

COSTaRS 2020 update

Summary of the changes to COSTaRS Practice Guides for the 2020 Update

Changes in	Changes Overall	Status
COSTaRS Steering Committee	ADDED: Names and affiliations of Current Committee members and Immune Checkpoint Inhibitor Therapy Working Group members were added.	Update
Overview and Practice Guide Development	ADDED: "In January 2020, the 15 symptom practice guides were updated with evidence using systematic review methods described previously and new practice guides for Mouth Dryness/Xerostomia and Skin Rash were added. At the COSTaRS priority setting meeting in 2017, adding evidence for patients receiving Immune Checkpoint Inhibitor therapy into the practice guides was identified as high priority given the increased use of immunotherapy and the special considerations required for managing treatment related symptoms. Key assessment and self-care items for patients receiving immunotherapy were added. End-users asked how severity assessment correlated with the NCI-CTCAE grading that they use in their assessments, clinical documentation and communications with physicians therefore NCI-CTCAE grading has been linked to applicable assessment questions in the practice guides."	Update
Formatting and language	REMOVED: Bradma label section (Name, Date of Birth, Sex, Date and Time) for more white space.	Update
	CHANGED: Font changed from Times New Roman to Arial.	Update
	CHANGED: Wording throughout the set of symptom practice guides has been simplified where possible to facilitate communication between nurses using the practice guides and patients/families	Update
Assess Severity	CHANGED: For symptoms that correspond with ESAS, wording was updated for consistency with the revised ESAS (ESAS-r): Anxiety, Appetite Loss, Depression, Fatigue. Watanabe SM, Nekolaichuk C, Beaumont C, Johnson L, Myers J, Strasser F. A multi-centre comparison of two numerical versions of the Edmonton Symptom Assessment System in palliative care patients J Pain Symptom Manage 2011; 41:456-468.	Update
	CHANGED: The ESAS scale was removed and incorporated into the Assessment table as a single question for all relevant symptoms.	Update
	CHANGED: The Worry scale (0-10) was removed and incorporated into Assessment table for all relevant symptoms: "Are you worried about your [symptom]?" with response choices No/Some and Yes, very.	Update
	ADDED: NCI-CTCAE grading linked to applicable assessment questions in the COSTaRS practice guides given end-users asked how severity assessment correlated with the NCI-CTCAE grading that they use in their assessments, clinical documentation and communications with physicians. The COSTaRS symptom practice guide assessment and triage section provides a more comprehensive assessment than the single NCI-CTCAE assessment. Questions in line with NCI-CTCAE grading are identified where applicable and severity is denoted with superscript symbols: G1, G2, ≥G3 where G1=Grade 1, G2=Grade 2, ≥G3=Grade 3 or higher.	NEW

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	National Institutes of Health: National Cancer Institute. Common terminology criteria for adverse events (CTCAE) v5.0. 2017.	
