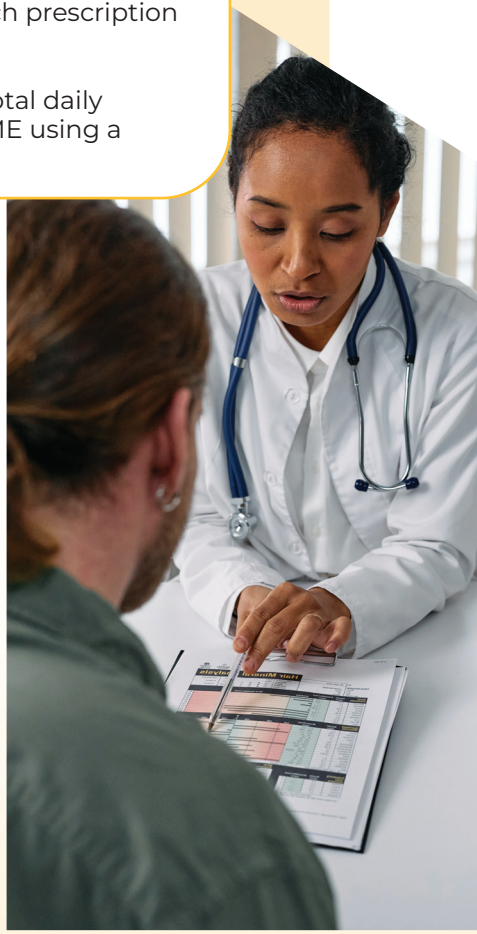
PDMP Morphine Milligram Equivalents Fact Sheet

Morphine milligram equivalents (MME) or morphine equivalent doses (MED) are values that represent the potency of an opioid dose relative to morphine. MME is intended to help clinicians make safe, appropriate decisions concerning changes to opioid regimens. Using a standard conversion factor developed by the CDC, the MME equates the many different opioids into a standard value that is based on morphine and its potency.

MME assigned to each prescription: MME/day is displayed in the PDMP for each prescription and is based on the CDC conversion factor, dosage, and days supply.

Average MME/day assigned to the patient: MME is calculated by adding the total daily amount of each opioid that a patient is prescribed, converting each value to MME using a conversion factor based on morphine, then calculating the average daily rate.



WHY SHOULD A PROVIDER CONSIDER MME?

The MME/day metric is often used as a gauge of the overdose potential of the amount of opioid prescribed. Higher dosages of opioids are associated with higher risk of overdose and death. Calculating the total daily dosage of opioids helps identify patients who may benefit from closer monitoring, reduction or tapering of opioids, co-prescribing of naloxone, or other measures to reduce risk of overdose.

CAVEATS IN USING MME:

- When changing opioid prescriptions, the dosage of the opioid to which the patient is being converted should be lower than the calculated MME of the current opioid regimen to avoid unintentional overdose caused by incomplete cross-tolerance and individual differences in opioid pharmacokinetics.[1] Not all opioids behave similarly; consult the medication label for additional information.
- Use extra precautions when increasing to ≥50 MME 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 discussing with your patients how and when to use naloxone.

[1] https://www.cdc.gov/mmwr/volumes/71/rr/rr7103a1.htm#T1_down

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PDMP Naloxone Co-Prescribing Fact Sheet

USE EXTRA CAUTION with transdermal fentanyl, and medications for opioid use disorder:

- Transdermal fentanyl is dosed in mcg/hr instead of mg/day, and absorption is affected by heat and other factors.
- Dosing methadone is complicated because of its long and unpredictable half-life, as well as its association with QTc prolongation and potential cardiac arrhythmia.
- The relation between dosage and overdose risk is different for buprenorphine. There is not a calculation to identify equivalency therefore MME is not available for buprenorphine products.
- Conversion factors for drugs used as part of medications for opioid use disorder should not be evaluated using opioid dosage indexes intended for chronic pain.

CALCULATING MORPHINE MILLIGRAMS EQUIVALENTS (MME)*

OPIOID (doses in mg/day except where noted)	CONVERSION FACTOR
Codeine	0.15
Fentanyl transdermal (in mcg/hr)**	2.4
Fentanyl buccal, sublingual, or lozenges (mcg)***	0.13
Hydrocodone	1
Hydromorphone	4
Methadone****	
1-20 mg/day	4
21-40 mg/day	8
41-60 mg/day	10
≥61-80 mg	12
Morphine	1
Oxycodone	1.5
Oxymorphone	3

*The dose conversions are estimated and cannot account for all individual differences in genetics and pharmacokinetics.
**Fentanyl patch: dosed in mcg/hr instead of mg/day, and absorption is affected by heat and other factors.
***Fentanyl lozenge: conversion factor should be multiplied by the number of micrograms in a given tablet or lozenge.
****Methadone: the conversion factor increases at higher doses.

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