



VCU

VIRGINIA COMMONWEALTH UNIVERSITY

Medical Center

**Geriatric Trauma For EMS
Providers**

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Objectives

- Identify current and future trends in the geriatric population
- Identify why education in geriatric trauma is important
- Identify physiological changes in the elderly that may affect trauma care
- Discuss challenges in communicating with elderly patients
- Discuss trends in geriatric injuries
- Case presentations





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Questions for the audience

- Has anyone here taken a “pediatric” EMS course?
- Has anyone here taken a “geriatric” EMS course?
- How many people here see more geriatric patients than pediatric patients?

Why Geriatric Education?

- Elderly people in the US (65 years or older) represented 12.9% of the U.S population in 2009
 - 1 in every 8 Americans
- By 2030, there will be 72.1 million elderly in the U.S
- By 2030, elderly will comprise 20% of the U.S. population

More Stats (sorry)

- Elderly patients make up approximately 38% of EMS calls nationally

Injury As A Marker For Emergency Medical Services Use In Medicare. *Prehospital Emergency Care*, 2010-Oct-Dec; 14(4); 425-432

- Those over 65 use EMS **twice** that of the younger population and those over 85 use EMS **three times** that of the younger population

Geriatric trauma; current problems, future directions. Blanda, M. 2005

And still more stats...

- 1995

- 10% of all trauma victims were > 65 years old
- 28% of all injury fatalities were > 65 years old

- 2050

- 40% of all trauma victims will be >65 years old
- Fatalities will be?????

Trends

- The mean survival rate is increasing
- Birth rate is declining
- Health care and living standards have improved greatly since WWII
 - Better nutrition, better technology, better health care



VCU Trauma Center Stats



- 2015 so far at VCU Trauma Center
 - Total geriatric patients 561
 - Falls – 301 (53.7%)
 - MVC – 165 (29.4%)
 - Other – 95 (16.9%)

Most Common Mechanisms of Unintentional Injury

1. Falls
2. Motor Vehicle Crashes
3. Burns
4. Pedestrian injury



Falls in the U.S.

In the next 17 seconds:

- An older adult will be treated in ED for injuries related to a fall

In the next 30 minutes:

- An older adult will die from injuries sustained in a fall



Motor Vehicle Crashes



2nd most common
cause of
unintentional injury in
the elderly

Older adults (>65):

- 16% of all traffic fatalities
- 8% of all injuries

Common Patterns Seen in Elderly Crashes

- Turning left into oncoming traffic
- Intersections
- In good weather
- Close to home
- During the day
- 80% “at fault”



Next Most Common Mechanisms of Injury

Burns

- 25% of all burn deaths occur in ages >65
- Elderly have the highest fatality rate among burns



Pedestrian

- 38% of deaths at a crosswalk
- Females > males
- 50% at night

When you get a call...

Is this what you picture?



Or this?



