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Reference: Nagurney et al. Emergency Department Visits Without Hospitalization Are Associated With Functional Decline in Older Persons. Annals of Emergency Medicine. 2017;69(4):426-433.

Question: In older community-dwelling adults, are illnesses and injuries requiring ED visit (but not hospitalization) associated with functional decline over the following 6 months?

Introduction: Previous studies have shown that elderly patients who require hospitalization have increased risk of functional decline. However, the link between less severe illnesses and injuries – requiring ED visit but not hospitalization – and functional decline in the elderly population is less clear. This is important, since the majority of older adults who visit the ED are ultimately discharged home. This study compared 6 month outcomes (disability scores, mortality, and nursing home use) among older individuals who were discharged from the ED, a matched control group, and a hospitalized group.

Methods: The study population consisted on 754 nondisabled, community-living adults aged 70+, recruited as part of the Yale Precipitating Events Project. Participants were followed longitudinally via home-based assessments every 18 months, as well as monthly telephone interviews. The study was conducted using a matched cohort design, comparing outcomes among participants with an ED visit, a matched group who did not visit the ED, and an unmatched group who were hospitalized. The primary outcome was defined as disability score at 6 months. This was measured on a 0-13 point scale, with points given for independence for each of 4 ADL's, 5 IADL's, and 4 mobility activities. Secondary outcomes included mortality and nursing home use at 6 months.

Results: The mean ages for the control, ED-only, and Hospitalized groups were 83.6, 83.6, and 84.4 respectively. The three groups were relatively well matched in terms of gender, baseline disability scores, and degree of independence. The most common reasons for ED-only visits were MSK complaints (31.4%), cardiac complaints (10.7%), and GI complaints (9.3%). The most common reasons for hospitalization were cardiac complaints (18.3%), MSK complaints (12.7%), and Infectious causes (12.4%). Throughout the 6 month follow up period, the ED-only group had disability scores which were higher than the control group but lower than the Hospitalized group. Compared with the control group, the ED-only group had higher disability scores with an adjusted risk ratio of 1.14; compared with the ED-only group, the Hospitalized group had higher disability scores with an adjusted risk ratio of 1.17. Similarly, nursing home stays and mortality rates were higher in the ED-only group than the control group, and were higher in the Hospitalized group than the ED-only group.

Discussion and Limitations: The authors conclude that community-living older persons who presented to the ED and were subsequently discharged home had worse functional outcomes, higher nursing home use, and increased mortality over the following 6 months compared with those who did not present to the ED, but better outcomes than those who presented to the ED and required hospitalization. In many ways, these results seem intuitive: a person with an illness or injury requiring a visit to the ED would seem more likely to have negative long-term sequela than someone who does not – particularly among the elderly. The value of this study is not just to establish, but to quantify this increased risk. Limitations included the observational nature of the study, the analysis of "observations" rather than participants (resulting in some

overlap of participants into different groups during the study period), and the geographical homogeneity of the study group. From a practical standpoint, this study highlights the importance of considering and discussing the long term implications of the older patient's illness or injury when discharging him/her from the ED.