

Morphine Equivalent Dose (MED) What Is It and Why Is It Important?

Compiled by:

Melissa Dear, RPh and Monica Guerriero, RPh
Office of Outcomes Research and Evaluation
School of Pharmacy
University of Louisiana at Monroe

What is the 'MED'?

Milligram Morphine Equivalent (MME) is a value assigned to opioids to represent their relative potencies. Each opioid is assigned a potency factor compared to morphine as a base level. Morphine is considered the 'gold standard' for treatment of moderate to severe

pain, and is therefore used as the reference point for other opioids. The morphine equivalent dose (MED) per day is the sum of the MME potency score of all opioids a patient is prescribed in a 24-hour period. The total is used as a guide to determine the potential dose-related risk for prescription opioid overdose.

Why is it important to calculate the MED?

Higher dosages of opioids are associated with higher risk of overdose and death—even relatively low dosages (20-50 MED per day) increase risk. Higher dosages have not been shown to reduce pain over the long term. One randomized trial found no difference in pain or function between a more liberal opioid dose escalation strategy (with average final dosage 52 MED per day) and maintenance of current dosage (average final dosage 40 MED per day). In a national sample of Veterans Health Administration (VHA) patients with chronic pain receiving opioids from 2004–2009, patients who died of opioid overdose were prescribed an average of 98 MED per day, while other patients were prescribed an average of 48 MED per day. A contextual evidence review found that most fatal overdoses were associated with patients receiving opioids from multiple prescribers and/or patients receiving high total daily opioid dosages.

How should the total daily dose of opioids be calculated?

DETERMINE the total daily amount of each opioid the patient takes. This can be done by reviewing the patient's history of controlled substance prescriptions in the Louisiana Prescription Monitoring Program (PMP); the PMP should be utilized when prescribers initially prescribe opioids and periodically during opioid therapy for chronic pain, ranging from every prescription to every three months.

CONVERT each to MED—multiply the dose for each opioid by the conversion factor. See *Oral Morphine Milligram Equivalent Conversion Factors Table*.

ADD them together.

What is the MED per day for a patient receiving Oxycontin® 30mg twice daily?

The conversion factor for oxycodone is 1.5.
Oxycontin® 30mg twice daily is equal to 60mg daily.
 $60 \times 1.5 = 90$

Therefore, this patient would be taking 90 MED per day.

Table of Contents

Morphine Equivalent Dose (MED) What Is It and Why Is It Important?	1
Payment Error Rate Measurement (PERM) FFY17 – Provider Education Webinars	5
Remittance Advice Corner	6
Online Medicaid Provider Manual Chapter Revisions as of March 1, 2017	7
Archived Online Medicaid Provider Manual Chapters as of March 1, 2017	7
For Information or Assistance	8



CAUTION:

Do not use the calculated dose in MEDs to determine dosage for converting one opioid to another—the new opioid should be lower to avoid unintentional overdose caused by incomplete cross-tolerance and individual differences in opioid pharmacokinetics. Consult the prescribing information.

USE EXTRA CAUTION:

- Methadone: the conversion factor increases at higher doses.
- Fentanyl: dosed in mcg/hr instead of mg/day, and absorption is affected by heat and other factors.

How should providers use the total daily opioid dose in clinical practice?

- Use caution when prescribing opioids at any dosage and prescribe the lowest effective dose.
- Use extra precautions when increasing to ≥ 50 MED per day* such as:
 - Monitor and assess pain and function more frequently.
 - Discuss reducing dose or tapering and discontinuing opioids if benefits do not outweigh harms.
 - Consider offering naloxone and overdose prevention education to both patients and their family members.
- Avoid or carefully justify increasing dosage to ≥ 90 MED per day.*

* These dosage thresholds are based on overdose risk when opioids are prescribed for pain.