Physiological Differences in the Elderly

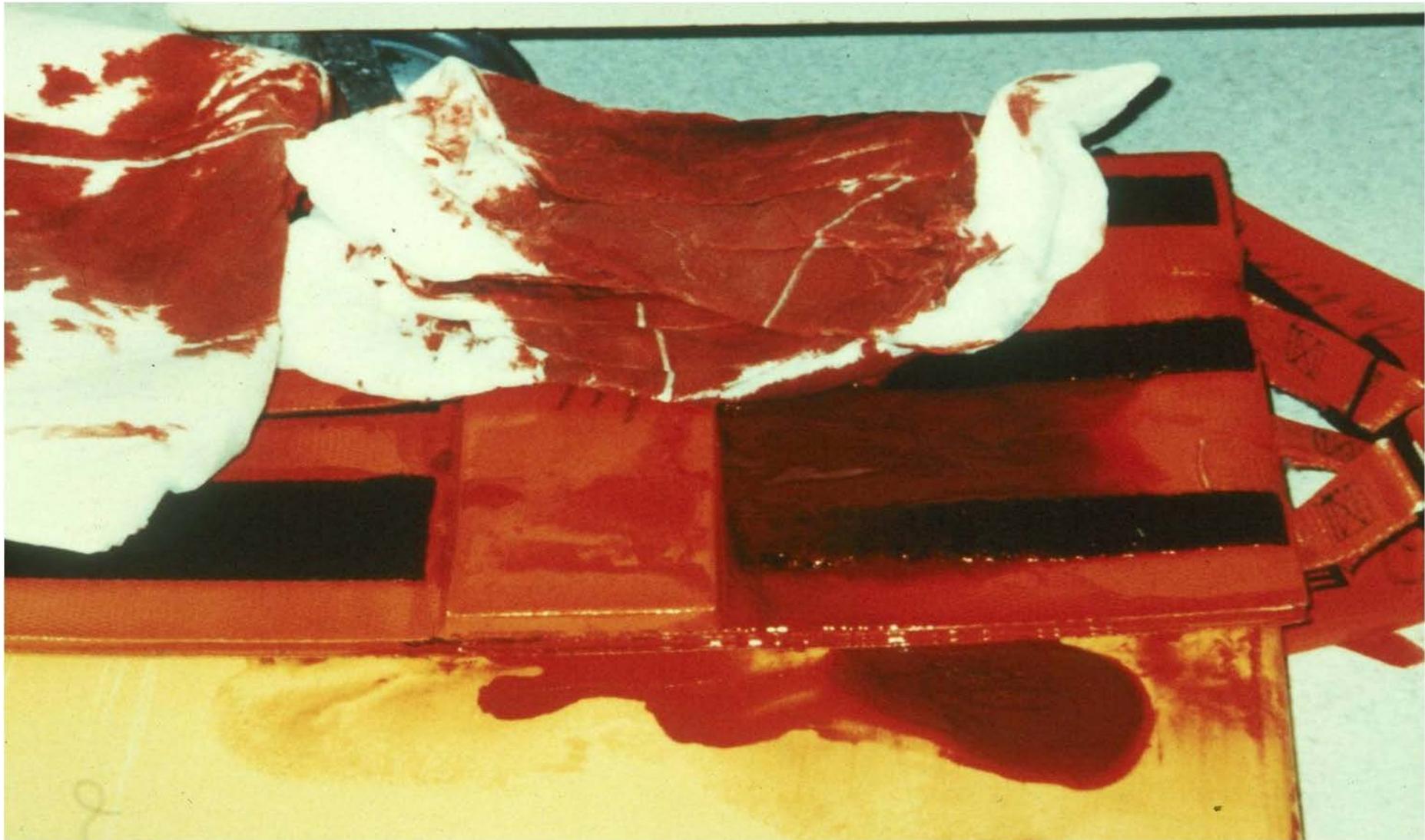
- The body begins the aging process at age 60
- Increased coronary artery stenosis
 - May become hypoxic quicker
- Maximum heart rate declines
 - May not be tachycardic
- Hypertension is common
 - SBP <110 is indicative of shock
 - Trigger to take to trauma center

Physiological Differences in the Elderly

- Kidney begins to lose nephrons and has a decreased glomerular filtration rate
 - They will go into shock sooner
- Decreased thermoregulatory ability
 - All geriatric trauma patients need to be warm
- Decreased bone mass
 - Minor fall can produce multiple fractures
- Decreased brain mass
 - Increased risk for SDH

What Do We Need to Know?

- Baseline neuro and functional status
- Co-Morbidities
- What meds?
 - Anticoagulants
 - Beta blockers
 - Are they on insulin?
 - Bring a list or just bring the bag



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What Do We Need to Know?

- If a fall, get as many details as you can
 - Intrinsic vs. extrinsic
- Were they using a device?
 - Try to bring it with you or have family bring
- Falls account for 40% of injury deaths in individuals over the age of 65

Other Factors to Consider for Appropriate Triage

- What does the scene look like?
- Proper immobilization
- Will they need long-term care?



Always remember, insignificant falls can cause significant injuries!!

