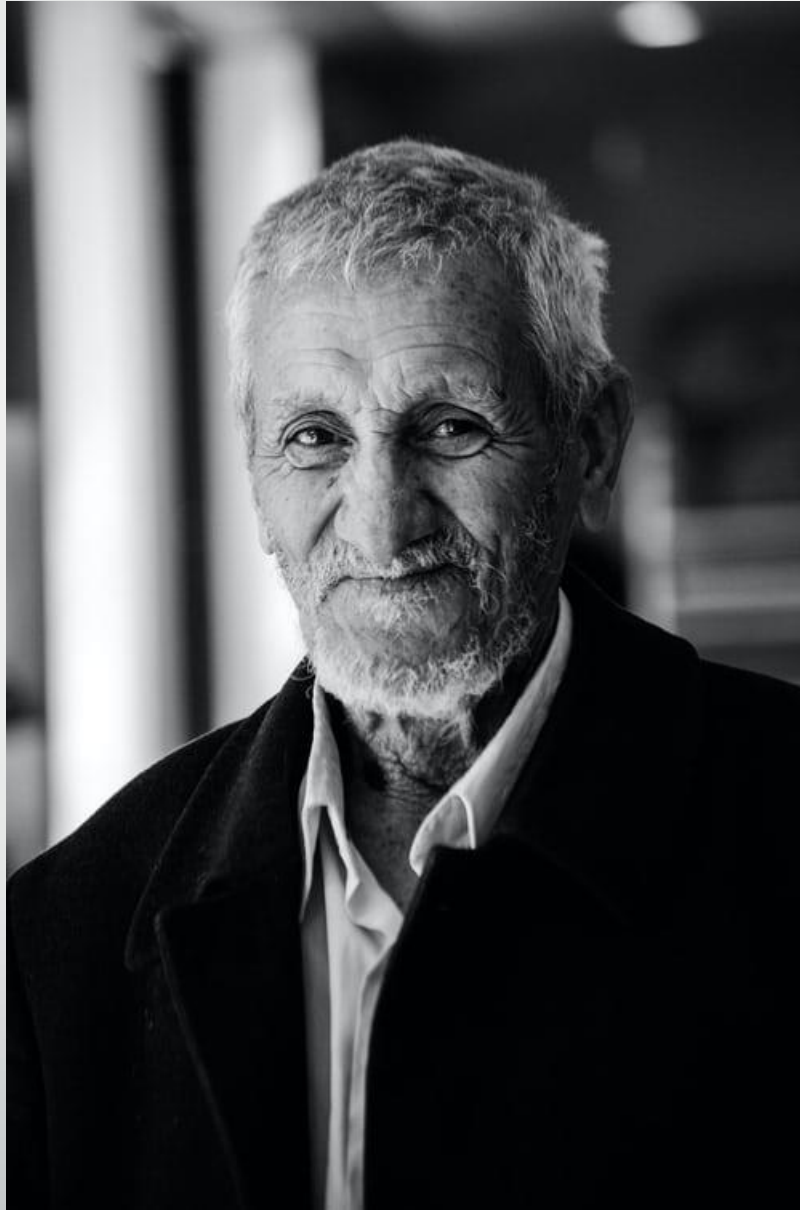
Respect Thy Elders! With Escalating, Longer-Living, Anti-Coag'ed Boomer Populations, What Does EMS Need to Know?

Christopher B. Colwell, MD

San Francisco EMS

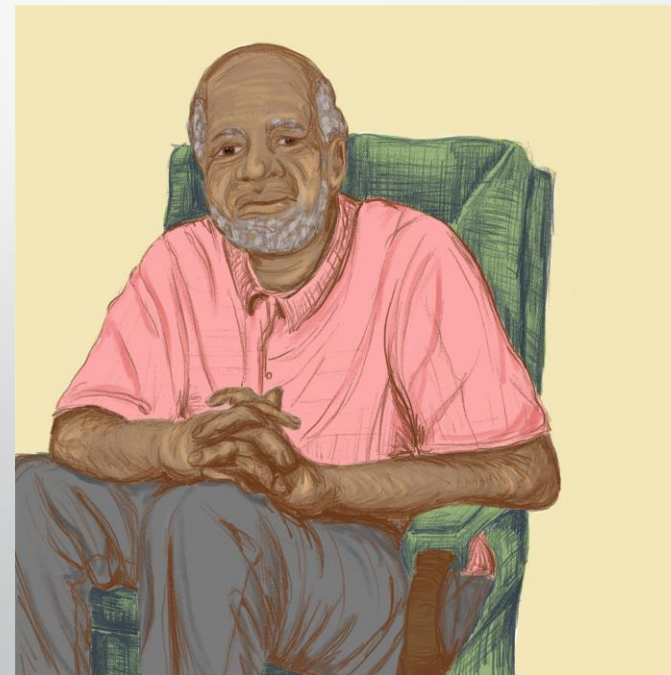






Getting Older

- The Elderly
 - 17% of the US population in 2020
 - 1 in 6
 - 25% by 2030
 - Longer life expectancy and declining birth rates
 - Almost 56 million
 - 38% increase since 2010
 - Population over 65 grew 5 times faster than the total US population



Elderly Definitions

- Older than 65
- Case for over 35
 - Outcomes worsen
 - Increased incidence of pneumonia
- Young old: 65-80
- Old old: >80
- ATLS: >55
 - ACS directs those over 55 to trauma centers
- No literature clearly delineates “geriatric”
- Physiologic age vs. chronologic age



Not Just Older Adults

- Different mechanisms
- More severe response to any injury or pathology
- Difficult presentations
 - Delays
- Different patterns of injury
- Worse outcomes
- Higher cost / quality year saved
- Special knowledge and skills required



**IT'S WEIRD BEING
THE SAME
AGE AS OLD
PEOPLE**

Why Are They Different?

