West Virginia (WV) has the highest drug overdose death rate of 35 per 100,000 (Age Adjusted), with a large margin over the next closest state of New Mexico having a rate of 27, while the national average is 14. A geographically and professionally diverse expert panel of West Virginia professionals was formed with intention of creating guidelines for the safe and effective overall management of pain, which build upon the CDC Chronic Pain Opioid Guidelines of 2016. The guidance, included herein, aims to first provide a risk reduction strategy for the appropriate use of all pain treatments, and secondly, to develop pain management clinical treatment algorithms.

Risk Reduction Strategy
A major concern of healthcare professionals and patients alike is the question of what is the “gold standard” approach to managing pain, particularly chronic pain. Previously, pain management strategies have been largely based upon subjective evaluation methods versus more objective assessments. The risk reduction strategy contained herein, aims to minimize patient risk and reduce healthcare professional anxiety in the overall management of chronic pain, which is paramount for ensuring the safest and most effective management of pain.

Clinical Treatment Algorithms
Safe and effective clinical pain management algorithms based on best practices, clinical experience, and evidence-based literature addressing the three main classification of pain: nociceptive, neuropathic, and mixed.

**Nociceptive Pain**
Pain arising from noxious stimuli affecting thermal, mechanical, or chemical receptors (nociceptors) in normal tissues

**Neuropathic Pain**
Abnormal processing of sensory input by the Central and/or Peripheral Nervous Systems (CNS/PNS)

**Mixed Pain**
Combination of both Nociceptive and Neuropathic Pains
Risk Reduction Strategy

www.sempguidelines.org

West Virginia
Safe & Effective Management of Pain
(SEMP) Guidelines

Patient & Provider(s) Agreement

Opioid Risk Screening
Drug Interaction & Pharmacogenetics Review
Improved Function & Reduced Pain Goal
End of Therapy Goal
Initial & Annual Psychological Evaluation
Medication Storage & Disposal
Naloxone
Prescription Drug Monitoring Program (PDMP)
Urine Drug Screening/Testing
Pill Counts
DEA Red Flags

DEA Red Flags

Urine Drug Screening/Testing

Pill Counts

Prescription Drug Monitoring Program (PDMP)

Naloxone

Medication Storage & Disposal

Improved Function & Reduced Pain Goal

End of Therapy Goal

Initial & Annual Psychological Evaluation

www.sempguidelines.org

West Virginia Safe & Effective Management of Pain (SEMP) Guidelines
Non-Pharmacological Treatments

West Virginia Safe & Effective Management of Pain (SEMP) Guidelines

Active
- Cardio Exercise
- Resistance Exercise
- Aquatic Exercise
- Walking Aids
- Yoga, Tai Chi, & Qigong
- Meditation or Hypnosis
- Relaxation
- Cognitive Behavioral Therapy
- Acceptance & Commitment Therapy
- Biofeedback
- Graded Motor Imagery
- Occupational/Physical Therapy

Passive
- Nutrition
- Heat or Cold
- TENS/EMS Devices
- Hyperbaric Oxygen
- Spinal Manipulation (Chiropractor)
- Massage
- Ultrasound
- Paraffin Wax
- Infrared Light
- Spinal Traction
- Acupuncture

www.sempguidelines.org
# Morphine Milligram Equivalents (MMEs)

