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# FALL-RELATED INJURY IN THE HOSPITAL

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## BACKGROUND/PURPOSE

2 – 9% of adult patients who fall in the hospital suffer serious injury. There is little evidence-based literature to guide physicians when assessing hospitalized patients for fall-related injury. This study was designed to (1) identify demographic and/or clinical factors which predict serious fall-related injury among hospitalized adults, and (2) judge the adequacy of physician documentation related to adult patients who fell in the hospital.

## METHODS/SETTING

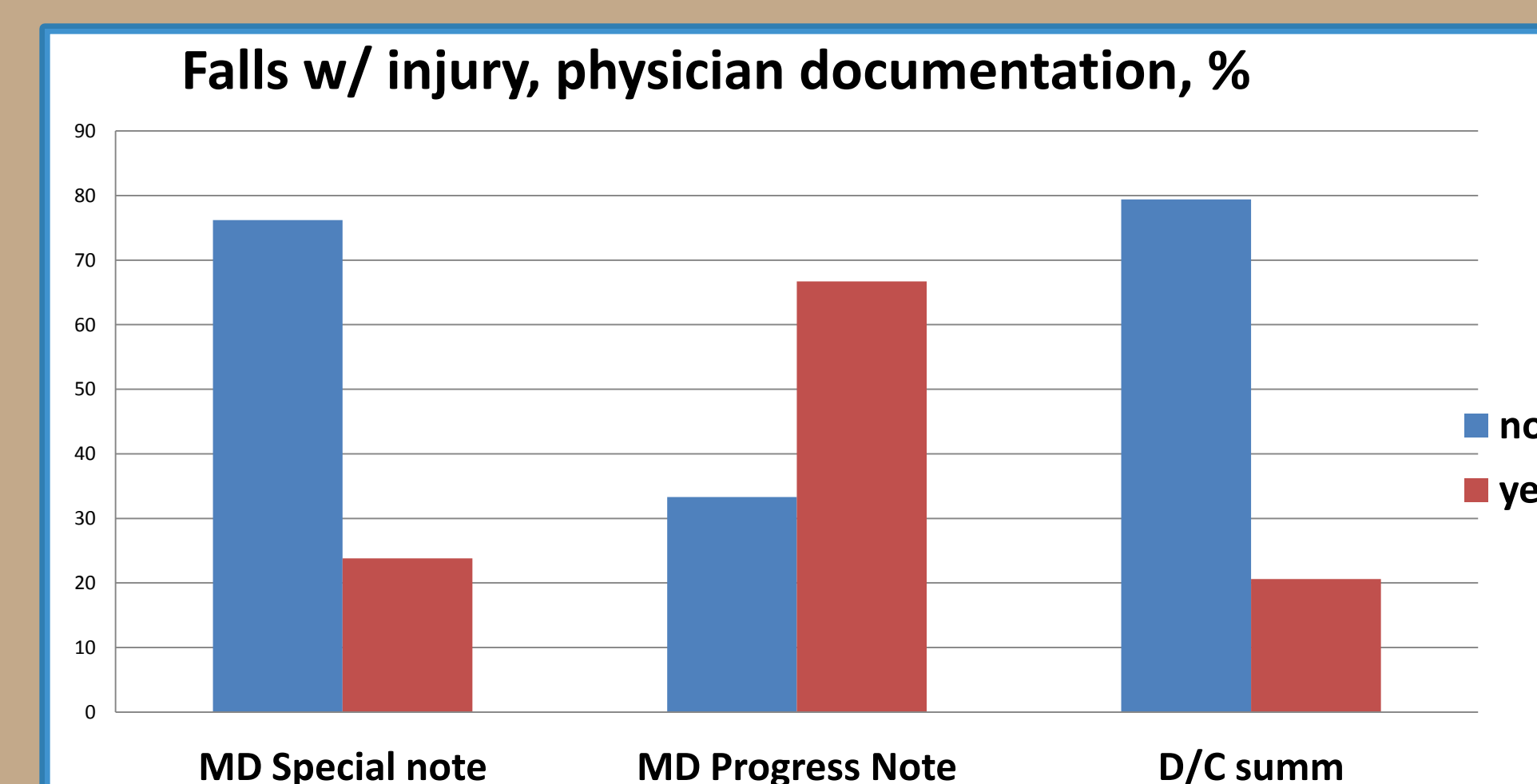
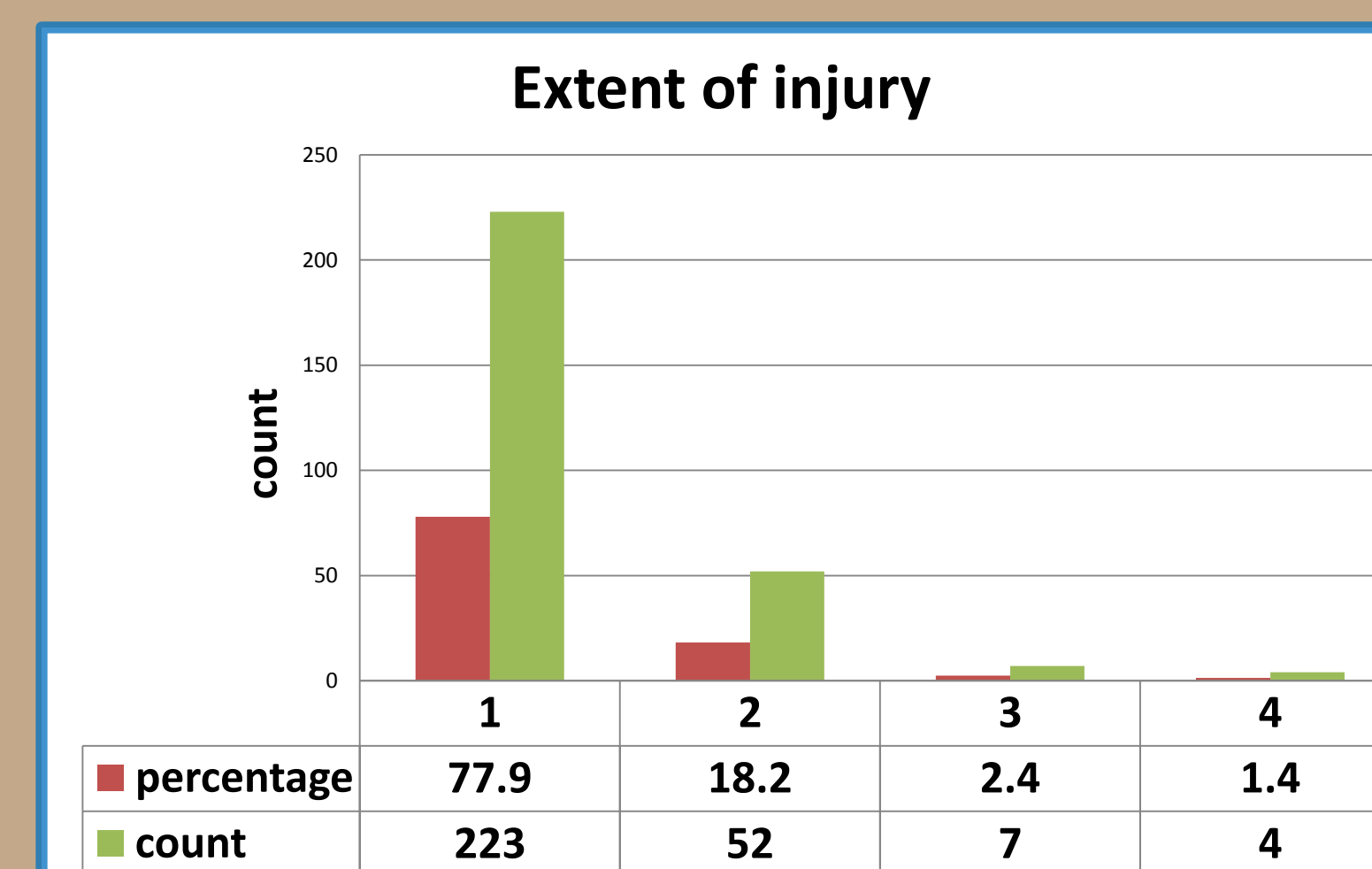
