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Explaining Improved Use of High-Risk Medications in Medicare Between 2007 and 2011

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To the Editor

The Healthcare Effectiveness Data and Information Set (HEDIS) developed by the National Committee for Quality Assurance includes two quality of prescribing measures for the elderly: rates of use of high-risk medications, based on the American Geriatric Society's Beers Criteria, and potentially harmful drug-disease interactions. One of the improvements touted in the most recent Scorecard on State Health System Performance by The Commonwealth Fund,⁽¹⁾ which compared trends over time in the indicators from 2007 to 2011, is the dramatic improvement in the indicator for high-risk prescribing to the elderly. The proportion of elderly patients using a high-risk drug declined by over 30% during this time frame, from 26.7% to 18.6%. Most of this improvement is realized in the final year, 2011, which nationwide saw a decline of 4.5%. This is in contrast with the relatively static indicator for potentially-harmful drug-disease interactions. To understand why these two indicators, which both capture the theme of quality prescribing to the elderly, trended so differently during this time, we explored the reason for the improvement in the high-risk indicator. Specifically, we decomposed the indicator by drug to examine the prescribing trends for each drug included in this measure.

Methods

We used 2007-2011 pharmacy and plan enrollment files for a 5 percent random sample of Medicare beneficiaries to examine the high risk prescribing measure according to the HEDIS definition.^(2, 3) We restricted the eligible sample to those who were at least 65 years old and enrolled in either a stand-alone or Medicare-Advantage Part D plan for the full year. For each year, we separately examined the proportion of beneficiaries who filled each drug in the list of high-risk drugs identified by HEDIS each year.

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Results

Six of the ten drugs included in the high-risk HEDIS measure that showed the most change in frequency of fills between 2007 and 2011 contain propoxyphene, including the five drugs that exhibited the most change during this time frame. For example, the drug exhibiting the most variation in this set was acetaminophen-propoxyphene napsylate 650 mg-100 mg oral tablet (NDC code 93089005), which had 38,806 fills in 2007 in this sample and only 1 fill in 2011. Propoxyphene was banned by the United States Food and Drug Administration (FDA) in November 2010 based on evidence linking it with life-threatening arrhythmia. Examining the trend in prescribing frequency from 2007-2011, it is clear that the overwhelming majority of the decline in propoxyphene products occurred between 2010 and 2011. This aligns with the timing of the FDA's ban on propoxyphene, and also corresponds with the sharp improvement in the high-risk HEDIS measure.

Based on this finding, we recalculated the HEDIS high-risk measure for all years excluding any drugs containing propoxyphene. Figure 1 presents the trend in the revised HEDIS high-risk measure as well as the current high-risk prescribing HEDIS measure for comparison. While there is still a decline observed in the high-risk measure, it is much more attenuated; the 11% decline is far lower than the 30% decline touted using the original measure.

Discussion

The ban on propoxyphene renders the huge decrease in high-risk prescribing misleading in the sense that it does not represent intentional changes in physician prescribing behaviors but rather the market restricting prescribing choices. Among non-propoxyphene drugs included in the high-risk measure, the rate of prescribing showed minimal improvement, decreasing from 21.0% to 18.6% from 2007-2011.

Medication management among the elderly is an issue of increasing importance as the elderly population continues to grow along with increases in rates of prescription drug use. (4, 5) The use of high-risk medication and potentially harmful drugs are closely related with worse outcomes, mortality, inpatient admission and emergency room visits.(6) A deeper dive into the high-risk prescribing HEDIS measure suggests that high-risk prescribing remains a troubling, expensive, and dangerous problem facing the elderly in the United States.

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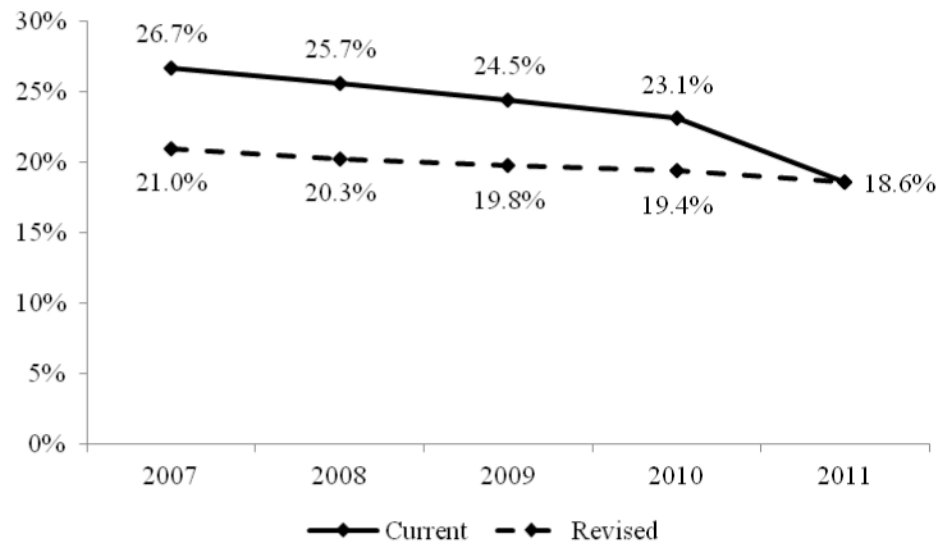


Figure 1. Percentage of Elderly Prescribed High Risk Drugs by Year

Percentage of elderly prescribed high risk drugs by year, calculated with (current) and without (revised) drugs containing propoxyphene.