Oral Morphine Milligram Equivalent Conversion Factors*	
Opioid (strength in mg except where noted)	MME Conversion Factor**
Buprenorphine, transdermal patch (MCG/HR)	12.6
Buprenorphine, tablet or film	30
Buprenorphine, film (MCG)	0.03
Butorphanol	7
Codeine	0.15
Dihydrocodeine	0.25
Fentanyl, buccal/SL tablet or lozenge/troche (MCG)	0.13
Fentanyl, film or oral spray (MCG)	0.18
Fentanyl, nasal spray (MCG)	0.16
Fentanyl, transdermal patch (MCG/HR)	7.2
Hydrocodone	1
Hydromorphone	4
Levomethadyl acetate	8
Levorphanol tartrate	11
Meperidine	0.1
Methadone	3
Morphine	1
Opium	1
Oxycodone	1.5
Oxymorphone	3
Pentazocine	0.37
Tapentadol	0.4

* Reference: National Center for Injury Prevention and Control. CDC compilation of benzodiazepines, muscle relaxants, stimulants, zolpidem, and opioid analgesics with oral morphine milligram equivalent conversion factors, 2016 version. Atlanta, GA: Centers for Disease Control and Prevention; 2016. Available at http://www.pdmpassist.org/pdf/BJA_performance_measure_aid_MME_conversion.pdf

**To be used in the formula: Strength per Unit X (Number of Units/ Days Supply) X MME conversion factor = MED/Day



John has chronic pain and has been taking Oxycontin® 20mg twice daily since Feb 2nd. On the 4th of April, he returns to his physician and tells his doctor that his pain is not being controlled. His doctor increases his dose to Oxycontin® 30mg twice daily. Two weeks later, on April 13th, he contacts his physician and says he is still experiencing pain between the doses of Oxycontin®. His doctor calls in a prescription for Ultram® 50mg every four hours as needed for breakthrough pain. What is his final MED per day?

See below for an evaluation of John’s morphine equivalent dose (MED) during the first two weeks of April. The morphine equivalent doses of the different opioids must be added together to determine the cumulative dose that John is taking each day.

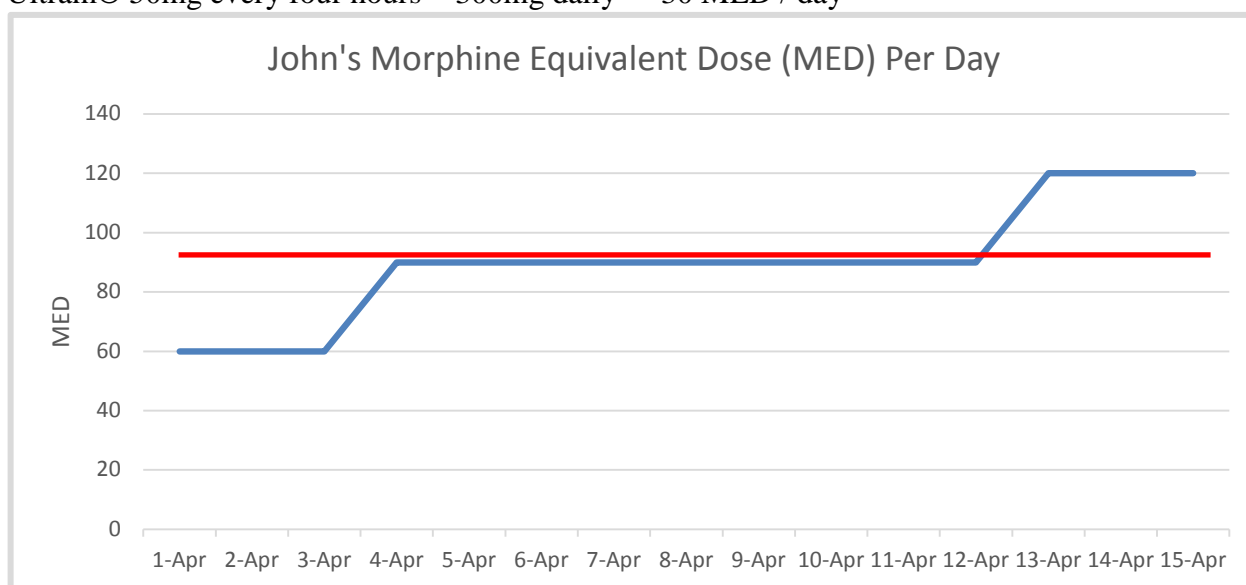
Oxycontin® (oxycodone): 1mg oxycodone = 1.5mg morphine

