Version 4, May 2025

Ontario Health

MyPractice: Orthopaedic Surgery Report

Technical Appendix

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1. Introduction

Physicians and administrators in Ontario are dedicated to quality improvement; however, they do not always have the comparable data they need to inform their quality improvement efforts. To help address this gap, Ontario Health creates customized and confidential reports for the primary care, long term care and hospital sectors.

Using existing administrative health databases, the *MyPractice:* Orthopaedic Surgery (MPOS) reports provide orthopaedic surgeons who perform hip replacements and/or knee replacements data about their opioid prescribing patterns and share change ideas to help drive quality improvement.

To assist users of these reports, this technical appendix provides details on the methodology to derive the cohort (i.e. how hip and knee replacement records were extracted), link opioid dispensing data to surgical discharge records, and link surgeons to the discharge records. As well, definitions, data sources, and analytical methods are provided for each of the indicators presented in the report. Below is a table of updates to the Technical Appendix:

VERSION	DATE	CHANGE
1	May 2019	Original Technical Appendix
2	March 2021	Updated Appendix C: OMT drug name list
3	May 2022	Addition of four new fee codes for virtual palliative care consultations and support as part of the cohort exclusions list: K092, K093, K094, K095. These codes were effective July 1, 2021
4	Nov 2022	Inclusion of Same Day Surgery Volumes for No Pre-Operative Opioid cohorts
5	May 2025	ICES to OH transition

2. Indicator and Report Development Process

Ontario Health used an indicator and report development process that included a comprehensive review of the scientific evidence, internal consultation and external consultation. The work was supported through consultation with a scientific committee that consists of clinical leaders, scientists and researchers on the topic of opioid prescribing and pain management for hip and knee replacement surgeries.

The report layout was developed based on known audit and feedback principles, extensive consultation with stakeholders and a user centered design approach. Two rounds of usability interviews were conducted to collect feedback from orthopaedic surgeons. Additionally, the final report, including the data, was validated by orthopaedic surgeons.

For more information about the *MyPractice:* Orthopaedic Surgery Report, email us at PracticeReport@ontariohealth.ca

3. Data Sources

Administrative databases that were used to generate this report included: The Discharge Abstract Database (DAD), National Ambulatory Care Reporting System (NACRS)*Canadian Institute for Health Information (CIHI)* for hospitalization records; the Ontario Health Insurance Plan (OHIP) database, *Ministry of Health (MOH)* for physician claims data; the Registered Persons Database (RPDB), *MOH* for patient demographic and vital statistics data; the Narcotics Monitoring System (NMS), *MOH* for narcotics dispensing data outside of hospital.

4. Identify the Patient Cohort for the Report

The report includes patients who have undergone hip and knee replacement surgeries in both inpatient and outpatient (same day surgery) settings and received opioids for pain management after being discharged. We first identified hip and knee replacement hospitalizations through the DAD and same day surgeries through the NACRS. Secondly, we linked those surgeries to patients who were dispensed opioids using the NMS. The third step involved attributing these surgeries to the primary attending surgeon using OHIP claims. For details, please see below.

4.1 Identify Hip and Knee Replacement Hospitalizations

The following approach is used to identify qualifying hip and knee replacement hospitalizations from the DAD or same day surgeries from NACRS:

Criteria	Specifications
Inclusion	a. Elective surgery b. Discharged home or to a place of residence c. Hip replacement: The first invention CCI code in 1. VA.53^^; not an out-of-hospital or cancelled/abandoned procedure d. Knee replacement: The first invention CCI code in 1.VG.53^^; not an out-of-hospital or cancelled/abandoned procedure
Exclusion	a. Aged < 18 years old or >115 years old b. Died within 42 days of discharge or death date is invalid, i.e. death date was before admission date c. Having a most responsible diagnosis of *fracture or secondary malignant neoplasm:* • Hip Replacement: ICD-10-CA code(s) S72 or C79 • Knee Replacement: ICD-10-CA code(s) S82 or C79 d. Records that had used palliative care services, i.e. if there were any OHIP, DAD or NACRS codes indicating palliative care

	treatment in the 180-day period prior to the surgical discharge, including day of discharge. See *Appendix B* for a list of the palliative care codes. e. Having at least one Opioid Maintenance Treatment (OMT) prescription dispensed within 30-day prior to the surgical admission date, excluding day of admission. See *Appendix C* for a list of the drug names. f. Non-Ontario resident g. Missing birthdate h. Sex not in “Male” or “Female”

