

Trauma related death and disability is common among working-age Americans, however the impact on older adults is consequential and increasing. Fractures are the most common traumatic injury diagnosis among Medicare beneficiaries, and though fragility fractures continue to be an important health problem, recent data indicate an increase in high-energy fractures. The purpose of this study was to produce national incidence estimates among US men and women  $\geq 65$  years using data from the 2003-2014 National Inpatient Sample (NIS). The study cohort included hospitalizations involving upper and/or lower extremity fractures which were further classified by mechanism as high or low energy using external cause of injury codes. Incidence was computed using survey weights provided by NIS, and population estimates from the Census Bureau. The incidence of high-energy fractures increased from 744.1/100,000 persons (95%CI: 681.1–807.1) in 2003 to 821.4/100,000 (95%CI: 795.0 – 874.8) in 2014 in women, and from 359.1/100,000 (95%CI: 331.4–386.8) to 408.2/100,000 (95%CI: 394.–809.2) in men. Over 80% were motor vehicle related. The greatest increase was among those  $\geq 85$  (1,856.4/100,000 to 2,126.3/100,000 in women; 1,069.1/100,000 to 1,215.1/100,000 in men). Simultaneously, the incidence of low-energy fractures declined: 748.4/100,000 (95%CI: 687.5–809.2) to 443.8/100,000 (95%CI: 423.5 –464.1) in women, and 310.6/100,000 (95%CI: 285 – 336.2) to 206.3/100,000 (95%CI: 196.5 - 216) in men. Results suggest that fractures commonly seen in younger adults will be seen more frequently in older age. It is therefore essential to establish treatment pathways to optimize outcomes for the growing number of injured older adults.

#### DISENTANGLING AND QUANTIFYING MECHANISMS OF INCREASED FALL RISK AMONG OLDER ADULTS WITH DEPRESSION

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**Background:** Older adults with depression are up to four times more likely to fall, yet the mechanisms by which depression increases fall risk are unclear. This study sought to quantify and compare the relative strength of selected mechanisms mediating the association between depression and falls. **Methods:** We used longitudinal linked data (2006 – 2010) from the Health and Retirement Study and Prescription Drug Study. The analytic sample included non-institutionalized adults age  $> 65$  with data on physical functioning and medication use ( $n=3,565$ ). Falls and injurious falls over the past two years were self-reported outcomes. Depression was measured using the Composite International Diagnostic Interview (CIDI). We used causal mediation analysis to estimate the total and direct associations between depression and falls and compared strength of three potential mediating mechanisms – frailty, cognition, and antidepressant (AD) use. **Results:** Of 190 participants reporting depression in 2006, 85 (44.7%) fell and 30 (15.8%) were injured from a fall between 2008 and 2010. Depressed individuals were 92% more likely to fall compared to non-depressed (OR=1.92,  $p<.01$ ). We found significant indirect effects of AD use (indirect OR=1.17,  $p<.01$ ) and frailty (OR=1.12,  $p=.013$ ) representing 19% and 13% of the total effect of

depression on falls, respectively. Cognition was not a significant mediator. Results were similar for falls leading to injury. **Discussion:** Results suggest that AD use and frailty explain a significant portion of the elevated risk for falls among depressed individuals. Identification of these and other mechanisms may inform clinical treatment decisions for older adults with depression.

#### EXPERIENCE-BASED CO-DESIGN TO DEVELOP AN INJURY PREVENTION INTERVENTION IN SKILLED NURSING FACILITIES

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Experience-based co-design (EBCD) improves clinical effectiveness and safety by incorporating end-user perspectives in the design of clinical interventions. To refine a centralized, multi-component fall-related injury prevention service (IPS) to be tested in skilled nursing facilities (SNFs) in a pragmatic trial, we employed a modified EBCD process. We first conducted in-depth interviews with SNF residents, family members, and staff ( $n = 28$ ; three facilities in two states) regarding their experiences in falls prevention. We then engaged these and other stakeholders from multiple institutions ( $n=4$ ) in a day-long co-design workshop with our interdisciplinary research team. Building upon themes drawn from the analysis of interviews, we targeted three intervention components that were refined during the workshop: de-prescribing process, osteoporosis treatment, and educational videoconferences. Key outcomes from the EBCD process included development of strategies to ensure that: (1) residents, families, and SNF staff are involved in communication about residents identified as high risk for fall-related injury, and in related treatment decisions; (2) approaches to monitoring for unintended consequences from the injury prevention plan are clearly understood by direct care staff and are compatible with existing workflow; (3) treatment plan risks and benefits are presented in a manner easily understood by stakeholders; and (4) staff education conferences build trust with the IPS nurse and provide direct care staff with support and advice about challenging cases. EBCD is a feasible approach to strengthen intervention development in SNFs and can lead to testable new ideas for protocol refinement to address diverse stakeholder perspectives.

#### SYSTEMS ADDRESSING FRAIL ELDER CARE: AN IMPLEMENTATION STUDY

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SAFE Care™ was developed at one hospital and found to be an effective care model for frail older adults. SAFE Care™ includes nurse screening for frailty risks,