Ultram® (tramadol): 1mg tramadol = 0.1mg morphine

Oxycontin® 20mg twice daily = 40mg daily = 60 MED / day

Oxycontin® 30mg twice daily = 60mg daily = 90 MED / day

Ultram® 50mg every four hours = 300mg daily* = 30 MED / day



Red line denotes the 90 MED per day level.

*Although Ultram® was prescribed every four hours as needed, MED should be calculated according to the potential maximum prescribed dose.

Reference: CDC. Injury Prevention & Control: Opioid Overdose. Available at <https://www.cdc.gov/drugoverdose>

ATTENTION PROVIDERS: PAYMENT ERROR RATE MEASUREMENT (PERM) FFY17 Currently underway- PROVIDER EDUCATION WEBINARS

LA Medicaid is mandated to participate in the Centers for Medicare and Medicaid (CMS) Payment Error Rate Measurement (PERM) program which will assess our payment accuracy rate for the Medicaid and LACHIP programs. The results of these reviews will be used to produce a national error rate which will be reported to Congress. If chosen in a random sample, your organization will soon receive a *Medical Records Request* from the review contractor, CNI Advantage. A period of 75 days from the date of receipt of the request will be given to submit the requested documentation. If no documentation or incomplete documentation is submitted, the claim(s) will be considered to be an error and is subject to a payment recovery through withholding of payment, and/or a possible fine. **REMINDER:** Providers who are no longer doing business with Louisiana Medicaid are obligated to retain recipient records for 5 years, under the terms of the Provider Enrollment Agreement.

The Centers for Medicare & Medicaid Services (CMS) will be hosting PERM Provider Education Conference Calls/Webinars this summer, to provide interactive sessions for providers of Medicaid and Children's Health Insurance Program (CHIP) services. Providers will be informed about PERM updates, trends and responsibilities. There will be opportunities to ask questions and provide feedback to CMS and your state representatives. For more information about PERM, visit: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Monitoring-Programs/Medicaid-and-CHIP-Compliance/PERM/Providers.html>

A Provider Education Webinar will be presented and repeated on the dates listed below.

Links are provided for the April meetings and the links for the remaining dates will be available on the CMS website in the near future.

- April 18th: 1-877-267-1577, meeting number 991 554 019

<https://meetings.cms.gov/orion/joinmeeting.do?MTID=e59c4eefe99208397c6a61d21c5686a6>

- April 19th: 1-877-267-1577, meeting number 993 955 276

<https://meetings.cms.gov/orion/joinmeeting.do?MTID=c4483518f0ce53f3e0222407508761f5>

- July 18, 2017 - 3:00-4:00 pm EST
- July 19, 2017 - 3:00-4:00 pm EST
- October 17, 2017 - 3:00-4:00 pm EST
- October 18, 2017 - 3:00-4:00 pm EST
- January 16, 2018 - 3:00-4:00 pm EST
- January 17, 2018 - 3:00-4:00 pm EST

If you have any questions, please call Catherine Altazan at 225-342-2612.

Remittance Advice Corner

2017 HCPCS and Fee Schedule Updates

The Louisiana Medicaid fee for service files are being updated to reflect the new and deleted Healthcare Common Procedure Coding System (HCPCS) codes effective for dates of service on or after January 1, 2017. Providers will begin to see these changes on the remittance advice (RA) of March 7, 2017. Claims that have been denied due to use of the new 2017 codes prior to their addition to the claims processing system will be systematically recycled with no action required by providers.

