

An Intervention to Reduce Overuse of Acetaminophen in an Oregon Medicaid Population

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Overdose with acetaminophen (APAP) is widely known to cause severe hepatic toxicity and is the most common cause of acute liver failure in the United States.¹ APAP is a commonly used analgesic drug that is contained in over 600 prescription and over-the-counter (OTC) products. When taken appropriately, it is exceedingly safe and has become one of the most commonly used analgesics available. Historically, most APAP overdose was considered suicidal in nature. However, recent literature has shown that unintentional overdoses are a prevalent and growing contributor to all APAP overdose cases. The Oregon Drug Utilization Review (DUR) Board recommended that APAP use in Oregon's Medicaid program be characterized and educational materials be prepared and disseminated to high-risk users and associated providers (prescribers and pharmacists). This intervention began in November 2007.

Background and Significance

When taken as a suicidal overdose or unintentionally consumed in large doses, APAP can overwhelm protective enzymatic metabolism and excretion.² In recent years, APAP has become recognized as the leading cause of acute liver failure in the United States.³ APAP overdose is estimated to cause 56,000 emergency department visits, 26,256 hospitalizations, and roughly 460 deaths per year nationally.⁴

While physician-reported survey data suggests APAP use is exceedingly common, little is known about the relative prevalence and characteristics of patients who use high dose APAP and thus may be at increased risk for a hepatotoxic event. A study using pharmacy claims data from the Ohio Medicaid program observed that only 3% of enrolled APAP users suggested doses over 4 grams per day limit.⁵ However, this study only examined subjects who had at least 6 fills in a 6 month period, and therefore may have underestimated short-term, but potentially high dose ingestions. It was also unclear from the paper whether or not multiple simultaneous prescriptions were included in the total APAP dose. The use of more than one APAP containing product is one factor that may contribute to accidental overdose ingestions.

Another study conducted through the Pennsylvania State Medicaid DUR Board quantified overuse for the purposes of notifying prescribers of this problem.⁶ Average use of more than 4 grams daily was found in 607 of 61,986 (~1%) APAP users. Similar to the study from Ohio, this study only evaluated excessive use for those patients with two prescriptions and did not examine concurrent APAP prescriptions.

The Food and Drug Administration has recognized the potential dangers of overuse of APAP, as well as other OTC pain relievers, and recently made labeling changes on APAP containing products, strengthening warnings for clinicians. However, efforts to enhance awareness and reduce the frequency of APAP overuse have

generally produced negligible effects. However, a letter based educational intervention sent to prescribers of Pennsylvania Medicaid patients with pharmacy claims suggesting overuse led to a decrease in APAP over-utilization compared to a historical control group.⁶

An Oregon DUR Board directed analysis of APAP use among Oregon Medicaid clients found that 18% of all enrolled subjects had at least one APAP containing prescription in a six-month period. Approximately 4% (n=4013) of all enrolled clients had claims evidence of exceeding the 4 grams per day maximum daily dose and 1.3% (n=1283) averaged over 4 grams per day for their entire period of consumption. The Oregon DUR board recommended educational material be developed and disseminated to prescribers, patients, and pharmacies reminding them about APAP safety concerns. The goals of this program are to increase awareness of the potential safety issues associated with APAP overuse with the end goal of reducing utilization. Educational materials were sent to prescribers and pharmacies who were associated with pharmacy claims for patients who have more than 5 days of APAP overuse (>4 grams per day) or in patients who average more than 3 grams per day for any period of time and have a diagnoses documented for viral hepatitis, alcoholism, cirrhosis or other conditions of hepatic dysfunction.

