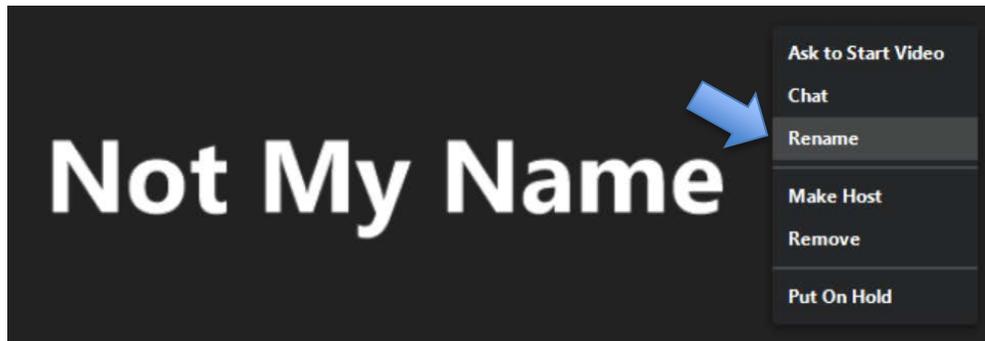




## ECHO Idaho: Opioid Addiction and Treatment Clinic

Welcome! The session will start at 12:15pm MT.



Please introduce yourself in the chat function: Name, Title, Organization, City

If you need to update your screen name, right click on your image and select rename.

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## ECHO Idaho: Opioid Addiction and Treatment

Safe Opiate Prescribing: Med Calculations

9/26/19

Kaylee Moretto, PharmD Candidate 2020

The speaker has no significant financial conflicts of interest to disclose.

# Learning Objectives

- Understand the importance of morphine milligram equivalents
- Identify resources and guidelines for pain management and safe opioid prescribing
- Utilize resources to calculate morphine milligram equivalents
- Utilize resources to convert between opioid analgesics

# Morphine Milligram Equivalents (MME)<sup>2</sup>

- Opioid analgesics have different potencies
- Morphine is used as the standard or “prototype” opioid
- Opioid analgesics are assigned a conversion factor and doses are converted to an equivalent dose of morphine in MME/day

# Why MME Matters<sup>3</sup>

- The risk of opioid overdose increases as doses of opioids increase
- Allows for easier assessment of overdose risk
- Aids in safe prescribing practices
- Helps identify patients who may benefit from additional overdose preventing measures

# CDC Recommendations<sup>3</sup>

- Prescribe the lowest effective dose
- Use caution and carefully weigh risks and benefits when prescribing  $\geq 50$  MME/day
  - Risks: twice as likely to overdose
- Avoid increasing doses  $\geq 90$  MME/day
  - Use caution, weigh risks vs benefits, and carefully justify decision to titrate  $> 90$  MME/day
  - Risks: nine times as likely to overdose with  $> 100$  MME/day

# Calculating MME<sup>3</sup>

- Different resources give different conversion factors and some medications
  - Methadone, fentanyl, buprenorphine
- Example calculated by hand
  - A patient is taking oxycodone ER 30 mg BID. The conversion factor for oxycodone is 1.5. What is the daily MME prescribed?
  - Total daily dose of oxycodone = 60 mg/day
  - 60mg oxycodone x 1.5 = 90 MME/day

# Calculating MMEs

When to Use ▾	Pearls/Pitfalls ▾	Why Use ▲
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- MME is a numerical standard against which most opioids can be compared, yielding a comparison of each medication's potency.
- Helps determine whether a cumulative daily dose of opioids is associated with increased risk of overdose.
- Helps identify patients who may benefit from closer monitoring, reduction or tapering of opioids, naloxone prescription, and other measures to reduce risk of potential opioid abuse and/or overdose.

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Drug	<input type="text" value="Choose one"/>
Dosage	<input type="text"/> mg/dose
Doses per day	<input type="text"/> doses/day
Add another drug	<input checked="" type="button" value="No"/> <input type="button" value="Yes"/>

---

**Result:**  
Please fill out required fields.

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<a href="#">» Next Steps</a>	<a href="#">Evidence</a>	<a href="#">Creator Insights</a>
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# Idaho Prescription Monitoring Program