www.sempguidelines.org

## West Virginia Safe & Effective Management of Pain (SEMP) Guidelines

<table>
<thead>
<tr>
<th>Medication</th>
<th>MME Factor</th>
<th>MME Relative Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tramadol</td>
<td>0.1</td>
<td>300mg</td>
</tr>
<tr>
<td>Meperidine</td>
<td>0.1</td>
<td>300mg</td>
</tr>
<tr>
<td>Codeine</td>
<td>0.15</td>
<td>200mg</td>
</tr>
<tr>
<td>Dihydrocodeine</td>
<td>0.25</td>
<td>120mg</td>
</tr>
<tr>
<td>Pentazocine</td>
<td>0.37</td>
<td>~100mg</td>
</tr>
<tr>
<td>Tapentadol</td>
<td>0.4</td>
<td>75mg</td>
</tr>
<tr>
<td><strong>MORPHINE</strong></td>
<td>1</td>
<td>30mg</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>1</td>
<td>30mg</td>
</tr>
<tr>
<td>Opium</td>
<td>1</td>
<td>30mg</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>1.5</td>
<td>20mg</td>
</tr>
<tr>
<td>Oxymorphone</td>
<td>3</td>
<td>10mg</td>
</tr>
<tr>
<td>Heroin (SC Diacetylmorphine)</td>
<td>3</td>
<td>10mg</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>4</td>
<td>7.5mg</td>
</tr>
<tr>
<td><strong>Methadone</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-20 mg/day</td>
<td>4</td>
<td>7.5mg</td>
</tr>
<tr>
<td>21-40 mg/day</td>
<td>8</td>
<td>3.75mg</td>
</tr>
<tr>
<td>41-60 mg/day</td>
<td>10</td>
<td>3mg</td>
</tr>
<tr>
<td>&gt;/=61 mg/day</td>
<td>12</td>
<td>2.5mg</td>
</tr>
<tr>
<td>Levorphanol</td>
<td>11</td>
<td>~3mg (2mg Available)</td>
</tr>
<tr>
<td>Fentanyl Transdermal (TD) Patch</td>
<td>7.2 (Divide By Days)</td>
<td>12.5mcg/hr Patch</td>
</tr>
<tr>
<td>Buprenorphine TD Patch</td>
<td>12.6 (Divide By Days)</td>
<td>15mcg/hr Patch</td>
</tr>
<tr>
<td>Buprenorphine SL &amp; Buccal</td>
<td>0.03 (for mcg)</td>
<td>1000mcg (900mcg Available)</td>
</tr>
</tbody>
</table>

## Using the MME Factor
Multiply the mg or mcg respectively of the chosen opioid by the MME Factor to calculate the MME of the chosen opioid.

## Using the MME Relative Doses
Comparative doses of opioids to 30mg of oral morphine


*Buprenorphine & Heroin References included within the full SEMP guidelines document
Prescription Drug Monitoring Programs (PDMPs)

www.sempguidelines.org

West Virginia Safe & Effective Management of Pain (SEMP) Guidelines

West Virginia PDMP or Controlled Substance Monitoring Program

• To Register, Delegate Access, or Log-In: https://www.csapp.wv.gov/Account/Login.aspx

• All licensed prescribers must check the PDMP at the initiation of opioid therapy and at a minimum of every year thereafter.

• A physician working in a pain management clinic must check the PDMP at the initiation of the controlled substance therapy and at a minimum of every 90 days thereafter.

• All licensees who dispense Schedule II, III, and IV controlled substances to residents of WV must provide the dispensing information to the WV Board of Pharmacy (BOP) at least every 24 hours.
To Register, Delegate Access, or Log-In:
https://www.csapp.wv.gov/Account/Login.aspx

All licensed prescribers must check the PDMP at the initiation of opioid therapy and at a minimum of every year thereafter.

A physician working in a pain management clinic must check the PDMP at the initiation of the controlled substance therapy and at a minimum of every 90 days thereafter.

All licensees who dispense Schedule II, III, and IV controlled substances to residents of WV must provide the dispensing information to the WV Board of Pharmacy (BOP) at least every 24 hours.
## Opioid Drug-Drug Interactions

