

Evaluating Nursing Preventive Measures and Hospital-Acquired Complications in Elderly Trauma Patients

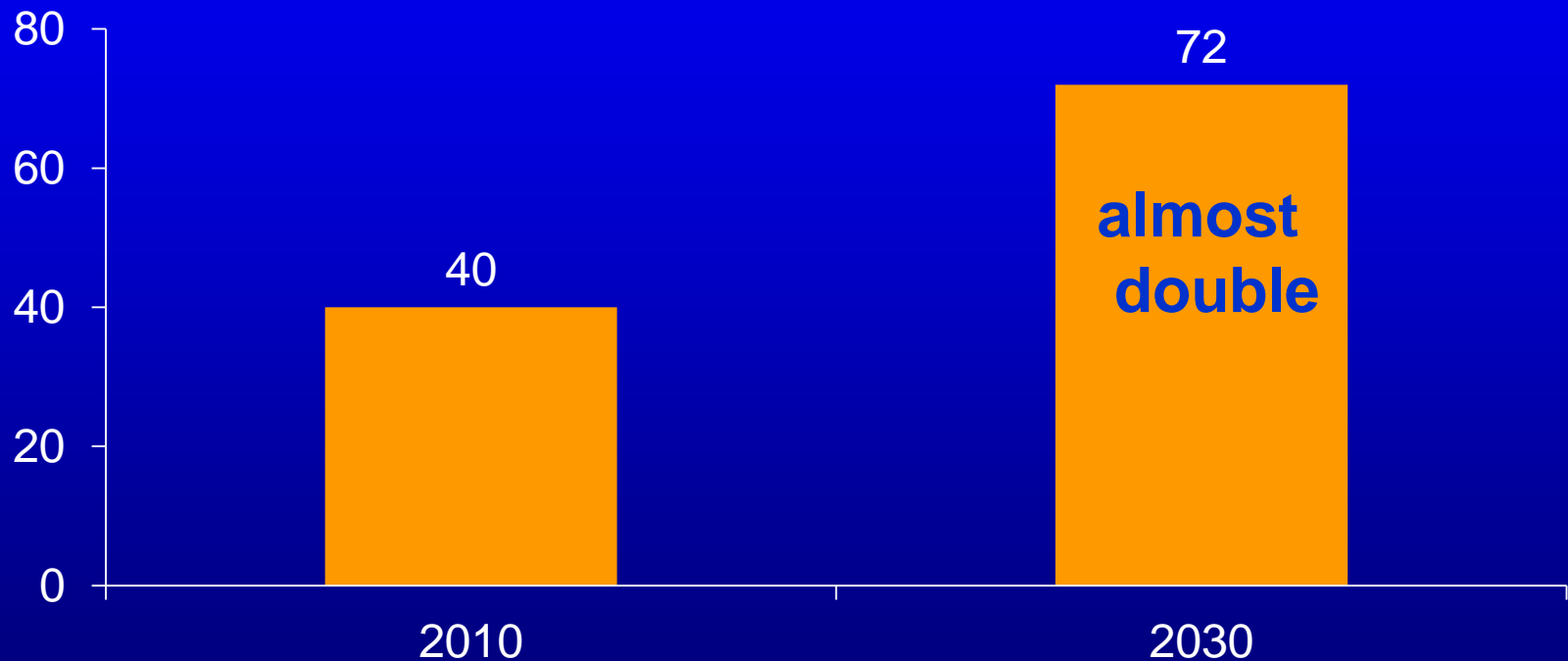
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Evaluating Nursing Preventive Measures and Hospital-Acquired Complications in Elderly Trauma Patients

The purpose of this study was to investigate the relationship between nursing preventive measures and hospital-acquired complications in elderly trauma patients.

Elderly in the U.S.

