

## USE OF OPIOIDS AT HIGHER DOSES IN PERSONS WITHOUT CANCER: MORPHINE EQUIVALENT DOSE EDIT

### BACKGROUND:

Approximately 10% of patients who are prescribed opioids and seek care from multiple doctors, are prescribed high daily doses ( $\geq 100$  mg morphine equivalent dose (MED) per day), and account for 40% of opioid overdoses.<sup>1, 2</sup> Patients exceeding this MED cut-off are at high risk for overdose themselves but may also be diverting or providing drugs to others who are using them without prescriptions. This suggests that prevention of opioid overdose deaths should focus on strategies that target (1) high-dose opioid users as well as (2) persons who seek care from multiple doctors, receive high doses, and are likely involved in drug diversion.<sup>3</sup> The combination of these two criteria provides a good method for identifying beneficiaries at risk of opioid abuse and risk of overdose death. The first criteria - high-dose opioid use - is a safety issue, whereas, the second criteria – use of multiple providers – is an indicator of potential abuse.

The Washington State Agency Medical Directors Group has suggested 120mg MED as a dosage level that should not be exceeded without special consideration.<sup>4</sup> Additionally, CMS' controlled substance overutilization monitoring system (OMS) for the Medicare Part D program currently identifies potential outlier opioid utilization issues at the beneficiary level using the following criteria: 'Excluding patients with cancer or receiving hospice care, beneficiaries whose daily MED is greater than 120mg for at least 90 consecutive days, and who used more than 3 prescribers and more than 3 pharmacies.'<sup>5, 6</sup>

In line with these aforementioned groups, three draft measures have been proposed by the Pharmacy Quality Alliance's (PQA) Medication Safe Use Workgroup to examine the quality of opioid use related to the dose of the medications over time, access to the medications, and the combination of both of these criteria.<sup>3</sup>

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<sup>1</sup> Dunn KM, Saunders KW, Rutter CM, et al. Opioid prescriptions for chronic pain and overdose. *Ann Intern Med* 2010;152:85–92.

<sup>2</sup> Bohnert AS, Valenstein M, Bair MJ, et al. Association between opioid prescribing patterns and opioid overdose-related deaths. *JAMA* 2011;305:1315–21.

<sup>3</sup> PQA Medication Safe Use Workgroup. Use of Opioids from Multiple Providers or at High Dosage in Persons Without Cancer.

<sup>4</sup> Interagency Guideline on Opioid Dosing for Chronic Non-cancer Pain: An educational aid to improve care and safety with opioid therapy. Available at: <http://www.agencymeddirectors.wa.gov/Files/OpioidGdline.pdf> Accessed on: Jan 15, 2014.

<sup>5</sup> Memorandum: Medicare Part D Overutilization Monitoring System. Available at:

[http://www.amcp.org/uploadedFiles/Production\\_Menu/Policy\\_Issues\\_and\\_Advocacy/Letters,\\_Statements\\_and\\_Analysis\\_-\\_docs/2013/OMS%20HPMS%20Announcement%20Memo\\_FINAL\\_070513.pdf](http://www.amcp.org/uploadedFiles/Production_Menu/Policy_Issues_and_Advocacy/Letters,_Statements_and_Analysis_-_docs/2013/OMS%20HPMS%20Announcement%20Memo_FINAL_070513.pdf) Accessed on: Jan 15, 2014.

<sup>6</sup> CMS Announces Medicare Part D Overutilization Monitoring System (OMS) for Controlled

Substances. Available at:

[http://www.amcp.org/uploadedFiles/Production\\_Menu/Policy\\_Issues\\_and\\_Advocacy/Letters,\\_Statements\\_and\\_Analysis\\_-\\_docs/2013/CMS\\_OMS\\_July2013\\_Letterhead\\_Final.pdf](http://www.amcp.org/uploadedFiles/Production_Menu/Policy_Issues_and_Advocacy/Letters,_Statements_and_Analysis_-_docs/2013/CMS_OMS_July2013_Letterhead_Final.pdf) Accessed on: Jan 15, 2014.