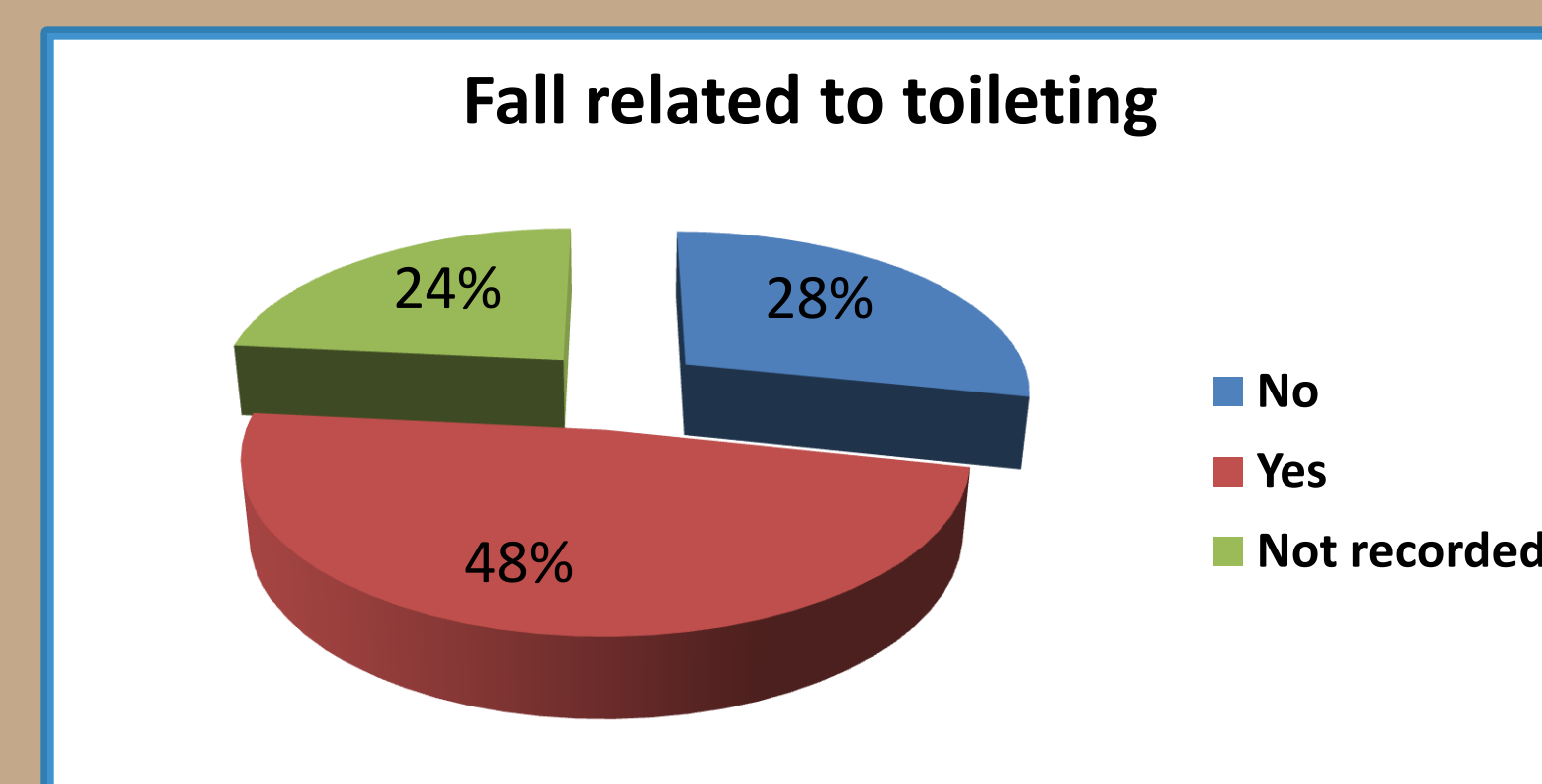
Nursing staff are required to report all hospital falls through our hospital's computerized Patient Safety Network (PSN). We performed a retrospective chart review of all PSN reported falls that occurred during 2010 in our 431-bed university acute care hospital. Patients less than 18 years old, pregnant women, and prisoners were excluded.

