BC Centre for Palliative Care

B.C. INTER-PROFESSIONAL PALLIATIVE SYMPTOM MANAGEMENT GUIDELINES

fraserhealth

Interior Health
Every person matters

First Nations Health Authority
Health through wellness

island health

Providence
HEALTH CARE

Vancouver
CoastalHealth

northern health

BC Centre for Palliative Care

NAUSEA & VOMITING

BC Centre for Palliative Care

DEFINITION

Nausea is the unpleasant subjective sensation of being about to vomit. It may occur in isolation or in conjunction with other gastrointestinal symptoms (e.g., vomiting)[1] and/or autonomic symptoms (e.g., pallor, cold sweat, salivation).[2] **Vomiting** is the forceful expulsion of the gastric contents through the mouth or nose.[2]

PREVALENCE

Nausea and vomiting affects 40-60% of those receiving palliative care.[2-5]

IMPACT

Nausea and vomiting can be profoundly distressing for both patients and families, decreasing their quality of life.[2-5] They may also delay active treatments such as chemotherapy.

STANDARD OF CARE

Step 1 | Goals of care conversation

Determine goals of care in conversation with the patient, family and inter-disciplinary team. Refer to additional resources (Additional resources for management of nausea and vomiting) for tools to guide conversations and required documentation. Goals of care may change over time and need to be reconsidered at times of transition, e.g., disease progression or transfer to another care setting.

Step 2 | Assessment

Nausea and Vomiting Assessment: Using Mnemonic O, P, Q, R, S, T, U and V[32]

Mnemonic Letter	**Assessment Questions** *Whenever possible, ask the patient directly. Involve family as appropriate and desired by the patient.*
Onset	When did it begin? How long does it last? How often does it occur?
Provoking /Palliating	What brings it on? What makes it better? What makes it worse?
Quality	What does it feel like? Can you describe it? Do you vomit or just feel nauseated? Does it change when you change position?
Region/Radiation	Not applicable
Severity	How severe is this symptom? What would you rate it on a scale of 0-10 (0 being none and 10 being the worst possible)? Right now? At worst? On average? How bothered are you by this symptom? Are there any other symptom(s) that accompany this symptom?
Treatment	What medications and treatments are you currently using? Are you using any non-prescription treatments, herbal remedies, or traditional healing practices? How effective are these? Do you have any side effects from the medications and treatments? What have you tried in the past? Do you have concerns about side effects or cost of treatments?
Understanding	What do you believe is causing this symptom? How is it affecting you and/or your family? What is most concerning to you?
Values	What overall goals do we need to keep in mind as we manage this symptom? What is your acceptable level for this symptom (0-10)? Are there any beliefs, views or feelings about this symptom that are important to you and your family?

Symptom Assessment: Physical assessment as appropriate for symptom

- Assess for signs of dehydration, jaundice, infection (e.g., fever) or drug toxicity.
- Neurological exam: assess for signs of a cranial lesion or raised intracranial pressure.
- Abdominal examination: assess for tenderness, organomegaly, ascites.
- +/- Rectal examination

Diagnostics: consider goals of care before ordering diagnostic testing

Possible investigations are guided by the findings from the history and examination

- Blood work: CBC and differential, calcium, glucose, renal and liver function.
- Urine culture.
- Abdominal imaging: X-ray, ultrasound, CT/MRI.
- Endoscopy.

Step 3 | Determine possible causes and reverse as possible if in keeping with goals of care (For more details, see Underlying causes of nausea and vomiting in palliative care)

Nausea and vomiting (NV) are separate but related symptoms present in many life-limiting conditions. Gastric stasis and chemical disturbance are the most common causes but the etiology is often multifactorial and may be difficult to establish.[9]

Underlying causes can be classified into 6 broad groups.[2, 8, 9] (**See** Underlying causes of nausea and vomiting in palliative care **for more detailed causes.**)

- **C**hemical
- **C**ortical
- **C**ranial
- **V**estibular
- **V**isceral or serosal
- **G**astric Stasis (impaired gastric emptying)

PRINCIPLES OF MANAGEMENT

When considering a management approach, always balance burden of a possible intervention against the likely benefit (e.g., does the intervention require transfer to another care setting?)

