In-House Chronic Pain and Opioid Use Reporting Guide

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Introduction

This guide is aims to give guidance and provide measure specifications for organizations attempting to report on opioid prescribing and chronic pain management, in a primary care setting. The measures it defines are expected to be pulled from an EHR rather than from claims or pharmacy data, though it may be appropriate to draw from those sources if the organization has them available. It attempts to align metrics with Oregon's PDMP Data Dashboard and upcoming CCO metric definitions as much as possible, with the understanding that there will be variation due to the difference in sources.

A note on terminology: This document uses the abbreviation MED consistently to indicate Morphine Equivalent Dose. The CDC and some other organizations have begun referring to this same quantity as MME/day or Morphine Milligram Equivalents; the are the same concept.

Types of Measures

Effective management of any chronic disease at a practice-level is best done with a data system that includes reports that support different pieces of the effort, tied together in a package. Below is a list of the types of reports listed in this document and their purpose:

- **Outcome measures:**
  Used to evaluate an intervention's success in producing a desired outcome, compare results between care teams or sites, and focus efforts on a common goal. They are backward-looking, and while they may act as a cue to action, they are NOT intended to generate lists of patients to take action on. They are typically reported on less frequently, monthly, quarterly, or yearly basis.
  They attempt to answer the questions "Is the work having the desired impact?"
- **Process measures:**
  Used to support improvements to a process and detect short-term change. They are often simpler than outcome metrics, less standardized, attempting to detect a general trend rather than an accurate snapshot in time. They may be even collected manually by staff or prescribers putting tick marks on paper. They are typically reported on a short timeframe, daily, weekly, or perhaps monthly.
  They attempt to answer the question "Are clinical teams doing the work?"
- **Compliance** (AKA Risk Management, QA, Balancing Metrics):
  Used to identify processes or teams that are not following a workflow, patients who are being missed, gaming of outcomes, or situations where an intervention might create an adverse effect in a different domain. They are typically reported on the same timeframe as a process measure.
  They attempt to answer the question "are there outlier processes, teams, or patients at risk?"
- **Registries**:
  A list of patients used to proactively manage a defined population. The list is usually broken down by responsible team. Registries may be sophisticated reports that include bundles of the above metrics, with complex inclusion/exclusion criteria, or they can be as simple as a handwritten list of patients.
  They primarily address the question "who are the patients a given team is responsible for managing?"

Confusion often arises when trying to use a report for a purpose it was not intended. A very common example is around the inclusion of deceased patients. Including deceased patients is absolutely appropriate for an outcome measure, when you're evaluating the performance of a team ("you don't get a pass if your patient dies"), but it's obviously not appropriate when using a registry to call patients who are overdue for a urine drug screen to come in. Being clear about the purpose of the metrics being used can save a lot of time and build trust. This is also a very important consideration for deciding when and how to use metrics generated by an EHR registry: when registries include only active, living patients, they often provide metrics which are useful as

rough process measures, yet may be inappropriate for use as outcome metrics, and can lead to confusion when metrics from different systems produce conflicting results; proceed with caution. See the Frequently Asked Questions section for more info.

Quick Start Packages:

The following is designed to be a menu of ready-to-use packages reports to help an organization get started managing chronic opioids or chronic pain quickly, including the types of reports needed (see above types of reports). The measure specifications for outcome metrics below are included in the measure definition section of this manual. If you are using viewing an electronic version of this manual, there are hyperlinks to the measure described.

Starter Package 1: Reduce the number of patients receiving opioids.

A. **Outcome:** R001 Number of Individuals Receiving Any Opioid, per 1,000 Individuals (see detailed specifications)
Rationale: One of the most basic measures of safety is how many people receive opioids. The goal is to reduce over-prescribing, and this outcome is sensitive improvements in both acute and chronic prescribing.
B. **Process:** Number of individuals receiving an opioid in the past week.
Rationale: This is a simple report to generate, and while it will vary week-to-week, a reliable downward trend will be a leading indicator that the outcome measure is coming along.

