fraserhealth
Better health.
Best in health care.

Hospice Palliative Care Program
Symptom Guidelines

Nausea and Vomiting

Nausea and Vomiting

☐ Rationale

This guideline is adapted for inter-professional primary care providers working in various settings in Fraser Health, British Columbia and the Fraser Valley Cancer Center and any other clinical practice setting in which a user may see the guidelines as applicable.

Depending on the review or study these symptoms occur in up to 90% of palliative care patients. In the majority of patients this can be successfully managed.[1-11]

☐ Scope

The guideline provides strategies for the assessment and management of adults (age 19 years and older) living with advanced life threatening illness and experiencing the symptoms of nausea and vomiting. This guideline does not address disease specific approaches in the management of nausea and vomiting.

☐ Definition of Terms

Nausea is expressed as an unpleasant subjective sensation as a result from stimulation of the gastrointestinal lining, the chemoreceptor trigger zone in the base of the fourth ventricle, the vestibular apparatus, or the cerebral cortex. **Vomiting** is an observable neuromuscular reflex that constitutes a final common pathway after stimulation of one or more of these regions. Vomiting can occur without nausea, and nausea does not always lead to vomiting. Both these symptoms, together or alone, can be very disruptive and distressing for patients and families.[12]

☐ Standard of Care

1. Assessment
2. Diagnosis
3. Education
4. Treatment: Nonpharmacological
5. Treatment: Pharmacological

Recommendation 1 Assessment of Nausea and Vomiting

Ongoing comprehensive assessment is the foundation of effective nausea and vomiting management, including interview, physical assessment, medication review, medical and surgical review, psychosocial and physical environment review and appropriate diagnostics[3, 5, 6, 10, 13-20] (*see Table 1*).

Table 1: Nausea and Vomiting Assessment using Acronym O, P, Q, R, S, T, U and V

Onset	When did it begin? How long does it last? How often does it occur? Is it there all the time?
Provoking / **P**alliating	What brings it on? What makes it better? What makes it worse?
Quality	What does it feel like? Can you describe it?
Region / **R**adiation	Do you have nausea with or without vomiting?
Severity	What is the intensity of this symptom (On a scale of 0 to 10, with 0 being none and 10 being worst possible)? Right Now? At Best? 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? How effective are these? Do you have any side effects from the medications and treatments? What medications and treatments have you used in the past?
Understanding / **I**mpact on You	What do you believe is causing this symptom? How is this symptom affecting you and / or your family?
Values	What is your goal for this symptom? What is your comfort goal or acceptable level for this symptom (On a scale of 0 to 10 with 0 being none and 10 being worst possible)? Are there any other views or feelings about this symptom that are important to you or your family?

* Physical Assessment (as appropriate for symptom)

Recommendation 2 Diagnosis

Management should include treating reversible causes where possible and desirable according to the goals of care. Intervention aimed at reducing nausea and vomiting must take into account the cause (often multi-factorial) of the symptoms and the central emetogenic pathways and their corresponding neurotransmitter receptors.[2, 5, 8-10, 12, 13, 16-19, 21-26]

The Integrative Vomiting Center (IVC) or Emesis Center is stimulated by all of the pathways *(see Appendix A)* which in turn initiates nausea and vomiting.