What to Bring

- Dentures
- Hearing aids
- Living Will, DNR
- Glasses
- Contact information



Level 1 Geriatric Trauma Care at VCU Medical Center

- Age does factor into Delta vs. Echo activation
 - Undertriage of the elderly is associated with a two-fold increase in the risk of death
- Automatic geriatrician consult for patients 65 or older
- Anyone greater than 60 gets an EKG
- Development of geriatric protocols
- Physical Medicine and Rehabilitation consult

Level 1 Geriatric Trauma Care at VCU Medical Center

- All patients >65 years of age with a rib fracture are admitted to the ICU.
 - Greater than 45% mortality in patients ≥ 65
- Patients without clear history of mechanical fall have a Fall/Syncope workup
- Frailty Score
- Social worker and chaplain respond to all traumas 24/7
- Inpatient rehabilitation unit



Level 1 Geriatric Trauma Care at VCU Medical Center

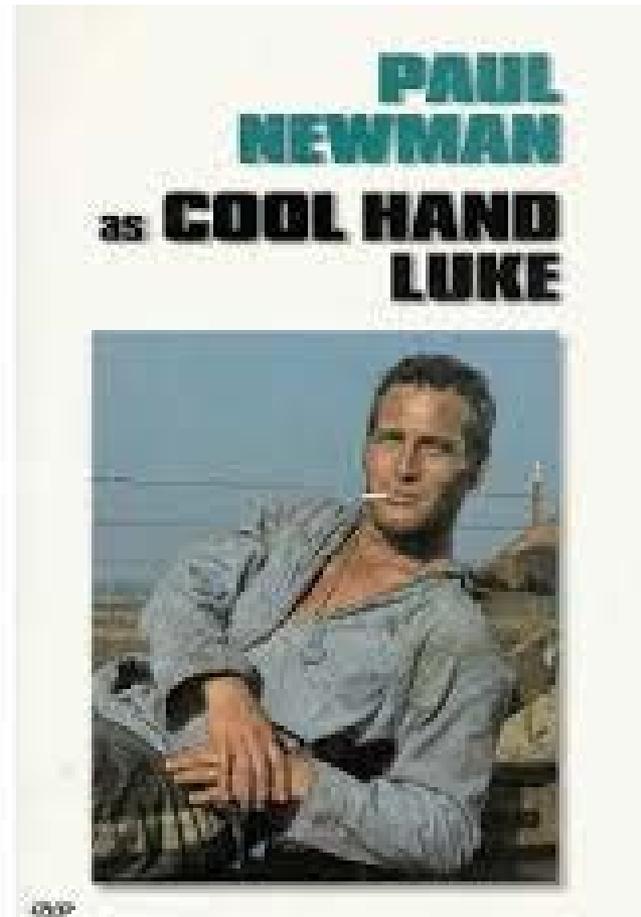
- All geriatric patients receive a Functional Status Exam
 - Can you get out of the bed or chair by yourself?
 - Can you dress and bathe yourself?
 - Can you make your own meals?
 - Can you do your own shopping?



Level 1 Geriatric Trauma Care at VCU Medical Center

- Frailty Scoring
 - Shrinkage – loss of 10 or more pounds
 - Weakness – decreased grip strength
 - Exhaustion – self-reported poor energy or endurance
 - Low physical activity – low weekly energy expenditure
 - Slowness – slow walking speed

What We Have is a Failure to Communicate



What We Have is a Failure to Communicate

- Normal changes can include
 - Impaired vision
 - Impaired hearing
 - Altered sense of taste/smell
 - Lower sensitivity to touch
- Any of these conditions can affect your ability to communicate with the patient