Starter Package 2: Reduce Patients with > 50 MED (or > 90 MED)

A. **Outcome:** R002 >50 MED Individuals per 1,000 Individuals (Any order) OR
R003 >90 MED Individuals per 1,000 Individuals (Any order) (see specifications)
Rationale: High MED is the leading predictor of overdose death.
B. **Process:** Preferred: Number of prescriptions written in the past week with total MED > 50 (or >90). If not technologically feasible, this can also be collected using tick-marks on paper by staff.
Alternate: Total MED of all prescriptions written in the past week.
Rationale: An approximate week-over-week downward trend should indicate progress toward the goal.
C. **Registry:** Optional - Chronic opioid registry.

Starter Package 3: Reduce total MED in the Community

A. **Outcome**: R007 Average MED per Patient
Rationale: Most opioids are abused by someone other than the person being prescribed to. The goal of some interventions should be to reduce the total number of pills in circulation.
B. **Process**: Total MED prescribed in the past week. Or even total number of prescriptions in the past week.

Starter Package 4: Improve the Function of Chronic Pain Patients

A. **Outcome**: P004 Percent of Chronic Pain Patients with OSWESTRY scores < 61% OR
   P003 Percent of Chronic Pain Patients with Measured and Improved Function (if OSWESTRY not used)
   Rationale: The goal of chronic pain therapy should be to improve function, regardless of treatment modality. Using a validated function instrument aids practices in determining if treatment is effective.
B. **Process**: Number of patients with OSWESTRY scores <61% in the past week, or other validated instrument with threshold if used. If screening is not consistent, consider measuring the number of patients who completed an OSWESTRY or other validated instrument in the past week.
C. **Compliance:** Number of patients in the past week given a validated functional instrument who do not have a chronic pain diagnosis on the problem list. Also consider: Number of patients receiving opioids chronically without a chronic pain diagnosis.
   Rationale: In order to measure the impact of both opioid and non-opioid therapy on chronic pain patients, the population needs to be reliably diagnosed, just like any other chronic condition.
D. **Registry**: Chronic pain registry required. This involves adding a chronic pain diagnosis.

Starter Package 5: Increase Prescribing of Naloxone

A. **Outcome**: Number of naloxone orders in the past 12 months.
   OR
   Preferred Outcome Measure: Ratio of patients with a naloxone order in the past 12 months to number of patients with an opioid order in the past 12 months.
   Note: the ultimate goal would be to measure the percent of chronic opioid patients with confirmed receipt of a naloxone prescription and training. This is workflow and technologically prohibitive for most organizations.
B. **Process**: Number of naloxone orders in the past week.
C. **Compliance**: (Optional) List of patients who received an order for naloxone but are not on the chronic opioid registry.
   Rationale: May be an indication of patients who should be considered chronic opioid patients.
D. **Registry**: (Optional) Chronic Opioid Registry

Starter Package 6: Increase buprenorphine (Suboxone) Prescribing

A. **Outcome**: Total number of patients with any buprenorphine orders in the past 12 months.
   OR
   Preferred Outcome Measure: Ratio of patients who have received a buprenorphine order to number of patients who have received an Opioid Order in the past 12 months.
B. **Process**: Number of patients receiving a buprenorphine/suboxone order in the past week.
C. **Registry**: At your discretion. Opioid registries may or may not include M.A.T. patients.

Frequently Asked Questions About Measures:

Q: Hey,this can't be right: there are dead patients on my report!
A: Nearly all outcome measures for any chronic disease *should and do* include deceased patients, and opioid use is no different. Is the fact the patient died evidence of good care? If this makes a significant impact on a provider's score, it could be an indication of the most serious problem of all. Obviously, registries and outreach lists should not include deceased patients; the focus of those reports should be on future improvements.

Q: How come this list includes patients who aren't mine?
A: Some reports may use the prescriber for attributing metrics, others use PCP. Neither method is perfect, but an attribution mismatch often indicates a systematic problem in the practice: if someone other than the PCP is consistently prescribing opioids in a primary care setting, then who is really managing the patient's care? It may be helpful for assigned PCP and most-common prescriber to discuss the patient's care. The organization may want to develop policies concerning what is and is not appropriate non-PCP prescribing of opioids and make determinations about how patients are attributed for outcomes and panel management. (I recommend that the PCP and the prescriber be the same in most situations in primary care).