- Use cause determination, knowledge of emetogenic pathways, and a structured approach to guide antiemetic selection.[10, 11]
- Use the first line drug recommended for the most likely cause of the symptom. **Refer to** Underlying causes of nausea and vomiting in palliative care **for drug selection and dosages.**
- A single antiemetic is sufficient in the majority of patients.[13]
- Monitor for symptom resolution and adverse effects for 48 hours. **Use** Management of nausea and vomiting titration algorithm **to guide further steps.**
- If symptoms persist, prescribe a regular antiemetic with different antiemetic to be given as needed.[2, 8, 9, 14]

LEGEND FOR USE OF BULLETS

Bullets are used to identify the type or strength of recommendation that is being made, based on a review of available evidence, using a modified GRADE process.

✓	**Use with confidence:** recommendations are supported by moderate to high levels of empirical evidence.
⬠	**Use if benefits outweigh potential harm:** recommendations are supported by clinical practice experience, anecdotal, observational or case study evidence providing low level empirical evidence.
⚠	**Use with caution:** Evidence for recommendations is conflicting or insufficient, requiring further study
☒	**Not recommended:** high level empirical evidence of no benefit or potential harm

Non-pharmacological interventions

Non-pharmacological interventions provide their best relief for mild and moderate nausea and vomiting. In severe symptoms, their role is adjunctive to medications.

Interventions available in the home and residential care facilities

- ⬠ Meticulous attention to **oral care**; watch for signs of oral thrush. **Prevent constipation**.[15, 16]
- ⬠ **Keep air and room fresh**; eliminate strong odors. [17]
- ⬠ **Increase oral intake** from ice chips, to clear fluids, to full fluids then to solid food as tolerated; Involve Clinical Dietician and/or other health disciplines as required.

Non-pharmacological interventions continued on next page

Non-pharmacological interventions *continued*

- **Aromatherapy**: peppermint or ginger oils reduce cancer related NV in small studies.[2]

Interventions requiring additional equipment or admission to acute care

- Use of **acupuncture or acupressure** wrist bands. [15]
- Offer **clinically assisted hydration** (IV or SC) if there is overall benefit or if functional status is high. Watch for fluid overload. Dying patients require lower volumes for hydration.[9]

Pharmacological interventions (refer to Medications for management of nausea and vomiting, Nausea and vomiting management algorithm and Nausea and vomiting extra resources or assessment tools for more detailed information)

Routes of Administration

- Oral administration is preferred.[2, 15] Rectal may be considered.
- Parenteral medication (IV/SC) may be considered if the patient has vomiting, suspected malabsorption or gastric stasis.[2, 15] After 3 days, consider converting to oral administration except in cases of mechanical intestinal obstruction.[14]
- When switching routes of administration (such as oral to SC or IV) consider a bioavailability dosing adjustment. **See** Nausea and vomiting management algorithm, and monitor response and adverse effects.

Low levels of distress (patient rating of 1 to 3/10)

- Mild levels may respond to non-pharmacological actions.
- Use the first-line drug for the most likely symptom cause. **Refer to** Underlying causes of nausea and vomiting in palliative care **for first, second and third line drug selection.**

Pharmacological interventions continued on next page

Pharmacological interventions *continued*

- Treat regularly for 48 hours, providing an additional PRN antiemetic drug.[9, 10, 12]

Moderate level of distress (patient rating of 4 to 6/10)

- Select the drug based on presumed etiology.
- If cause is unknown (10-25% of patients)[10 18] or due to multiple factors (25-62%),[3, 10, 18, 19] initial antiemetic choices are:

    a) Metoclopramide: treats common causes of nausea, e.g., gastric stasis, partial bowel obstruction.[9] **Avoid use in *complete* bowel obstruction.**

    b) Haloperidol: treats chemical disturbances, another common cause of nausea.

    c) Methotrimeprazine: a broad acting receptor antagonist.[7]

Severe distress (patient rating of 7 to 9/10)

- Urgently assess cause and initiate appropriate drug treatment/interventions.
- If inadequate control of severe nausea and vomiting within the first 48 hours, consider further management including:

    a) Hospitalization, if required.

    b) Consultation with palliative care physician.

