



For More Information, Contact:  
Heather Harrison • 515.267.6214 • [hharrison@telligen.com](mailto:hharrison@telligen.com)

**America's Other Drug Crisis: Adverse Drug Events Among Seniors**  
**Telligen Study Uses Medicare Claims to Understand Medication Use Patterns Among Seniors at High-Risk for Adverse Drug Events**

**West Des Moines, IA** — While the opioid epidemic receives national attention, another less publicized drug crisis has been developing for decades — more senior citizens arriving in the ER due to adverse drug events (ADEs). The statistics on medication usage among the elderly are eye-opening — more than 40 percent of seniors are taking five or more drugs to manage multiple chronic diseases such as hypertension, diabetes, COPD, and heart failure.<sup>1</sup>

While awareness of the problem isn't new, prevention efforts have been hindered by the absence of a uniform national system for measuring and monitoring ADEs among seniors. A team of healthcare data analysts tackle this problem in the latest issue of [\*Journal of Managed Care & Specialty Pharmacy\*](#).

The Telligen team, working under contract with the Centers for Medicare & Medicaid Services (CMS), developed a method that uses Medicare claims data to track medication use patterns, health outcomes, and outpatient ADEs among high-risk beneficiaries.

"In the clinical setting, outpatient ADEs are often not documented in the HER," says Rachel Digmann, PharmD, BCPS at Telligen and co-author of the study. "Existing systems lack the capability to capture all the complex components of adverse events and fail to effectively aggregate and share that data among providers," she says.

The method will enable the Medicare program to:

- 1) Identify populations at high-risk for adverse events;
- 2) Calculate rates of hospitalization among the high-risk population; and
- 3) Share the data for targeted quality interventions.

"Proactive quality interventions can really move the needle on something like ADEs, a number of which are likely preventable," says Dr. Jane Brock, Medical Director at Telligen. "With Medicare claims we were able to trace medication use to attribute risk and associated outcomes, which included outpatient ADEs and hospitalization."

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The work was initiated by CMS who built on previous research that included the Department of Health & Human Services' (HHS) National Action Plan for ADE Prevention. The plan, published in 2014, identified three priority medications responsible for 60 percent of all ADE-related ER visits made by seniors — anticoagulants (blood thinners), diabetes agents, and opioid painkillers.<sup>2</sup>

Telligen used pharmacy claims data to identify those beneficiaries prescribed three or more medications, with one belonging to a high-priority drug class (opioid, diabetic and/or anticoagulant). Nearly 21 percent of beneficiaries (or more than 8 million) met the criteria, with outpatient ADEs occurring in 48 out of every 1,000 identified beneficiaries in a 12-month period. Despite representing the smallest proportion of the high-risk population, anticoagulant users demonstrated the highest rates of both hospital utilization and ADEs.

“This study reinforces the importance of educating patients about the potential for ADEs when prescribing or dispensing high-risk medications,” says Richard Michael, beneficiary advisor at Telligen.

In addition to surveilling outpatient ADE rates, this method can be used to monitor medication use patterns and track progress on medication safety interventions.

“While the science behind the method may sound complex, the ultimate goals are simple — employing interventions that make patient care safer,” says Digmann.

Objective:	Method:	Result:
<b>Identify populations at high-risk for ADEs</b>	Analyze Part D identifying those taking at least three medications; one being a high-priority medication.	Identified <b>8,178,753</b> beneficiaries at high-risk (20.7% of the eligible population).
<b>Calculate rates of outpatient ADEs</b>	Identify outpatient ICD diagnosis codes associated with ADE by priority drug class.	Annual outpatient ADE rate was <b>46.28/1000</b> (4.6%)
<b>Evaluate rates of hospital utilization</b>	Link high-risk beneficiaries to Part A claims & hospital care events (ED, observation, inpatient).	Primary care setting was the <b>emergency department</b> .

<sup>1</sup>Trends in Prescription Drug Use Among Adults in the United States, JAMA, 2015 ;<sup>2</sup> US Emergency Department Visits for Outpatient ADEs, JAMA, 2016

### About Telligen

With more than 45 years' experience impacting our clients' outcomes and managing costs, Telligen brings together clinical, analytical, and technical expertise to improve the quality and cost-effectiveness of healthcare for government agencies and commercial clients.

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