

Adverse Drug Events | High -Dose Opioid Prescribing Upon Discharge Chart

Adverse Drug Events High – Dose Opioid Prescribing Upon Discharge	
Numerator	Number of patients discharged with an opioid prescription with >90 Morphine milligram equivalents (MME) daily
Denominator	Number of Acute Care, SNF, Swing Bed and Observation patients discharged with an opioid prescription
Multiplier	1000
Link/Notes on measure specifications if applicable	Includes Obstetric patients, excludes cancer and hospice patients
Outcome or Process	Process

Frequently Asked Questions:

- + **Question:** When measuring high dose opioid prescribing upon discharge are patients with the following diagnosis excluded: cancer, hospice, palliative or comfort care?
- + **Answer:** Yes, patients who are hospice, comfort care/palliative care or if they have cancer as a primary diagnosis are excluded. This measure is specific to acute care, SNF, swing bed and observations patients.
- + **Question:** When measuring high dose opioid prescribing upon discharge is Tramadol included? Does this include OB patients?
- + **Answer:** Yes, Tramadol is included. MME conversion table below for reference.
- + **Question:** When measuring high dose opioid prescribing upon discharge are OB patients included?
- + **Answer:** Yes

How Should the Total Daily Dose of Opioids be Calculated?

Calculated MME	
Opioid (Doses in Mg/Day Except Where Noted)	Conversion Factor
Codeine	0.15
Fentanyl transdermal (in mcg/hr)	2.4
Hydrocodone	1
Hydromorphone	4
Methadone	
1-20 mg/day	4
21-40 mg/day	8
41-60 mg/day	10
≥ 61-80 mg/day	12
Morphine	1
Oxycodone	1.5
Oxymorphone	3

This guide information was retrieved from:
<https://www.cdc.gov/drugoverdose/pdf/>



- 1. DETERMINE** the total daily amount of each opioid the patient takes.
- 2. CONVERT** each to MMEs – Multiply the dose for each opioid by the conversion factor. (See Table)
- 3. ADD** them together.

These dose conversions are estimated and cannot account for all individual differences in genetics and pharmacokinetics.

Caution:

Do not use the calculated dose in MMEs 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 medication label.

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

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Opioid Oral Morphine Milligram Equivalent (MME) Conversion Factors^{1,2} Chart:

Adverse Drug Events High – Dose Opioid Prescribing Upon Discharge	
Type of Opioid (Strength Units)	MME Conversion Factor
Buprenorphine film/tablet ³ (mg)	30
Buprenorphine patch ⁴ (mcg/hr)	12.6
Buprenorphine film (mcg)	0.03
Butorphanol (mg)	7
Codeine (mg)	0.15
Dihydrocodeine (mg)	0.25
Fentanyl buccal or SL tablets, or lozenge/troche ⁵ (mcg)	0.13
Fentanyl film or oral spray ⁶ (mcg)	0.18
Fentanyl nasal spray ⁷ (mcg)	0.16
Fentanyl patch ⁸ (mcg)	7.2
Hydrocodone (mg)	1
Hydromorphone (mg)	4
Levorphanol tartrate (mg)	11
Meperidine hydrochloride (mg)	0.1
Methadone ⁹ (mg)	3
> 0, <= 20	4
>20, <=40	8
>40, <=60	10
>60	12
Morphine (mg)	1
Opium (mg)	1
Oxycodone (mg)	1.5
Oxymorphone (mg)	3
Pentazocine (mg)	0.37
Tapentadol ¹⁰ (mg)	0.4
Tramadol (mg)	0.1

¹ The MME conversion factor is intended only for analytic purposes where prescription data to calculate daily MME. It is to be used in the formula: Strength per Unit X (Number of Units/Days Supply) X MME Conversion factor – MME/Day. This value does not constitute clinical guidance or recommendations for converting patients from one form of opioid analgesic to another. Please consult the manufacturer's full prescribing information for such guidance. Use of this file for the purposes of any clinical decision-making warrants caution.

Resources:

+ CDC's Opioid Prescribing Guideline

Webpage: <https://www.cdc.gov/drugoverdose/prescribing/guideline.html> (Link)

To determine dose in MMEs, multiply the dose for each opioid by the conversion factor. For example, tablets containing hydrocodone 5mg and acetaminophen 300mg taken four times a day would contain a total of 20mg of hydrocodone daily, equivalent to 20 MME daily; extended-release tablets containing oxycodone 10mg and taken twice a day would contain a total of 20mg of oxycodone daily, equivalent to 30 MME daily.

- + All doses should be in mg/day, except for fentanyl which should be in mcg/hr. before multiplying by the conversion factor.
- + Equianalgesic dose conversions are only estimates and cannot account for individual variability in genetics and pharmacokinetics.
- + Do not use the calculated dose in MMEs to determine the doses to use when converting opioid to another; when converting opioids, the new opioid is typically dosed at substantially lower than the calculated MME dose to avoid accidental overdose due to incomplete cross-tolerance and individual variability in opioid pharmacokinetics.
- + Use particular caution with methadone dose conversions because the conversion factor increases at higher doses.
- + Use particular caution with fentanyl since it is dosed in mcg/hr. instead of mg/day, and its absorption is affected by food and other factors.

+ Morphine Milligram Equivalent (MME) Calculator

Webpage: <https://www1.nyc.gov/site/doh/providers/health-topics/mme-calculator.page> (Link)

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