EVMS Emergency Medicine Journal Club
Therapy Worksheet

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Date: 1/22 (JC 1/29)

CITATION: Opioid Prescribing Patterns of Emergency Physicians and Risk of Long Term Use. Barnett et al, New England Journal of Medicine Feb 16 2017

A. What is being studied? (Answer below)	**Comments**
1. Study Objective	To determine if opioid overuse in the US is driven by emergency physician prescribing. "To examine the extent to which emergency physicians within the same hospital varied in rates of opioid prescribing"
2. Study Design	Retrospective observational analysis of a 20% random sample of a Medicare beneficiary database between 2008-2012
3. Inclusion Criteria	1. Medicare Part D patients who had been enrolled for 18 months or greater. Only those who had not had an opioid prescription filled in the 6 months prior to the index visit to the ED 2. Each index ED visit was assigned to a physician 3. Opioid prescription attributed to an index ED visit and associated ED physician if it was filled with 7 days
4. Exclusion Criteria	1. Non Medicare patients 2. Patients with hospice claims or cancer diagnosis between 2008 and 2012 3. Admitted patients 4. Physicians who did not primarily practice EM
5. Interventions Compared	1. High intensity vs low intensity opioid prescribing physicians

<table>
<tr><td></td><td>within same hospital. They were grouped into quartiles of rates of opioid prescribing within each hospital and were either top (“high-intensity”) or bottom (“low-intensity”) quartiles.</td></tr>
<tr><td>6. Outcomes Evaluated</td><td>1. Primary – “long term opioid use defined as 180 days or more of opioids supplied in the 12 months after an index ED visit, excluding prescriptions within 30 days after index visit.”
2. Secondary – rates of hospital encounters in 12 months after index ED visit including those potentially related to adverse effects of opioids and those associated with a selection of medical condition that were unlikely to be influenced by opioid use.</td></tr>
<tr><td>B. Are the results of the study valid?
Answer questions below</td><td></td></tr>
<tr><td>1. Were patients randomized?</td><td>No. this was an observational retrospective Medicare database analysis of a “random 20% sample” during the study dates. Implied randomization to MD as patients don’t select their ED MD.</td></tr>
<tr><td>2. Was randomization concealed (Blinded)</td><td>As above.</td></tr>
<tr><td>3. Were patients analyzed in the groups to which they were randomized?</td><td>No, they were primarily analyzed in groups of patients treated by low-intensity vs high-intensity providers</td></tr>
<tr><td>4. Were patients in the treatment and control groups similar with respect to known prognostic factors?</td><td>Not exactly. There were small but statistically significant (p<.05) differences in patient characteristics in the following areas:
<table>
<tr><td>High-intensity MD</td><td>Low-intensity MD</td></tr>
<tr><td>Caucasion</td><td>Disabled</td></tr>
<tr><td>Chronic conditions</td><td></td></tr>
<tr><td>Older patients</td><td></td></tr>
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	Midwest location	Northeast location
C. Did experimental and control groups retain a similar prognosis after the study started (answer the questions below)?		
1. Were patients aware of group allocation?	No, retrospective	
2. Were clinicians aware of group allocation?	No, retrospective	
3. Were outcome assessors aware of group allocation?	Yes, no mention of blinding of data assessors.	
4. Was follow-up complete?	Unclear. No mention of patients lost to follow-up, those who died or those who lost Medicare.	
D. What were the results?		
1. How large was the treatment effect? (difference between treatment and control group).	1. 215,678 patients treated by low-intensity provider and 161,951 patients treated by high intensity provider 2. Rates of opioid prescribing between high and low intensity prescribers varied by a factor of 3.3 within the same hospital (**7.3% vs 24.1%** of ED visits) 3. Long term opioid use at 12 months was higher and statistically significant among patients treated by high intensity provider than low intensity (1.51% vs 1.16% with an OR 1.31 95% 1.24-1.39)) This increased with each quartile. 4. NNH of 48 patients to lead to 1 excess long term opioid user 5. Rates of opioid related hospital encounters and encounters for fall or fracture were significantly higher in high vs low intensity rates of encounters for fall or fracture, 6. 4.56% vs. 4.28% OR 1.07 (1.03-1.11) 7. No sig difference in 12 month rates of overall hospital encounters or non opioid related encounters or	

	evidence of under-treated pain.
2. How precise was the estimated treatment effect at a 95% confidence interval?	For primary outcome of long term opioid use at 12 months – 1.51% vs 1.16% (high vs low) or a difference of **0.35%**
D. How can I apply the results to patient care	
IV. Were the study patients similar to my patients?	Yes. Generally, we see plenty of Medicare patients in ED. However there are many patients that are not in Medicare and are typically younger and healthier.
1. Were all clinically important outcomes considered?	Long term opioid use was 180 days or more of opioid use over the next 12 months. That is a lot. This study looked at relevant outcomes given its limitations, but functional capacity (does the fact they are on chronic opioids affect their function?) Did diagnoses change warranting long-term opioid use. Did not track subsequent prescriptions and the characteristics of those providers. No diagnoses were included which was available through the database.
2. Are the likely treatment benefits worth the potential harms and costs?	Chart review so will talk more in clinical bottom line

Limitations:
Observational retrospective study – differences were small and cannot be concluded as being causal
Were the opioids appropriate difficult to determine as there were no diagnoses included
Focus on medicare patients only so cannot be broadly applied to other patient populations

Clinical Bottom Line:

Study demonstrated significant differences in prescribing patterns of high-intensity vs. low intensity clinicians (24.1 vs 7.3% respectively) which may be the most valid take-away. No demographics of high-intensity vs low-intensity providers given

The difference in 180-day opioid use between patients who saw high intensity prescribers was 0.35% (1.51% vs. 1.16%) which is statistically significant but small. If causal, is the NNH significant considering the potential harms of narcotic dependence and overdose?

We are all aware of the opioid epidemic and all should try to be judicious of what we prescribe and I will continue to do so after this paper That stated, does this data provide evidence that a short course of opiates overall is pretty safe?

No data was provided regarding subsequent prescriptions which is where causality is more likely to be attributed.

RCT's that include a broader range of patients, sources of subsequent prescriptions and high vs. low-intensity follow-up clinician practices are needed to provide more meaningful data.