- **Measure 1 (Opioid Dose Over-utilization):** The percentage of individuals without cancer receiving a daily dosage of opioids greater than 120mg morphine equivalent dose (MED) for 90 days or longer.
- **Measure 2 (Multiple Providers and Multiple Pharmacies):** The percentage of individuals without cancer receiving prescriptions for opioids from four (4) or more prescribers AND four (4) or more pharmacies.
- **Measure 3 (Multi-Provider, Multi-Opioid Use):** The percentage of individuals without cancer receiving prescriptions for opioids greater than 120mg morphine equivalent dose (MED) for 90 days or longer, who received opioid prescriptions from four (4) or more prescribers, AND four (4) or more pharmacies.

Using a combination of these measures to identify beneficiaries at risk of opioid overuse or abuse/diversion was reviewed with the MS-DUR Board in November 2012 and February 2014. MS-DUR is still working with DOM Program Integrity to develop better methods of identifying potential abuse or diversion. Based on growing concerns about preventing opioid related deaths due to high doses, MS-DUR reran analyses focusing on Measure 1 – high-dose utilization. This is a clinical safety issue that could be addressed through prospective clinical edits, whereas, the multiple provider measures are not easily addressed prospectively. The purpose of this analysis was to determine the number of beneficiaries who are possibly over-utilizing opioid medications in the Medicaid population and are at-risk for opioid addiction or death.

#### **METHODS:**

Medicaid fee-for-service (FFS) and managed care (MS-CAN) claims for the period July 1, 2013 and June 30, 2014 were used in the analysis. Beneficiaries aged ≥18 years, with continuous 12 month enrollment, and two or more prescription claims for opioids with ≥15 days supply on at least two separate dates during the measurement period were included in the analysis. Beneficiaries with Prescription Drug Hierarchical Condition Categories (Rx-HCCs) 8, 9, 10, 11 were excluded from the final sample (representing patients with cancer diagnoses). Claims for all opioids included in the ‘CDC Injury Center Morphine Milligram Equivalent (MME) Table’ (Appendix) were extracted.

Morphine Equivalent Dose (MED) was calculated using the following formula:

$$MED = \frac{\text{Submitted Quantity} \times \text{Strength} \times \text{MME Conversion Factor}}{\text{Days Supply}}$$

The quality measure used in this analysis is the percentage of individuals without cancer receiving a daily dosage of opioids greater than 120mg morphine equivalent dose (MED) for 90 days or longer. Sensitivity testing was conducted by using 100mg MED in addition to 120mg and by using 60 days in addition to 90 days as the duration of high dosing required.

**RESULTS:**

As shown in Table 1, each Medicaid plan (Medicaid fee-for-service (FFS), United Health Care (UHC), and Magnolia) had a large number of beneficiaries with 2 or more prescription claims for opioids during the study year and not having a cancer diagnosis.

<b>TABLE 1: Number of Beneficiaries Meeting Inclusion Criteria for Analysis (Denominator)</b>				
#	DESCRIPTION	UNIQUE BENEFICIARIES IN FFS	UNIQUE BENEFICIARIES IN UHC	UNIQUE BENEFICIARIES IN MAGNOLIA
1.	Beneficiaries with a Rx claim of an opioid medication	5,428	13,194	17,445
2.	Beneficiaries with ≥ 2 prescription claims with ≥ 15 days supply for an opioid medication, on at least two separate dates	3,063	7,657	10,213
3.	After excluding beneficiaries in LTC	2,648	7,657	10,213
4.	After excluding beneficiaries with a diagnosis of cancer within 6 months of the study start date (i.e., July 1, 2013)	<b>2,475</b>	<b>7,483</b>	<b>9,933</b>

LTC: Long-term Care

Table 2 shows the number and percent of beneficiaries meeting the high dose criteria for the quality measure. Rates for FFS and Magnolia were similar. The rates for UHC were significantly higher than for the two other plans. The sensitivity analyses show that a more relaxed time criteria for high dosing (60 days vs. 90 days) almost doubles the percentage of beneficiaries identified as being at risk. Using the lower MED of 100mg increases the percentage of beneficiaries identified as being at risk by about 50%.

<b>TABLE 2: Number and Percent of Beneficiaries With Opioid Use Exceeding the Morphine Equivalent Dose Limits</b>						
	60 Consecutive Days			90 Consecutive Days		
	FFS	UHC	MAGNOLIA	FFS	UHC	MAG
<b>MED &gt; 100</b>	51 (2.1%)*	419 (5.6%)	227 (2.3%)	27 (1.1%)	301 (4.0%)	114 (1.1%)
<b>MED &gt; 120</b>	39 (1.6%)	343 (4.6%)	167 (1.7%)	24 (1.0%)	243 (3.2%)	80 (0.8%)

\*Example: (51/2475)\*100 = 2.1%

**CONCLUSION:**

The absolute percentage of beneficiaries identified as being at risk from use of high doses of opioids is small. This is good, but the fact that any beneficiaries without a cancer diagnosis were identified indicates that a problem still exists. Since managing opioid use and actively trying to prevent opioid addiction is a high national priority, MS-DUR makes the following recommendations.

