Bree Collaborative | AMDG Opioid Prescribing Guidelines Workgroup

Opioid Prescribing Metrics - DRAFT

Definitions:

- **Days Supply**: The total of all opioid prescriptions dispensed during the calendar quarter including overlapping prescriptions calculated by dividing the maximum amount of the medication used in one day by the dispensed amount. Sum number of days supply from each opioid prescription in the calendar quarter.
- **New Opioid Patient**: At least one opioid prescription in the calendar quarter and no opioid prescription in the preceding calendar quarter among patients enrolled in health plan for at least two subsequent calendar quarters.
- **Chronic Opioid Prescription**: ≥60 days supply of opioids in the calendar quarter.
    - **Alternative chronic use definition**: If days supply is not available, use pill count of ≥160 or more pills dispensed in 90 days (total of short-acting and long-acting) -OR- patient received methadone in liquid form or fentanyl patch.
- **Chronic Concurrent Opioid and Sedative Hypnotics, Benzodiazepines, Carisoprodol, and/or Barbiturate Prescription**: ≥60 days supply of opioids and ≥60 days supply of sedatives in the same calendar quarter.
- **Average morphine equivalent dose (MED) per day inclusive of overlapping opioid prescriptions**: Total MED per calendar quarter/90 days

Inclusions:

- Opioid and sedative prescription data for all patients in the population pulled in calendar quarters (i.e., three month intervals of Jan-Mar, Apr-June, Jul-Sep, Oct-Dec).
- Data from the calendar quarter and previous two calendar quarters will be needed to complete all analyses.
- See **Appendix A** for full list of included and excluded opioids

Exclusions:

- All prescriptions for Buprenorphine.
- Prescriptions for opioid not typically used in outpatient settings or when used as part of cough and cold formulations including elixirs, and combination products containing antitussives, decongestants, antihistamines, and expectorants.

Guidelines:

- Washington State Agency Medical Directors Group. Interagency Guideline on Prescribing Opioids for Pain. 3rd Edition, June 2015. Available: www.agencymeddirectors.wa.gov/Files/2015AMDGOpioidGuideline.pdf
- Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain - United States, 2016. MMWR Recomm Rep. 2016 Mar 18;65(1):1-49. Available: www.cdc.gov/mmwr/volumes/65/rr/pdfs/rr6501e1.pdf

Metric 1	**Patients prescribed any opioid** Percent of the population prescribed opioids, by age Primary: All ages Secondary: Age-specific: ≤20, 21-34, 35-64, ≥65
Rationale	To track trends in opioid prescribing overall and by age group AMDG 2015 Guideline: *Reserve opioids for acute pain resulting from severe injury or medical conditions, surgical procedures, or when alternatives are ineffective or contraindicated.* (Page 22) *The goal of opioid therapy is to prescribe the briefest, least invasive and lowest dose regimen that minimizes pain and avoids dangerous side effects.* (Page 26) CDC 2016 Guideline: *Long-term opioid use often begins with treatment of acute pain. When opioids are used for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids and should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. Three days or less will often be sufficient; more than seven days will rarely be needed (recommendation category: A, evidence type: 4).* (Page 24)
Numerator	Number of patients in the population with at least one opioid prescription in the calendar quarter
Denominator	Number of patients in the population in the calendar quarter (e.g., health plan population, Washington State population)
Frequency	Quarterly
Level of Analysis	Region System/Health Plan

Metric 2	**Patients prescribed chronic opioids** Percent of patients prescribed chronic opioids
Rationale	To track trends in long-term (chronic) prescriptions of opioids AMDG 2015 Guideline: *The overall data on effectiveness of opioids for longer term use, especially for improved function, and for routine conditions such as non-specific low back pain, headaches, and fibromyalgia is weak, and the evidence of potential harm is strong.* (Page 24) *Prescribe chronic opioid analgesic therapy only if there is sustained clinically meaningful improvement in function and no serious adverse outcomes or contraindications.* (Page 32) CDC 2016 Guideline: *Non-pharmacologic therapy and non-opioid pharmacologic therapy are preferred for chronic pain. Clinicians should consider opioid therapy only if expected benefits for both pain and function are anticipated to outweigh risks to the patient. If opioids are used, they should be combined with non-pharmacologic therapy and non-opioid pharmacologic therapy, as appropriate. (recommendation category: A, evidence type: 3).* (Page 17)
Numerator	Number of patients in the population prescribed ≥60 days supply of opioids in the calendar quarter
Denominator	Number of patients in the population with at least one opioid prescription in the calendar quarter (e.g., health plan population, Washington State population)
Frequency	Quarterly
Level of Analysis	Region System/Health Plan

