# Symptom Management Guidelines:
## CANCER RELATED NAUSEA AND VOMITING

### Definition

**Nausea:** A subjective phenomenon of an unpleasant, wavelike sensation experienced in the back of the throat and/or the epigastrium. Nausea may or may not result in vomiting- it is the patient's perception that vomiting may occur.

**Vomiting:** The forceful expulsion of the contents of the stomach, duodenum, or jejunum through the oral cavity.

### Contributing Factors

<table>
<thead>
<tr>
<th>Cancer Treatments</th>
<th>Medication</th>
<th>Cancer Related</th>
<th>Other</th>
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<tbody>
<tr>
<td><strong>Chemotherapy:</strong></td>
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<tr>
<td>For emetogenicity of chemotherapeutic agent, See Appendix A and Cancer Drug Manual in Resources Section</td>
<td>Antibiotics</td>
<td>Gastric cancer</td>
<td>Constipation</td>
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<tr>
<td>NOTE: Protocols with highly emetogenic chemotherapy (HEC) and Moderately Emetogenic Chemotherapy with cyclophosphamide and an anthracycline combined (MEC-A) increase risk for nausea and vomiting</td>
<td>Opioids &amp;/or Opioid withdrawal</td>
<td>Tumour growth in the GI tract or CNS</td>
<td>Vestibular dysfunction</td>
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<td>Biotherapy:</td>
<td>NSAIDs</td>
<td>Brain metastases</td>
<td>Anxiety, anticipatory nausea</td>
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<td>High dose Interferon or Interleukin-2</td>
<td>SSRI antidepressants</td>
<td>Reduced GI motility or Bowel Obstruction</td>
<td>Hypercalcemia, hyperglycemia, hyponatremia</td>
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<td>Radiation Therapy:</td>
<td>Iron supplements</td>
<td>Gastroparesis, tumour or chemotherapy induced (e.g. vincristine)</td>
<td>Peptic ulcer disease</td>
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<td>GI tract, liver, brain</td>
<td>Anticonvulsants</td>
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<td>Infections of the mouth, pharynx or esophagus</td>
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<td>NOTE: The greater the amount of daily fractional doses, the increased likelihood of radiation induced nausea and vomiting</td>
<td>Antiarrhythmics</td>
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<td>Uremia</td>
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<td>More common in women than men</td>
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<td>Surgery</td>
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<td>Motion sickness</td>
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<td>More common in younger patients (less than 50)</td>
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<td>Decreased risk for patients with a high chronic alcohol intake</td>
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<td>Conditions that may require the use of warfarin (e.g. venous thrombosis, cardiac surgeries)</td>
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### Consequences
- Dehydration
- Aspiration pneumonia
- Malnutrition
- Anorexia
- Wound dehiscence
- Esophageal tears
- Chemotherapy dose delays, reductions, discontinuations of treatment
- Quality of life – distress, compromised role function, decreased functional status, exacerbation of other symptoms (e.g. pain, fatigue, sleep-wake disturbance)
- Decreased nutritional intake from nausea and vomiting may lead to increased INR or increased risk of bleeding for patients on warfarin

### Focused Health Assessment

<table>
<thead>
<tr>
<th>GENERAL ASSESSMENT</th>
<th>SYMPTOM ASSESSMENT</th>
<th>PHYSICAL ASSESSMENT</th>
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</thead>
<tbody>
<tr>
<td><strong>Contact and General Information</strong></td>
<td><strong>Normal</strong>&lt;br&gt;- Did you have nausea/vomiting prior to your treatment starting?&lt;br&gt;- Are you aware of any medications that are taking that could cause nausea and vomiting (e.g. warfarin, antibiotics)&lt;br&gt;&lt;br&gt;<strong>Onset</strong>&lt;br&gt;- When did the nausea and/or vomiting begin?&lt;br&gt;- How many episodes of vomiting in the last 24 hours?&lt;br&gt;&lt;br&gt;<strong>Provoking / Palliating</strong>&lt;br&gt;- What brings on the nausea and/or vomiting?&lt;br&gt;- Is there anything that makes the nausea/vomiting better? Worse?&lt;br&gt;&lt;br&gt;<strong>Quality</strong>&lt;br&gt;- Describe the emesis? – Colour (visible blood, coffee ground emesis, bile)? Volume (large or small amounts)? Odour?&lt;br&gt;- Can you estimate the amount, large or small volume?&lt;br&gt;&lt;br&gt;<strong>Region / Radiation - NA</strong>&lt;br&gt;&lt;br&gt;<strong>Severity / other Symptoms</strong>&lt;br&gt;- How bothered are you by this symptom? (On a scale of 0 – 10, with 0 being not at all and 10 being the worse imaginable)&lt;br&gt;- What is the daily intake and output?&lt;br&gt;- Do you have nausea with or without vomiting?&lt;br&gt;- Have you had any other symptoms such as:&lt;br&gt;  - Abdominal cramping? Stomach pain? Gas pain?&lt;br&gt;  - Constipation? - When was your last bowel movement?&lt;br&gt;  - Fever? - possible infection&lt;br&gt;  - Dry mouth, thirst, dizziness, weakness, dark urine? – possible dehydration&lt;br&gt;  - Blood, mucous in stool</td>
<td><strong>Vital Signs</strong>&lt;br&gt;- Frequency – as clinically indicated&lt;br&gt;&lt;br&gt;<strong>Weight</strong>&lt;br&gt;- Take current weight and compare to pre – treatment or last recorded weight&lt;br&gt;&lt;br&gt;<strong>Hydration Status</strong>&lt;br&gt;- Assess skin turgor, capillary refill, mucous membranes&lt;br&gt;- Amount and character of urine&lt;br&gt;&lt;br&gt;<strong>Abdominal Assessment</strong>&lt;br&gt;- Auscultate abdomen - assess presence and quality of bowel sounds&lt;br&gt;- Assess for abdominal pain, tenderness, distention&lt;br&gt;&lt;br&gt;<strong>Emesis Examination</strong>&lt;br&gt;- Inspect emesis for colour, consistency, quantity, odour and blood</td>
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</table>
Treatment
- What medications or treatments have you tried? Has this been effective?