Table 2: Diagnosis: Determining the cause of nausea and / or vomiting

Common Causes	Clinical Picture	Principle Site of Action
Chemical • **Drugs** *(opioids, digoxin, steroids, antibiotics, anticonvulsants, cytotoxics)* • **Biochemical** (hypercalcaemia, uremia, organ failure) • **Toxins** (tumour factors, infection, drug metabolites, radiation, ischemic bowel, food poisoning)	Symptoms of drug toxicity or underlying disease plus nausea as the prominent symptom. Nausea usually not relieved by vomiting.	Chemotrigger Zone (CTZ), Dopamine (D_2), Serotonin receptor antagonist ($5\text{-}HT_3$)
Gastrointestinal Tract–Vagal • **Gastric irritation** (ASA, NSAIDs, steroids, antibiotics, blood, ETOH, stress, radiotherapy) • **Obstruction** (partial or complete) • **Constipation** • **Gastric stasis** • **Mass effect** (GI, GU, hepatic distention, carcinomatosis) • **Anatomic / Structural**	Epigastric pain, fullness, acid reflux, early satiety, flatulence, hiccup, intermittent nausea relieved with vomiting. Altered bowel habit, pain may occur with oral intake. Vomitus may be large volume and fecal smelling.	Vagal & sympathetic afferent nerve pathways. Dopamine (D_2), Serotonin receptor antagonist ($5\text{-}HT_3$) and $5HT_4$ receptors H_2 receptors Acetylcholine
CNS • **Increased Intracranial Pressure** (brain metastases, infectious meningitis, cerebral edema, bleeding) • **Psychological** (fear, anxiety, pain)	Headache +/- cranial nerve signs, (diurnal). Vomiting often without nausea. Anticipatory nausea / vomiting to sights, smells, etc.	Histamine (H_1) receptors
Vestibular • **Motion sickness** • **Cerebellar tumour**	Nausea +/- vomiting with movement.	Histamine (H_1) receptors Acetylcholine

Recommendation 3 Education

Nausea and/or vomiting can be distressing to experience and witness. Providing information and education is foundational to enhance the patient and family's ability to cope.[8, 13, 16, 20, 27]

- Explain to the patient / family what is understood about the multiple triggers of nausea and / or vomiting and that it may take many strategies together to make a difference.[1]
- Consult with a Clinical Dietician and provide dietary advice.
  - Cut out intolerant foods.[1, 4, 6, 12]
  - Restrict intake when gastric distension is a factor. Start with sips, ice chips or popsicles, after nausea settled; gradually increase from fluids to semi-solid to full food. If nausea recurs, step back until nausea resolves.[1, 15]
  - Avoid spicy, fatty and salty foods, or ones with strong odours.[6, 13, 14]
  - Avoid mixing liquids and solids.[12, 14, 15]
  - Use small frequent, bland meals when hungry.[6, 12-15, 20, 24, 25]
  - Drinking cool, fizzy drinks.[4]
  - Avoid lying flat after eating.[12, 20]

Recommendation 4 Treatment: Nonpharmacological

- Environmental modification – eliminate strong smells and sights and use air deodorizers or fresheners.[4, 6, 8, 12-15, 18, 20, 24]
- Maintain good oral hygiene, especially after episodes of vomiting.[3, 6, 13, 14, 18, 20]
- Acupuncture or acupressure point have been found to have limited benefit.[5, 15, 20, 27]
- Visualization or hypnosis.[8, 15, 25, 27]
- Distraction.[4, 8, 14, 18, 20]
- Consult with Social Worker, Spiritual Practitioner, Physiotherapist, Occupational Therapist, Counsellors for psychosocial care, anxiety reduction.[12, 18, 27]

Recommendation 5 Treatment: Pharmacological

- Nausea is mediated by several neurotransmitters: the four main being; serotonin ($5HT_3$), dopamine (D_2), acetylcholine (Ach_m) and histamine (H_1).[1, 4, 8, 10, 11, 15, 19, 23, 26-28] *(see Appendix A)*
- Select antiemetics according to the etiology of nausea, vomiting and site of action of mediation.[1, 4, 6, 8, 10-12, 14, 16, 19, 20, 23, 26-28]
- Treatment recommendations - Select antiemetic according to etiology, if the nausea is not controlled:
  - Metoclopramide is the usual first choice as it targets common causes of nausea in advanced diseases.
  - Titrate up antiemetics to their full dose before adding another drug.[25]
  - If nausea is not controlled with a specific antiemetic, add another antiemetic from another group if nausea continues for 48 hours, but do not stop the initial agent.[6, 10, 14, 27]
  - Consider combinations but monitor overlapping toxicities.[1, 14]
  - Use regular dosing of antiemetics if experiencing constant nausea and / or vomiting.[4, 27]
  - Antiemetics should be prescribed as a regularly scheduled dose with a breakthrough dose.[4, 27]
  - All medications need to be individually titrated and a variety of routes and combinations of medications may be used to alleviate nausea.[6, 18, 25]
  - Give antiemetics prophylactically to prevent nausea with high dose opioids and chemotherapeutic agents.[1, 14, 27]
  - Ondansetron, although useful in chemotherapy induced nausea is considered as a fourth line therapy in chronic nausea and is therefore not covered by the BC Palliative Benefits Program.[29]

Recommendation 5 Treatment: Pharmacological continued...