Metric 3	**Patients prescribed high-dose chronic opioid therapy** Percent of patients prescribed chronic opioids at high doses
Rationale	To track trends in high-dose opioid prescribing (e.g., ≥50 mg/day MED, ≥90 mg/day MED) among those being prescribed chronic opioid therapy AMDG 2016 Guideline: *There is no completely safe opioid dose. Chronic opioid analgesic therapy patients should be routinely assessed for risk as medical conditions and life circumstances may change during treatment.* (Page 12) *Prescribe opioids at the lowest possible effective dose. If the dose is increased but does not result in clinically meaningful improvement in function, then significant tolerance or adverse effects to opioids may be developing and opioids should be tapered back to the previous dose or possibly discontinued.* (Page 32) CDC 2016 Guideline: *When opioids are started, clinicians should prescribe the lowest effective dosage. Clinicians should use caution when prescribing opioids at any dosage, should carefully reassess evidence of individual benefits and risks when considering increasing dosage to ≥50 morphine milligram equivalents (MME)/day, and should avoid increasing dosage to ≥90 MME/day or carefully justify a decision to titrate dosage to ≥90 MME/day (recommendation category: A, evidence type: 3).* (Page 22)
Numerator	Number of patients prescribed chronic opioid therapy ≥50 mg/day MED in the calendar quarter Number of patients prescribed chronic opioid therapy ≥90 mg/day MED in the calendar quarter
Denominator	Number of patients in the population prescribed ≥60 days supply of opioids in the calendar quarter (e.g., health plan population, Washington State population)
Frequency	Quarterly
Level of Analysis	Region System/Health Plan Provider

Calculation of Morphine Equivalent Dose for commonly prescribed opioids

Opioid	Conversion factor*
Codeine	0.15
Dihydrocodeine	0.25
Fentanyl buccal, sublingual or lozenge/	0.13 mcg/hr
Fentanyl film or oral spray	0.18 mcg/hr
Fentanyl nasal spray	0.16 mcg/hr
Fentanyl transdermal (in mcg/hr)	2.4 mcg/hr
Hydrocodone	1
Hydromorphone	4
Levorphanol tartrate	11
Meperidine hydrochloride	0.1
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
	Pentazocine	0.37
	Propoxyphene	0.23
	Tapentadol	0.4
	Tramadol	0.1

Multiply the dose for each opioid by the conversion factor to determine the dose in MED. For example, tablets containing hydrocodone 5 mg and acetaminophen 300 mg taken four times a day would contain a total of 20 mg of hydrocodone daily, equivalent to 20 MED daily; extended-release tablets containing oxycodone 10mg and taken twice a day would contain a total of 20mg of oxycodone daily, equivalent to 30 MED daily. The following cautions should be noted: 1) All doses are in mg/day except for fentanyl, which is mcg/ hr. 2) Equianalgesic dose conversions are only estimates and cannot account for individual variability in genetics and pharmacokinetics. 3) Do not use the calculated dose in MED 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. 4) Use particular caution with methadone dose conversions because the conversion factor increases at higher doses. 5) Use particular caution with fentanyl since it is dosed in mcg/hr instead of mg/day, and its absorption is affected by heat and other factors. (Source: AMDG Guidelines, CDC Guidelines)
Note: Some guidelines refer to this as morphine milligram equivalent or MME.