Understanding / Impact on You
- Are you able to keep fluids down? What are you drinking? How much?
- What do you believe is causing your nausea?

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<tr>
<th>NAUSEA AND VOMITING GRADING SCALE</th>
<th>Normal</th>
<th>GRADE 1 (Mild)</th>
<th>GRADE 2 (Moderate)</th>
<th>GRADE 3 (Severe)</th>
<th>GRADE 4 (Life Threatening)</th>
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<tr>
<td>Nausea</td>
<td>Non-symptomatic</td>
<td>Loss of appetite without alteration in eating habits</td>
<td>Oral intake decreased without significant weight loss, dehydration or malnutrition</td>
<td>Inadequate oral caloric or fluid intake; tube feedings, TPN or hospitalization may be indicated</td>
<td>Life-threatening consequences; urgent intervention indicated</td>
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<tr>
<td>Vomiting</td>
<td>No emesis</td>
<td>1-2 episodes (separated by 5 minutes) in 24 hours</td>
<td>3-5 episodes (separated by 5 minutes) in 24 hrs</td>
<td>≥ 6 episodes (separated by 5 minutes) in 24 hrs; tube feeding, TPN or hospitalization indicated</td>
<td>Life-threatening consequences; urgent intervention indicated</td>
</tr>
</tbody>
</table>

*Step-Up Approach to Symptom Management:
Interventions Should Be Based On Current Grade Level and Include Lower Level Grade Interventions As Appropriate

NORMAL – GRADE 1
Nausea and Vomiting NOT resolving after 24 hours

NON – URGENT
Prevention, support, teaching, & follow-up as clinically indicated

URGENT:
Requires medical attention within 24 hours

Patient Care and Assessment
- Rule out other causes of nausea and vomiting
- Collaborate with physician if further investigation warranted
- Assess need for hospital admission
- Assess for nausea and vomiting prior to each chemotherapy, radiation treatment or clinic visit. If an inpatient, assess daily
- Lab tests that may be ordered: CBC and electrolyte profile
- If anticipatory nausea, consider distraction strategies such as relaxation, music, imagery or hypnosis (referral to patient and family counseling may be helpful for these interventions)
- Consider acupressure-patient administered
### Dietary Management
- **Encourage:**
  - Frequent small meals in a relaxing environment
  - Eating foods cold or at room temperature
  - Appealing foods, even if not usual diet
  - Increased fluids—aim for 8-10 cups per day: 2 to 2.5 litres a day (e.g., sports drinks, broth, popsicles, water)
  - Assistance with food preparation
  - Restricting fluids with meals
  - Eating at least one hour before treatment
  - Continue dietary recommendations until symptoms resolve

- **Avoid:**
  - Alcohol and tobacco
  - Foods or fluids that are spicy, acidic, salty, hard or crunchy
  - Lying down after eating

**NOTE:** If patient unable to tolerate adequate daily fluid intake, IV hydration to replace lost fluid and electrolytes may be required.

**For further Dietary Management See Oncology Nutrition Services in Resource Section**

### Pharmacological Management
- Avoid or discontinue any medications that may cause or exacerbate nausea and vomiting (in consultation with physician and pharmacist).
- If patient is taking Warfarin, in collaboration with physician:
  - Consider alternate anticoagulants such as dalteparin
  - Consider increasing frequency of INR monitoring
- Instruct patient to initiate or continue medications according to instructions given
- Allow 30-60 minutes post antiemetic before eating
- Antiemetic medications that may be prescribed:
  - Ondansetron, dexamethasone, metoclopramide, prochlorperazine
  - Aprepitant for highly emetogenic chemotherapy
  - Haloperidol
  - Nozinan
  - Dimenhydrinate suppository if unable to take orally
  - Lorazepam may be prescribed for anticipatory nausea