        - Further antiemetic titration drugs or options, including the combining of antiemetics which have a different or broader action, may be considered.

Non-pharmacological interventions

Refractory Nausea and Vomiting[15]

- May requires a consultation with a palliative care specialist.
- Prior to referral, professionals may wish to review if:
  - An appropriate antiemetic has been chosen, at optimal dose, and given by the appropriate route (often non-oral due to compromised oral absorption) for an adequate time period.[15]
  - Continued vomiting is an obstruction; duodenal/gastric outflow or high small bowel.[15]

Practice Points for Antiemetic Pharmacological Management

- Antiemetics tend to suppress vomiting more readily than nausea; an increase of the antiemetic dose may improve nausea control.[18]
- Haloperidol and methotrimeprazine have long elimination half-lives (13-35, 15-30 hours),[11] reaching steady state in about 5 days. Once or twice daily dosing frequency may then be possible to improve dosing convenience and to minimize adverse effects from accumulation.
- Combining antiemetics aims to block several, but not overlapping, emetic pathways:
  - Initially, use of a single antiemetic drug up to maximum tolerated dose is preferable.
  - Single broader spectrum drugs such as methotrimeprazine and olanzapine have affinity at many receptors and may be as effective as, and easier for patients to handle than, multiple simultaneous antiemetics; may also minimize drug interactions.[11, 19]
  - When combining antiemetics, polypharmacy risks are greater, as are adverse effects such as sedation and anti-cholinergic effects; monitor for overlapping toxicities.[20, 21]

Non-pharmacological interventions continued on next page

Non-pharmacological interventions *continued*

- Avoid combinations with antagonistic actions as effectiveness of either is at risk:
  - Prokinetic agents such as metoclopramide are potentially antagonized by anticholinergics (e.g., dimenhydrinate, scopolamine, hyoscine).[2, 8, 9, 11, 12]
  - Use combinations with different receptor affinities, e.g., dimenhydrinate and haloperidol,[11] or haloperidol with a 5HT3 receptor antagonist such as ondansetron.[19]
- Corticosteroids may improve nausea caused by increased ICP (related to intracranial tumors), hypercalcemia of malignancy, malignant pyloric stenosis[2] or visceral causes (**see** Underlying causes of nausea and vomiting in palliative care); may also reverse partial bowel obstructions.
- Marijuana lacks controlled clinical efficacy studies; nabilone is an antiemetic alternative.[1]
- Opioid-induced nausea lacks evidence of a preferred antiemetic choice.[22] However, use of an antiemetic may help, thus increasing compliance with analgesic especially for patients sensitive to many drugs.
- Nausea might be minimized by switching opioids or route of administration.[22]

Patient and family education

- Explain that a combination of strategies may be needed, often due to multiple triggers.[1, 8]
- Teach how to use non-oral medications and non-pharmacological methods.[2]
- Encourage patients to continue analgesic medication as pain can make nausea worse.[15]
- Offer tools to keep track of symptoms, medications taken and effectiveness.

ADDITIONAL RESOURCES FOR MANAGEMENT OF NAUSEA AND VOMITING

Resources specific to nausea and vomiting

- BC Cancer Agency Symptom Management Guidelines: Nausea
  - ➞ http://www.bccancer.bc.ca/nursing-site/Documents/11.%20Nausea%20and%20Vomiting.pdf
- BC Guidelines: Nausea and vomiting
  - ➞ http://www2.gov.bc.ca/assets/gov/health/practitioner-pro/bc-guidelines/palliative2_nausea.pdf
- BC's Heart Failure Network: Nausea and vomiting
  - ➞ http://www.bcheartfailure.ca/wp-content/uploads/downloads/2015/01/Nausea-Vomiting-Jan-2015.pdf

General Resources

- **Provincial Palliative Care Line** – for **physician** advice or support, call **1 877 711-5757** In ongoing partnership with the Doctors of BC, the toll-free Provincial Palliative Care Consultation Phone Line is staffed by Vancouver Home Hospice Palliative Care physicians 24 hours per day, 7 days per week to assist physicians in B.C. with advice about symptom management, psychosocial issues, or difficult end-of-life decision making.
- BC Centre for Palliative Care: Serious Illness Conversation Guide
  - ➞ http://www.bc-cpc.ca/cpc/
- BC Guidelines: Palliative Care for the Patient with Incurable Cancer or Advanced Disease
  - ➞ http://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/palliative-care
- BC Palliative Care Benefits: Information for prescribers
  - ➞ http://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/pharmacare/prescribers/plan-p-bc-palliative-care-benefits-program