US population of elder adults – those 65 and older
(in millions)



Administration on Aging, 2010

High Costs of Elder Care



- Elders account for 15% of patients seen in Emergency Departments
- The elderly account for **48% of all ICU admissions**
- The elderly use 50% more diagnostic resources than do younger patients



ACEP, 2008

Challenges in the care of the elderly

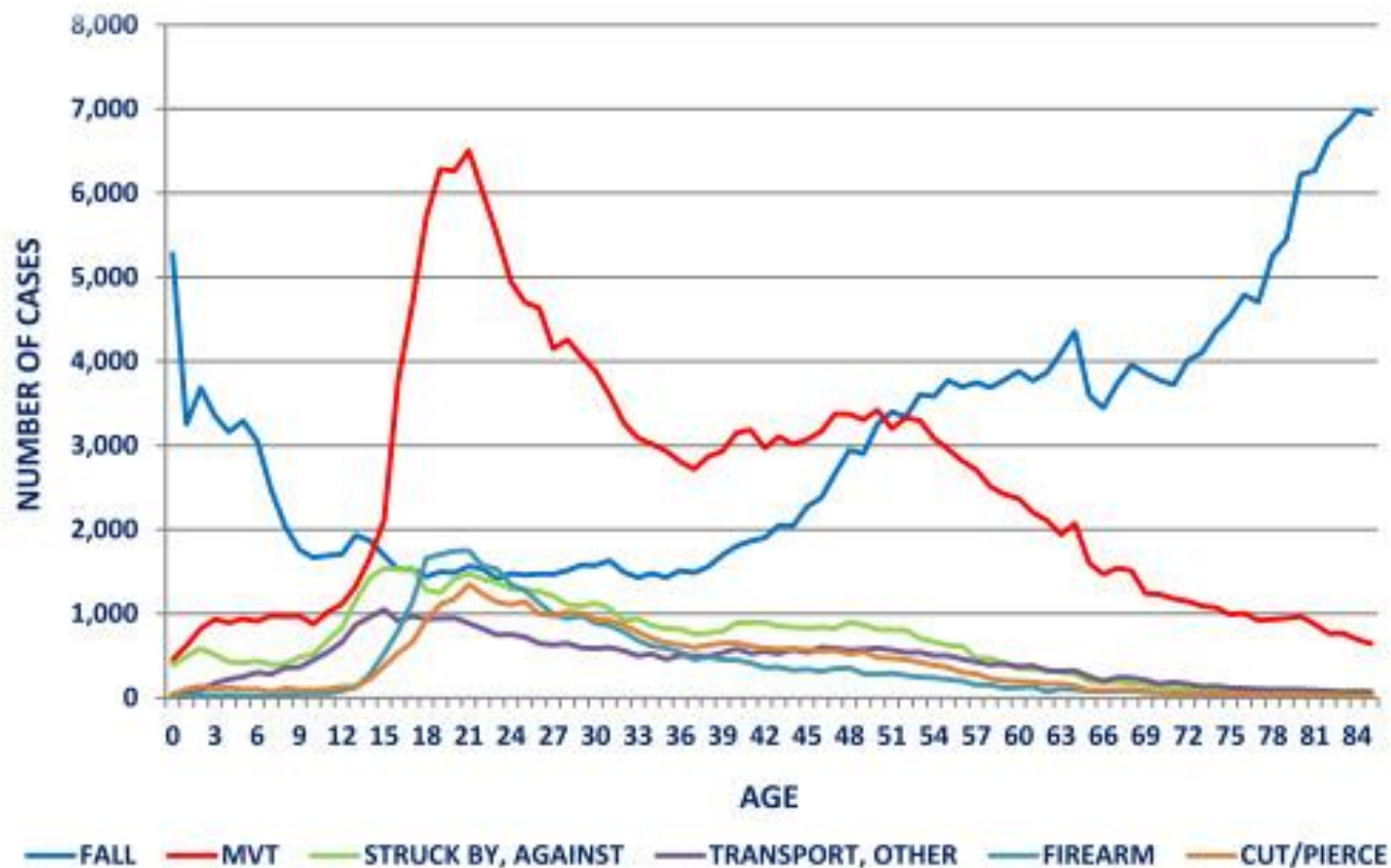
- Higher rates of co-morbidity
- Use of more medications that can mask disease or complicate management
- More likely to have adverse events and complications during hospitalization