**For further Pharmacological Management See Cancer Management Guidelines (Health Professional) and Cancer Drug Manual in Resource Section**

### Patient Education
- Reinforce importance of accurately recording and reporting the following information:
  - Onset and number of emesis occurrences per 24 hours
  - Fluid intake per 24 hours
- Reinforce with patients when to seek immediate medical attention:
  - Temperature greater than or equal to 38°C
  - Blood (bright red or black) in emesis, coffee ground emesis
  - Severe cramping, acute abdominal pain (+/- nausea & vomiting)
  - Dizziness, weakness, confusion, excessive thirst, dark urine
  - Projectile vomiting
  - Nausea and vomiting not improving with recommended strategies
- Inform patient that isolation precautions may be required if symptoms worsen or infection suspected, patient may need to be isolated as per Infection Control Manual

### Follow-Up
- Reassess in 24 hours, if symptoms not resolved provide further recommended strategies and repeat follow-up assessment within 24 hours.
- Follow up options:
  - Instruct patient/family to call back
  - Arrange for nurse initiated telephone follow-up or physician follow-up
### EMERGENT:
**Requires IMMEDIATE medical attention**

#### Patient Assessment
- Patients with Grade 3 or 4 nausea and vomiting generally require admission to hospital – notify physician of assessment, facilitate arrangements as necessary
- Consult with physician
  - To rule out other causes or concomitant causes of nausea and vomiting
  - To hold chemotherapy until symptoms resolved.
- Lab tests that may be ordered:
  - Complete blood count (CBC), electrolyte profile
- Nursing Support
  - Monitor vital signs (as clinically indicated)
  - Physical assessment
  - Accurate intake and output record, include daily weight
  - Pain and symptom assessment and management as appropriate

#### Dietary Management
- IV hydration to replace lost fluids and electrolytes
- Enteral or parenteral nutrition (TPN) may be indicated for some patients
- **For further Dietary Nutrition Services in Resource Section**

#### Pharmacological Management
- Avoid/discontinue any medications that may cause or exacerbate nausea and vomiting (in consultation with physician and pharmacist).
- Medications that may be prescribed intravenously:
  - Ondansetron (Zofran)
  - Metoclopramide
  - Prochlorperazine (Stemetil)
  - Haloperidol
  - Nozinan
  - Dexamethasone
- **For further Pharmacological Management See Cancer Management Guidelines (Health Professional) and Cancer Drug Manual in Resource Section**

#### Patient Education
- Provide support, reinforce to patients/family that nausea and vomiting can be effectively managed with prompt intervention.
- Continue to reinforce self care, review medications, lab /diagnostic testing with patients/family as appropriate
- Discharge teaching as early as possible with patient/family

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### RESOURCES & REFERALS

#### Referrals
- Oncology Nutrition Services
- BCCA Pharmacist
- Home Health Nursing
- Patient Support Centre
- Telephone Care for follow-up
- Pain and Symptom Management/Palliative Care (PSMPC)

#### Health Professional Resources
- Chemotherapy Induced Nausea and Vomiting in Adults- Scroll down to SC NAUSEA: [http://www.bccancer.bc.ca/health-professionals/professional-resources/chemotherapy-protocols/supportive-care](http://www.bccancer.bc.ca/health-professionals/professional-resources/chemotherapy-protocols/supportive-care)

#### Patient Education Resources

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Nausea management:
http://www.bccancer.bc.ca/health-info/coping-with-cancer/managing-symptoms/nausea

Food choice to help control nausea:
http://www.bccancer.bc.ca/health-professionals/professional-resources/nutrition/nutrition-handouts

Increasing Fluid Intake:
http://www.bccancer.bc.ca/health-professionals/professional-resources/nutrition/nutrition-handouts

Resources about managing anxiety, progressive muscle relaxation, positive thinking, etc
http://www.bccancer.bc.ca/health-info/coping-with-cancer/emotional-support/resources

Related Online Resources
E.g. Fair Pharmacare; BC Palliative Benefits. Can be found in “Other Sources of Drug Funding Section”
http://www.bccancer.bc.ca/health-professionals/professional-resources/pharmacy/financial-support-benefit-lists

Bibliography List
http://www.bccancer.bc.ca/health-professionals/professional-resources/nursing/symptom-management

Appendix A: Emetic Risk of Intravenous Antineoplastic Agents
Adapted from ASCO Guidelines (2011)

<table>
<thead>
<tr>
<th>Emetic Risk of Antineoplastic Agents Administered Intravenously</th>
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<tr>
<td>High</td>
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<tr>
<td>Carmustine</td>
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<td>Cisplatin</td>
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<td>Cyclophosphamide—greater than or equal to 1500mg/m2</td>
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<tr>
<td>Dacarbazine</td>
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<tr>
<td>Dactinomycin</td>
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<td>Mechlorethamine</td>
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<td>Streptozotocin</td>
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* These anthracyclines when combined with cyclophosphamide, are now designated as high emetic risk.
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