Drug	Route	Dose Range	Frequency
Metoclopramide	S.C. or PO or I.V.	10 to 20 mg	q6h
Domperidone	PO	10 to 20 mg	t.i.d or q.i.d.
Haloperidol	S.C. or PO or I.V.	0.5 to 2.5 mg	q6h to q24h
Methotrimeprazine	PO S.C.	6.25 to 12.5 mg 6.25 to 25 mg	q4h to q24h q4h to q24h
Prochlorperazine	PO Rectal I.M. or I.V.	5 to 10 mg 10 mg 10 to 20 mg	q4h to q6h q4h to q6h q3h to q6h
ChlorproMAZINE	PO or S.C. or I.M.	6.25 mg	q8h
Olanzapine	PO or I.M.	2.5 to 5 mg	Daily
DimenhyDRINATE	PO or S.C. or I.M. or I.V.	25 to 50 mg	q4h to q6h
Promethazine	PO or S.C. or I.M.	6.25 mg	q8h
Dexamethasone	PO or S.C. or I.V.	4 to 24 mg	daily or b.i.d. or t.i.d.
Scopolamine Transdermal Patch	Transdermal	1.5 mg patch	Every third day
Atropine	S.C.	0.4 to 0.8 mg	q4h to q6h
Ondansetron	PO or I.V.	8 mg	q8h to q24h
Granisetron	PO	1 mg	q12h
Dronabinol	PO	2.5 to 15 mg	q4h to q8h
Nabilone	PO	1 to 2 mg	1 to 3 hrs pre then q8h to q12h post chemotherapy
Octreotide	S.C.	50 to 250 ug	t.i.d.
Lorazepam	PO or S.C. or I.V.	0.5 to 2 mg	q4h to q24h

References

Information was compiled using the CINAHL, Medline (1996 to March 2006) and Cochrane DSR, ACP Journal Club, DARE and CCTR databases, limiting to reviews / systematic reviews, clinical trials, case studies and guidelines / protocols using terms associated with nausea and vomiting in conjunction with palliative / hospice / end of life / dying.

1. Downing M. Nausea and Vomiting. In: Downing GM, Wainwright W, editors. Medical Care of the Dying. 4th ed. Victoria, British Columbia, Canada: Victoria Hospice Society Learning Centre for Palliative Care; 2006. p. 317 - 33.

2. Herndon CM, Jackson II KC, Hallin P, A. Management of Opioid Induced Gastrointestinal Effects in Patients Receiving Palliative Care. Pharmacotherapy. 2002 February 2002;22(2):240 - 50.

3. Yates R, Lyons M, Horstman A. Symptom control in advanced cancer. Journal of the American Academy of Physician Assistants. 2003 October 2003;16(10):40 -52.

4. Rousseau P. Nonpain Symptom Management in the Dying Patient. Hospital Physician. 2002 Hospital Physician;38(2):51 - 6.

5. Pan CX, Morrison SR, Ness J, Fugh-Berman A, Leipzig RM. Complementary and Alternative Medicine in the Management of Pain, Dyspnea, and Nausea and Vomiting Near the End of Life: A Systematic review. Journal of Pain and Symptom Management. 1999 December 13, 1999;20(5):374 - 87.

6. Tyler LS, Lipman AG. Nausea and Vomiting in Palliative Care. Evidenced Based symptom Control in Palliative Care: Systematic Reviews and Validated Clinical Practice Guidelines for 15 Common Problems in Patients with Life Limiting Disease. 2000;8(1):163 - 81.

7. Solano JP, Gomes B, Higginson IJ. A Comparison of Symptom Prevalence in Far Advanced Cancer, AIDS, Heart Disease, Chronic Obstructive Pulmonary Disease and Renal Disease. Journal of Pain and Symptom Management. 2005 June 13, 2005;31(1):58 - 69.