Communication

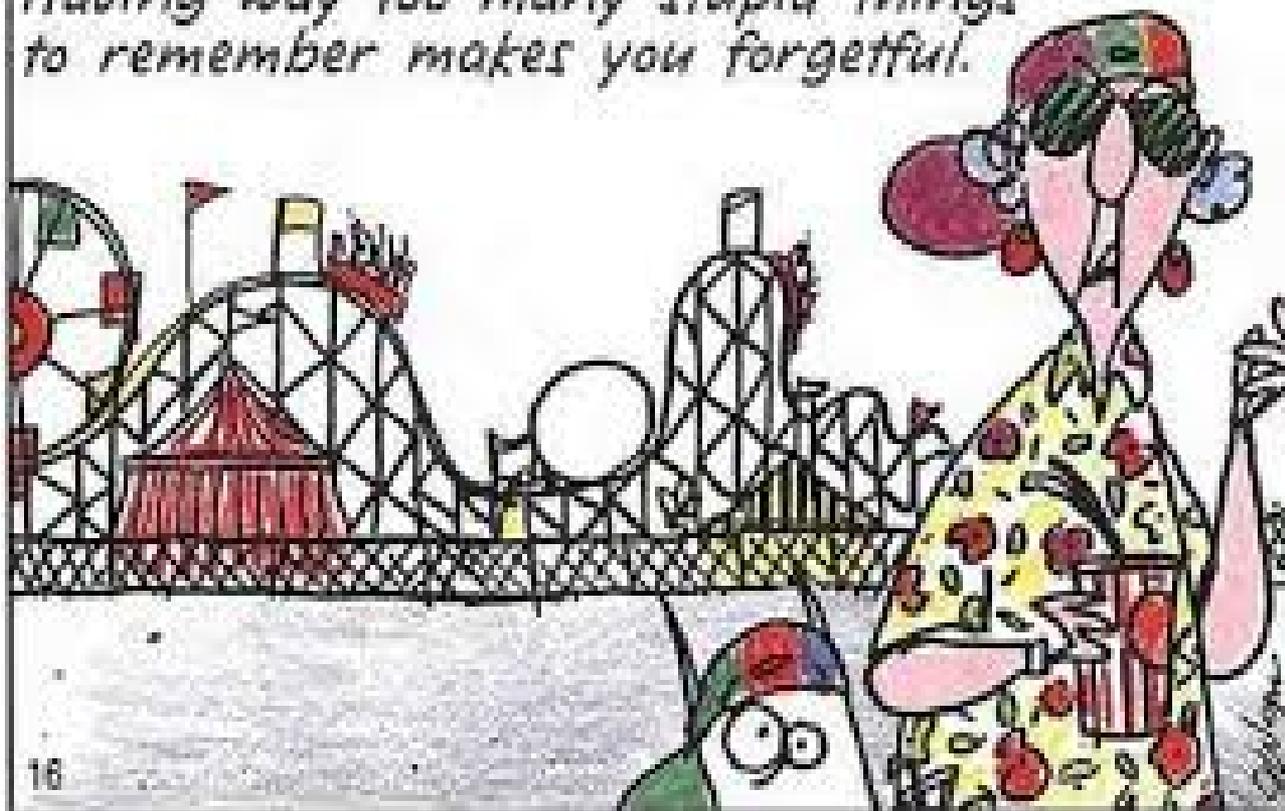
- Talk directly to patient
 - Respectful approach
 - Face your patient when speaking
 - Try to stay in the middle of the field of vision



Communication

- Protect their dignity
 - Avoid terms like “honey, pops, dear.”
 - Ask “My name is Karen. How would you like to be addressed?”
- Don’t let well-meaning family members prevent you from hearing the patient
- Allow autonomy
 - If they want to go back and make sure their door is locked, let them.

*Age doesn't make you forgetful.
Having way too many stupid things
to remember makes you forgetful.*



Golden Years??

- Is it trauma or abuse?
 - Abuse is the “Willful infliction of injury, unreasonable confinement, intimidation or cruel punishment, resulting in physical harm, pain, or mental anguish; Willful deprivation of goods or services that are necessary to avoid physical harm, mental anguish, or mental illness”
 - - Webster's Dictionary



Golden Years??

- As with Child Abuse, Elder Abuse can manifest in variety of ways:
 - Physical abuse
 - Sexual abuse
 - Emotional/Psychological abuse
 - Neglect
 - Abandonment
 - Economic
 - Abuse may exacerbate pre-existing medical conditions

Golden Years??

- Assessments and History
 - Note explanations that just sound “wrong”:
 - Conflicting histories from patient and caregiver
 - History inappropriate to the type or degree of injury
 - Bizarre or unrealistic explanation
 - Long delay in treatment from time of injury.
 - History of being “accident prone”
 - Denial in view of obvious injury

Golden Years??

- What to look for
 - Injuries inconsistent with story - bruises, black eyes, welts, lacerations, rope marks, fractures.
 - Open wounds, untreated injuries in different stages of healing.
 - Patient reporting he or she have been abused



Golden Years??

