

## Emergency Hospitalizations for Adverse Drug Events in Older Americans

### STUDY QUESTION

What medications are most commonly implicated for adverse drug events that require emergency hospitalizations?

### STUDY DESIGN

**Design:** Retrospective review of a representative national sample of patients admitted to an acute care hospital.

**Setting:** Data collected between 2007 and 2009 using the National Electronic Injury Surveillance System–Cooperative Adverse Drug Event Surveillance (NEISS-CADES). NEISS-CADES is a population weighted probability sample of US hospitals designed to estimate the number of events in the United States.

**Patients:** 65 years of age or older admitted from an emergency department to an acute care hospital.

**Description of Observations:** Case coded as adverse drug events (ADE) were included. Adverse events were categorized by mechanism of ADE (allergic, adverse effects at usual dose or unintentional overdose). Up to 2 medications could be implicated for an ADE. **Outcomes:** Hospitalization after emergency departments visit for an ADE. They also investigated the number of admissions related to “high risk medications” (defined by Healthcare Effectiveness Data and Information Set) and “potentially inappropriate” medications (defined by Beers Criteria).

### MAIN RESULTS

The medications with the highest estimated number of annual admissions for ADEs were: warfarin (33,171), insulins (13,854), antiplatelet agents (13,263), oral hypoglycemic agents (10,656) and opioids (4,778). Two thirds majority of ADEs were inadvertent overdoses. Rates were highest for patients older than 80 years. “High risk” and “potentially inappropriate” medications accounted for approximately 1,200 and 6,700 admissions respectively.

### CONCLUSION

The vast majority of admissions for adverse drug events are related to anticoagulants and anti-diabetic agents. Medications designated as “High risk” and “potentially inappropriate” were responsible for many fewer admissions.

### ABSTRACTED FROM

Budnitz D et al. Emergency Hospitalizations for Adverse Drug Events in Older Americans. *N Engl J Med* 2011;365:2002-12

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## COMMENTARY by Kennon Heard MD (University of Colorado Department of Emergency Medicine)

Adverse drug events (ADEs) remain a major concern for providers caring for elderly patients. The Institute of Medicine has identified reducing adverse events is a major safety goal.<sup>1</sup> Patients over age 65 who are seen in an emergency department are usually taking 3 or more medications, and the majority will leave with one or more additional prescriptions.<sup>2</sup> It will hardly come as a surprise to emergency physicians that anticoagulants and hypoglycemics account for the vast majority of hospitalizations related to ADEs. Interventions designed to decrease ADEs should target these medications.<sup>3</sup> The vast majority of ADEs were caused by inadvertent overdose (as opposed to events at therapeutic doses or allergic reactions) suggesting that these events are avoidable through education and increased monitoring of medication use. Interestingly, medications identified as “high risk”<sup>4</sup> or “potentially inappropriate”<sup>5</sup> were responsible for relatively few admissions, suggesting that avoiding medications on these lists will do little to prevent hospitalizations due to ADEs. While the potentially inappropriate medication list has been recently updated,<sup>6</sup> the new list is not likely to result in substantial changes to the conclusions

### REFERENCES

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