	ADDED: Questions specific to patients receiving Immune Checkpoint Inhibitors have been added. These items are denoted with the following symbol (➔) and shaded in grey.	NEW
	CHANGED: For symptoms with the risk of dehydration (Loss of appetite, Diarrhea, Mouth sores, Nausea) the question regarding fluid intake was reworded to ensure a more comprehensive assessment.	Update
Triage	CHANGED: “Advise to call back” to “Advise to notify” given the COSTaRS practice guides may also be used by health care providers during face to face encounters.	Update
	ADDED: for Severe “Alert clinician if on immunotherapy.”	NEW
Medications	ADDED: Commonly prescribed medications for patients receiving Immune Checkpoint Inhibitor therapy were added where appropriate	NEW
	CHANGED: Medications were re-ordered to list them in order by level of evidence (effective to expert opinion) except in cases where there is a stepped approach to management.	Update
Self-care strategies	CHANGED: The heading for “4. Review self-care strategies” was changed to “4. Review 3 or more self-care strategies”.	NEW
	CHANGED: Bold was applied to key words in the Self-care Strategies (section 4 of the practice guides) to address the concern that the document was “wordy” raised by end-users	Update
Summarize plan	CHANGED: “caller” to “patient” given the COSTaRS practice guides may also be used by health care providers during face to face encounters.	Update
Legend:	ADDED: legend to denote assessment items related to Immune Checkpoint Inhibitor therapy and NCI-CTCAE grading	NEW
Mouth Dryness/ Xerostomia	NEW practice guide added for Mouth Dryness/Xerostomia due to systemic therapies in response to requests for this guideline.	NEW
Skin Rash	NEW practice guide added for Skin Rash due to systemic therapies in response to requests for this guideline.	NEW
Section of guide	Changes for ANXIETY	Status
Definition	ADDED: “feeling of” worry to the definition.	Update
	CHANGED: Wording for ESAS was updated for consistency with the revised ESAS-r. “Not anxious” updated to “No Anxiety”.	Update
	CHANGED: In the list of risk factors for Anxiety, “Living alone” was changed to “Lack of social support” to encompass other forms of isolation e.g., separation from extended family/cultural community.	Update
	ADDED: “On steroids” to the list of risk factors for Anxiety	NEW
	MOVED: The question “Do have any concerns that are making you feel more anxious...” was moved to the assessment table.	Update
	ADDED: “spiritual/religious concerns” given multiple new guidelines are recommending spiritual and chaplaincy care be included as part of psychosocial services.	NEW

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	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of hyperthyroidism): <input type="checkbox"/> Weight loss, <input type="checkbox"/> Heart pounding or racing, <input type="checkbox"/> Tremors, <input type="checkbox"/> Feeling overheated, <input type="checkbox"/> Diarrhea” given anxiety is one of several signs/symptoms of thyrotoxicosis.	NEW
Triage	ADDED: “Alert clinician if on immunotherapy” for triage level severe.	NEW
Review medications	CHANGED: Level of evidence for Benzodiazepines upgraded from Expert Opinion to Likely Effective.	Update
	ADDED: Cautionary footnote “Benzodiazepines are intended for short term use. Caution: may cause confusion, ataxia and falls in the elderly.”	Update
Self-Care Strategies	CHANGED: Merged self-care items #3 (more information about cancer or your treatment) and #4 (more information about your symptoms) into one item “Would more information about your symptoms, cancer or your treatment help to ease your worries? If yes, provide relevant information or suggest resources”	Update
	ADDED: “If your concerns are spiritual or religious in nature, have you tried spiritual counseling, meaning-focused meditation, prayer, worship, or other spiritual activities?” given multiple new guidelines are recommending spiritual and chaplaincy care be included as part of psychosocial services.	NEW
References	10 new evidence sources; 0 outdated sources removed	NEW
Section of guide	Changes for APPETITE LOSS	Status
Assess severity	CHANGED: Response options for the question “How much have you had to eat in past 24 hours (e.g. at each meal)? (compared to your normal intake)” were changed from “Some”, “Minimal”, and “None” to “Less than normal”, “Much less than normal” and “Not eating at all”.	Update