Additional resources for management of nausea and vomiting continued on next page

ADDITIONAL RESOURCES FOR MANAGEMENT OF NAUSEA AND VOMITING *CONTINUED*

- National Centre for Complementary and Alternative Medicine (NCCAM) for additional information on the use of non-pharmacological interventions
  - ➞ https://nccih.nih.gov/
- Canadian Association of Psychosocial Oncology: Pan-Canadian Practice Guideline: Screening, Assessment and Management of Psychosocial Distress, Depression and Anxiety in Adults with Cancer
  - ➞ http://www.capo.ca/wp-content/uploads/2015/11/FINAL_Distress_Guideline1.pdf
- Fraser Health psychosocial care guideline
  - ➞ https://www.fraserhealth.ca/media/psychosocial%20care.pdf

Resources specific to health organization/region

- Fraser Health
  - ➞ http://www.fraserhealth.ca/health-professionals/professional-resources/hospice-palliative-care/
- First Nations Health Authority
  - ➞ http://www.fnha.ca/
- Interior Health
  - ➞ https://www.interiorhealth.ca/YourCare/PalliativeCare/Pages/default.aspx
- Island Health
  - ➞ http://www.viha.ca/pal_eol/
- Northern Health
  - ➞ https://www.northernhealth.ca/Professionals/PalliativeCareEndofLifeCare.aspx
- Providence Health
  - ➞ http://hpc.providencehealthcare.org/
- Vancouver Coastal Health
  - ➞ http://www.vch.ca/your-care/home-community-care/care-options/hospice-palliative-care

Additional resources for management of nausea and vomiting continued on next page

ADDITIONAL RESOURCES FOR MANAGEMENT OF NAUSEA AND VOMITING *CONTINUED*

Resources specific to patient population

- ALS Society of Canada: A Guide to ALS patient care for primary care physicians
  - ➡ https://als.ca/wp-content/uploads/2017/02/A-Guide-to-ALS-Patient-Care-For-Primary-Care-Physicians-English.pdf
- ALS Society of British Columbia 1-800-708-3228
  - ➡ www.alsbc.ca
- BC Cancer Agency: Symptom management guidelines
  - ➡ http://www.bccancer.bc.ca/health-professionals/clinical-resources/nursing/symptom-management
- BC Renal Agency: Conservative care pathway and symptom management
  - ➡ http://www.bcrenalagency.ca/health-professionals/clinical-resources/palliative-care
- BC's Heart Failure Network: Clinical practice guidelines for heart failure symptom management
  - ➡ http://www.bcheartfailure.ca/for-bc-healthcare-providers/end-of-life-tools/
- Canuck Place Children's Hospice
  - ➡ https://www.canuckplace.org/resources/for-health-professionals/
    - 24 hr line – 1.877.882.2288
    - Page a Pediatric Palliative care physician – 1-604-875-2161 (request palliative physician on call)
- Together for short lives: Basic symptom control in pediatric palliative care
  - ➡ http://www.togetherforshortlives.org.uk/professionals/resources/2434_basic_symptom_control_in_paediatric_palliative_care_free_download

UNDERLYING CAUSES OF NAUSEA AND VOMITING IN PALLIATIVE CARE

All underlying causes for this symptom have been outlined in the document.