Metric 4	**Patients prescribed chronic concurrent opioids and sedatives** Among patients prescribed chronic opioids, percent of patients with concurrent sedative prescription	
Rationale	To track concurrent chronic sedative prescriptions in those with chronic opioid use AMDG 2015 Guideline: *High-risk chronic opioid analgesic therapy prescribing practices (high opioid dose, extended chronic opioid analgesic therapy duration, concurrent use of sedatives/hypnotics) are associated with increased risks of opioid overdose and serious fractures*. Acute: "*Avoid new prescriptions of benzodiazepines and sedative-hypnotics. Consider tapering or discontinuing benzodiazepines and/or sedative-hypnotics*." Chronic: "*Do not combine opioids with benzodiazepines, sedative-hypnotics or barbiturates*." (Page 24-5, 26, 27, 28, 32, 33) CDC 2016 Guideline: *Clinicians should avoid prescribing opioid pain medication and benzodiazepines concurrently whenever possible (recommendation category: A, evidence type: 3)* (Page 32)	
Numerator	Number of patients in the population prescribed ≥60 days supply of opioids and prescribed ≥60 days supply of sedative hypnotics, benzodiazepines, carisoprodol, and/or barbiturates in the calendar quarter	
Denominator	Number of patients in the population prescribed ≥60 days supply of opioids in the calendar quarter (e.g., health plan population, Washington State population)	
Frequency	Quarterly	
Level of Analysis	Region System/Health Plan Provider	
Codes to identify sedatives	Generic names	• Benzodiazepines o Alprazolam o Chlordiazepoxide o Clonazepam o Clorazepate o Diazepam o Estazolam o Flumazenil o Flurazepam o Lorazepam o Midazolam o Oxazepam o Quazepam o Temazepam o Triazolam • Barbiturates o Butabarbital o Butalbital o Mephobarbital o Phenobarbital o Secobarbital • Skeletal muscle relaxants o Carisoprodol • Non-benzodiazepine hypnotics o Chloral Hydrate o Eszopiclone o Meprobamate o Suvorexant o Zaleplon o Zolpidem
	Therapeutic class codes	Benzodiazepines: 'H2F' or 'H4B' and drug_hicl_seq_num in ('001894', '001615') and controlled substance indicator >0 Non-benz hypnotic: 'H2E' and controlled substance indicator >0 Barbiturate: 'H2D' and controlled substance indicator >0 Carisoprodol: 'H6H' and controlled substance indicator >0

Metric 5	**New opioid users by days supply** Among new opioid patients, percent who are prescribed opioids by days supply on first prescription
Rationale	CDC guidelines recommend initial opioid prescriptions should generally be for 3 days or less. Among new opioid patients in a quarter this metric tracks the percent of first prescriptions with ≤3 days supply, ≥7 days supply, and ≥14 days supply AMDG 2015 Guideline: *If opioids are prescribed, it should be at the lowest necessary dose and for the shortest duration (usually less than 14 days).* (Page 22) CDC 2016 Guideline: *Long-term opioid use often begins with treatment of acute pain. When opioids are used for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids and should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. Three days or less will often be sufficient; more than seven days will rarely be needed (recommendation category: A, evidence type: 4)*. (Page 24)
Numerator	Number of patients in the population with at least one opioid prescription that is Y (i.e., 3 days supply, >7 days supply, and ≥14 days supply) in the calendar quarter and no opioid prescription in the preceding calendar quarter among patients enrolled in health plan for at least two subsequent calendar quarters
Denominator	Number of patients in the population with at least one opioid prescription in the calendar quarter and no opioid prescription in the preceding calendar quarter among patients enrolled in health plan for at least two subsequent calendar quarters
Frequency	Quarterly
Level of Analysis	Region System/Health Plan Provider
Definition of new opioid user	At least one opioid prescription in in the calendar quarter and no opioid prescription in the preceding calendar quarter among patients enrolled in health plan during the previous calendar quarter

Metric 6	**New opioid users subsequently prescribed chronic opioids** Among new opioid patients, percent who then transition to being prescribed chronic opioids in the next quarter
Rationale	To track the transition from new to chronic opioid prescription AMDG 2015 Guideline: *Because there is little evidence to support long term efficacy of chronic opioid analgesic therapy in improving function and pain, and there is ample evidence of its risk for harm, prescribers should proceed with caution when considering whether to initiate opioids or transition to chronic opioid analgesic therapy.* (Page 7) *Patients who used opioids for at least 90 days were greater than 60% more likely to still be on chronic opioids in 5 years.* (Page 11) *Do not discharge the patient with more than a two week supply of opioids, and many surgeries may require less. Continued opioid therapy will require appropriate reevaluation by the surgeon*. (Page 28) CDC 2016 Guideline: *Long-term opioid use often begins with treatment of acute pain. When opioids are used for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids and should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. Three days or less will often be sufficient; more than seven days will rarely be needed (recommendation category: A, evidence type: 4)*. (Page 24)
Numerator	Number of patients in the population prescribed ≥60 days supply of opioids in the calendar quarter with at least one opioid prescription in the preceding calendar quarter and no opioid prescription in the prior calendar quarter among patients enrolled in health plan for at least three subsequent calendar quarters
Denominator	Number of patients in the population with at least one opioid prescription in the calendar quarter and no opioid prescription in the preceding calendar quarter among patients enrolled in health plan for at least three subsequent calendar quarters
Frequency	Quarterly
Level of Analysis	Region System/Health Plan Provider
Definition of new opioid user	At least one opioid prescription in in the calendar quarter and no opioid prescription in the preceding calendar quarter among patients enrolled in health plan during the previous calendar quarter
Enrollment requirements	Needs at least three consecutive quarters of enrollment (one quarter with no opioid use to define new opioid use, one quarter with new opioid use, and one quarter to track transition to chronic use)