4.2 Obtain Opioid Dispensing Data and Link to Hip and Knee Replacement Procedures

Opioid Dispensing Data

In this report, opioids dispensed included only opioids for pain management. Opioids for cough, antidiarrheal products and opioid agonist therapy (methadone maintenance therapy or buprenorphine/naloxone) and injectable mixtures or injectable in cassette were excluded.

Link to Hip and Knee Replacement Procedures

Opioid dispensing data from the NMS is linked with procedures from the DAD and NACRS by the encoded identifiers. If an opioid was dispensed during admission period or within 42 days post-surgery discharge date, it was attributed to the index surgery.

The report looks at two periods:

Period #1. Admission date to 14 days post-surgery discharge (inclusive)
Period #2. 15 days to 42 days, i.e. 3 to 6 weeks, post-surgery discharge (inclusive)

Calculation notes:

- If a surgical record had more than one opioid dispensation with the same DIN, dispensing date, prescriber, quantity and day supply: keep only one dispensation and exclude additional presumed duplicates.

- For records where there was a surgical discharge and more than one opioid dispensation within the selected period: keep all dispensing data and conduct analysis accordingly.

- If an opioid dispensation was eligible to be assigned to more than one surgery: assign it only to the surgery with discharge date closest to the dispensing date.

4.3 Link Surgical Data to Surgeons

The report is designed to report opioid dispensing data back to the orthopaedic surgeon who performed the procedure as a primary attending surgeon. The hip or knee replacement patient cohort that was generated from the DAD or NACRS, is linked with specific OHIP fee codes via the encoded identifier to identify the orthopaedic surgeon who performed the procedure as the primary surgeon. The algorithm is described below:

- Admission date (DAD) or Registration Date (NACRS) =< Service date (OHIP) =< Discharge date (DAD or NACRS)

- Use the following fee codes and associated fee suffix code (fee suffix=A: physician performed procedure, if surgical procedure) from OHIP physician billing claims data, to identify the surgeon who performed the procedure as a primary attending surgeon:

    - Hip replacement fee code: R440, R241, R491, R509
    - Knee replacement fee code: R441, R244, R442

Hip and knee replacement cases that were linked to surgeons using the above method were included in both surgeon level and provincial level analysis. Hip and knee replacement cases that were not linkable to surgeons using the defined method were included in the provincial level analysis only.

5. Stratifications Based on Pre-operative Opioid Dispensing History

5.1 Rationale

Pre-operative opioid use affects postsurgery opioid prescribing patterns and consumption. Studies suggest that pre-operative opioid use increases the risk for post-operative pain at rest and walking and is associated with increased opioid use after hip or knee replacements. [1-3] Pre-operative opioid use is also one of the risk factors for persistent opioid use post hip or knee replacement surgery.[4]

5.2 Stratifications

- *With pre-operative opioid dispensed:* If a patient has had an opioid dispensed for pain management within 6 months prior to the admission date and the duration of therapy (estimated by the dispensation date plus the days of medication supplied) was overlapping with the admission date. This included all previous prescriptions by any prescriber.

- *No pre-operative opioid dispensed:* If a patient has had no opioid dispensed for pain management within 6 months prior to the admission date; Or there was an opioid dispensed for pain management within 6 months prior to the admission date but the duration of therapy (estimated by the dispensation date plus the days of medication supplied) was not overlapping with the admission date. This included all previous prescriptions by any prescriber.