- Physical Exam
 - Note the location and pattern to bruises or injuries:
 - Any bruising at the neck
 - Circumferential bruising
 - Injuries on the torso only
 - Injuries that take the shape of an object



Golden Years??

- The reasons for Elder Abuse and Neglect are not always clear cut:
 - Increased life expectancy
 - Vulnerable population due to physical and / or mental impairment
 - Decreased productivity
 - Increased dependence with greater longevity
 - Limited resources for care of the elderly
 - Stress of the middle-aged caretaker responsible



Golden Years??

- Mandated Reporting of Elder Abuse
 - Many states have laws that require EMS personnel to report suspected cases of Elder abuse and/or neglect
 - What does your state require?



Case Presentation #1

- 84 y.o. male traveling from Florida to Delaware
 - Stepped out of car during a stop and became dizzy. Fell to ground
- Mental status – baseline and current
- Dizziness vs trip and fall?
- Complaints

Case Presentation #1

- C/o hip pain
- Family states patient is on a “blood thinner.” What do you think now?
- VS – BP 177/78, HR 74. RR 14, SpO2 100%
- What else are you thinking at this point?

Case Presentation #1

- Medications
 - Plavix
 - Lisinopril
 - Meloxicam (Mobic)
 - Pantoprazole (Protonix)
 - Fluticasone (Flonase)
 - Verapamil

Case Presentation #1

- What would you do for him at this point?
 - GCS
 - Oxygen
 - IV
 - Pelvic binder
 - Warming

Case Presentation #1

- Comminuted and displaced right acetabular fracture with medial protrusion of the right femoral head
 - Unstable pelvis
 - Hematoma
- All other films negative
- Needed surgery

Case Presentation #2

- 78 y.o. female fall
- Fell 10 feet from ladder while cleaning leaves from her gutters.
- C/o right elbow pain, right hip pain.
Remembered accident.
- Approximately 500 cc of blood loss from head lac
- How did she fall?

Case Presentation #2

- VS – BP 130/90, HR 80, RR 30, SpO2 95%
- GCS 15
- Home meds – Synthroid, Lipitor
- What are you thinking now?
- Where should she be transported?



Case Presentation #2

- Forehead hematoma
- Frontal scalp laceration
- Manubrium fracture
- Left 8-11 rib fractures
- Small right and left pneumothorax
- Retroperitoneal hematoma
- Left L2-L4 transverse process fractures
- Left sacral fracture
- Left inferior pubic ramus fracture
- Left elbow fracture



Case Presentation #3

- 66 y.o. female restrained passenger of car that slid down a hill, hit an embankment and then was hit by an oncoming vehicle, T-boned on her side.
- Seen at OSH, had chest x-ray
- Dx'd with rib fractures
- Discharged w/Percocet



Case Presentation #3

- Pt seeks care at another OSH with c/o leg and back pain.
- What might you be thinking at this point?



Case Presentation #3

- VS on arrival to OSH: B/P 153/62, P 83, SaO2 96%
- CT body and chest
- Lab work
- Right-sided rib fractures 3-8, L1 burst fracture, very small bilateral pleural effusions, grade 4 liver laceration, spleen laceration, Hgb 8.2
- Transferred to VCU Medical Center

Case Presentation #3

- VS on arrival: BP 132/81, P 111, RR 16, SpO2 98%
- GCS 15
- Chest x-ray
- CT head and C-spine
- Neurosurgeon and geriatrician consults



Case Presentation #3

- Received one unit PRBC for tachycardia and HBG of 8.6
- Admitted to STICU
- Hepatic arteriogram
- T11-L3 fusion 2/20
- Discharged after 8 days



Case Presentation #4

- 67 y.o. female tripped over a cord, fell onto her hip
- Transported to VCU Medical Center as an ECHO alert
- C/o right hip pain 8/10
- No other obvious injury
- Additional information- patient is a hoarder



Case Presentation #4

- VS on arrival: BP 179/63, HR 82, O2 sat 98%
- Alert and oriented
- Good pedal pulses
- X-ray showed right hip fracture
- Patient went to surgery on admission day #2 for hip repair
- Discharged to home w/home health on day #6



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Questions?