**www.sempguidelines.org**

**West Virginia Safe & Effective Management of Pain (SEMP) Guidelines**

<table>
<thead>
<tr>
<th>Opioid</th>
<th>CYP450 Enzyme</th>
<th>Common Interacting Medications(s)</th>
<th>Result</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>codeine</td>
<td>2D6</td>
<td>celecoxib, duloxetine, bupropion, fluoxetine, &amp; paroxetine</td>
<td>Inhibit conversion to active metabolite</td>
<td>Decreased Analgesia</td>
</tr>
<tr>
<td>codeine</td>
<td>n/a</td>
<td>SSRI/s/SNRIs</td>
<td>Increased central serotonin levels</td>
<td>Monitor for Serotonin Syndrome</td>
</tr>
<tr>
<td>fentanyl</td>
<td>3A4</td>
<td>clarithromycin, diltiazem, verapamil, &amp; erythromycin</td>
<td>Increased fentanyl concentration</td>
<td>Adjust fentanyl dose</td>
</tr>
<tr>
<td>fentanyl</td>
<td>n/a</td>
<td>acyclovir</td>
<td>Increased meperidine concentration</td>
<td>n/a</td>
</tr>
<tr>
<td>meperidine</td>
<td>3A4</td>
<td>phenytoin, carbamazepine, &amp; phenobarbital</td>
<td>Decreased meperidine concentration</td>
<td>n/a</td>
</tr>
<tr>
<td>meperidine</td>
<td>n/a</td>
<td>SSRI/s/SNRIs</td>
<td>Increased central serotonin levels</td>
<td>Monitor for Serotonin Syndrome</td>
</tr>
<tr>
<td>meperidine</td>
<td>n/a</td>
<td>cimetidine</td>
<td>Increased meperidine concentration</td>
<td>Choose alternative H2RA</td>
</tr>
<tr>
<td>morphine</td>
<td>n/a</td>
<td>rifampin &amp; ranitidine</td>
<td>Decreased morphine concentration &amp; conversion to active metabolite</td>
<td>May result in decreased analgesia</td>
</tr>
<tr>
<td>methadone</td>
<td>2D6</td>
<td>celecoxib, duloxetine, bupropion, fluoxetine, &amp; paroxetine</td>
<td>Increased methadone concentration</td>
<td>Reduce dose of methadone</td>
</tr>
<tr>
<td>methadone</td>
<td>3A4</td>
<td>phenytoin, carbamazepine, &amp; phenobarbital</td>
<td>Decreased methadone concentration</td>
<td>May precipitate opioid withdrawal</td>
</tr>
<tr>
<td>methadone</td>
<td>3A4</td>
<td>clarithromycin, diltiazem, verapamil, &amp; erythromycin</td>
<td>Increased methadone concentration</td>
<td>Reduce dose of methadone</td>
</tr>
<tr>
<td>tramadol</td>
<td>2C9</td>
<td>carbamazepine</td>
<td>Increases tramadol metabolism</td>
<td>Avoid combination</td>
</tr>
<tr>
<td>tramadol</td>
<td>2D6</td>
<td>celecoxib, duloxetine, bupropion, fluoxetine, &amp; paroxetine</td>
<td>Inhibit conversion to active metabolite</td>
<td>Decreased Analgesia</td>
</tr>
<tr>
<td>tramadol</td>
<td>n/a</td>
<td>SSRI/s/SNRIs</td>
<td>Increased central serotonin levels</td>
<td>Monitor for Serotonin Syndrome</td>
</tr>
<tr>
<td>hydrocodone</td>
<td>2D6</td>
<td>celecoxib, duloxetine, bupropion, fluoxetine, &amp; paroxetine</td>
<td>Inhibit conversion to active metabolite</td>
<td>Decreased Analgesia</td>
</tr>
<tr>
<td>hydrocodone</td>
<td>3A4</td>
<td>clarithromycin, diltiazem, verapamil, &amp; erythromycin</td>
<td>Increased hydrocodone levels</td>
<td>Adjust hydrocodone dose</td>
</tr>
<tr>
<td>hydrocodone</td>
<td>2D6</td>
<td>celecoxib, duloxetine, bupropion, fluoxetine, &amp; paroxetine</td>
<td>Increased oxycodone levels, but decreased oxymorphone (metabolite) levels</td>
<td>n/a</td>
</tr>
<tr>
<td>oxycodone</td>
<td>3A4</td>
<td>phenytoin, carbamazepine, &amp; phenobarbital</td>
<td>Decreased oxycodone concentration</td>
<td>Decreased Analgesia</td>
</tr>
<tr>
<td>oxycodone</td>
<td>3A4</td>
<td>clarithromycin, diltiazem, verapamil, &amp; erythromycin</td>
<td>Increased oxycodone levels</td>
<td>Adjust oxycodone dose</td>
</tr>
</tbody>
</table>

# Urine Drug Screenings & Tests

**Urine Drug Screening (UDS)**
- Immunoassay screen (i.e. Cup)
- In-office, point-of-care, or lab-based
- Results within minutes
- Detects a few legal & illicit medications by structural class
- Guidance for preliminary treatment decisions
- Cross-reactivity common: more false positives
- Higher cutoff levels: more false negatives

**Urine Drug Testing (UDT)**
- GC-MS or LC-MS/MS
- Laboratory, highly specific and sensitive
- Results in hours or days
- Measures concentrations of all medications, illicit substances, & metabolites
- Definitive identification & analysis
- False-positive results are rare
- False-negative results are rare