6. Indicator Details

6.1 Case volume

INDICATOR DESCRIPTION	***Indicator description***	Total number of eligible surgeries linked to the surgeon as per the linkage method stated above
	Ontario Health Reporting tool/product	N/A
	Type	N/A
	External Alignment	N/A
	Other reporting	N/A
	Accountability	N/A
OTHER RELEVANT INFORMATION	***Stratification***	By procedure; By pre-operative opioid dispensing history
	Reporting level	Surgeon level
	Reporting period	Latest biannual data
	Data source / data elements	DAD, NACRS, OHIP
	Limitations / Caveats	N/A
	Comments	1) A small number of surgeries were not linked to a surgeon. According to the sensitivity analysis based on FY2016/2017 data, less than 4% hip replacement cases, and less than 8% knee replacement cases were not linked to surgeons using the linkage methods stated above. As such, they were not included in the surgeon level analysis, but they were included in the provincial level analysis. 2) The method used was to identify the primary surgeon who performed the surgery. Therefore, surgeons, such as medical residents, students, and trainees who have an eligible specialty and a CPSO number but did not bill to OHIP as a primary attending surgeon were not linked to any procedures.

6.2 Median total opioid dose dispensed within 14 days postsurgery

INDICATOR DESCRIPTION	***Indicator description***	This indicator measured the median total opioid dose dispensed within 14 days postsurgery. • All opioids dispensed between admission date to 14 days post discharge date were included. • The median was only calculated among patients having opioids dispensed during this period, i.e. patients who haven't had any opioids were excluded. In addition, the median total morphine equivalents (MEQ) value was translated to number of pills of the most commonly dispensed opioid by the surgeon for easy interpretation. Median total MEQ values of all eligible orthopaedic surgeons were percentile ranked for comparison.

	Ontario Health Reporting tool/product	N/A
	Type	N/A
	External Alignment	N/A
	Other reporting	N/A
	Accountability	N/A
DEFINTION & SOURCE INFORMATION	***Unit of analysis***	Milligram morphine equivalents (mg MEQ)
	Calculation	**A. The median total opioid dose dispensed within 14 days postsurgery** **1)** Calculate the MEQ of each opioid prescription that was dispensed within 14 days post discharge date: include all prescriptions between admission date to 14 days post discharge date: calculate the MEQ where variable MEQ = 'Y" (i.e. the MEQ is calculatable). Calculation method was adapted from *the Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain (2010).* See *Appendix D* for details. **2)** For each surgical case, calculate the total MEQ dispensed between admission data to 14 days post discharge date by adding MEQs dispensed during that period. **3)** For each surgeon, calculate the median total MEQ among all patients who have had opioids dispensed during this period **B. Identify the most common drug class and strength dispensed, and calculate number of pills of this combination that represents by the median total MEQ** 1) For each surgeon, rank volumes of all eligible opioids dispensed by drug class and strength, select the top #1 combination as the drug class and strength 2) If there is a tie (>1) of the ranking for a surgeon, follow the rules below to get one drug class and strength combination: a. If same drug classes, but different strengths: use the drug class, and choose the lower strength b. If drug classes are different: • If one is a short acting drug, and the other a long acting drug, then prioritize short acting drug over the long acting drug • If both are short acting drugs, or both are long acting drugs, then select the lowest strength of the drug that is first alphabetically. 3) Convert the median total MEQ back to number of pills of selected drug class and strength: back calculation method was adapted from the *Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain (2010)*. See *Appendix D* for details **Notes**: • For surgeons whose top drug class is Fentanyl, the median total MEQ is not calculated back to number

		of pills due to the complexity of the MEQ calculation for Fentanyl. • For surgeons whose top drug class does not have a calculable MEQ, the median total MEQ is not calculated back to number of pills. **C. Percentile Ranking** 1) Percentile rank of median total MEQ values, including surgeons who were linked to at least one surgery and had valid median total MEQ 2) Categorize the percentile rank of median total MEQ value: a. If the rank is <25th percentile, then colour coded as green b. If the rank is between 25th and 60th percentile, then colour coded as yellow c. If the rank is >=60th percentile, then colour coded as red
		Stratification By procedure; By pre-operative opioid dispensing history
		Reporting period Biannual; over time trending available for median total MEQ
		Reporting level Surgeon level; Median total MEQ is available at provincial level
		Adjustment (risk, age/sex standardization) None
	Data source / data elements	DAD, NACRS, OHIP, NMS
OTHER RELEVANT INFORMATION	***Limitations / Caveats***	Not all opioids have a calculable MEQ value.
	Comments	The median total MEQ is the main indicator featured in the report. It is important to measure the total opioid dose dispensed to patients within the first 14 days postsurgery: • Post surgery persistent use of opioids has been shown in studies of hip and knee arthroplasty. [4-6] • A recent study suggested that the quantity of opioid prescribed is associated with higher patient-reported opioid consumption.[7] • Studies also showed that opioid prescribing patterns vary widely among common orthopaedic surgeries, and a large amount of opioid medications remains unused following elective orthopaedic surgical procedures.[8]