Co-morbidities in the Elderly

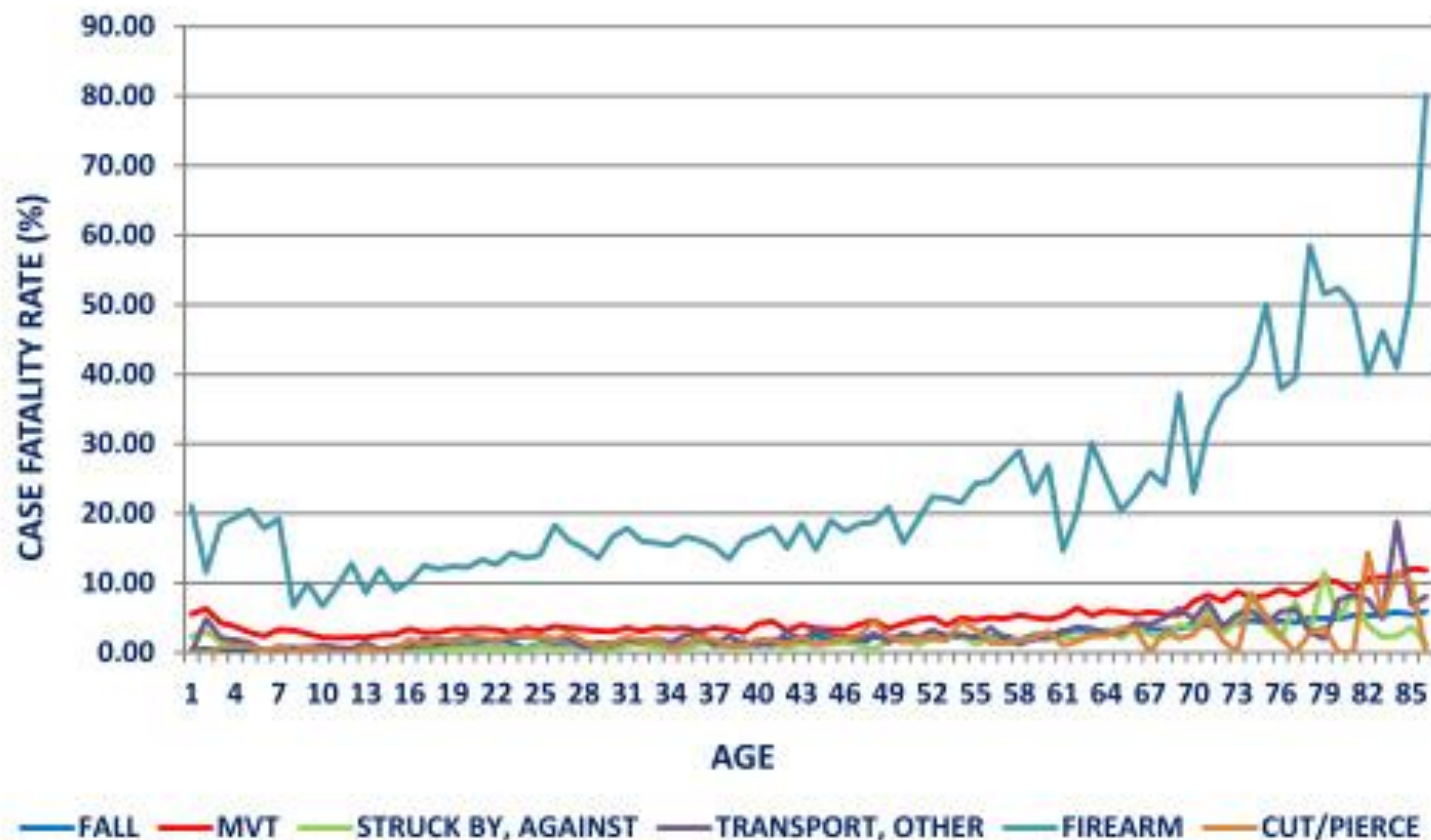
- Hypertension – 49%
- Arthritis – 36.1%
- CHD – 31.1%
- Cancer – 20%
- Diabetes – 15%

Administration on aging.gov

Incidents by Selected Mechanism of Injury and Age



Case Fatality Rate by Selected Mechanism of Injury and Age



High Co\$t of Elder Trauma Care



Trauma in the Elderly



- The elderly make up 13% of the population.
- **They account for 25% of all trauma admissions.**
- By 2050, it is estimated that **40%** of all trauma patients will be over 65.

Rising Co\$ts of Elder Trauma Care

- Those over 65 are hospitalized at a rate twice that of younger population with similar injuries.
- Hospital length of stay is longer; the utilization of expensive intensive care and costly diagnostic services is higher than that of younger patients.