Q: What's up with methadone's MED calculation?
A: MED calculation is an inexact science, which originally used data generated for use by anesthesiologists converting patients from one opioid to another, but is now being used to correlate relative risk of adverse outcomes, a different use entirely. The approach to methadone has been particularly controversial, given the difference in its acute versus chronic metabolism, and different published MED calculators have used significantly different approaches, without a broadly agreed-upon standard at time of writing. The most widely-used calculator was produced by the Agency Medical Directors of Washington State, and they describe the pharmacological evidence for the decision to use a step-wise non-linear conversion factor here:
http://www.agencymeddirectors.wa.gov/MethadoneFactors.asp

Q: Why can't my EMR calculate MED automatically?
A: Although some builds of some EMRs can do this, it is often a difficult problem for computer, or even humans, with the complexity often driven by the following factors: ambiguous dosage ranges (e.g. 1-2 T Q 4-6 HRs PRN pain), no discretely entered start or end or days supply (e.g. missing start: 6/1/2017, end: 6/29/2017, or to last 28 days), technological limitations, and patients not taking meds as prescribed. For reporting, reports often calculate MED based on the total quantity of pills ordered within a timeframe, with the over- and under-estimation effects balanced out across the population, yet this is likely to produce wildly inaccurate results at the level of an individual patient in the exam room. See the EHR Configuration guide for more guidance on this issue.

Q: Why do some outcome measures assume patients are out of compliance if no MED or functional score is entered?
A: This is a common approach to take with outcome measures that rely on a process step. Hypertension outcome metrics often take this approach as well: if an active patient does not have a blood pressure on file, they are assumed to be out of range. This also reduces the incentive to (consciously or not) "game" the measure by failing to take measurements when patients are likely to be out of range, a phenomenon which has been documented across many medical systems.

Outcome Metric Specifications:

This section is intended to be a semi-comprehensive listing of commonly used outcome metrics, developed for use in a primary care setting, using EHR data rather than claims or pharmacy, while aligning with Oregon's PDMP Data Dashboard metric definitions wherever possible. This can be used as a reference, or as a starting place when attempting to determine what to measure. One of the challenges in undertaking this work with chronic opioid use is that, unlike most other chronic conditions, there are very few standard metrics maintained by organizations like the NQF. My intent is to help bridge that gap with some suggested specifications. These metrics are typically reported for a full 12 month period as of the report date, but some organizations may choose to use shorter reporting windows if greater sensitivity is desirable.

Alternate Denominators:

Most of the following metrics were designed to align with the Oregon PDMP data dashboard metrics, which base metric rates on the total population for a region. This is useful from a population surveillance perspective, but it can introduce issues when measuring at a practice or clinic level. For example, it can be difficult to compare clinics that have different underlying prevalence rates of opioid use or pain among their total population, or clinics that are working to combat a historical over-prescribing rate; or make it difficult to detect changes in prescribing habits due to large total population. As such, you may want to consider alternate denominators such as:

- Per individuals prescribed at least one opioid
- Per chronic opioid using patients, as measured by patients with an active diagnosis of long term opioid use (ICD 10 Z79.891)
- Per chronic opioid using patients, based on prescribing history (taking an opioid at least 60 out of the past 90 days)

Risky Prescribing Measures:

R001 Number of Individuals Receiving Any Opioid, per 1,000 Individuals

Measure Description: The rate of individuals receiving opioids per 1,000 patients. Measure is designed to align with the Oregon PDMP prescribing measure, which presents this data using quarterly reporting periods. This measure may also be presented as a percent of patients served, or inverted (number of individuals NOT receiving an opioid) to make it easier to interpret in some contexts.

Numerator Statement:
Number of distinct individuals receiving any opioid in the reporting period.

Denominator Statement:
Total number of distinct individuals served by the clinic or organization in the reporting period, those who received an office visit or face-to-face service (see Appendix B). The Oregon PMDP Dashboard uses annual county population as a denominator; the intent of this denominator is to approximately align with that metric.

Exclusions: None.

