Supplementary Figure 1. Cohort Derivation – Long-Stay Nursing Home Residents

Long-term care nursing home residents $% \frac{1}{2}$ with \geq 120 days of nursing home stay, 2011 to 2017

N = 1,419,760



Nursing home residents aged 65 years or older

N = 1,271,811



Continuous enrollment in Medicar Part D during 120 days of nursing home stay and 6 months prior to the MDS assessment date

N = 1,098,341



Continuous enrollment in Medicare Parts A & B in the 12 months prior to the MDS assessment date

N = 770,660



Final cohort after excluding patients with missing values for patient characteristics

N = 734,739

Supplementary Figure 2. Cohort Derivation – Nursing Home Residents with an Emergency Room Visit for a Fracture

Long-term care nursing home residents with outpatient emergency room visit for fracture and no hospitalization within 7 days, no fracture in 6 months prior to outpatient visit, 1/1/2012 to 12/24/2017

N = 34,365



Nursing home residents aged 65 years or older N = 32,056



Continuous enrollment in Medicar Part D 6 months prior to the outpatient emergency room admission date

N = 26,289



Continuous enrollment in Medicare Parts A & B in the 12 months prior to the outpatient emergency room admission date

N = 23,107



Exclude the fracture who have any opioid prescription between 90 days prior to emergency room admission date

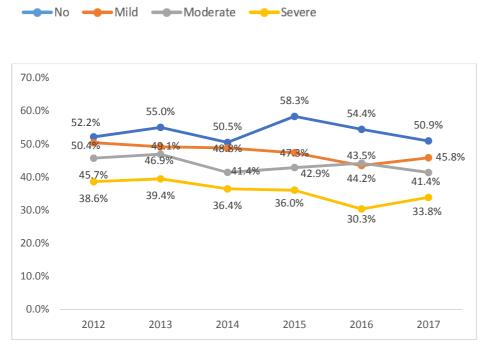
N = 15,237



Final cohort after excluding nursing home residents with missing values for patient characteristics

N = 12,927

Supplementary Figure 3. Trends in Opioid Use by Dementia Severity in Long-term Care Nursing Home Residents with an Emergency Room Visit for a Fracture



P value for trends from Cochrane-Armitage trends test: no 0.7871; mild 0.0454; moderate 0.0317; severe 0.0150