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MEDICATIONS...VOMITING RELATED TO UNDERLYING CAUSE[6, 9,23-25]

Chemical Cause	Key Features[2, 6, 7, 13, 20]	Antiemetic of Choice	Adverse Effects‡
Drugs e.g., steroids, opioids **Chemotherapy** **Metabolic** e.g., hypercalcemia **Toxins** e.g., infection	Symptoms of drug toxicity or underlying disease. Nausea as predominant symptom. Nausea not relieved by vomiting. Delirium (suggests primary metabolic cause or metabolic derangement secondary to vomiting). Polydipsia and polyuria (suggests hypercalcemia or hyperglycemia).	1st line: Haloperidol 0.5 to 1.5 mg PO/SC Q8H or 1.5 to 5 mg CSCI per 24 hours 2nd line: Methotrimeprazine 3.125 to 6.25 mg PO/SC Q8H or 6.25 to 25 mg CSCI per 24 hours 3rd line: Ondansetron 4 to 8 mg once or twice daily or 16 to 24 mg CSCI per 24 hours	QTc prolongation risk. Extrapyramidal symptoms (uncommon). QTc prolongation risk. Sedating at 12.5 mg per day and above.[26] QTc prolongation risk. Constipation 11%[27] (refer to Constipation guideline) Avoid IV ondansetron when using IV metoclopramide.[23,24]

Medications...vomiting related to underlying cause continued on continued on next page

MEDICATIONS...VOMITING RELATED TO UNDERLYING CAUSE *CONTINUED*

Cortical Cause	Key Features	Antiemetic of Choice	Adverse Effects‡
Anxiety **Pain** **Previous nausea experience** **Emotional factors**	Psychological or physical distress. Anticipatory nausea and vomiting.[13]	1st line: Lorazepam 0.5 to 1mg sublingual QID PRN 2nd line: Methotrimeprazine 3.125 to 6.25 mg PO/SC Q8H or 6.25 to 25 mg CSCI per 24 hours 3rd line: Cannabinoids Nabilone 0.25 to 2 mg PO BID Medicinal cannabis[25]	Sedation. QTc prolongation risk. Sedating at 12.5 mg per day and above.[26]

Medications...vomiting related to underlying cause continued on continued on next page

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MEDICATIONS...VOMITING RELATED TO UNDERLYING CAUSE *CONTINUED*

Cranial Cause	Key Features	Antiemetic of Choice	Adverse Effects‡
Raised intracranial pressure (ICP) **Meningeal infiltration** **Whole brain radiotherapy**	Headache +/- cranial nerve signs, especially in the morning. Vomiting without nausea. Changes to vision and/or personality. Depressed consciousness (raised ICP). N&V in response to sensory stimulation (sights/sounds/ smells)	1st line: Dimenhydrinate 50 mg PO/SC/PR Q4H to Q8H or 150 mg CSCI per 24 hours 1st line: Add Dexamethasone 8 mg daily up to 8 mg bid PO/ SC if raised ICP 2nd line: Haloperidol 0.5 to 1.5 mg PO/SC Q8H or 1.5 to 5 mg CSCI per 24 hours 3rd line: Methotrimeprazine 3.125 to 6.25 mg PO/SC Q8H or 6.25 to 25 mg CSCI per 24 hours	Sedation. QTc prolongation risk. Extrapyramidal symptoms (uncommon). QTc prolongation risk. Sedating at 12.5 mg per day and above.

Medications...vomiting related to underlying cause continued on continued on next page

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MEDICATIONS...VOMITING RELATED TO UNDERLYING CAUSE *CONTINUED*

Vestibular Cause	Key Features	Antiemetic of Choice	Adverse Effects‡
Drugs e.g., opioids Motion sickness Tumor e.g., cerebellar, acoustic neuroma, cranial metastasis	Symptoms are movement related. Less common cause of nausea and vomiting.	1st line: Dimenhydrinate 50 mg PO/SC/PR Q8H or 150mg CSCI per 24 hours 2nd line: Scopolamine Transdermal 1 to 2 patches applied to skin every 72 hours 3rd line: Methotrimeprazine 3.125 to 6.25 mg PO/SC Q8H 6.25 to 25 mg CSCI per 24 hours Prochlorperazine 5-10 mg PO Q8H	Sedation. Anticholinergic effects, e.g., dry mouth. QTc prolongation risk. Sedating at 12.5 mg per day and above.[26]

Medications...vomiting related to underlying cause continued on continued on next page