	CHANGED: Assessment of food and fluid intake separated into 2 items for a more comprehensive assessment: “How much have you eaten in the past 24 hours (e.g. at each meal)?” “How much fluid are you drinking per day?” with response options “6-8 glasses”, “1-5 glasses”, and “Sips”	Update
	ADDED: Assessment item for symptom-related risk factors for appetite loss: “Do you have any other symptoms? <input type="checkbox"/> Sore mouth, <input type="checkbox"/> Early fullness, <input type="checkbox"/> Taste/smell changes, <input type="checkbox"/> Nausea/vomiting, <input type="checkbox"/> Swallowing problems, <input type="checkbox"/> Pain, <input type="checkbox"/> Constipation, <input type="checkbox"/> Diarrhea, <input type="checkbox"/> Fatigue, <input type="checkbox"/> Depression, <input type="checkbox"/> Breathlessness”	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy: “Do you have (signs of endocrine toxicity): <input type="checkbox"/> fatigue, <input type="checkbox"/> headache, <input type="checkbox"/> eyes sensitive to light, <input type="checkbox"/> confusion, <input type="checkbox"/> dry skin, <input type="checkbox"/> hair loss, <input type="checkbox"/> puffy face, <input type="checkbox"/> constipation, <input type="checkbox"/> nausea, <input type="checkbox"/> fever.”	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy: “Do you have (signs of renal toxicity): <input type="checkbox"/> decreased urine, <input type="checkbox"/> blood in urine, <input type="checkbox"/> swelling of hands or legs”	NEW
Triage	ADDED: “Alert clinician if on immunotherapy” for triage level severe.	NEW
Review medications	ADDED: Omega 3 fatty acids (EPA, Fish Oil). Level of evidence: Expert Opinion.	NEW

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	ADDED: Prokinetics (metoclopramide, domperidone) for early satiety and nausea. Level of evidence: Expert Opinion	NEW
	ADDED: Cautionary footnote “Megestrol has potential for serious side effects such as blood clot”	NEW
Self-Care Strategies	ADDED: “Sitting upright for 30-60 min helps digestion” to existing self-care item “Are you trying to eat 5-6 small meals?”	Update
	ADDED: “If food odours bother you, have you tried eating foods that are cold, with less odour, or avoiding being in the kitchen during meal preparation?”	NEW
	ADDED: “Do you have beliefs about certain foods (e.g. cultural or think some foods cause cancer) or pre-existing diet (e.g. diabetes) that may affect your eating habits?”	NEW
	ADDED: Do you have a diary to track your food, fluid intake and weight?	NEW
	ADDED: If your food intake has been very low for a long time, are you slowly increasing your intake over several days (to prevent refeeding syndrome)?	NEW
	ADDED: To the self-care item “Have you spoken with a dietitian?” added “If you are having taste changes, they can suggest ways to help lessen your symptoms.”	Update
References	7 new evidence sources; 1 outdated source removed	NEW
Section of guide	Changes for BLEEDING	Status
Definition	ADDED: “wound or ulcer” added to the list of factors that cause bleeding	Update
Assess severity	REMOVED: The question “How much blood loss” was merged with existing item in the assessment table below “How much are you bleeding”.	Update
	ADDED: Examples for amounts of blood loss have been provided for “Minor” (e.g. 1 tsp), “Some” (e.g. 1 tbsp), and “Gross” (e.g. ¼ cup)	Update
	ADDED: For the question “Do you have any bruises?” the word “new” was added - “Do you have any new bruises?”	Update
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Bruising or bleeding more easily than normal?” which may indicate immune-mediated hepatitis. Small, unexplained bruises may indicate hemolytic uremic syndrome.	NEW
	ADDED: An example of time frame for blood clotting was added to the question “Have you had problems with blood clotting (e.g. >10-15min)”?	Update
	ADDED: The descriptor “tarry” was added to the assessment item “Do you have any blood in your: stool or is it black/tarry?”	Update
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have any blood: In your nose and mouth?” which may indicate hemolytic uremic syndrome.	NEW
	CHANGED: The item regarding menstrual periods was re-worded from “Women only: Has there been an increase bleeding with your menstrual periods?” to “If you are having menstrual periods has there been an increase bleeding?”	Update

