Injectable Opioid Agonist Treatment (iOAT) for Opioid Use Disorder and IV fentanyl for Withdrawal Management

Site Applicability

St. Paul's Hospital (SPH) and Mount Saint Joseph Hospital (MSJ) Acute Care

Practice Level

RN, RPN: Basic Skill

LPN: Basic Skill **(subcutaneous, intramuscular and oral routes only)**

Requirements

- An Independent Double Check (IDC) is required when preparing and administering diacetylmorphine or HYDROmorphone 50 mg/mL all routes.

Need to Know

- Injectable diacetylmorphine (heroin) and HYDROmorphone (DILAUDID) are evidence-based treatment options for individuals diagnosed with severe opioid use disorder (OUD). Patients in community are prescribed individualized doses according to their tolerance and opioid needs. These patients self-administer their medication into a vein or muscle at a supervised clinic, and are monitored by a nursing team for adverse reactions or overdose. These treatments are referred to as injectable Opioid Agonist Treatment (iOAT).
- When patients are admitted to acute care, their community-prescribed opioid dose must be assessed as they may be at risk for withdrawal, overdose, or pain in the context of acute illness.
- In hospital, **diacetylmorphine** or **HYDROmorphone** is prescribed by the Addiction Medicine Consult Team (AMCT), or a physician in direct consultation with AMCT.
- Some patients may be starting iOAT for the first time in hospital, in which case the doses may be smaller and more frequent.
- Nurses administer the medication in hospital (patients do not self-inject as in community) and can anticipate that high dose HYDROmorphone doses can range from 30 mg to 250 mg per dose. Prior to administration of 50 mg/mL HYDROmorphone concentration, an Independent Double Check (IDC) **must be completed**, including the concentration and dose.
- Diacetylmorphine also **requires an** IDC and will only be ordered for inpatients as a continuation of therapy (i.e., for patients who are already prescribed and receiving diacetylmorphine in a

community clinic/setting). At PHC, diacetylmorphine can only be prescribed by AMCT, and any orders by other providers will be rejected by pharmacy.

- Although **not considered iOAT**, AMCT may order high doses of intravenous **fentanyl** to mitigate opioid withdrawal symptoms and cravings when other therapies are not an option (e.g., patients who require opioids and decline other opioid medications, those who may initiate discharge [leave against medical advice] and not complete medical treatment, patients who are using non-prescribed fentanyl on the unit). AMCT carefully considers patients' opioid use and prescribes fentanyl doses that match patient tolerance (e.g., doses may range from 200 mcg – 2000 mcg, but can be higher). An IDC is **highly recommended**.

Procedure

Prescriber Orders

A PowerPlan for diacetylmorphine or HYDROmorphone for OUD, or ad hoc medication order for IV fentanyl, will be entered into Cerner by the AMCT, or a physician in direct consultation with AMCT. The medication will appear on the Medication Administration Record (MAR). PowerPlan orders include additional safety instructions, including monitoring parameters and PRN naloxone.

Initial Assessment

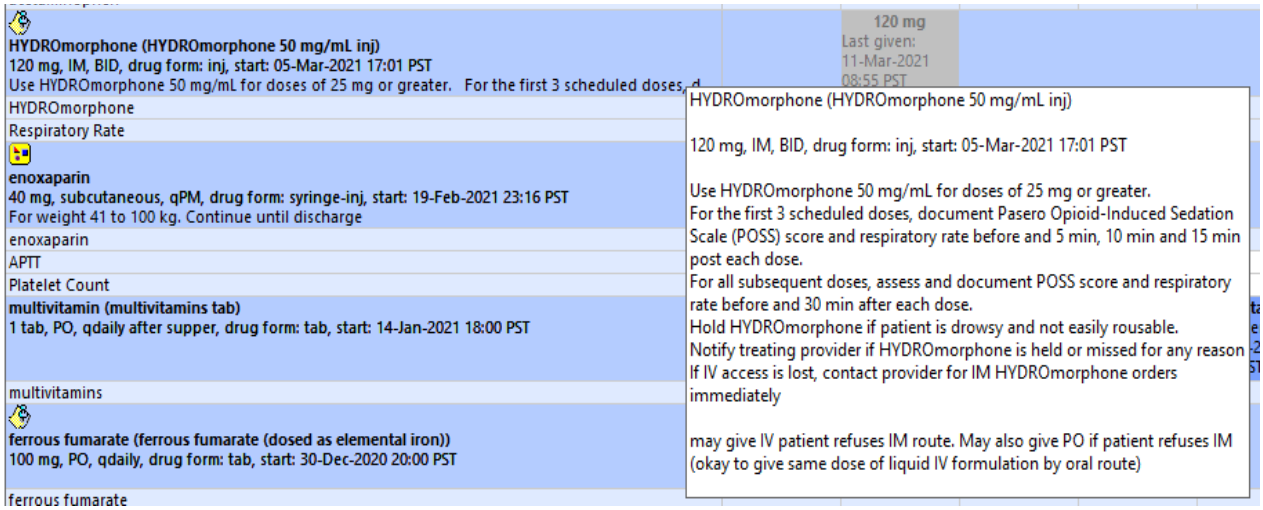
Prior to administration:

- Obtain baseline respiratory rate (RR) and level of sedation (LOS) using the Pasero Opioid-induced Sedation Scale (POSS) [see Appendix A].
  - If patient's POSS score is 3 or 4, hold the dose and notify AMCT and the AMCT Liaison Nurse *OR* most responsible provider (MRP) if after hours.
  - If patient discloses using non-prescribed opioids, assess the POSS and proceed with administering iOAT if POSS is S, 1 or 2. Hold the dose if POSS is 3 or 4.
  - Respiratory rate is the best indicator of respiratory status; do not be reassured by a normal oxygen saturation.
  - Appendix A contains additional actions and direction.

Administration

- Verify the order and determine dose and route of administration. **Review all of the order comments** as administration instructions may not be visible by just looking at the MAR:

  Hover the mouse over the medication entry on the MAR, or
  Right click on the medication and select "Order Info…" to open the order details. The order comments can be found under the "Comments" tab.



- For information on administering intramuscular (IM) injections including recommended volume for different administration sites, see Elsevier Clinical Skills (use Google Chrome) search for Medication Administration: Intramuscular Injection.

	diacetylmorphine
Preparation	○ diacetylmorphine is ordered IV or IM. ○ Barcode scan the vial(s) when removing the medication from the Omnicell. The label that prints from the Omnicell should be used to label the syringe(s) containing the medication that is reconstituted and drawn up. ○ Reconstitute 200 mg vial with 1.9 mL sterile water for injection to provide 100 mg/mL clear, colourless to light beige solution. **Use immediately after reconstitution.** ○ diacetylmorphine is a **high alert medication** **that requires an independent double check** prior to administration. ○ *1 mg diacetylmorphine IV is approximately equal to 0.5 mg HYDROmorphone IV.*[4]
Administration **Rescheduling doses (e.g., patient off unit)**	○ Doses of diacetylmorphine should be administered at least 3 hours apart. ○ **IV doses must be given IV direct**. Do not infuse in an IV mini bag. ○ For IV direct, administer undiluted *(use 10 mL syringe size for central line when possible - if a smaller syringe size is required [e.g., for concentrated, small volume iOAT dosing], inject slowly [do not force] into the line)*, then flush slowly over 2 to 3 minutes with: ▪ Peripheral IV: 10 mL NS/sodium chloride 0.9% prefilled syringe ▪ Central line (PICC, CVC): 20 mL NS/sodium chloride 0.9% (2 x 10 mL prefilled syringes) ○ Administration time of regularly scheduled diacetylmorphine doses may be adjusted by the nurse up until 23:59 on the same day as long as doses are administered 3 hours apart from any other scheduled doses of diacetylmorphine, and patient's POSS score is S, 1 or 2 (see Appendix A). Nurses are not required to call AMCT when they do an adjustment within these parameters. ▪ *Example: A patient is ordered diacetylmorphine IV TID at 09:00, 15:00 and 21:00. The patient was off unit and missed their 15:00 dose. Upon return to the unit at 20:00, the patient is requesting their 15:00 dose. If the POSS score is less than 3, it is okay per AMCT to reschedule and administer the regularly ordered 15:00 dose at 20:00. The 22:00 dose could then be administered between 23:00 and 23:59 if the patient has a POSS score of less than 3.* After midnight, offer alternative opioid PRN doses.