8. Doorley J, Hobbs M. The use of Selective Serotonin Antagonists in the Palliation of Intractable Nausea. Clinical Nurse Specialist: The Journal for Advanced Nursing Practice. 2004 November/December 2004;18(6):282 - 4.

9. Owens DA. Haloperidol as an Antiemetic. Journal of Hospice and Palliative Nursing. 2005 January/February 2005;7(1):7 - 8.

10. Currow DC, Coughlan M, Fardell B, Cooney NJ. Use of Ondansetron in Palliative Medicine. Journal of Pain and Symptom Management. 1997 May 5, 1997;13(5):302 - 7.

11. Critchley P, Plach N, Grantham M, Marshall D, Taniguchi A, Latimer E. Efficacy of Haloperidol in the Treatment of Nausea and Vomiting in the Palliative Patient: A Systematic Review. Journal of Pain and Symptom Management. 2001 August 2001;22(2):631 - 4.

12. Paolini CA. Symptoms Management at the End of Life. The Journal of the American Osteopathic Association. 2001 October 2001;101(10):609 - 15.

13. Wheeler MS. Palliative Care is more than Pain Management. Home Healthcare Nurse. 2004 April 2004;22(4):250 - 5.

14. Ladd LA. Nausea in Palliative Care. Journal of Hospice and Palliative Nursing. 1999 April - June 1999;1(2):67 - 70.

15. Haughney A. Nausea & Vomiting in End-Stage Cancer. American Journal of Nursing. 2004 November 2004;104(11):40 - 8.

16. Thompson I. The management of nausea and vomiting in palliative care. Nursing Standard. 2004 September 24, 2004;19(8):46 - 53.

17. Bentley A, Boyd K. Use of clinical pictures in the management of nausea and vomiting: a prospective audit. Palliative Medicine. 2001 May 2001;15(3):247 - 53.

18. Close H. Nausea and vomiting in terminally ill patients: towards a holistic approach. Nurse Prescribing. 2003 February 1, 2003;1 (1):22 - 6.

19. Mannix KA. Palliation of nausea and vomiting. In: Doyle D, Hanks G, Cherny NI, Calman K, editors. Oxford Textbook of Palliative Medicine. 3rd ed. New York, New York: Oxford University Press Inc., New York; 2005. p. 459 - 68.

20. de Kock I. Nausea and vomiting. In: MacDonald N, Oneschuk D, Hagen N, Doyle D, editors. Palliative Medicine - A case based manual 2nd ed. New York: Oxford University Press Inc.; 2005.

21. Pinkowish MD, Bruera E-c, Byock I-c. Management of pain and other discomfort. Patient Care. 2000 November 15, 2000:38 - 71.

22. Wrede-Seaman LD. Management of Emergent Conditions in Palliative Care. Primary Care: Clinics in Office Practice. 2001 June 2001;28(2):317 - 28.

23. Ross DD, Alexander CS. Management of Common Symptoms in Terminally Ill Patients: Part I. Fatigue, Anorexia, Cachexia, Nausea and Vomiting. American Family Physician. 2001 September 1, 2001;64(5):807 - 14.

24. Esper P, Heidrich D. Symptom Clusters in Advanced Illness. Seminars in Oncology Nursing. 2005 February 2005;21(1):20 - 8.

25. Han P, Arnold B, von Gunten CF. The Challenge of Chronic AIDS-Related Nausea and Vomiting. Journal of Palliative Medicine. 2001 March 2001;4(1):65 - 8.

26. Bruera E, Neumann CM. Management of specific symptom complexes in patients receiving palliative care. CMAJ: Canadian Medical Association Journal 1998 Jun 30; 158(13): 1717-26 (44 ref).