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	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of hematological adverse effects): <input type="checkbox"/> Weak, <input type="checkbox"/> pale, <input type="checkbox"/> yellow skin/eyes”	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Results of your last liver function blood test?” given bleeding more easily than normal may indicate immune-mediated hepatitis.	NEW
	ADDED: NSAIDs was added to the list of examples of medications that increase the risk of bleeding.	Update
	ADDED: “herbal” was added to the list of examples of medications that increase the risk of bleeding to prompt the nurse to consider natural health products and other complementary therapies.	Update
Triage	ADDED: “Alert clinician if on immunotherapy” for triage level severe.	NEW
Review medications	CHANGED: Level of evidence for Mesna oral or IV downgraded from Effective to Likely effective.	Update
	ADDED: Tranexamic acid with level of evidence Likely effective	NEW
	ADDED: Pantoprazole IV (Panto IV [®]) for GI bleeding with level of evidence Expert opinion	NEW
	ADDED: Octreotide IV (Sandostatin [®]) for GI bleeding with level of evidence Expert opinion	NEW
	ADDED: Corticosteroids/prednisone for Immune-mediated adverse events (hepatitis, hemophilia, and hemolytic uremic syndrome) with level of evidence Expert opinion	NEW
	ADDED: Factor replacement for immunotherapy-related acquired hemophilia with level of evidence Expert opinion	NEW
	ADDED: Eculizumab for immunotherapy-related hemolytic uremic syndrome with level of evidence Expert opinion	NEW
Self-Care Strategies	REMOVED: The item “What is your goal for managing the bleeding” given no evidence from source guidelines to support this recommendation.	Update
References	9 new evidence sources; 1 outdated source removed	NEW
Section of guide	Changes for BREATHLESSNESS/ DYSPNEA	Status
Assess severity	Added: new assessment items relevant for cancer treatment-related cardiotoxicity (♥ symbol). (F Kelly et al. 2017). <ul style="list-style-type: none"> • “Do you have a new cough or wheezing?” • (If you have chest pain) “Does it go away with: Rest or Medication?” • “Do you have any other symptoms?” (e.g. Fatigue) • “Have you gained or lost weight in the last week?” • “Have you raised the head of your bed or increased the number of pillows you need to sleep?” • “Do you have swelling in your hands, ankles, feet, legs or stomach?” • “Do you have a fast heartbeat that does not slow down when you rest?” 	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of pneumonitis): cough, wheezing, chest pain, fever, fatigue”	NEW

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	ADDED: New assessment item to enquire about low red blood cell count “Do you know your last red blood cell count?”	NEW
	ADDED: New assessment item to enquire about the patient’s general appearance (e.g. pallor, cyanosis) “Do you have new pale skin or bluish colour in your nail beds?”	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of cardiovascular toxicity): <input type="checkbox"/> irregular heartbeat (e.g. too hard or too fast, skipping a beat, fluttering), <input type="checkbox"/> fatigue”	NEW
Triage	ADDED: “Alert clinician if on immunotherapy” for triage level severe.	NEW
Review medications	MOVED: “Immediate-release oral or parenteral opioids” moved to top of medication list given level of evidence for effectiveness.	Update
	ADDED: “Non-invasive ventilation (e.g. CPAP mask)” with 2 supporting guidelines and level of evidence Likely Effective.	NEW
	ADDED: Clarification added that supplemental oxygen is intended for hypoxic patients only.	Update
	ADDED: Bronchodilators with 1 supporting guidelines and level of evidence Expert Opinion.	NEW
	ADDED: Medications specific to cardiology <ul style="list-style-type: none"> • Diuretics (6 guidelines, evidence level: Effective) • Nitrates (2 guidelines, evidence level: Benefits Balanced with Harm) 	NEW
	ADDED: Medications for patients with Immune-Checkpoint Inhibitor related pneumonitis “Corticosteroids, infliximab, mycophenolate mofetil, or cyclophosphamide”	NEW
Self-Care Strategies	ADDED: Use of a “humidifier” was added to the item about using a fan or open window to increase air flow directed at the face.	Update