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MEDICATIONS...VOMITING RELATED TO UNDERLYING CAUSE *CONTINUED*

Visceral or Serosal Cause	Key Features	Antiemetic of Choice	Adverse Effects‡
Bowel obstruction **Severe constipation** **Liver capsule stretch** **Ureteric distention** **Mesenteric metastases** **Pharyngeal stimulation** (difficult expectoration)	Vomiting undigested food hours after ingestion (gastric outlet obstruction). Abdominal pain and altered bowel habit (intestinal obstruction). Pain may occur with oral intake. Vomitus may be large volume progressing from stomach contents, to bile to fecal matter (intestinal obstruction).	1st line: Dimenhydrinate 50 mg PO/SC Q8H or 150 mg CSCI per 24 hours 2nd line: Methotrimeprazine 3.125 to 6.25 mg PO/SC Q8H 6.25 to 25 mg CSCI per 24 hours	Sedation. QTc prolongation risk. Sedating at 12.5 mg per day and above.[26]

Medications...vomiting related to underlying cause continued on continued on next page

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MEDICATIONS...VOMITING RELATED TO UNDERLYING CAUSE *CONTINUED*

Gastric Stasis Cause	Key Features	Antiemetic of Choice	Adverse Effects‡
Drugs e.g., opioids, tricyclics **Tumor ascites** **Hepatomegaly** **Autonomic dysfunction** **Tumor infiltration**	Impaired gastric emptying. Epigastric pain, fullness, acid reflux, early satiety, flatulence, hiccup. Intermittent nausea relieved by vomiting.	1st line: Metoclopramide* 10 mg PO TID or QID before meals or 30 to 40 mg CSCI per 24 hours Higher doses should usually not be exceeded.[24] 2nd line: Domperidone* 10 mg PO TID Health Canada recommends a maximum of 30 mg daily.[23]	QTc prolongation risk. Extrapyramidal symptoms.[28] QTc prolongation risk.[28]

† Off-label. PO = by mouth IV = Intravenous, SC = Subcutaneous, TID = three times daily, QID = four times daily ODT = oral dissolving tablet CSCI = continuous subcutaneous infusion.

*Adjust/monitor dosing in patients with renal dysfunction, avoid in complete bowel obstruction

‡QTc prolongation risk known to occur for domperidone, haloperidol, ondansetron, methotrimeprazine and is a conditional risk for metoclopramide use. Per https://crediblemeds.org/

Drug coverage and cost information available from: http://www2.gov.bc.ca/assets/gov/health/practitioner-pro/bc guidelines/palliative2_nausea_medtable.pdf