Identical to the above measure, but excludes prescriptions for the medication buprenorphine with or without the addition of naloxone from the Numerator. Buprenorphine may be used to treat addiction in a primary care setting, and may be reasonably thought to reduce the risk of adverse outcomes on the population of interest rather than increase it. Note that this variation is not included in the PDMP Dashboard.

R002 >50 MED Individuals per 1,000 Individuals (Any order)

Measure Description: The rate of individuals prescribed more than 50 MED of opioids per 1,000 patients, from any medication order. This measure is designed to align with the Oregon PDMP prescribing measure, which presents this data using quarterly reporting periods. 50 MED is a commonly-used threshold to indicate increased risk when prescribing, see the CDC Guidelines for Prescribing Opioids for Chronic Pain (https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm) and the Oregon Pain Guidance Pain Treatment Guidelines (https://www.oregonpainguidance.org/pain-treatment-guidelines/).
This measure may also be presented as a percent of patients served, or inverted (<=50 MED) to make it easier to interpret in some contexts.
Numerator Statement:
Number of distinct individuals prescribed more than 50 MED of opioids during the measurement period, from any combination of prescriptions in the reporting period.
Denominator Statement:
Total number of distinct individuals served by the clinic or organization in the reporting period, those who received an office visit or face-to-face service (see Appendix B). The Oregon PMDP Dashboard uses annual county population as a denominator; the intent of this denominator is to approximately align with that metric.
Exclusions: None.
Variations: Some organizations may want to present this data as number of patients less than or equal to 50 MED, so that higher scores represent better performance.

R003 >90 MED Individuals per 1,000 Individuals (Any order)

Measure Description: The rate of individuals prescribed more than 90 MED of opioids per 1,000 patients, from any medication order. This measure is designed to align with the Oregon PDMP prescribing measure, which presents this data using quarterly reporting periods. 90 MED is a commonly-used threshold to indicate very high risk or an absolute ceiling above which should not be prescribed; see the CDC Guidelines for Prescribing Opioids for Chronic Pain (https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm) and the Oregon Pain Guidance Pain Treatment Guidelines (https://www.oregonpainguidance.org/pain-treatment-guidelines/).
This measure may also be presented as a percent of patients served, or inverted (<=90 MED) to make it easier to interpret in some contexts.
Numerator Statement:
Number of distinct individuals prescribed more than 90 MED of opioids during the measurement period, from any combination of prescriptions in the reporting period.
Denominator Statement:
Total number of distinct individuals served by the clinic or organization in the reporting period, those who received an office visit or face-to-face service (see Appendix B). The Oregon PMDP Dashboard uses annual county population as a denominator; the intent of this denominator is to approximately align with that metric.

Exclusions: None.
Variations: Some organizations may want to present this data as number of patients less than or equal to 90 MED, so that higher scores represent better performance.

R004 Percent of Patients Going from Acute to Chronic Opioids

Measure Description: Attempts to measure the rate at which patients are becoming chronic opioid users, based on the reporting methodology used by the Oregon PDMP Data dashboard. The reporting logic is predicated on a quarterly reporting timeframe, but it can be adapted to other reporting timeframes.
Numerator Statement: Individuals are identified as transitioning from acute to chronic opioid use if two quarters ago they were prescribed no opioids, one quarter ago they had at least one opioid, and in the current quarter they have >60 days supply.
Denominator Statement: Total number of distinct individuals served by the clinic or organization in the reporting period, those who received an office visit or face-to-face service (see Appendix B). The Oregon PMDP Dashboard uses annual county population as a denominator; the intent of this denominator is to approximately align with that metric.
Exclusions: Prescriptions for tramadol and buprenorphine are not included in the numerator for this measure.