	ADDED: “Are you trying to conserve your energy (e.g. balance activity with rest)” was added to the item about use of assistive devices (e.g. wheelchair) to help with activities that cause breathlessness.	Update
	ADDED: “When breathing is stable, have you tried 15-30 min of physical activity (e.g. walking) at least twice a week?”	NEW
	ADDED: Self-care items specific to cardiology: <ul style="list-style-type: none"> • Do you weigh yourself daily (after waking and voiding, before dressing and eating)? • Have you tried limiting your salt intake to under 1/2 tsp. (< 2000 mg) per day? • Are you trying to drink fluids, 6-8 glasses per day? • If you drink >1-2 alcohol drinks/day, have you tried to reduce to 1 drink/day? 	NEW
	ADDED: If you smoke, have you tried to stop?	NEW
	ADDED: “supportive counselling” was added to the item about psychoeducational interventions “Have you tried a program such as cognitive behavioural therapy (relaxation therapy, guided imagery) or supportive counselling?”	Update
References	15 new evidence sources; 2 outdated sources removed	NEW
Section of guide	Changes for CONSTIPATION	Status

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Definition	CHANGED: Minor wording changes from “A decrease in the passage of formed stool characterized by stools that are hard and difficult to pass.” TO “A decrease in the frequency or passage of stool usually characterized by stools that are hard.”	Update
Assess severity	REMOVED: The rating scale (0-10) for severity of Constipation based on the ESAS was removed based on comments from end-users that this symptom is not considered an ESAS symptom.	NEW
	CHANGED: Response option to describe stools “Bleeding (Gross)” was replaced with “blood in stool”.	Update
	MOVED: “Do you have hemorrhoids?” removed from item “Do you feel like your rectum is not emptying after a bowel movement” and included as a separate assessment item.	Update
	ADDED: Item added to assess for possible spinal cord compression “Do you have loss of bladder or bowel control, numbness in your fingers, toes or buttocks, feel unsteady on your feet, or difficulty walking?”	NEW
	ADDED: To the item “Do you feel like your rectum is not emptying after a bowel movement” added “feel impacted with stool or diarrhea (possible overflow around blocked stool)” for a more comprehensive assessment.	Update
	ADDED: “Do you have a fever > 38° C?” with supporting evidence from one guideline.	NEW
	ADDED: Assessment for dehydration “Are you feeling dehydrated (e.g., feeling dizzy, dry mouth, thirsty, feel faint, fast heart rate, less urine)?” with supporting evidence from 3 guidelines.	NEW
	ADDED: “Weakness/difficulty walking” and “Sensory loss” was added to the item “Do you have any other symptoms?” given sensory loss, +/- motor weakness may indicate possible spinal cord compression.	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of hypothyroidism): <input type="checkbox"/> Weight gain, <input type="checkbox"/> Fatigue, <input type="checkbox"/> Depression, <input type="checkbox"/> Feeling cold, <input type="checkbox"/> Headaches, <input type="checkbox"/> Deeper voice, <input type="checkbox"/> Hair loss” given constipation is one of several signs/symptoms of endocrine toxicity.	NEW
ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of autonomic neuropathy): <input type="checkbox"/> Nausea, <input type="checkbox"/> Urinary problems, <input type="checkbox"/> Sweating changes” given constipation is one of several signs/symptoms of nervous system immune mediated adverse events.	NEW	
Triage	ADDED: “Alert clinician if on immunotherapy” for triage level severe.	NEW
Review medications	MOVED: Polyethylene glycol was moved up higher on the list of medications based on level of effectiveness.	Update
	REMOVED: Docusate sodium (Colace®) was removed due to lack of evidence for its efficacy. The reason for removal was added as a footnote below the medications table.	Update
	ADDED: Sorbitol was added with level of evidence Expert Opinion based on evidence from 2 guidelines.	NEW

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	ADDED: Amidotrizoate (Gastrografin®) if laxative resistant/advanced cancer with level of evidence Likely Effective based on evidence from 1 guideline.	NEW