6.3 Percentage of patients who received repeat opioid dispensations within 14 days postsurgery, among those with at least one opioid dispensed during this period

INDIC	***Indicator description***	This indicator measured the percentage of patients having 2 or more dispensing days between admission date to 14 days post

		discharge date, among those with at least one opioid dispensed during this period.
	Ontario Health Reporting tool/product	N/A
	Type	N/A
	External Alignment	N/A
	Other reporting	N/A
	Accountability	N/A
DEFINTION & SOURCE INFORMATION	***Unit of analysis***	Percentage
	Calculation	**Numerator** Number of patients having 2 or more opioid dispensing days between admission date and 14 days post discharge date **Note:** Patients may have 2 or more opioids dispensed on the same date. Those are more likely prescribed at the same time and counted as one dispensing day.
		Denominator Total number of patients with at least one opioid dispensed between admission date and 14 days post discharge date
		Methods $\frac{\text{Number of patients having 2 or more opioid dispensing days between admission date and 14 days post discharge date}}{\text{Total number of patients with at least one opioid dispensed between admission date and 14 days post discharge date}}$ X 100%
		Stratification By procedure; By pre-operative opioid dispensing history
		Reporting period Latest biannual data available
		Reporting level Surgeon level; Provincial level
		Adjustment None
	Data source / data elements	DAD, NACRS, OHIP, NMS
OTHER RELEVANT INFORMATION	***Limitations / Caveats***	N/A
	Comments	This indicator is reported as a contextual measure to help surgeons understand their patient's opioid dispensing patterns.

6.4 Percentage of patients having a long acting opioid dispensed within 14 days postsurgery, among those with at least one opioid dispensed during this period

INDIC	***Indicator description***	This indicator measured the percentage of patients having at least one long acting opioid dispensed between admission date and 14

		days post discharge date, among those with at least one opioid dispensed during this period.
	Ontario Health Reporting tool/product	N/A
	Type	N/A
	External Alignment	N/A
	Other reporting	N/A
	Accountability	N/A
DEFINTION & SOURCE INFORMATION	***Unit of analysis***	Percentage
	Calculation	**Numerator** Number of patients having at least one long acting opioid dispensed between admission date and 14 days post discharge date
		Denominator Total number of patients with at least one opioid dispensed between admission date and 14 days post discharge date
		Methods $\frac{\text{Number of patients having at least one long acting opioid dispensed between admission date and 14 days post discharge date}}{\text{Total number of patients with at least one opioid dispensed between admission date and 14 days post discharge date}}$ X 100%
		Stratification By procedure; By pre-operative opioid dispensing history
		Reporting period Latest biannual data available
		Reporting level Surgeon level; Provincial level
		Adjustment None
	Data source / data elements	DAD, NACRS, OHIP, NMS
OTHER RELEVANT INFORMATION	***Limitations / Caveats***	N/A
	Comments	This indicator is reported as a contextual measure to help surgeons understand their patients opioid dispensing patterns.

