RETROSPECTIVE ANALYSIS OF ACETAMINOPHEN USAGE AFTER IMPLEMENTATION OF A CONCURRENT DRUG UTILIZATION REVIEW (CDUR)

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Background

- Unintentional acetaminophen overdose accounts for an average of 13,000 emergency room visits, 440 hospitalizations, and 75 deaths annually in the United States.[1]
- The Center for Disease Control and Prevention (CDC) suggests an amount of less than 4 grams of acetaminophen per day for safe therapeutic use in most patients.[2]
- Among older adults (40 years and older), more than 4 of every 5 acetaminophen overdose incidences involve opioid combination prescription products.[1]
- Among older adults, it is estimated that there are 3.3 emergency department visits as a result of accidental acetaminophen overdose per 100,000 individuals.[1]
- The approximate cost per hospitalization due to acetaminophen overdose is $17,000.[3]

Objectives

- The primary objective was to analyze the number of denied acetaminophen prescriptions due to implementation of a hard reject at the point of service (POS) that prevented the use of greater than the recommended acetaminophen amount per day.
- The primary outcome was the number of instances that an insurance payment was denied for a prescription claim that was never dispensed.
- The secondary outcome was the number of instances that an insurance payment was denied for an early prescription refill and was later dispensed.

Disclosures

No external financial support.

Methods

- **Sample:** Medicare Part D patients.
- **Design:** A cross-sectional, retrospective analysis.
- **Data:** Patients enrolled from August 15th, 2013 to March 31st, 2014.
- Opioid combination products included:
  - Butalbital
  - Lorcet
  - Endocet
  - Oxycodone
  - Hydrocodone
  - Tramadol
  - Roxicet
  - Vicodin
- Direct cost avoidance was the money saved from prevented prescription dispensing.
- Indirect cost avoidance was calculated by avoided hospitalization costs based on average estimates of emergency room visits.

Results

Table 1

	August 15th, 2013 - March 31, 2014
Primary Outcomes	76
Secondary Outcomes	20
Unique Invoiced Claims	26760
Doses Prevented	4288
Cost Savings	$2,018
Number Needed to Prevent (Primary)	352 combination opioid prescriptions
Number Needed to Prevent (Primary and Secondary)	279 combination opioid prescriptions

- An average of 46,110 Medicare Part D patients were enrolled during this period. This equates to 2 emergency department visits avoided per year as a result of the CDUR hard reject at the POS.
- With an average cost of $17,000 per hospitalization, $34,000 in annual savings was estimated.

Limitations

- Estimates for the annual emergency department visits due to acetaminophen were referenced from a study on prevalence of hospital treated acetaminophen overdoses in the United States.[1]
- The cost of a hospitalization used in the analysis was an estimate from a retrospective study from a university hospital in the United States over a five-year period (1996-2000).[3]
- Every patient who presents to the emergency department will not necessarily need to be hospitalized with n-acetylcysteine drug therapy.
- This study did not monitor patients' adherence to medication therapy or proper use of over the counter acetaminophen.

Conclusions

- The study suggests that the CDUR system is successfully prompting pharmacists and practitioners of dose limit recommendations at POS set forth by the CDC.
- Over the study period, direct savings equated to $2,018 from 4288 prevented doses of opioid combination product.
- When extrapolating the data, an indirect cost of $34,000 from 2 avoided emergency department visits is avoided annually as a result of the CDUR edit.

References

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3. Martello JL, Pummer TL, Krenzelok EP. Cost minimization analysis comparing enteral N-acetylcysteine to intravenous acetylcysteine in the management of acute acetaminophen toxicity. Clin Toxicol (Phila). 2010;48(1):79-83.