Self-Care Strategies	ADDED: “Are you trying to use the toilet 30-60 minutes after meals?” to take advantage of the gastro-colic reflex, supported by 2 guidelines.	NEW
	ADDED: To the item encouraging fluid intake “Are you trying to limit your intake of caffeine or alcohol” (to avoid fluid loss) with supporting evidence from 2 guidelines.	NEW
	ADDED: “slowly” to the item “Have you [slowly] increased the fiber in your diet to 25g/day?” given guidance to gradually increase fibre.	Update
	MOVED: “Are you avoiding non-sterilized corn syrup and castor oil? (Corn syrup can be a source of infection; castor oil can cause severe cramping)” was moved as a footnote below the Medications table “Avoid non-sterilized corn syrup (can be a source of infection) and castor oil (can cause severe cramping)”	Update
References	8 new evidence sources; 0 outdated sources removed	NEW
Section of guide	Changes for DEPRESSION	Status
Assess severity	ADDED: “Are you currently receiving professional care for depression?” given one new guideline recommends determining if the patient is under the care of a professional for depressive symptoms, and if yes, determine whether additional support is needed.	NEW
	CHANGED: Wording for ESAS was updated for consistency with the revised ESAS-r. “Not depressed” updated to “No depression”	Update
	MOVED: The question “Do have any concerns that are making you feel more anxious...” was moved to the assessment table.	Update
	ADDED: “spiritual/religious concerns” given multiple new guidelines are recommending spiritual and chaplaincy care be included as part of psychosocial services.	NEW
	CHANGED: For the item “Have you felt tired or fatigued?”, “ESAS fatigue rating” was added and response options were changed from “No; Yes moderate; Yes, often” to “No, 1-3; Yes 4-6; Yes 7-10” consistent with the ESAS scoring in the Fatigue practice guide.	Update
	ADDED: “confused” was added to the item assessing “Have you felt agitated (may include twitching or pacing), or slowing down of your thoughts”.	Update
	CHANGED: In the list of risk factors for Anxiety, “Living alone” was changed to “Lack of social support” to encompass other forms of isolation e.g., separation from extended family/cultural community.	Update
	ADDED: “prior abuse” to the list of risk factors for depression.	NEW
	ADDED: “Anxiety” was added to the list of symptom-related factors for depression.	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of hyperthyroidism): <input type="checkbox"/> weight loss, <input type="checkbox"/> heart pounding or racing, <input type="checkbox"/> tremors, <input type="checkbox"/> feeling overheated, <input type="checkbox"/> diarrhea” given depression is one of several signs/symptoms of ICI induced hyperthyroidism.	NEW
Triage	ADDED: “Alert clinician if on immunotherapy” for triage level severe.	NEW

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Review medications	ADDED: SNRIs - venlafaxine (Effexor XR [®]), duloxetine (Cymbalta [®]). Level of evidence: Effective, based on evidence from 1 guideline.	NEW
	ADDED: Psychostimulants - methylphenidate (Ritalin [®]). Level of evidence: Effective, based on evidence from 2 guidelines.	NEW
	ADDED: Other antidepressants - bupropion (Wellbutrin [®]), trazodone (Mylan [®]), mirtazapine (Remeron [®]), Mianserin (Tolvon [®]). Level of evidence: Effective, based on evidence from 1 guideline.	NEW
Self-Care Strategies	CHANGED: Merged self-care items #3 (more information about cancer or your treatment) and #4 (more information about your symptoms) into one item “Would more information about your symptoms, cancer or your treatment help to ease your worries? If yes, provide relevant information or suggest resources”	Update
	ADDED: “creative therapies (e.g. art, dance, music)?” was added to the item regarding relaxation therapy or guided imagery with supporting evidence from two guidelines.	NEW
	ADDED: “If your concerns are spiritual or religious in nature, have you tried spiritual counseling, meaning-focused meditation, prayer, worship, or other spiritual activities?” given multiple new guidelines are recommending spiritual and chaplaincy care be included as part of psychosocial services.	NEW
	ADDED: ““Are you agreeable to a referral to a mental health professional for further help?” with supporting evidence from 6 guidelines”	NEW