## Target Drug Test

<table>
<thead>
<tr>
<th>Cross-Reactant</th>
<th>Target Drug Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSAIDs, dronabinol, promethazine, &amp; pantoprazole</td>
<td>Cannabinoids</td>
</tr>
<tr>
<td>Poppy seeds, chlorpromazine, rifampin, dextromethorphan, quinolones, diphenhydramine, &amp; quinine</td>
<td>Opioids</td>
</tr>
<tr>
<td>Methylphenidate, trazodone, bupropion, amantadine, propranolol, labetalol, ranitidine, &amp; menthol</td>
<td>Amphetamines</td>
</tr>
<tr>
<td>Ibuprofen, tramadol, chlorpromazine, venlafaxine, thioridazine, meperidine, dextromethorphan, diphenhydramine, &amp; doxylamine</td>
<td>PCP</td>
</tr>
<tr>
<td>Oxaprozin, sertraline, &amp; some herbals</td>
<td>Benzodiazepines</td>
</tr>
<tr>
<td>Asthma inhalers</td>
<td>Alcohol</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>Methadone</td>
</tr>
</tbody>
</table>

## Opioid

<table>
<thead>
<tr>
<th>Opioid</th>
<th>Opioids Expected in Testing Results (Based on Metabolites)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>Morphine &amp; hydromorphone*</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>Hydromorphone</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>Hydrocodone &amp; hydromorphone</td>
</tr>
<tr>
<td>Codeine</td>
<td>Codeine, hydrocodone*, morphine, &amp; hydromorphone</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>Oxycodone &amp; oxymorphone</td>
</tr>
<tr>
<td>Oxymorphine</td>
<td>Oxymorphone</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>Fentanyl</td>
</tr>
<tr>
<td>Tramadol</td>
<td>Tramadol</td>
</tr>
<tr>
<td>Methadone</td>
<td>Methadone</td>
</tr>
<tr>
<td>Heroin</td>
<td>Heroin, morphine, &amp; hydromorphone</td>
</tr>
</tbody>
</table>

*Minor
General Considerations

- Determine if the goal is to reduce or discontinue the opioid medication.
- Gradual tapering can take 2 to 6 months (Some may benefit from longer time frame of 18 to 24 months) and is best for avoiding withdrawal symptoms.
- More rapid tapering is possible and sometimes desired, with an emphasis on monitoring for withdrawal symptoms.
- Formulations that offer smaller dose increments are useful for more gradual tapers, especially once in the lower end of the dosage range.
- Consult with pain management specialists as needed.

Tapering Timeline

Initial dose reductions in the range of 10% every 1 to 2+ weeks.

Once 1/3 of original dose is reached, smaller reductions (5% every 2 to 4 weeks) may be useful.

If discontinuing opioid, the final 20-60 MME may require more time.

Opioid Withdrawal Symptoms & Treatments

- Pain: NSAID and/or Acetaminophen
- Diarrhea: Loperamide
- Anxiety: Hydroxyzine
- Insomnia: Sleep Hygiene
- Nausea/Vomiting: Dimenhydrinate
- Tachycardia: Clonidine
Naloxone
www.sempguidelines.org

West Virginia
Safe & Effective Management of Pain (SEMP) Guidelines

Candidates to Carry Naloxone

- Any patient receiving >50mg Morphine Milligram Equivalent (MME) of opioid treatment
- Respiratory condition
  - COPD, Asthma, Sleep Apnea, or Smoking of marijuana, hooka, tobacco, etc.
- Patients being treated for opioid use disorder (DSM-V)
- Personal or Family history of substance abuse (alcohol or drugs)
- Patients released having experienced an opioid overdose
- Benzodiazepine, Hypnotics, Muscle Relaxers, or other sedative use
- Patients being switched between opioids product formulations
- Those with difficult access to emergency services (rural)
- Heavy alcohol use
- Voluntary request from patient or caregiver

Opioid Overdose Signs/Symptoms

- Slow Gargled Breathing (or No Breathing)
- Blue Lips and/or Nails
- Cold & Clammy Skin
- Unresponsive
- Pin-Point Pupils
- Hypotension

Key Points of Naloxone Administration

- Call 911, Emergency Medical Services EMS
- Clearing of airway and Rescue Breathing
- After naloxone administration, the rescue position can help
  - Laying on Side, one leg extended, other leg bent, & hand under head
  - Staying with person at least until EMS arrives.