**Recommendations:**

1. DOM should implement an electronic prior authorization clinical edit to prevent beneficiaries from exceeding the morphine equivalent dose of 120mg/day for more than 90 days during the prior year.
2. United Health Care and Magnolia should be encouraged to implement a similar edit for Medicaid beneficiaries enrolled in Coordinated Care.

## APPENDIX A

From Acumen LLC July 2013

Patient Safety Analysis PDP/MA-PD Contracts  
Overutilization Monitoring System User Guide

Table Opioid Morphine Equivalent Conversion Factors<sup>1</sup>

Type of Opioid	Morphine Equivalent Conversion Factor	Included in 2012 CMS?
buprenorphine patch <sup>2</sup>	42	No
buprenorphine tab or film	10	No
butorphanol	7	No
codeine	0.15	Yes
dihydrocodeine	0.25	Yes
fentanyl buccal or SL tablets, or lozenge/troche <sup>3</sup>	0.13	Yes
fentanyl film or oral spray <sup>4</sup>	0.18	Yes
fentanyl nasal spray <sup>5</sup>	0.16	Yes
fentanyl patch <sup>6</sup>	7.2	Yes
hydrocodone	1	Yes
hydromorphone	4	Yes
levorphanol tartrate	11	Yes
meperidine hydrochloride	0.1	Yes
methadone	3	Yes
morphine	1	Yes
nalbuphine	1	No
opium	1	No
oxycodone	1.5	Yes
oxymorphone	3	Yes

pentazocine	0.37	No
tapentadol	0.4	No
tramadol	0.1	No

<sup>1</sup>Center for Disease Control and Prevention, Morphine equivalent conversion factors for opioids, 2011 version CDC, Atlanta, GA, 2013.

<sup>2</sup>MME conversion factor for buprenorphine patches is 42 based on 15% bioavailability compared with IV buprenorphine, which is 40 times the strength of morphine and the use of such patches for 7 days. In other words,  $40 \times 0.15 \times 7 = 42$

<sup>3</sup>MME conversion factor for fentanyl buccal tablets, sublingual tablets, and lozenges/troche is 0.13. It is intended to be multiplied by the number of micrograms in a given lozenge/troche

<sup>4</sup>MME conversion factor for fentanyl film and oral spray is 0.18 (based on 40% greater exposure compared to lozenge for film and 38% greater compared to lozenge for oral spray).

<sup>5</sup>MME conversion factor for fentanyl nasal spray is 0.16 (based on 20% greater exposure compared to lozenge for nasal spray)

<sup>6</sup>The MME conversion factor for fentanyl patches is 2.4, but each patch is usually worn for 3 days. Since daily dosage is calculated by multiplying pill size in MME by number of pills and then dividing by number of days prescribed, failure to account for the long use of each patch would underestimate daily dosage. For example, 10 patches dispensed for use over 30 days would be  $(10 \times 2.4)/30$ . Multiplying the conversion factor by 3 accounts for the prolonged use of a patch. Therefore, the conversion factor is given as 7.2.

### **CMS Morphine Equivalent Dose (MED) Calculation<sup>7</sup>**

- Prescription for oxycodone 5mg 1-2 tablets every 4-6 hours as needed quantity **#60**
- Pharmacist enters days supply = **5** (could take up to 12 tablets in 24 hour period)

- Number of opioid dosage units per day =  $\frac{\text{Submitted Quantity}}{\text{Days Supply}} = \frac{60}{5} = 12$

- **Oral MED Daily Dose Per Claim:**

$$\begin{aligned}
 &= \text{Number of Opioid Units per Day} \times \text{Strength} \times \text{MME Conversion Factor} \\
 &= 12 \times 5 \times 1.5 \\
 &= 90
 \end{aligned}$$

<sup>7</sup> AMCP 2013 Nexus. Research Briefs: Identifying and Managing Controlled Substance Abuse.