References	7 new evidence sources; 0 outdated sources removed	NEW
Section of guide	Changes for DIARRHEA	Status
Definition	REMOVED: The frequency of bowel movements (>4-6 stools/day) was removed from the definition given bowel frequency is included as part of the assessment.	Update
Assess severity	ADDED: Three new assessment items related to bowel frequency for patients on Immune Checkpoint Inhibitor therapy were added and triaged to a higher level than patients receiving traditional anti-cancer therapy: <ul style="list-style-type: none"> • “Bowel movements/day above normal?” • “Ostomy: increase in output above normal?” • “Diarrhea overnight or new incontinence?” 	NEW
	ADDED: “mucus” was added to the assessment item “How would you describe your stools (colour, hardness, odour, amount, oily, blood, mucus, straining)?”	Update
	CHANGED: Response option to describe stools “Bleeding (Gross)” was replaced with “Blood in stool”.	Update
	ADDED: New assessment item related to stool quality for patients on Immune Checkpoint Inhibitor therapy “Blood or mucus in stool?” triaged to a higher level than patients receiving traditional anti-cancer therapy.	NEW

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	ADDED: New assessment item related to abdominal pain for patients on Immune Checkpoint Inhibitor therapy “Pain in abdomen, cramping, bloating?” triaged to a higher level than patients receiving traditional anti-cancer therapy.	NEW
	CHANGED: Assessment of fluid intake reworded for a more comprehensive assessment: “Have you been able to drink fluids?” changed to “How much fluid are you drinking per day?” with response options “6-8 glasses”, “1-5 glasses” and “Sips”.	Update
	ADDED: “Fatigue” and “Mouth sores” were added as response options to the assessment item “Do you have any other symptoms?”	NEW
	ADDED: New assessment item related to onset of new symptoms for patients on Immune Checkpoint Inhibitor therapy “New severe fatigue, headache, rash, cough, nausea, breathlessness, weight loss, vision changes, eye pain, muscle weakness, joint pains, or mood changes”	NEW
	ADDED: New assessment item “Any recent travel or contact with others with diarrhea?” with supporting evidence from 3 guidelines.	NEW
	ADDED: New assessment item “Do you have any rectal or ostomy skin breakdown?” with supporting evidence from 3 guidelines.	NEW
Review medications	ADDED: “First line treatment” to the medication Loperamide (Imodium [®]) with level of evidence “Likely Effective” and supporting evidence from 8 guidelines	Update
	ADDED: “Loperamide (Imodium [®]) for moderate diarrhea” for patients on Immune Checkpoint Inhibitor therapy with level of evidence “Expert opinion” and supporting evidence from 8 guidelines	NEW
	ADDED: A note was added that Octreotide (Sandostatin [®]) is intended for chemotherapy-induced diarrhea.	Update
	ADDED: “Corticosteroid cream if rectal skin irritated” with level of evidence “Expert opinion” and supporting evidence from 1 guideline	NEW
	ADDED: For patients on Immune Checkpoint Inhibitor therapy “Corticosteroids/prednisone, Infliximab, Vedolizumab or Budesonide for severe diarrhea” with level of evidence “Expert opinion” and supporting evidence from 2 to 9 guidelines.	NEW
	ADDED: Footnote below medications table “For radiation induced diarrhea... oral antibiotics are generally not recommended” with supporting evidence from 1 guideline	Update
Self-Care Strategies	ADDED: “Have you spoken to a dietician?” with supporting evidence from 2 guidelines.	NEW
	ADDED: “Cleanse perianal skin with warm water (+/- mild soap) after each stool. Moisture barrier cream if not on radiation therapy. Hydrocolloid dressings may be used as a physical barrier to protect skin.” was added to the self-care item “Are you trying to keep skin around your rectum or ostomy clean to avoid skin breakdown”	Update
	REMOVED: The self-care item “Were you taking probiotics with lactobacillus to prevent diarrhea?” has been removed due to inconsistent evidence for its use across source guidelines.	Update

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	ADDED: “Have you tried strategies to help with coping: carefully plan all outings, carry a change of clothes, know the location of restrooms, use absorbent undergarments.” with supporting evidence from 1 guideline.	NEW
References	13 new evidence sources; 4 outdated sources removed	NEW