Complications in elderly trauma patients

For any injury of given severity, the elderly are more likely to suffer significantly higher morbidity and mortality than are younger victims

Geriatric Syndrome



A particular set of complications are now known as “**Geriatric Syndrome**” complications due to the high frequency in the elderly – falls, pressure ulcers, depression, inadequate nutrition, functional decline, incontinence, and delirium

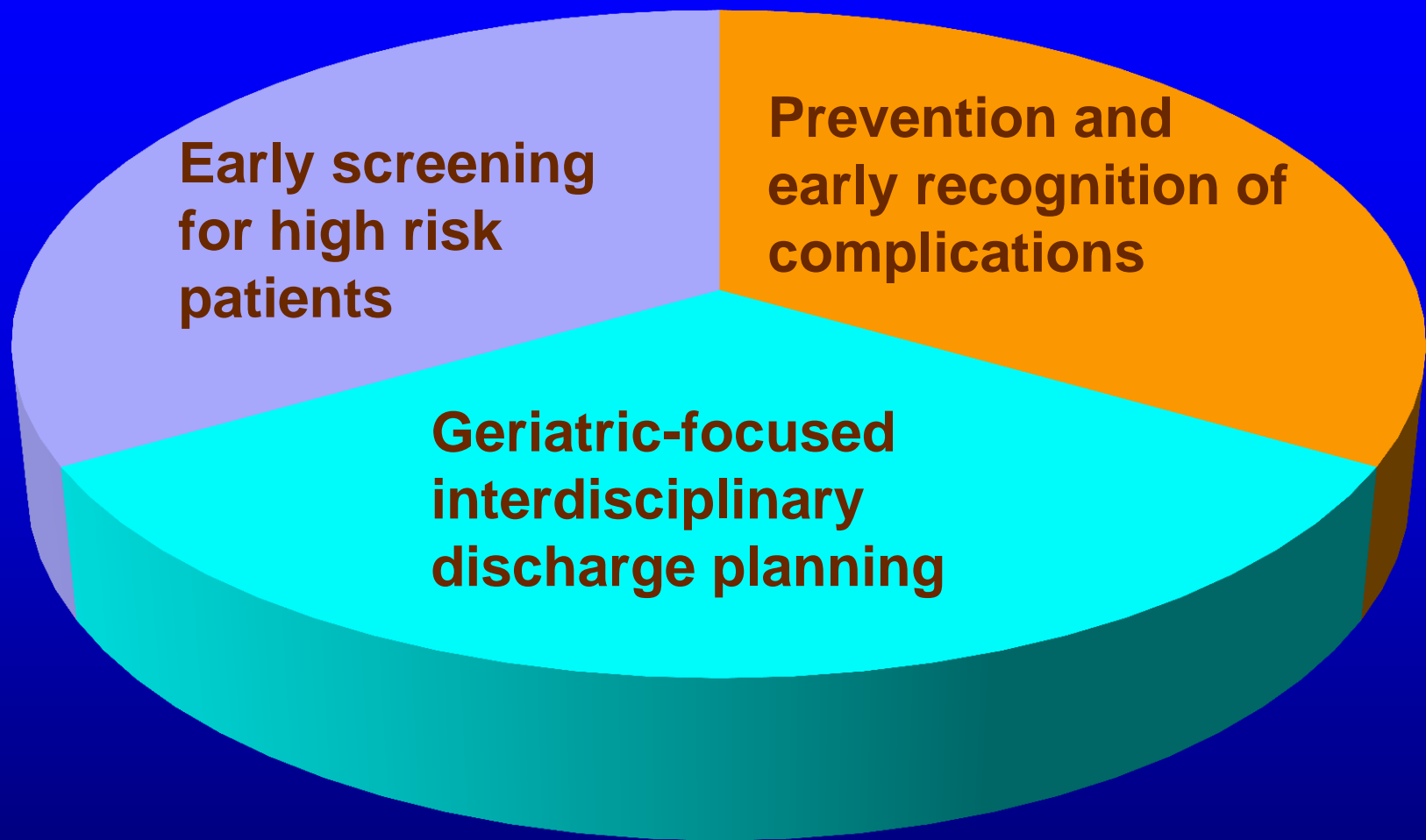
Nursing Preventive Measures

- Certain of the “geriatric syndrome” complications have been shown to be preventable with timely nursing intervention
- Commonly implemented nursing measures include those directed toward preventing falls, pressure ulcers, functional decline, medication errors, confusion, nutritional and hydration issues, and some nosocomial infections (pneumonia, UTIs, BSIs, etc.).