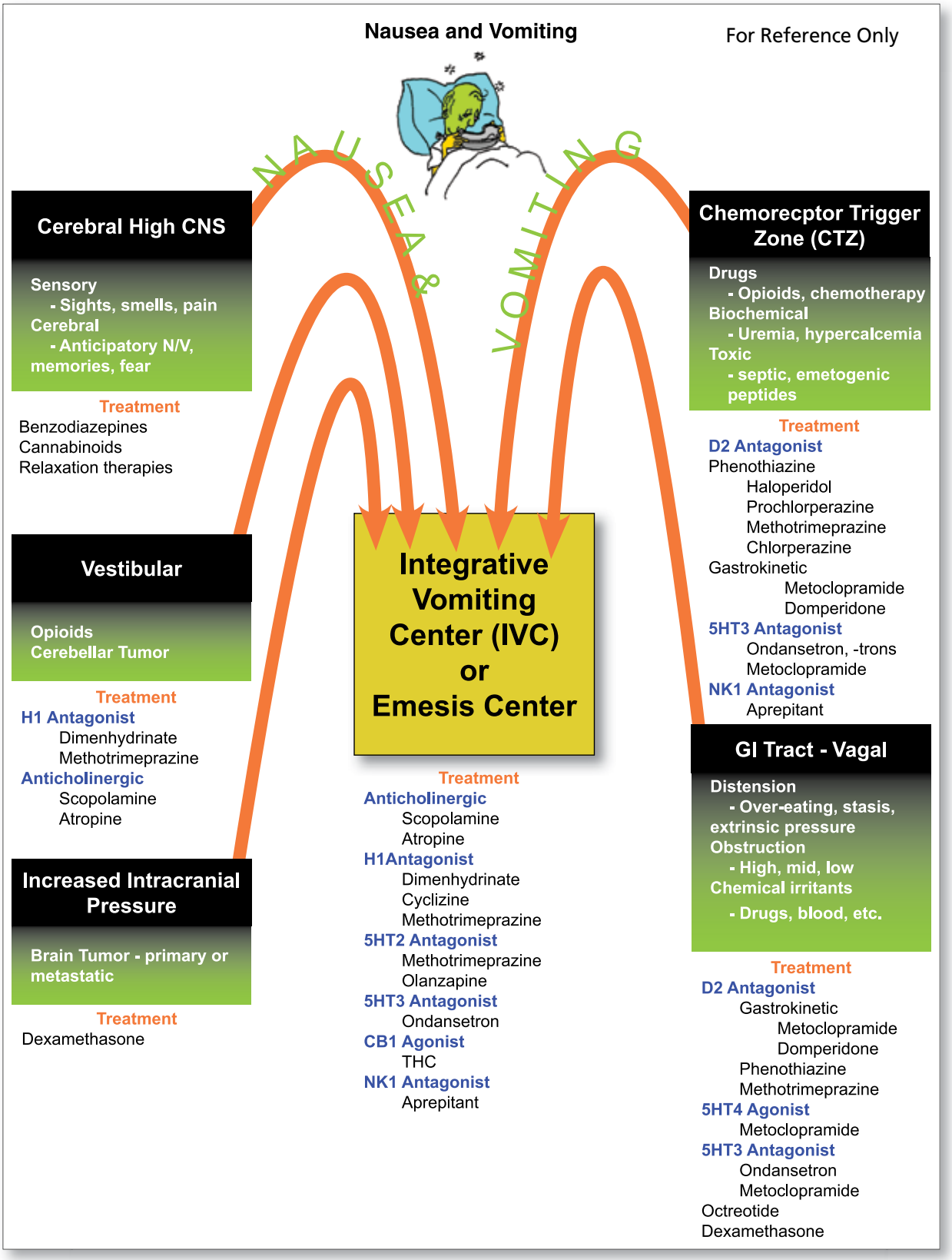
27. ONS. Nausea and vomiting Detailed PEP (Putting Evidence into Practice) Card. [Evidence based guidelines] 2006 May 2006 [cited; Available from: http://www.ons.org/outcomes/resources/nausea.shtml

28. Spiller JA, Fallon M. The use of Scopoderm in palliative care. Hospital Medicine (London) 2000 Nov; 61(11): 782-4 (13 ref).

29. British Columbia Ministry of Health Services. BC Palliative Care Benefits Program - Physician Guide. 2005 [cited 2006 July 24th, 2006]; Available from: http://www.health.gov.bc.ca/pharme/outgoing/palliative_physguide.pdf

Approved by: Hospice Palliative Care, Clinical Practice Committee, November 24, 2006

Nausea and Vomiting



Medical Care of the Dying 4th Edition – p. 319 Used with permission from Dr. Michael Downing