Pre-existing conditions

Decreased reserve



Impact on EMS

- 48.6% of EMS transports
 - Over 65
 - Response, transport rates, and non-transport rates (per 1000) were all higher
 - Highest in the oldest (> 85)
 - Most common presenting complaint
 - Transported and non-transported
 - Fall
 - Goldstein et al
 - CJEM, 2015



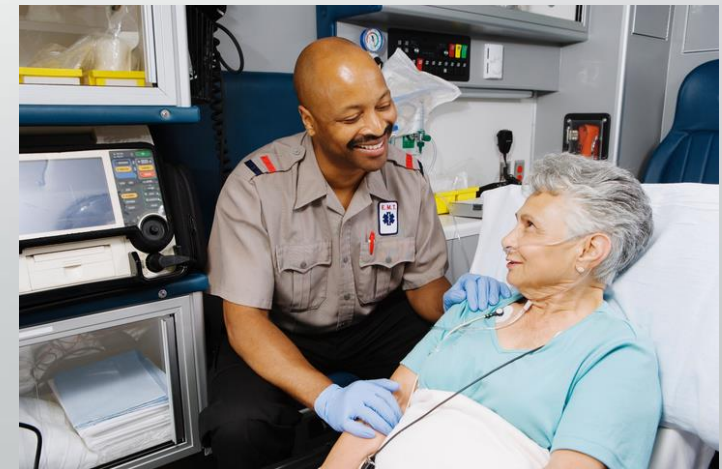
Impact on EMS

- Age is the major determinant of EMS use
 - Svenson
 - Am J Emerg Med, 2000
- 30% longer on scene time in non-transports
 - Goldstein et al, 2015
- Between 1994 and 2008, transports for older adults increased 75%
 - Lowthian et al
 - Med J Aust, 2011



Impact on EMS

- Repeat EMS use by older adults
 - 18% had a repeat EMS transport within 30 days
 - Highest with dispatch complaints of
 - SOB
 - Back pain
 - Diabetic problem
 - Psychiatric problem
 - Fall
 - Most common dispatch complaint
 - Evans et al
 - Ann Emerg Med, 2017



Cause of Injury: Falls are Number 1

- Account for 50% of trauma in the elderly
- 30% over 65 fall each year
- 10% lead to major injuries
- Ground level
- Injuries
 - Fracture most common
 - Cerebral contusions and subdural hematomas
 - Spaniolas et al, J Trauma 2010



If We Don't Count Them, We Will Never Know

- Between 18 and 80% of seriously injured were not captured by trauma registries
 - Newgard et al
 - JAMA Surg, 2019
- Injury transported by EMS?
 - Sentinel event in those over 65 with death typically occurring within months
 - Newgard et al
 - Injury, 2019

Research

JAMA Surgery | Original Investigation

Comparison of Injured Older Adults Included in vs Excluded From Trauma Registries With 1-Year Follow-up

Craig D. Newgard, MD, MPH; Aaron Caughey, MD, PhD; K. John McConnell, PhD; Amber Lin, MS; Elizabeth Eckstrom, MD; Denise Griffiths, BS; Susan Malveau, MS; Eileen Bulger, MD

IMPORTANCE Trauma registries are the primary data mechanism in trauma systems to evaluate and improve the care of injured patients. Research has suggested that trauma registries may miss high-risk older adults, who commonly experience morbidity and mortality after injury.

OBJECTIVE To compare injured older adults who were included in with those excluded from trauma registries, with a focus on patients with serious injuries, requiring major surgery, or dying after injury.

DESIGN, SETTING, AND PARTICIPANTS This cohort study included all injured adults 65 years

+ Invited Commentary
+ Supplemental content

Elderly Falls and EMS

- 11%-56% of older adults who receive EMS treatment for a fall are not transported
 - Although not always obviously injured, they comprise a particularly vulnerable cohort
 - Mikolaizak et al
 - Australas J Ageing, 2013
- 49% of those not transported required medical care within 2 weeks
 - Snooks et al
 - Qual Saf Health Care, 2006



“Mechanical” Fall?

- There is often more to a mechanical fall in the elderly than mechanics
 - Dehydration
 - Delerium
 - Infections
- Non-syncopal fall



Falls in the Elderly

- When an older person falls, they will fall again!



Vital Signs: Pulse

- Normal should NOT reassure
 - What is normal?
- Falsely “normal” pulse is common
- Less responsive to circulating catecholamines
- Medications
 - Beta blockers
 - Calcium channel blockers
- Trend may be the most helpful



Vital Signs: Blood Pressure

- Often falsely normal
 - “Normal” may indicate significant hypovolemia
 - Baseline hypertension
- Maintained by increases in SVR because of poor cardiac response to hypovolemia
 - Heffernan et al, J Trauma, Oct 2010



Polypharmacy

- 14% increase in falls for every medication over 4
- Newly started medication?
- Many ADEs are dose-related
 - Start with lower doses
- The CNS is especially vulnerable in the elderly
- Sensitivities to some drugs decrease with age



Coming to a Hospital Near You!



In Summary

- Not just older adults!
 - Break easily
 - Hide their injuries well
 - Worse outcomes
- Impact on EMS is already significant
 - And getting more so!
- Falls are important
 - Significant injuries
 - Significant impact on lives
 - Intervene now or intervene later



In Summary

- Beware
 - Normal vital signs
 - “Minor” mechanisms
 - Elder abuse
- Think twice about “mechanical” falls
- Benefit from aggressive care
 - Aggressive care and resuscitation may have a dramatic effect in improving outcomes
- We must do a better job with anticipating issues and prevention



Thank You!

- Christopher.Colwell@ucsf.edu