R005 Overlapping Opioid / Benzodiazepine Individuals per 1,000 Individuals

Measure Description: Rate of individuals who were prescribed at least one opioid and at least one benzodiazepine in the reporting period, per 1,000 patients. This measure is designed to align with the Oregon PDMP prescribing measure, which presents this data using quarterly reporting periods, although the PDMP measure includes overlapping prescription dates which this measure does not.
        Note: this is a challenging metric for most organizations to capture, and even when accurately recorded, data can be especially stochastic due to smaller sample sizes at the level of a single practice.
Numerator Statement: Individuals who were prescribed at least one opioid *and* at least one benzodiazepine in the reporting period.
Denominator Statement: Total number of distinct individuals served by the clinic or organization in the reporting period, those who received an office visit or face-to-face service (see Appendix B). The Oregon PMDP Dashboard uses annual county population as a denominator; the intent of this denominator is to approximately align with that metric.
Exclusions: none.
Variations: Some organizations include patients in the numerator who have received a benzodiazepine prescription within 30 days of an opioid prescription, within the reporting period.

R006 Percent of Chronic Opioid Patients with MED calculated and <50, past 90 days

Measure Description: Percent of patients receiving chronic opioids whose MED has been recorded in the chart in the past 90 days, and if calculated whose most recent value was less than 50 MED per day. This measure depends on the particular method used by the EHR to record MED; it often will require manual entry. This metric is modeled after several hypertension blood pressure control metrics, which require both a process and an outcome component. This metric is typically reported for a full 12 month period.

Numerator Statement: Total number of distinct individuals who have an MED recorded before 90 days of the end of the measurement period, and whose most recent MED is less than 50.

Denominator Statement: Patients with an active diagnosis of Z79.891 "Long term use of an opioid analgesic" on the problem list or visit diagnosis in the reporting period, and who received an office visit or face-to-face service (see Appendix B) in the reporting period.

Exclusions: None.

R007 Average MED per Patient

Measure Description: The average total MED per day divided by the total population served by the organization in the reporting period. This is a quick yet reasonably sensitive measure of opioids circulating in the community.

Numerator Statement: Total MED per day prescribed in the reporting period.

Denominator Statement: Patients who received an office visit or face-to-face service (see Appendix B) in the reporting period.

Exclusions: Optional exclusion of burpenorphine/naloxone (Suboxone) orders from the numerator.

Effective Treatment of Chronic Pain:

P001 Percent of Chronic Pain Patients Not Receiving Opioids

Measure Description: Percent of patients who are diagnosed with chronic pain, or meet criteria for chronic opioid use, who were *not* prescribed opioids during the measurement period.

Data elements required denominator: Patients 18 years of age who received a diagnosis (or had an active problem list diagnosis) of chronic pain (G89.0, G89.2X, or G89.4) during the measurement period, or who were prescribed an opioid prescription for a 90 day or longer period (see Appendix B for methodology) during the measurement period, and who received a qualifying outpatient service during the measurements period (See Appendix A for methodology).

Required Exclusions for the denominator: Patients who received a diagnosis of cancer pain (G89.3) during the measurement period or had the diagnosis active on the problem list at any time during the measurement period.

Data elements required numerator: Patients in the denominator who do not have record of an opioid prescription on file during the measurement period.

P002 Percent of Chronic Pain Patients with Documented Function Measurement

Measure Description: Percent of chronic pain patients who have a measurement of function, using a validated instrument, on file in the chart recorded during the measurement period.

Data elements required numerator: Patients in the denominator whose function was measured using a validated clinical instrument. Measure may be satisfied by EHR-specific data and/or by use of G-codes.

Data elements required denominator: Patients 18 years of age who received a diagnosis (or had an active problem list diagnosis) of chronic pain (G89.0, G89.2X, or G89.4) during the measurement period, or who were prescribed an opioid prescription for 60 out of the past 90 days (see Appendix B for methodology) during the measurement period, and who received a qualifying outpatient service during the measurements period (See Appendix A for methodology).

Required Exclusions for the denominator: Patients who received a diagnosis of cancer pain (G89.3) during the measurement period or had the diagnosis active on the problem list at any time during the measurement period.

The following are some examples (not comprehensive) of commonly-used instruments that include a measurement of function: Oswestry, Graded Pain and Function Scale (Alias "Graded Pain Scale"), PEG-3,

Order codes that may be used to document use of a functional assessment:
- G8539: Documentation of a current functional outcome assessment using a standardized tool AND documentation of a care plan based on identified deficiencies on the date of the functional outcome assessment.

- G8542: Documentation of a current functional outcome assessment using a standardized tool; no functional deficiencies identified, care plan not required.
- G8942: Documented functional outcomes assessment and care plan within the previous 30 days.

