



# Trends in Opioid Prescribing for Acute Headache in U.S. Emergency Departments

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## Background and Research Question

- Prescribing of opioid analgesics has risen dramatically over the past decade, often despite the lack of an appropriate indication.
- Opioids are not recommended by the American Academy of Neurology and American College of Emergency Physicians guidelines as first-line therapy for acute headache (vs. acetaminophen or antiemetics).
- We sought to assess trends in opioid prescribing for acute headache in U.S. emergency department (EDs).

## Methods

- Review of the National Hospital Ambulatory Medical Care Survey (NHAMCS), 2001-10.
- Visits for headache/head pain were identified.
- Therapies used to treat headache were identified and categorized based on medication class (antiemetics, opioids, triptans, etc.).
- Trends in prescribing for 5 common opioids were further explored.
- The proportion of visits involving each medication was tabulated and trends analyzed using survey-weighted logistic regression.
- Divided into medications given in the ED vs. prescribed at discharge for 2005-10.

## Trends in Opioid vs. Non-Opioid Prescribing

Medication Type	2001 Use (% Visits)	2010 Use (% Visits)	Percent Change	p-Value
Acetaminophen	10.1%	9.0%	-10.8%	0.827
Antiemetics	23.2%	21.5%	-7.4%	<b>0.019</b>
Butalbital	1.9%	2.4%	23.3%	0.829
IV fluids	20.3%	33.5%	64.7%	<b>0.001</b>
NSAIDs	25.8%	30.0%	16.2%	0.067
Opioids	20.8%	34.3%	64.9%	<b>0.001</b>
Triptans	2.0%	1.4%	-29.2%	0.123

## Trends in Specific Opioid Prescribing

Specific Opioid	2001 Use (% Visits)	2010 Use (% Visits)	Percent Change	P-Value
Codeine	2.3%	2.0%	-12.8%	<b>0.04</b>
Hydrocodone	13.1%	16.5%	26.7%	0.268
Hydromorphone	1.7%	9.5%	454.1%	<b>0.001</b>
Morphine	2.0%	6.7%	230.7%	<b>0.001</b>
Oxycodone	2.8%	6.0%	113.1%	<b>0.001</b>

## Results

- The estimated number of visits for acute headache increased from 5.5 million in 2001 to 7.7 million in 2010.
- Opioid analgesics had the largest increase in use among headache therapies (64.9%, p=0.001).
- Hydromorphone was the opioid with the greatest increase in use (454.1%, p=0.001).
- Oxycodone increased in discharge prescriptions (2.5% to 3.5%, 41.2%, p=0.001) from 2005-10.

## Limitations/Discussion

- We could not account for multiple medications given during the same visit, order of administration, or separate medications given in the ED vs. at discharge for 2001-04.
- Future initiatives should focus on promoting guideline-concordant treatment of headache in the ED and to promote the rational use of opioid analgesics.

## Conclusions

- Despite guideline recommendations, there was increased utilization of opioid analgesics for headache in U.S. EDs, whereas antiemetic use decreased despite endorsement.

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