What can be done...?

- Studies suggest that as many as **70%** of all complications are. . .

...preventable!



Recommendations of the ACS, ACEP, American Geriatric Society

Feasibility pilot study (2011)

- A chart monitoring tool was developed to determine if preventive measures were being documented according to the nursing department policy of the hospital.
- The health records of 100 patients 65 years and older admitted to a Level II trauma center with trauma diagnoses were evaluated for required nursing documentation of preventive measures.

Follow up study (2012)

In the follow up study, 79 additional records were evaluated for documentation of the original nursing preventive measures *plus* 3 additional measures of:

- Hydration status
- Incontinence status
- Appropriateness of Indwelling urinary catheter

Data Analysis

- All 179 records were evaluated for the relationship between nursing preventive measures, hospital-acquired complications (HACs) and hospital length of stay (LOS).

Nursing Preventive Measures Assessed

Original pilot study (100 patients)

- Respiratory
- Mobility
- Skin
- Orientation
- Falls
- Pain***

Added in 2nd study (79 patients)

- Hydration status
- Incontinence
- Indwelling urinary catheter

*** associated with impaired mobility, falls, exacerbation of cognitive impairment and functional loss

Results of Pilot Documentation review

- Compliance with documentation requirements was excellent, with four exceptions.
- The four exceptions were those for which documentation was *not required by the charting system* used by the hospital (there were no mandatory entry requirements or “prompts”)

Results of chart review for nursing preventive measures

Preventive Measures

- Cough & deep breathing
- Use of incentive spirometer
- Up walking if indicated
- Pain reassessed per policy

Documentation Compliance

- 14%
- 46%
- 64%
- 61%

Second Study

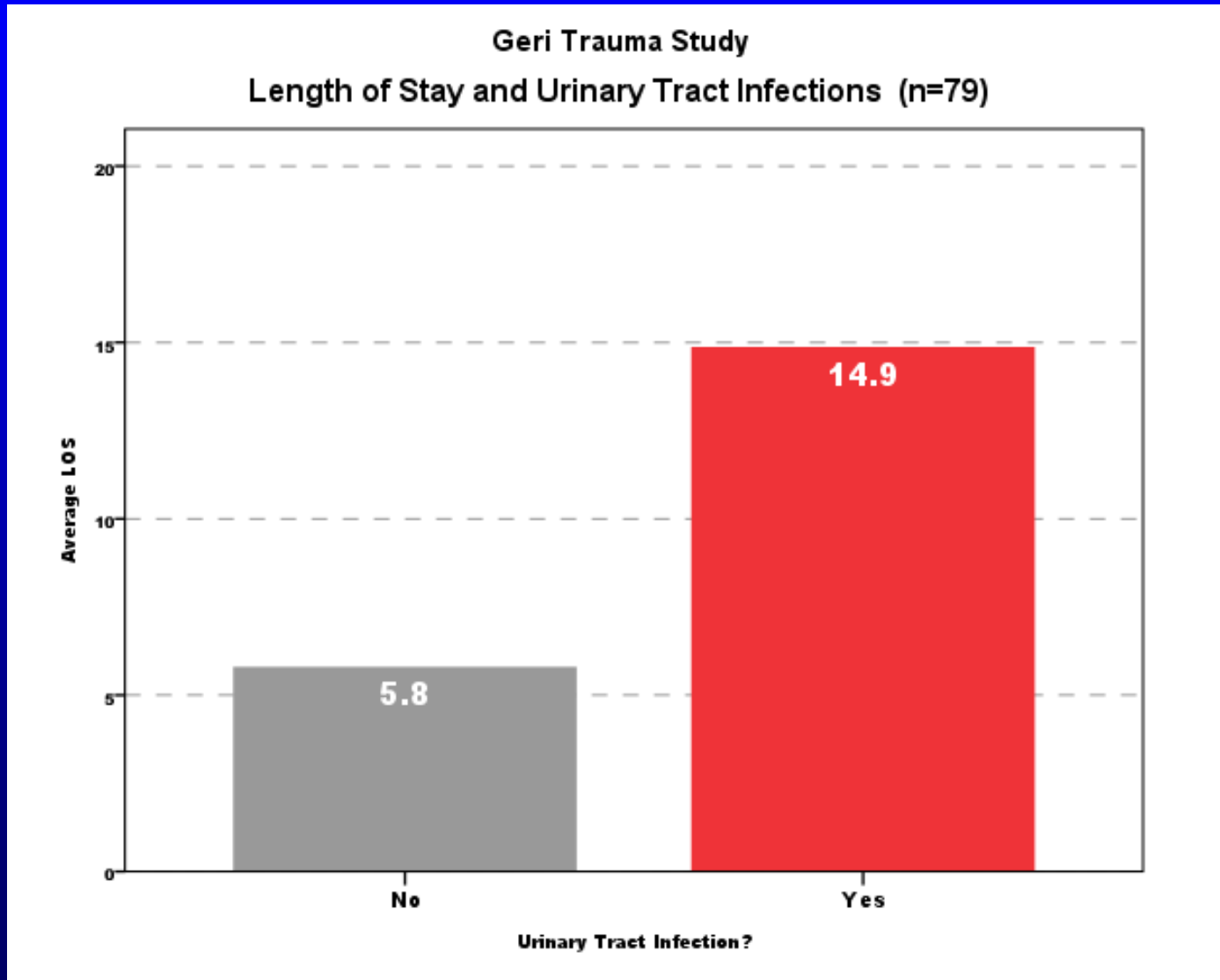
- The original 100 patient records plus the records of an additional 79 elderly trauma patients were evaluated for the relationship between preventive nursing measures, hospital-acquired complications, and hospital length of stay.