P003 Percent of Chronic Pain Patients with Measured and Improved Function

Measure Description: Percent of chronic pain patients whose function was both measured and improved, as recorded in the record within the measurement period and using a validated instrument.

Data elements required numerator: Patients included in the denominator, and have at least two instances of the same functional instrument on file, and there is an increase in function (or a decrease in impairment, depending on the instrument used) between the first score in the reporting period and the most recent score in the reporting period. If a patient has multiple different instruments with two or more recorded scores on file, use the instrument with the most recent recorded value for this measure.

Data elements required denominator: Patients 18 years of age who received a diagnosis (or had an active problem list diagnosis) of chronic pain (G89.0, G89.2X, or G89.4) during the measurement period, or who were prescribed an opioid prescription for a 90 day or longer period (see Appendix B for methodology) during the measurement period, and who received a qualifying outpatient service during the measurements period (See Appendix A for methodology).

Required Exclusions for the denominator: Patients who received a diagnosis of cancer pain (G89.3) during the measurement period or had the diagnosis active on the problem list at any time during the measurement period.

Optional exclusion for the denominator: practices may also choose to exclude patients who established care 180 days or fewer before the end of the reporting period.

P004 Percent of Chronic Pain Patients with OSWESTRY scores < 61%

Description: Percent of chronic pain patients who have been assessed using the Oswestry disability index and whose most recent score is less than 61%, which is the traditionally defined "severe disability" threshold. (May consider <41% for moderate disability, or <81% for bed-bound).

Data elements required denominator: Patients 18 years of age who received a diagnosis (or had an active problem list diagnosis) of chronic pain (G89.0, G89.2X, or G89.4) during the measurement period, or who were prescribed an opioid prescription for 60 out of 90 days (see Appendix B for methodology) during the measurement period, and who received a qualifying outpatient service during the measurements period (See Appendix A for methodology).

Required Exclusions for the denominator: Patients who received a diagnosis of cancer pain (G89.3) during the measurement period or had the diagnosis active on the problem list at any time during the measurement period.

Optional exclusion for the denominator: practices may also choose to exclude patients who established care 180 days or fewer before the end of the reporting period.

Data elements required numerator: Patients included in the denominator who have an OSWESTRY value recorded in the reporting period, and whose most recent OWSESTRY value in the reporting period is less than 61%.

P005 Functional Outcome Assessment (NQF 2624)

See NQF measure page: http://www.qualityforum.org/QPS/2624

Quoting from the above NQF Measurement specification document:

Measure Description:

Percentage of visits for patients aged 18 years and older with documentation of a current functional outcome assessment using a standardized functional outcome assessment tool on the date of the encounter AND documentation of a care plan based on identified functional outcome deficiencies on the date of the identified deficiencies.

Numerator Statement:

Patients with a documented current functional outcome assessment using a standardized tool AND a documented care plan based on the identified functional outcome deficiencies.

Denominator Statement:

All visits for patients aged 18 years and older

Exclusions:

Not Eligible – A patient is not eligible if one or more of the following reasons(s) is documented:

• Patient refuses to participate

• Patient unable to complete questionnaire

• Patient is in an urgent or emergent medical situation where time is of the essence and to delay treatment would jeopardize the patient's health status

P006 Percent of Chronic Opioid Patients Diagnosed with Chronic Pain

Measure Description: Percent of patients receiving chronic opioids who have been diagnosed with chronic pain. In a primary care setting, this should be 100% of all chronic opioid patients, after considering medicated addiction treatment exclusions. This measure is intended to ensure that the foundation for managing chronic pain without opioids is being built as practices transition away from opioid therapy. Without a chronic pain diagnosis, it is difficult to conduct population management because it is difficult to identify the population of interest.

Data Elements Required in the Numerator: Patients in the denominator who have a diagnosis of chronic pain noted or active on the problem list during the measurement period (

Data Elements Required in the Denominator: Patients 18 years old or older who have taken opioids for at least 90 days in the reporting period (See Appendix B for methodology).

Required Exclusions from the Denominator: Patients with active medication assisted addiction treatment diagnoses noted or active on the problem list during the measurement period.