## RESULTS

Medical records were available for 286/293 (98%) of PSN-reported falls in 251 eligible patients. Falls occurred in 152 males (61%), and 99 females (39%). Compared with all adult patients admitted during the same period, falls were more frequent in males ( $p = 0.02$ ), but not more frequent in persons older than 64 years ( $p=0.8$ ). 48% of falls occurred while toileting. 25% (63/286) of falls were associated with injury, and 4% (11/286) with serious injury (laceration requiring closure or fracture). Compared to all fallers, patients with injury did not differ by gender (males 38/152 vs. females 25/99,  $p=0.96$ ). Patients older than 64 years who fell were no more likely to suffer injury than younger adults (13/64 vs. 50/187,  $p = 0.31$ ). In univariate analysis, patients who reported hitting their head, patients with pre-fall confusion, and patients who received narcotics on the day of fall were more likely to suffer injury (estimated odds ratios 6.04, 2.00 and 5.1, respectively). In multivariate analysis, receiving a narcotic on the day of fall was the strongest predictor of injury (Table). 33% (21/63) of falls with injury had no physician documentation in the hospital record, and in only 21% (13/63) of cases, were falls with injury mentioned in the discharge summary.

## RESULTS

Risk of Injury Among Fallers						
Variable		Odds Ratio			Z statistic	p-value
Name	Values	Estimate	95% Conf Interval			
Hit head	Yes vs. No	1.07	0.85	1.36	0.58	0.5629
Pre-fall confusion	Yes vs. No	1.74	0.99	3.08	1.91	0.0558
Received narcotic	Yes vs. No	5.59	2.14	14.65	3.51	0.0005



## CONCLUSIONS

1. In this single-institution study, injury occurred in 25% of patients who fell, and serious injury in 4%.
2. Nearly half of all falls occurred while toileting.
3. Compared to all falls, falls with injury did not vary by gender or age.
4. Receiving a narcotic of the day of fall was the strongest predictor of injury.
5. Physicians inconsistently provided medical record documentation of hospitalized patients who fell with injury.

## LIMITATIONS

1. This is a single institution study.
2. Only falls reported by nurses to our Patient Safety Network were studied, thus not all falls may have been included.
3. Classification of extent of injury was based on review of the nurse's PSN and physician's progress note, and some injuries may not have been captured.
4. This study did not include psychiatric patients admitted to Mental Health Center

## REFERENCES

1. Fischer ID, Krauss MJ, Dunagan WC, Birge S, Hitcho E, Johnson S, et al. Patterns and predictors of inpatient falls and fall-related injuries in a large academic hospital. *Infect Control Hosp Epidemiol.* 2005 Oct;26(10):822-7.
2. Hignett S, Masud T. A review of environmental hazards associated with in-patient falls. *Ergonomics.* 2006 Apr 15-May 15;49(5-6):605-16.
3. Inouye SK, Brown CJ, Tinetti ME. Medicare nonpayment, hospital falls, and unintended consequences. *N Engl J Med.* 2009 Jun 4;360(23):2390-3
4. Lakatos BE, Capasso V, Mitchell MT, Kilroy SM, Lussier-Cushing M, Sumner L, et al. Falls in the general hospital: Association with delirium, advanced age, and specific surgical procedures. *Psychosomatics.* 2009 May-Jun;50(3):218-26.
5. Schwendimann R, Buhler H, De Geest S, Milisen K. Characteristics of hospital inpatient falls across clinical departments. *Gerontology.* 2008;54(6):342-8.
6. Webster J, Courtney M, Marsh N, Gale C, Abbott B, Mackenzie-Ross A, et al. The STRATIFY tool and clinical judgment were poor predictors of falling in an acute hospital setting. *J Clin Epidemiol.* 2010 Jan;63(1):109-13.