Patients prescribed higher opioid doses are at increased risk of overdose death. Higher opioid doses may also contribute to hyperalgesia, neuroendocrine dysfunction, and possibly immunosuppression.

**Morphine Milligram Equivalent (MME) is a clinical indicator of potential dose-related risk** for adverse effects, including overdose, related to opioid use. While there is no standard definition for what constitutes a high dose of opioids, evidence suggests the risk of overdose death doubles when MME dose exceeds 90 mg per day.

Key considerations with MME:

- **Calculating the MME helps identify patients who may benefit from closer monitoring, reduction or tapering of opioids, prescribing of naloxone, or other measures to reduce risk of overdose** (CDC, 2016).
- MME thresholds identified in the opioid prescribing guidelines are not dose limits or maximum doses. They are intended to define increasing levels of risk.
- Opioid doses > 50 MME / day should prompt patient evaluation to ensure treatment goals are being met including analgesia, function, and quality of life, without evidence of intolerable adverse effects or aberrant behaviors.
- Opioid doses > 90 MME/day should prompt discussion with patient regarding overdose risk; evaluate current treatment and use of additional treatment modalities, which may include consultation with a pain specialist.
- **Patient education tip**: Review MME dose with patients to stimulate discussion and raise awareness of opioid dose in relation to risk.
- The CDC recommends prescribing naloxone for patients receiving > 50 MME/day in case of overdose. For questions on naloxone prescribing, contact your local pharmacy.
- MME is related to equianalgesic conversion in terms of opioid dose comparison to morphine. Equianalgesic conversion and opioid rotation will be covered in a future communication.

**MME calculators and tools**:

- [Calculating Total Daily Dose of Opioids for Safer Dosing](https://www.cdc.gov/drugoverdose/pdf/calc_latest.pdf) (CDC, 2016)
- Washington State Agency Medical Directors' Group [Opioid Dose Calculator](http://www.washingtonstate.gov/drugtreatment/drgor/odc)
- Global RPh [Opioid Analgesic Converter](http://opioidanalgesicconverter.org/) – this is an equianalgesic conversion tool; morphine equivalent data is expressed for the opioid being converted to.
- The ePDMP lists MME and graphs them over time with reference to CDC defined thresholds.

For questions, contact Peggy Lutz, Service Line Director, Pain Management peggy.lutz@ascension.org or Robert Sedlacek, MD, Family Medicine, Merrill robert.sedlacek@ascension.org