6.5 Percentage of patients having more opioids dispensed between 3-6 weeks postsurgery, among those with at least one opioid dispensed within 14 days postsurgery

INDICATOR DESCRIPTION	***Indicator description***	This indicator measured the percentage of patients having more opioids dispensed between 15 to 42 days postsurgery, among those with at least one opioid dispensed between admission date and 14 days post discharge date
	Ontario Health Reporting tool/product	N/A

	Type	N/A
	External Alignment	N/A
	Other reporting	N/A
	Accountability	N/A
DEFINTION & SOURCE INFORMATION	***Unit of analysis***	Percentage
	Calculation	**Numerator** Number of patients having at least one opioid dispensed within 15 to 42 days postsurgery
		Denominator Total number of patients with at least one opioid dispensed between admission date and 14 days post discharge date
		Methods $\frac{\text{Number of patients having at least one opioid dispensed within 15 to 42 days postsurgery}}{\text{Total number of patients with at least one opioid dispensed between admission date and 14 days post discharge date}}$ X 100%
		Stratification By procedure; By pre-operative opioid dispensing history
		Reporting period Latest biannual data available
		Reporting level Surgeon level; Provincial level
		Adjustment None
	Data source / data elements	DAD, NACRS, OHIP, NMS
OTHER RELEVANT INFORMATION	***Limitations / Caveats***	N/A
	Comments	This indicator is reported as a contextual measure to help surgeons understand their patients opioid dispensing patterns.

6.6 Percentage of all opioids dispensed to my patients within 3-6 weeks postsurgery, by provider type.

INDICATOR DESCRIPTION	***Indicator description***	This indicator measured the percentage of all opioids dispensed to my patients* within 15 to 42 days postsurgery, by the following provider types: - The assigned surgeon - Family physicians - Other providers * My patients include only those who had at least one opioid dispensed between admission date to 14 days post discharge date
	Ontario Health Reporting tool/product	N/A
	Type	N/A

	External Alignment	N/A
	Other reporting	N/A
	Accountability	N/A
DEFINTION & SOURCE INFORMATION	***Unit of analysis***	Percentage
	Calculation	**Numerator** 1) Dispensation of opioid prescribed within 15 to 42 days postsurgery by the assigned surgeon: Get the prescriber ID information from the Corporate Provider Database (CPDB). If the prescriber ID from the CPDB is equal to the prescriber ID from the NMS 2) Dispensation of opioid prescribed within 15 to 42 days postsurgery by family physicians: Get the main specialty information from the CPDB. If the specialty is family physician 3) Dispensation of opioid prescribed within 15 to 42 days postsurgery by others: If the dispensation is not prescribed by the assigned surgeon or a family physician.
		Denominator Total number of opioids dispensed, among those who had at least one opioid dispensed between admission date to 14 days post discharge date
		Methods Number of opioid prescriptions dispensed within 15 to 42 days postsurgery by the assigned surgeon (or family physicians; or other providers) ——————————————————— Total number of opioid prescriptions dispensed with 15 to 42 days among those who had at least one opioid dispensed between admission date to 14 days post discharge date X 100%
		Stratification By procedure
		Reporting period Latest biannual data available
		Reporting level Surgeon level; Provincial level
		Adjustment None
	Data source / data elements	DAD, NACRS, OHIP, NMS, CPDB
OTHER RELEVANT INFORMATION	***Limitations / Caveats***	N/A
	Comments	This indicator is reported as a contextual measure to help surgeons understand their patients opioid dispensing patterns.

6.7 Contextual measures

Age	***Indicator description***	This indicator measured the average age of patients.

	Ontario Health Reporting tool/product	N/A
	Type	N/A
	External Alignment	N/A
	Other reporting	N/A
	Accountability	N/A
DEFINTION & SOURCE INFORMATION	***Unit of Analysis***	Years
	Calculation	A patients' age was determined from the RPDB and was based on the age of the patient on the discharge date.
	Stratification	By procedure
	Reporting level	Surgeon level; Provincial level
	Reporting period	Latest biannual data available
	Data source / data elements	DAD; NACRS; RPDB; OHIP
OTHER RELEVANT INFORMATION	***Limitations / Caveats***	N/A
	Comments	Age is a significant factor that is associated with increased immediate and chronic postoperative opioid demand. [2, 9]