	HYDROmorphone
	Use the injectable formulation for all routes of administration, including oral, IV direct, IM, or SUBCUT.
Preparation	○ Barcode scan the vial(s) when removing the medication from the Omnicell. The label that prints from the Omnicell should be used to label the syringe(s) containing the medication that is drawn up. ○ For oral doses, draw up the parenteral solution from the vial with a needle attached to a syringe for dose accuracy and then label the syringe with the Omnicell medication label. The dose is transferred into an oral medication cup and diluted with juice (in front of the patient) prior to administration. ○ As per the Parenteral Drug Therapy Manual (PDTM), for doses less than 25 mg, use 10 mg/mL concentration vial; for doses 25 mg or more, use 50 mg/mL concentration vial. ○ HYDROmorphone 50 mg/mL concentration is a **high alert medication** **that requires an independent double check** prior to administration for all routes (even oral (PO) doses).
Administration **Rescheduling doses (e.g., patient off unit)**	○ **IV doses must be given IV direct**. Do not infuse in an IV mini bag. ○ For IV direct, administer undiluted *(use 10 mL syringe size for central line when possible - if a smaller syringe size is required [e.g., for concentrated, small volume iOAT dosing], inject slowly [do not force] into the line)*, then flush slowly over 2 to 3 minutes with: ▪ Peripheral IV: 10 mL NS/sodium chloride 0.9% prefilled syringe ▪ Central line (PICC, CVC): 20 mL NS/sodium chloride 0.9% (2 x 10 mL prefilled syringes) ○ Administration time of regularly scheduled injectable HYDROmorphone doses may be adjusted by the nurse up until 23:59 on the same day as long as doses are administered 3 hours apart from any other scheduled doses of injectable HYDROmorphone, and patient's POSS score is S, 1 or 2 (see Appendix A). Nurses are not required to call AMCT when they do an adjustment within these parameters. ▪ *Example: A patient is ordered high dose HYDROmorphone IV TID at 06:00, 14:00 and 22:00. The patient was off of the unit and missed their 14:00 dose. Upon return to the unit at 18:00, the patient is requesting their 14:00 dose. If the POSS score is less than 3, it is okay per AMCT to reschedule and administer the regularly ordered 14:00 dose at 18:00. The 22:00 dose could be given at 22:00 if the patient has a POSS score of less than 3 or rescheduled to 23:59.* After midnight, offer PRN doses of HYDROmorphone until the scheduled morning dose.

	fentanyl (RN/RPN only)
	AMCT is using a (conservative) conversion of HYDROmorphone 10 mg IV to fentanyl 500 mcg IV.
Preparation	○ Barcode scan the vial(s) when removing the medication from the Omnicell. The label that prints from the Omnicell should be used to label the syringe(s) containing the medication that is drawn up. ○ Parenteral vials or ampoules containing more than 100 mcg of fentanyl is considered **high alert**. **An independent double check is highly recommended** prior to administration.
Administration	○ **Doses must be given IV direct**. Do not infuse in an IV mini bag. ○ For IV direct, administer undiluted, *(use 10 mL syringe size for central line when possible - if a smaller syringe size is required [e.g., for concentrated, small volume iOAT dosing], inject slowly [do not force] into the line)*, pushing slowly over 2 to 3 minutes (you can expect larger volumes). Following administration, flush slowly with: ▪ Peripheral IV: 10 mL NS/sodium chloride 0.9% prefilled syringe ▪ Central Line (PICC, CVC): 20 mL NS/sodium chloride 0.9% (2 x 10 mL prefilled syringes) ○ Fentanyl may be ordered as scheduled doses (e.g., Q4h), but more commonly it is ordered as PRN dosing.

- If a dose is held for any reason or missed *and not able to be rescheduled*, contact prescriber/AMCT and AMCT Liaison Nurse *OR* MRP after hours.
  - Patients may be at risk for withdrawal if they do not receive their scheduled doses. Prescribers and teams should work with patients to try to avoid missed doses.