Appendices:

Appendix A: Qualifying Outpatient Services

Services sufficient to indicate a patient has received care in a particular organization, such as the following:

Qualifying Outpatient Service	Grouping Value Set
Office Visit	Office Visit Grouping Value Set (2.16.840.1.113883.3.464.1003.101.12.1001)
Face-to-Face Interaction	Face-to-Face Interaction Grouping Value Set (2.16.840.1.113883.3.464.1003.101.12.1048)

Grouping value sets are collections of various codes used to identify the above concepts, which can be accessed from the Value Set Authority Center (VSAC) at the National Library of Medicine: https://vsac.nolm.nih.gov/
If value set groupings are not available in the reporting organization's EHR or dataset, it is appropriate for organizations to use equivalent reporting logic to identify the above logical concepts.

Appendix B: Calculating Days of Opioid Prescriptions

Many measures refer to a standard of 90 days of opioids received, or 60 out of the past 90 days with an opioid. If this data is available within the EHR or from another source, appropriate methods of calculation are:
A. If available for all prescriptions, calculate based on script start and end date. It is common for EHR data to be missing prescription end dates or days supply data; in those cases, consider the following methods:
B. As an operating definition, it may sometimes be appropriate to consider total MED prescribed in a time period.
Daily use for 60 out of the past 90 days would be at least 150 MED (2.5 mg morphine for 60 days) in the past 90 days.
Daily use for 90 days in the past year would be 225 MED (2.5 mg morphine for 90 days) total over a year.
C. If total quantity per script but not per day is calculable from the dataset, calculate the total number of days from the prescription start to end date, divide by the total MED, and include in the total calculation if the average MED per day is at least 2. Add the total of all days of prescription for the patient.
D. If quantity per day and prescription start and end is determinable in the dataset, calculate the total number of days in the reporting period during which at least at least 2 MED is prescribed. Add the total days of prescription for the patient.
It is appropriate to adjust days of opioids for prescriptions whose end date is later than the reporting period.
E. Consider the end date to be the last day of the reporting period. Although this may produce inaccurate results on an individual patient level, on a population level over-and-under counting will tend to balance out, which may be appropriate for evaluating a panel or practice's performance. (It should not be used to determine registry membership or support outreach to patients).
F. When end dates are not available on prescriptions that are active as of the reporting date, it may be advisable to add a fixed 1 or 2 month delay to the report, to allow active scripts to be ended. This can

be used in conjunction with the above techniques, but it tends to slow down the process of conducting quality improvement.

Appendix C: Calculating Morphine Equivalent Dose (MED)

According to the Oregon PDMP Data Dashboard Prescribing and PDMP Technical Notes "Morphine Equivalent Doses (MED): MED is a standardized way to calculate the strength of an opioid prescription. MED is calculated as (Quantity / Days Supply) * Strength per Unit * Conversion Factor. Opioids are the only pharmaceutical class possible to convert to MED units. This measure is also referred to as MME (morphine milligram equivalents)."
(http://www.oregon.gov/oha/PH/PREVENTIONWELLNESS/SUBSTANCEUSE/OPIOIDS/Pages/data.aspx)

It can be difficult to calculate days supply using EHR data. Several approaches can be used; the simplest approach is to simply treat the entire reporting period as the days supply for scripts; this may produce wildly varying values for any given individual prescription, but when averaged across the population it should produce the same results as more intensive methods. Beyond that, I recommend the following reporting logic: 1. When start and end dates are contained on prescriptions, use them to calculate days supply. 2. If start dates are missing, assume the order date is the start date. 3. If end dates are missing, assume the end date is the end of the reporting period. So long as you use a consistent approach in reporting the above metrics, your data should be reasonable for internal comparisons; as ever, use extreme caution when comparing measures to external agencies when there are no recorded standards for a metric.

Additionally, there is significant controversy to how to treat methadone, given the difference in its acute versus chronic metabolism. Different published MED calculators have used significantly different approaches. The Oregon Health Authority researched and recommended the calculator hosted on the Oregon Pain Guidance website: https://www.oregonpainguidance.org/opioidmedcalculator/