Rx Data

**PRESCRIPTIONS**

Total Prescriptions: 5  
Total Private Pay: 2

Fill Date	ID	Written	Drug	Qty	Days	Prescriber	Rx #	Pharmacy	Refill	Daily Dose *	Pymt Type	PMP
09/07/2019	3	08/30/2019	Oxycodone Hcl Er 10 Mg Tablet	20.00	10				0	30.00 MME	Comm Ins	ID
09/05/2019	2	08/30/2019	Hydromorphone 2 Mg Tablet	28.00	7				0	32.00 MME	Private Pay	ID
09/05/2019	2	08/30/2019	Hydrocodone-Acetamin 10-325 Mg	40.00	5				0	80.00 MME	Private Pay	ID
09/10/2018	4	09/08/2018	Hydrocodone-Acetamin 5-325 Mg	20.00	5				0	20.00 MME	Comm Ins	ID
12/14/2017	1	12/14/2017	Oxycodone-Acetaminophen 5-325	9.00	3				0	22.50 MME	Comm Ins	ID



\*Per CDC guidance, the MME conversion factors prescribed or provided as part of the medication-assisted treatment for opioid use disorder should not be used to benchmark against dosage thresholds meant for opioids prescribed for pain. Buprenorphine products have no agreed upon morphine equivalency, and as partial opioid agonists, are not expected to be associated with overdose risk in the same dose-dependent manner as doses for full agonist opioids. MME = morphine milligram equivalents. LME = Lorazepam milligram equivalents. mg = dose in milligrams.

<https://idaho.pmpaware.net>

# MME Resources for Providers

- CDC Guideline for Prescribing Opioids for Chronic Pain
  - Website: <https://www.cdc.gov/drugoverdose/prescribing/guideline.html>
  - PDF: [https://www.cdc.gov/drugoverdose/pdf/guidelines\\_at-a-glance-a.pdf](https://www.cdc.gov/drugoverdose/pdf/guidelines_at-a-glance-a.pdf)
  - Mobile App with MME calculator available for download on Android and Apple devices
  - Online modules for safe opioid prescribing
- MD Calc Online MME Calculator
  - <https://www.mdcalc.com/morphine-milligram-equivalents-mme-calculator>
  - Online calculator for easy calculation of MME with ability to add multiple medications
- CMS MME Conversion Factor Table
  - <https://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovContra/Downloads/Oral-MME-CFs-vFeb-2018.pdf>
  - Table with conversion factors for hand calculating MME

# Converting Between Opioid Analgesics<sup>1</sup>

- Using MME to convert directly from one opioid analgesic to another is NOT recommended
- Cross Tolerance
  - Each medication has unique properties
  - Patients will respond differently to new agents and may not have the same level of tolerance built up to the new agent

# Accounting for Cross Tolerance<sup>1</sup>

- Doses of the new opioid regimen the patient is switching to should be lower than the MME of the patient's current opioid regimen
- When switching among lower potency agents, reduce the MME by ~25%
- When switching to a high potency agent, reduce the MME by ~50%

# Converting Between Opioid Analgesics

## Equivalent Opioid Calculator

### Equianalgesic dosage conversion calculator

 [ClinCalc.com](https://clincalc.com) » [Neurology](#) » Opioid Equianalgesic Calculator

### Total Daily (24 hr) Opioid Dose

From:   mg  

To:

Cross-tolerance:   25% reduction

<https://clincalc.com/Opioids/>

# Equianalgesic Dose Conversion Resources for Providers

- Pharmacist's Letter Opioid Conversion Dosing Chart
  - <https://www.nhms.org/sites/default/files/Pdfs/Opioid-Comparison-Chart-Prescriber-Letter-2012.pdf>
  - Gives parenteral and oral equianalgesic doses in addition to approximate 24 hour dosing regimens and usual starting doses
- ClinCalc Online Equivalent Opioid Calculator
  - <https://clincalc.com/Opioids/>
  - Online calculator for easy conversion between parenteral and/or oral equianalgesic doses with the ability to reduce doses to account for cross-tolerance

# Key Points

- Calculating MME can aid in safe prescribing of opioid analgesics
- Converting between opioid analgesics appropriately can decrease the risk of overdose
- Resources are available to make calculating MME and converting between opioid analgesics easy

# References

- Anderson R, Saiers JH, Abram S, et al. Accuracy in equianalgesic dosing: conversion dilemmas. *J Pain Symptom Manage*. 2001; 21(5):397-406.
- Centers for Disease Control and Prevention. CDC guideline for prescribing opioids for chronic pain. 2018: 1-4.
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## ECHO Idaho: Opioid Addiction and Treatment

Join us for our next session  
October 10 at 12:15 pm MT

*When to Use Long-Acting Opioids*  
Roger Hefflinger, PharmD

For information, please visit [uidaho.edu/echo](http://uidaho.edu/echo)