Ongoing Assessment

- For the first 3 scheduled doses:

  Assess and document RR and LOS (using POSS; see Appendix A)

  a. Pre-dose and 5, 10 and 15 minutes after each **IV** dose
  b. Pre-dose and 10, 20 and 30 minutes after each **IM** or **SUBCUT** dose
  c. Pre-dose and 30, 45 and 60 minutes after each **oral (PO)** dose

- For all subsequent doses:

  Assess and document RR and LOS (using POSS)

  a. Pre-dose and 30 minutes after each **IV** dose
  b. Pre-dose and 30 minutes after each **IM** or **SUBCUT** dose
  c. Pre-dose and 30 minutes after each **oral (PO)** dose

- If patient misses 3 or more post-dose assessments, contact AMCT or AMCT Liaison Nurse so they can discuss the program expectations with the patient and if there are reasonable steps that can be taken by either the prescriber or the patient to help meet the patient's needs.
- **If patient has PRN doses of injectable HYDROmorphone** ordered in addition to regular doses, AMCT may be trying to titrate the patient to a therapeutic dose (higher regular doses). Refer to the AMCT progress note in the "Documentation" section of the patient's chart to review care plan.
    - **Offer the PRNs** of injectable HYDROmorphone if safe to administer based on assessment of RR and LOS as noted above.
    - If patients receive and tolerate the PRN doses, the prescriber can make adjustments to the scheduled doses the following day.

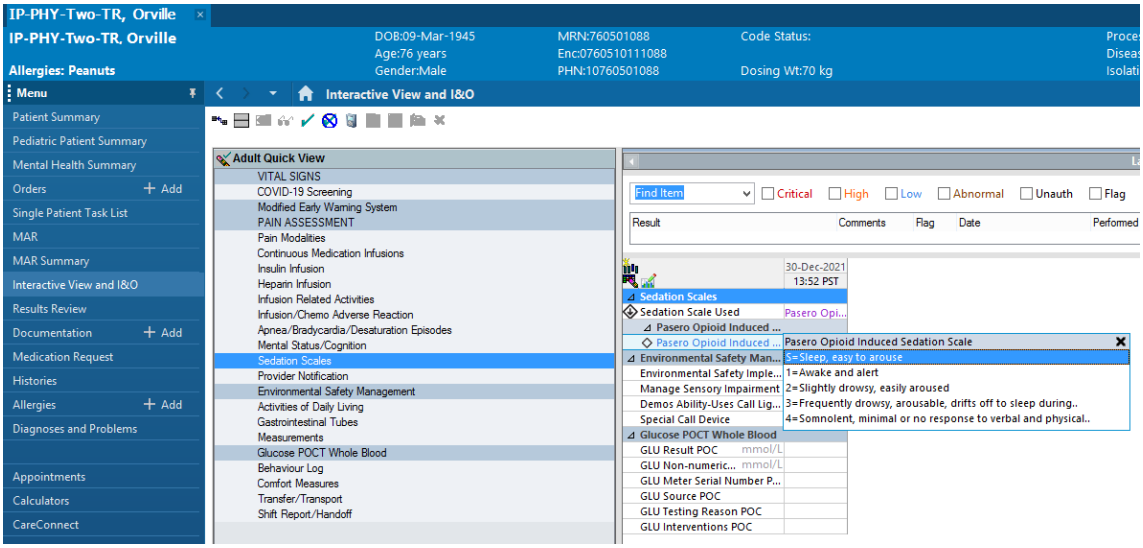
  The hospital setting allows for monitoring of the patient's tolerance and sedation during titration so we are able to titrate doses faster than in community.
- In the case of suspected opioid overdose, naloxone can be administered with or without an order. Diacetylmorphine and HYDROmorphone ordered within a PowerPlan for OUD will be accompanied by naloxone PRN orders for 0.1 mg or 0.4 mg IV and IM. Notify prescriber/AMCT and/or MRP if any naloxone is administered.
- Assess for and ask patients about opioid withdrawal signs and symptoms (e.g., nausea/vomiting, diaphoresis, anxiety) opioid cravings, and pain and offer PRNs accordingly.

Interventions

- If a patient's IV access is lost and cannot be re-established prior to next dose, either scheduled or required PRN, contact AMCT and/or MRP (if after hours) to obtain alternate opioid orders **STAT** (e.g., IM dosing in the case of diacetylmorphine and HYDROmorphone).