Sex

INDICATOR DESCRIPTION	***Indicator description***	This indicator measured the proportion of patients that are female
	Ontario Health Reporting tool/product	N/A
	Type	N/A
	External Alignment	N/A
	Other reporting	N/A
	Accountability	N/A
DEFINTION & SOURCE INFORMATION	***Unit of Analysis***	Percentage
	Calculation	Patient's sex (male or female) was determined from the RPDB. Proportion of patients that are female was calculated.
		Numerator Number of females
		Denominator Total number of procedures
		Methods $\frac{\text{Number of females}}{\text{Total number of procedures}}$ X 100%
	Stratification	By procedure

	Reporting level	Surgeon level; Provincial level
	Reporting period	Latest biannual data available
	Data source / data elements	DAD, NACRS, RPDB, OHIP
OTHER RELEVANT INFORMATION	***Limitations / Caveats***	N/A
	Comments	N/A

Revisions

INDICATOR DESCRIPTION	***Indicator description***	Percentage of revision surgeries among all procedures
	Ontario Health Reporting tool/product	N/A
	Type	N/A
	External Alignment	N/A
	Other reporting	N/A
	Accountability	N/A
DEFINTION & SOURCE INFORMATION	***Unit of analysis***	Percentage
	Calculation	**Numerator** Number of revision cases: Intervention status attribute is revision
		Denominator Total number of procedures
		Methods $\frac{\text{Number of revision cases}}{\text{Total number of procedures}}$ X 100%
	Stratification	By procedure
	Reporting level	Surgeon level; Provincial level
	Reporting period	Latest biannual data available
	Data source / data elements	DAD, NACRS, OHIP
OTHER RELEVANT INFORMATION	***Limitations / Caveats***	N/A
	Comments	N/A

7. Data Interpretation Considerations

7.1 Data suppression

Data are suppressed or complementarily suppressed as per Ontario Health's privacy policy for the following reasons: (a) Counts or summary statistics are between 1 and 5; or (b) To prevent residual disclosure of suppressed values.

7.2 Not all data are shown on the graphs

Due to scale limitations, median total MEQ values over 2,000 mg for the "No Pre-Operative Opioid Dispensed" stratification, or over 3,000 mg for the "With Pre-Operative Opioid Dispensed" stratification are not shown on the graphs. In some cases, those high values may be due to infrequent data entry errors, while in other cases, those may reflect real values. With no access to additional information, we are not able to make any corrections on the data.

7.3 Opioid data from NMS

The opioid data reported in this report are derived from the NMS which contains dispensing related information. Please note that: 1) opioid administered during hospitalization is not captured in NMS; and 2) patients who receive opioid prescriptions from their health providers, but do not have the prescription filled are not captured in NMS. Also, NMS data captures dispensing but not administration of opioid or the appropriateness/reasons for the dispensation.

Appendix A. Table of Acronyms

ACRONYM	TERM
CIHI	Canadian Institute for Health Information
CPDB	Corporate Provider Database
CPSO	College of Physicians and Surgeons of Ontario
DAD	Discharge Abstract Database
MEQ	Morphine equivalence
MOH	Ministry of Health
MPOS	*MyPractice:* Orthopaedic Surgery
NMS	Narcotics Monitoring System
NACRS	National Ambulatory Care Reporting System
OHIP	Ontario Health Insurance Plan
OMT	Opioid Maintenance Treatment
RPDB	Registered Persons Database

Appendix B. Palliative Care Patients Identified by Using Hospital and Physician Billing Claims Data

FEE CODE (OHIP)	DESCRIPTION
A945	GEN./FAM.PRACT.SPECIAL PALLIATIVE CARE CONSULTATION
C945	SPECIAL PALLIATIVE CARE CONSULT HOSP IN PATIENT
C882	TERMINAL CARE IN HOSP.G.P/F.P
C982	PALLIATIVE CARE
W872	TERMINAL CARE N.H G.P/FAMILY PRACTICE
W882	TERMINAL CARE IN CHR.HOSP.G.P.
W972	PALLIATIVE CARE
W982	PALLIATIVE CARE
K700	PALLIATIVE CARE OUT-PATIENT CASE CONFERENCE