Metric 7	Opioid overdose deaths
Rationale	To track deaths from both prescription opioids and heroin
Numerator	Number of deaths from prescription opioids Number of deaths from heroin
Denominator	Number of people in the population (e.g., health plan population, Washington State population)
Frequency	Annually
Level of Analysis	Region System/Health Plan
Definitions	Deaths with any of the following ICD-10 codes as an underlying cause of death: X40-X44: Accidental poisonings by drugs X60-X64: Intentional self-poisoning by drugs X85: Assault by drug poisoning Y10-Y14: Drug poisoning of undetermined intent AND with any of the following ICD-10 contributing cause-of-death codes: T40.0: Opium T40.1: Heroin T40.2: Natural and semisynthetic opioids T40.3: Methadone T40.4: Synthetic opioids, other than methadone T40.6: Other and unspecified narcotics

Metric 8	Non-fatal overdose involving prescription opioids
Rationale	To track the non-fatal overdoses from prescription opioids
Numerator	Number of non-fatal overdoses involving prescription opioids in the Emergency Department Number of non-fatal overdoses involving prescription opioids hospitalization
Denominator	Number of people in the population (e.g., health plan population, Washington State population)
Frequency	Annually
Level of Analysis	Region System/Health Plan
Definitions	Rate of non-fatal overdoses in at least one quarter in the year diagnosis from inpatient care and emergency department care by age **ED visits or hospitalizations for all opioid overdose excluding heroin (ICD-9):** 965.00 Poisoning by Opium 965.02 Poisoning by Methadone 965.09 Poisoning by Other Opiates and Related Narcotics E850.1 Accidental Poisoning by Methadone E850.2 Accidental Poisoning by Other Opiates and Related Narcotics **ED visits or hospitalizations for heroin overdose (ICD-9):** 965.01 Poisoning by Heroin E850.0 Accidental Poisoning by Heroin **ED visits or hospitalizations for all opioid overdose excluding heroin (ICD-10):** T40.0 (T40.0X – T40.0X4): Opium T40.2 (T40.2X – T40.2X4): Natural and semisynthetic opioids T40.3 (T40.3X – T40.3X4): Methadone T40.4 (T40.4X – T40.4X4): Synthetic opioids, other than methadone T40.6 (T40.60 – T40.604): Other and unspecified narcotics **ED visits or hospitalizations for heroin overdose (ICD-10):** T40.1 (T40.1X – T40.1X4): Heroin

Metric 9	Patients prescribed chronic opioids who receive a diagnosis of opioid use disorder
Rationale	To track the number of patients receiving opioids chronically who also receive a diagnosis of opioid use disorder
Numerator	Number of patients diagnosed with an opioid use disorder in a population with who are prescribed ≥60 days supply of opioids in at least 3 of 4 quarters in a year
Denominator	Number of patients in a population ≥60 days supply of opioids in at least 3 of 4 calendar quarters in a year
Frequency	Annually
Level of Analysis	Region System/Health Plan
Definitions	ICD-10 diagnosis of an opioid use disorder: F11 (F11.1 – F11.99) Opioid related disorders DSM5 for opioid use disorder: 305.50 Opioid use disorder, mild 304.00 Opioid use disorder, moderate 304.00 Opioid use disorder, severe Rate of patients prescribed chronic opioids in at least 3 of 4 quarters in a year with a diagnosis of an opioid use disorder in the same year

Appendix A: Included and Excluded Opioids

For complete list including NDC codes see: www.breecollaborative.org/wp-content/uploads/Opioid-NDC-2017-include.pdf and www.breecollaborative.org/wp-content/uploads/Opioid-NDC-2017-exclude.pdf

Therapeutic class codes: 'H30', 'H3A', 'H3N', 'H3U', 'H3X', 'H3Z'

Generic Names:

- Codeine
- Dihydrocodeine
- Fentanyl
- Hydrocodone
- Hydromorphone
- Levorphanol
- Meperidine
- Methadone
- Morphine
- Oxycodone
- Oxymorphone
- Pentazocine
- Propoxyphene HCL
- Propoxyphene Napsylate
- Tapentadol
- Tramadol