Documentation

- Document medication administered on the MAR, including the Independent Double Check (IDC) performed prior to administration:
    - The IDC can be signed using the 'Witnessed by' box at the time of administration at the bedside or documented after administration has occurred. After administration, this can be done by the IDC nurse right clicking the administered dose in the MAR -> click 'Modify' then fill in the 'Witnessed by' section and sign.
- Document pre- and post-administration assessments of RR and LOS (POSS) in 'Interactive View and I&O' -> 'Adult Quick View'. POSS is found under 'Sedation Scales' -> double click the empty box that you would like to document in and the 'Sedation Scale Used' box will appear -> select POSS.



- Document any abnormal or significant findings and/or interventions in narrative charting.

Patient and Family Education

- Encourage the patient to tell you if they are experiencing pain, withdrawal symptoms, or cravings. Advise them of available PRN medications.
  - If the patient is just starting treatment, explain that symptoms may not be alleviated fully, but we will support them to achieve the best outcome.
- Advise patient to tell you if they are using non-prescribed substances while in hospital and offer education regarding harm reduction and safer substance use if appropriate.
- Offer a Take Home Naloxone Kit and associated education.

Related Documents

1. Parenteral Drug Therapy Manual (PDTM) - HYDROmorphone
2. Parenteral Drug Therapy Manual (PDTM) - fentanyl
3. Parenteral Drug Therapy Manual (PDTM) - diacetylmorphine
4. BD-00-11-40028 - High-Alert Medications Policy
5. B-00-07-10098 - Independent Double Check of Medication
6. B-00-13-10175 - Dispensing Naloxone Kits to Clients at Risk of Opioid Overdose (Adults and Youth)
7. BD-00-13-40094 - Opioid Overdose (Suspected): Management, Including Naloxone Administration without a Provider Order
8. B-00-13-10176 - Naloxone HCl (Narcan) Administration in the Management of Suspected Opioid Overdose in Community Settings (Adults & Youth)
9. Practice Standard for Registered Nurses and Nurse Practitioners: Medication

10. BCCSU/MOH Guideline for the Clinical Management of Opioid Use Disorder

Additional Education

- UBC CPD Addiction Care and Treatment Online Course (free)

References

1. BC Centre for Disease Control. (2016). Administration of naloxone. *BCCDC Decision Support Tool Administration of Naloxone.* Retrieved from: http://www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/Epid/Other/NaloxoneDSTUseforRN.pdf
2. Blanken, P., Hendriks, V. M., van Ree, J. M., & van den Brink, W. (2010). Outcome of long-term heroin-assisted treatment offered to chronic, treatment-resistant heroin addicts in the Netherlands. *Addiction*, *105*(2), 300-308. DOI: 10.1111/j.1360-0443.2009.02754.x
3. British Columbia Centre on Substance Use and B.C. Ministry of Health. (2017). *A guideline for the clinical management of opioid use disorder*. Retrieved from http://www.bccsu.ca/care-guidance-publications/
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5. Oviedo-Joekes, E., Sordo, L., Guh, D., Marsh, D. C., Lock, K., Brissette, S., Anis, A. H., & Schechter, M. T. (2015). Predictors of non-use of illicit heroin in opioid injection maintenance treatment of long-term heroin dependence. *Addictive Behaviours, 41*, 81-86. DOI: 10.1016/j.addbeh.2014.10.003
6. Pasero, C., & McCaffery, M. (2002). Monitoring sedation: It's the key to preventing opioid-induced respiratory depression. *American Journal of Nursing, 102*(2), 67-69.