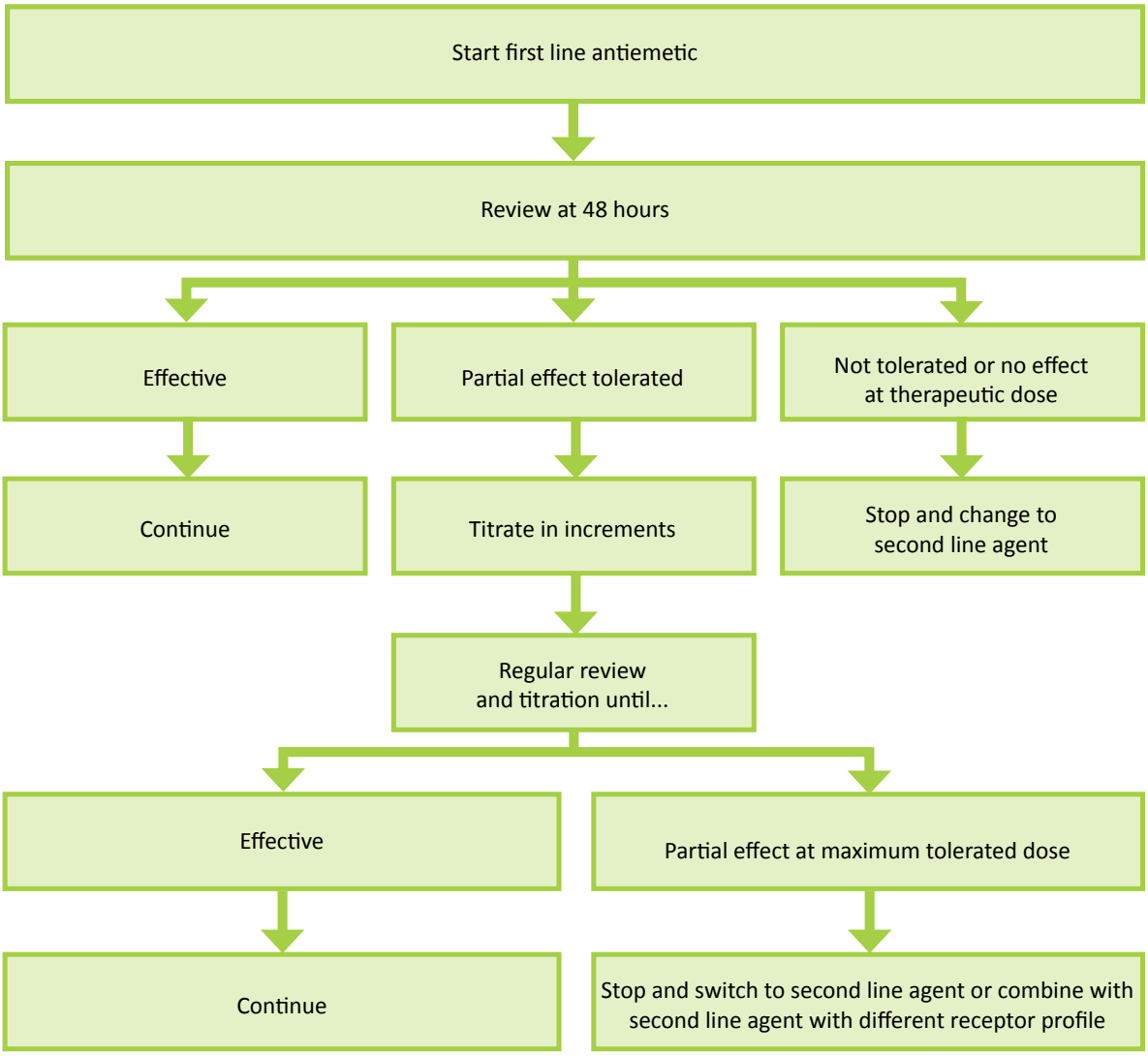
Consult most current product monograph for full drug information and adverse effects: https://health-products.canada.ca/dpd-bdpp/index-eng.jsp

Medications...vomiting related to underlying cause continued on continued on next page

MEDICATIONS...VOMITING RELATED TO UNDERLYING CAUSE *CONTINUED*

Prices for prescription drugs may be obtained from BC PharmaCare. The British Columbia Palliative Care Benefits Plan http://www2.gov.bc.ca/assets/gov/health/health-drug-coverage/pharmacare/palliative-formulary.pdf provides province wide drug coverage for many of the recommended medications– check website to confirm coverage. **Consider price when choosing similarly beneficial medications, especially when the patient / family is covering the cost.**

NAUSEA AND VOMITING MANAGEMENT ALGORITHM - TITRATION[9]



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NAUSEA AND VOMITING EXTRA RESOURCES OR ASSESSMENT TOOLS

Antiemetics Oral Bioavailability's, Parenteral Dosing Adjustment[14, 21, 23,30]

Drug	Oral (PO) Bioavailability	Possible/Suggested Dosing Adjustment when switching from Oral to Subcutaneous or IV route of Administration‡
Dimenhydrinate	Not available*	Unknown, possibly by 50-100%
Haloperidol	60 - 70 %	Reduce by 50-100 %
Lorazepam	93 %	None
Metoclopramide	50 - 80 %	Possibly reduce by 50-100 %
Methotrimeprazine	20 - 40%	Reduce by 50%
Ondansetron	56 - 71 %	None
Olanzapine	60 %	Possibly reduce by 50-100 %

*Dimenhydrinate is a 53 to 56% component of diphenhydramine[30] and the latter has a 42% oral bioavailability.[14]

‡The need to adjust dosing is poorly studied for these antiemetics, while use of small doses may partially preclude dosing adjustments for oral to parenteral dosing.[31] Studies to guide rationale dosage reduction when changing between oral and parenteral routes with antiemetics are lacking, however known oral bioavailability data and some expert opinion suggest that dose adjustments may need to be considered and therapy individualized.

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