Patients were selected for this intervention if they exceed two utilization criteria. First patients were identified if they had an average estimated APAP consumption of greater than 4 grams for greater than five days and their last prescription ended within 30 days of letter generation. Secondly, patients were selected if they averaged over 3 grams over the last 6 months, had a recent prescription fill (30 days prior to letter generation), and had documented diagnosis of viral hepatitis (070xx), alcoholism (303xx), necrosis of the liver (ICD9 570xx), chronic liver disease (ICD 571xx-572xx), or other disorders of the liver (ICD9 573xx). Prescriber and pharmacy educational letters include: a cover letter summarizing the prescribing concern, patient specific profiles (Figure 1) indicating what patients were over using APAP, involved drugs, and claim dates. Additionally, a patient education letter was sent to all involved patients with a tool to assist patients in calculating their total APAP dose (Figure 2) and instructions to discuss with a physician or pharmacist. The FDA consumer education flier was also included (<http://www.fda.gov/cder/drug/analgesics/whyimportantHi.pdf>)

Conclusion

APAP is widely known to cause severe hepatic toxicity and is the most common cause of acute liver failure in the United States. Educational materials were sent to high risk APAP users and associated providers, prescribers and pharmacists beginning in November 2007.

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Figure 1 – Patient Specific APAP Use Profile

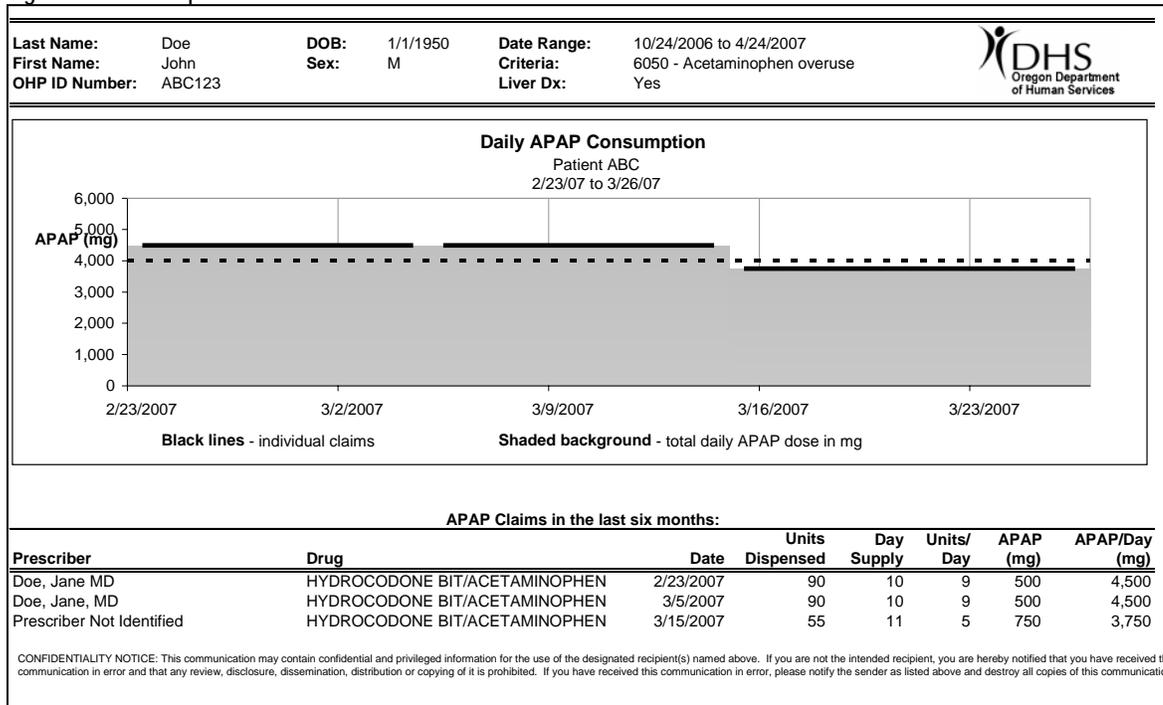


Figure 2 – Patient APAP Calculation Tool

Brand Name (Generic Name)	APAP Amount (mg)	X	How many do you take each day?	=	APAP Per Day	
HYDROCODONE/ACETAMINOPHEN (HYDROCODONE BIT/ACETAMINOPHEN)	500	X	_____	=	_____	
OXYCODONE W/ACETAMINOPHEN (OXYCODONE HCL/ACETAMINOPHEN)	325	X	_____	=	_____	
Include any other APAP drugs you take regularly, such as Tylenol	_____	X	_____	=	_____	
Here's another line you may use:	_____	X	_____	=	_____	
Add the amounts here - this is your total daily APAP					+	_____

References

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