Definitions

Opioid agonist treatment

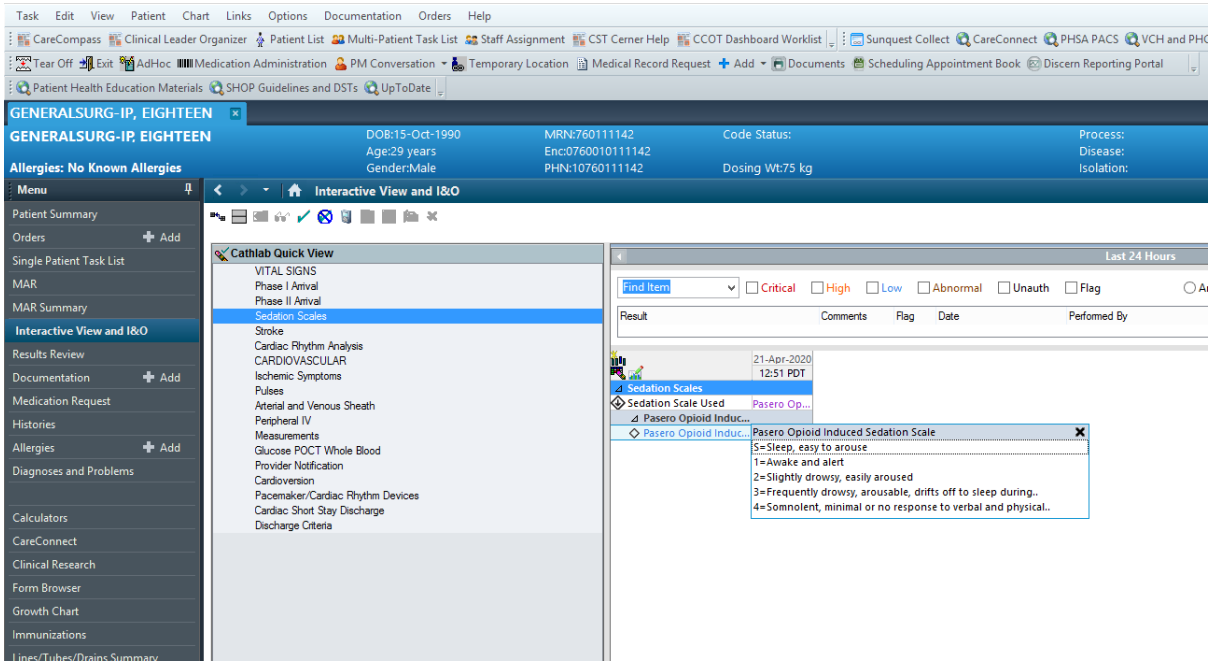
Opioid agonist treatment (OAT) refers to the use of a substitution opioid to manage opioid use disorder. The choice of agonist treatment depends on several patient-specific factors such as initial presentation, comorbidities, drug–drug interactions, treatment preference, and response to treatment. Methadone and buprenorphine are both long-acting oral opioids that are used in opioid agonist treatment. Opioid agonist treatment has been shown to result in a reduced risk of morbidity and mortality, a sustained absence from opioid use, and retention of patients in treatment.

- **Injectable OAT (iOAT)** is indicated for those individuals who have not benefited from oral opioid agonist treatment. For patients who are not able to stop or reduce use of non-medical opioids with methadone or other oral options, iOAT offers an evidence-based alternative.

Appendix A: Pasero Opioid-induced Sedation Scale (POSS) [Modified to include appropriate actions] located in Cerner PowerChart in 'Interactive View and I&O' under 'Sedation Scales' (see below)

Level of Sedation	Appropriate Action
S = Sleep, easy to arouse	Acceptable; no action necessary; may continue with opioid dose
1 = Awake and alert	Acceptable; no action necessary; may continue with opioid dose
2 = Slightly drowsy, easily aroused	Acceptable; no action necessary; may continue with opioid dose
3 = Frequently drowsy, arousable, drifts off to sleep during conversation	Unacceptable; hold opioid until improved; monitor respiratory status and sedation closely until sedation level is stable at less than 3 and respiratory status is satisfactory
4 = Somnolent, minimal or no response to verbal or physical stimulation	Unacceptable; hold opioid and notify prescriber; consider administering naloxone; monitor respiratory status and sedation closely until sedation level is stable at less than 3 and respiratory status is satisfactory

Modified from: Pasero, C., & McCaffery, M. (2002). Monitoring sedation: It's the key to preventing opioid-induced respiratory depression. *American Journal of Nursing, 102*(2), 67-69.



Persons/Groups Consulted

Nurse Educator, Substance Use

Practice Consultant, Medication Safety & Management

General Nurse Educators, Medication Safety/Medication Management

Medication Safety Pharmacist

Clinical Pharmacy Specialist, AMCT

Pharmacy Dispensary/Parenteral Supervisor

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