The following fee schedules were updated to reflect the new 2017 procedure codes:

- Home Health
- Professional Services
- Laboratory and Radiology
- Ambulatory Surgical Centers (Non-Hospital)
- Free Standing Rehabilitation
- Take Charge Plus

The fee schedule updates above are expected to be available on the Louisiana Medicaid website, www.lamedicaid.com, the week of February 28, 2017. 'Immunization' fee schedule updates will follow.

Providers should monitor their RA messages for additional information on fee for service updates. Please contact Molina Provider Relations at (800) 473-2783 or (225) 924-5040 if there are questions related to this matter for fee for service claims. Questions related to the Bayou Health managed care organizations' updates should be directed to the specific health plan.

2017 HCPCS Claims Recycle

Louisiana Medicaid fee-for-service (FFS) claims processed from January 1, 2017 through March 3, 2017 that were denied due to use of the new 2017 procedure codes prior to their addition to the claims processing system and the updates made to the 'ClaimCheck' editing product will be recycled. Providers can expect to see the recycled claim results on the remittance advice of March 28, 2017. No action is required by providers.

The following claims are included in the recycle:

- Home Health
- Professional Services
- Laboratory and Radiology
- Ambulatory Surgical Centers (Non-Hospital)
- Free Standing Rehabilitation
- Take Charge Plus

Claims containing updates to immunization services will be recycled separately in the near future. Providers should monitor their RA messages for information regarding the recycling of the immunization claims.

Please contact Molina Provider Relations at (800) 473-2783 or (225) 924-5040 if there are questions related to this matter for fee for service claims. Questions related to the Healthy Louisiana managed care organizations' updates should be directed to the specific health plan.

Attention Louisiana Medicaid Providers

Effective March 28, 2017, Fee-for-Service (FFS) Medicaid pharmacy claims for tasimelteon (Hetlioz®) and lumacaftor/ivacaftor (Orkambi®) will have Point of Sale (POS) edits and clinical pre-authorization requirements.

Please refer to www.lamedicaid.com for more information.

**Online Medicaid Provider Manual Chapter Revisions as of March 1, 2017**

Manual Chapter	Section(s)	Date of Revision(s)
Behavior Health	New Manual Chapter	03/14/17
Children's Choice Waiver	Title Page 14.1 - Covered Services	02/24/17 02/24/17
Hospital Services	Title Page 25.7 - Reimbursement Appendix A - Forms and Links	03/01/17 03/01/17 03/23/17
Pharmacy Benefits Management Services	37.5 - Covered Services, Limitations and Exclusions	03/15/17

Archived Online Medicaid Provider Manual Chapter Revisions as of March 1, 2017

Manual Chapter	Section(s)	Date of Omission (s)
Behavior Health	New Manual Chapter	03/14/17
Children's Choice Waiver	Title Page 14.1 - Covered Services	02/24/17 02/24/17
Hospital Services	Title Page 25.7 - Reimbursement Appendix A - Forms and Links	03/01/17 03/01/17 03/23/17
Pharmacy Benefits Management Services	37.5 - Covered Services, Limitations and Exclusions	03/15/17

For Information or Assistance, Call Us!

Provider Enrollment	(225)216-6370	General Medicaid Eligibility Hotline	1-888-342-6207
Prior Authorization:		MMIS Claims Processing Resolution Unit	(225) 342-3855
Home Health/EPSTD – PCS	1-800-807-1320		
Dental	1-866-263-6534 1-504-941-8206		
DME & All Other	1-800-488-6334 (225) 928-5263	MMIS/Recipient Retroactive Reimbursement	(225) 342-1739 1-866-640-3905
Hospital Pre-Certification	1-800-877-0666		
Provider Relations	1-800-473-2783 (225) 924-5040	Medicare Savings Program and Medicaid Purchase Hotline	1-888-544-7996
REVS Line	1-800-776-6323 (225) 216-(REVS)7387		
Point of Sale Help Desk	1-800-648-0790 (225) 216-6381	For Hearing Impaired	1-877-544-9544
		Pharmacy Hotline	1-800-437-9101
		Medicaid Fraud Hotline	1-800-488-2917