Hospital-acquired complications evaluated

- **Atelectasis**
- **Bacterial Pneumonia**
- **Dehydration**
- **Falls – with injury**
- **Pressure ulcers**
- **Incontinence**
- **UTI**
- **Confusion**

Geriatric Trauma Study

LOS & UTIs with indwelling urinary catheters



Geriatric Trauma Study

LOS & UTIs with indwelling urinary catheters

Average Length of Stay by UTI (n=79)

UTI		N	MIN LOS	MAX LOS	Average LOS	Std. Deviation
No	Length of Stay	71	1	19	5.80	3.63
Yes	Length of Stay	8	6	35	14.88	12.59

There is a statistically significant correlation
between LOS and UTI.
Patients with UTI have a longer LOS than those
without UTI.

$P \leq .000$

Findings

- The findings suggest the importance of coordinating nursing policy documentation requirements and the required entries of the electronic health system used by the institution.
- When time consuming narrative entries are necessary for compliance, documentation becomes more burdensome and less adherence to documentation requirements may result.

Findings, continued

- There were no definitive associations found between documentation of nursing preventive measures and HACs.
- The positive findings of an association between UTI and the duration of indwelling urinary catheters were consistent with the literature and current evidence

Limitations

- The study was based on the assumption that nursing documentation is reflective of performance. This assumption may not be accurate due to a number of possible factors that require further exploration.
- Interrater reliability for the patient record monitoring tool was not rigorously established prior to the study. Documentation was determined to be complete or incomplete based on nursing policy requirements.

Conclusions

- Patient documentation systems need to incorporate all nursing policy requirements for ease of compliance. Narrative notes are more labor intensive and may lead to missing documentation
- There is little current evidence to support many nursing preventive measures. Since these measures are time consuming, their benefit needs to be established unequivocally.

Future Research

- Future qualitative studies may be able to clarify to what extent nursing activities are accurately and completely documented.
- Further investigation may determine if the accuracy of documentation is related to elements of the health record itself or to other as yet undetermined factors.
- Records of any readmitted elderly trauma patients should be evaluated for accurate assessment of the incidence of HACs.

Summary

- Elderly trauma patients have higher morbidity, mortality & iatrogenic complication rates & utilize more and expensive resources.
- Evidence-based recommendations include early screening for high risk elderly patients and a greater focus on prevention and early recognition of complications in this age group.
- Future research is needed to accurately determine measures to prevent HACs in elderly trauma patients

Hospital-acquired complications in elderly trauma patients

Questions?