K023	PALLIAT CARE SUPPORT INDIVID CARE 1/2 HR OR MAJOR PART
B998	SPEC VIS PALLIATIVE CARE HOME, DAYS, EVE
B966	TRAVEL PREMIUM - PALLIATIVE CARE HOME VISIT
B997	SPEC VIS PALLIATIVE CARE HOME, DAYS, EVE
G511	TELEPHONE MANAGEMENT OF PALLIATIVE CARE AT HOME
G512	WEEKLY PALLIATIVE CARE CASE MANAGEMENT
K092	VIRTUAL PALLIATIVE CARE CONSULTATION - TELEPHONE
K093	VIRTUAL PALLIATIVE CARE CONSULTATION - VIDEO
K094	VIRTUAL PALLIATIVE CARE SUPPORT - TELEPHONE
K095	VIRTUAL PALLIATIVE CARE SUPPORT - VIDEO
MAIN PATIENT SERVICE (DAD)	**DESCRIPTION**
58	PALLIATIVE CARE
ICD10 CODE (DAD; NACRS)	**DESCRIPTION**
Z515	ANY DIAGNOSIS FIELD: PALLIATIVE CARE
PROVIDER OR INTERVENTION SERVICE **(DAD; NACRS)**	**DESCRIPTION**
00121	PALLIATIVE MEDINCE

Appendix C: OMT Drug Name List

OPIOID MAINTENANCE THERAPY (OMT): DRUG NAME
Buprenorphine (used for OMT)
Buprenorphine HCL (used for OMT)
Buprenorphine HCL & naloxone HCL (used for OMT)
Methadone HCL (used for OMT)
Methadone (used for OMT)
Methadone mixture (used for OMT)

Appendix D. Oral Opioid Analgesic Equivalence Table

Adapted from the *Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain (2010)*; available at:
http://nationalpaincentre.mcmaster.ca/opioid_2010/cgop_b_app_b08.html

Oral Opioid Analgesic Equivalence Table

OPIOID	NUMBER (MG)	RATIO (OPIOID:MORPHINE)
Morphine	30 mg	1:1
Codeine	200 mg	1:0.15
Oxycodone	15-20 mg	1:1.5
Hydrocodone	30 mg	1:1
Hydromorphone	6-7.5 mg	1:5
Meperidine	300 mg	1:0.1
Tramadol	300 mg	1:0.1
Methadone	Dose equivalence between methadone and other opioids has not been reliably established	Excluded from analyses
Transdermal fentanyl (routeadm is PATCH or TRANS PAD)	12.5mcg/h→30-67morphine* 25mcg/h→60-134mg morphine 37.5mcg/h→135-179mg morphine 50mcg/h→180-224mg morphine 75mcg/h→270-314mg morphine 100mcg/h→360-404mg morphine If 12.5mcg/h then Fent_Equiv = 1 If 25mcg/h then Fent_Equiv = 2 If 37.5mcg/h then Fent_equiv=3 If 50mcg/h then Fent_equiv=4 If 75mcg/h then Fent_equiv=5 If 100mcg/h then Fent_equiv=6 *12.5 was assumed based on a 3.8 meq/ug	If day supply/quantity=2 then: Fent_equiv=1 → 1:48*2 Fent_equiv=2 → 1:97*2 Fent_equiv=3 → 1:157*2 Fent_equiv=4 → 1:202*2 Fent_equiv=5 → 1:292*2 Fent_equiv=6 → 1:382*2 If day supply/quantity is not equal to 2 then adjust fentanyl day supply when <3 days to equal 3 and use the following conversion: Fent_equiv=1 → 1:48*3 Fent_equiv=2 → 1:97*3 Fent_equiv=3 → 1:157*3 Fent_equiv=4 → 1:202*3 Fent_equiv=5 → 1:292*3 Fent_equiv=6 → 1:382*3

Other Fentanyl Formulations	Fentanyl buccal or SL tablets, or lozenge (routeadm= “BUC STRIP” or “TAB SL” or “EFF TAB”)	1: 0.13
	Fentanyl film or oral spray (currently not in drug list)	1: 0.18
	Fentanyl nasal spray (currently not in drug list)	1: 0.16

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