Section of guide	Changes for FATIGUE	Status
Assess severity	CHANGED: Wording for ESAS was updated for consistency with the revised ESAS-r. “Not tired” updated to “No tiredness”	Update
	ADDED: Item to assess for fever (possible infection) “Do you have a fever > 38° C?” with supporting evidence from 5 guidelines.	NEW
	ADDED: Item to assess for possible anemia “Do you know the results of your last hemoglobin (Hgb) blood test?” with supporting evidence from 5 guidelines.	NEW
	ADDED: Item to assess weight changes “Have you lost or gained weight in the last 4 weeks without trying?” with supporting evidence from 4 guidelines.	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of endocrine toxicity): <input type="checkbox"/> nausea, <input type="checkbox"/> appetite loss, <input type="checkbox"/> constipation, <input type="checkbox"/> eyes sensitive to light, <input type="checkbox"/> hair loss, <input type="checkbox"/> dry skin, <input type="checkbox"/> puffy face, <input type="checkbox"/> confusion, <input type="checkbox"/> headache” given fatigue may be a symptom of an endocrine disorder secondary to immune checkpoint inhibitor therapy, not simply general cancer-related fatigue. Health care providers need to suspect underlying endocrine immune-related adverse events with vague symptoms such as fatigue.	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of pneumonitis): <input type="checkbox"/> cough, <input type="checkbox"/> wheezing, <input type="checkbox"/> breathlessness, <input type="checkbox"/> chest pain, <input type="checkbox"/> fever” given fatigue may be a symptom of lung toxicity secondary to immune checkpoint inhibitor therapy.	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of cardiovascular toxicity): <input type="checkbox"/> fast or skipped heartbeat, <input type="checkbox"/> breathlessness” given fatigue may be a symptom of a cardiac immune checkpoint inhibitor therapy adverse event. Presentation of cardiovascular complications of secondary to immune checkpoint inhibitor therapy may include arrhythmia, palpitations, chest pain, or signs and symptoms of heart failure (shortness of breath, peripheral edema, pleural effusion, fatigue).	NEW
ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of hepatic toxicity): <input type="checkbox"/> yellow skin/eyes, <input type="checkbox"/> dark urine, <input type="checkbox"/> fever, <input type="checkbox"/> nausea, <input type="checkbox"/> stomach pain” given severe hepatitis secondary to immune checkpoint inhibitor therapy can develop with symptoms of fever, fatigue, abdominal pain, nausea, and jaundice.	NEW	

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	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of myositis): <input type="checkbox"/> limb weakness, <input type="checkbox"/> difficulty standing up, lifting arms, moving around” given patients receiving immune checkpoint inhibitor therapy can develop severe myalgia in their proximal upper and lower extremities, with severe fatigue resembling polymyalgia rheumatica.	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of hemolytic uremic syndrome): <input type="checkbox"/> blood in urine/stool or nose/mouth, <input type="checkbox"/> less urine, <input type="checkbox"/> new/unexplained bruises, <input type="checkbox"/> abdominal pain, <input type="checkbox"/> pale skin, <input type="checkbox"/> vomiting, <input type="checkbox"/> confusion/seizures, <input type="checkbox"/> swelling” given fatigue is one of several signs symptoms of hematologic adverse events secondary to immune checkpoint inhibitor therapy.	NEW
	ADDED: “endocrine” was added to the item assessing for other health conditions that can cause fatigue (cardiac, lung, liver, kidney).	Update
	MOVED: The assessment item “Do you drink alcohol?” was added to the item assessing for other health conditions that can cause fatigue.	Update
Triage	ADDED: “Alert clinician if on immunotherapy” for triage level severe.	NEW
Review medications	ADDED: Specified two types of ginseng “(American or Asian)” given there are various types of herbs that the name ginseng applies to. Asian ginseng (Panax ginseng) and American ginseng (Panax quinquefolius) are two types of true ginseng. Three guidelines indicated specific types of ginseng may be effective in improving fatigue scores.	Update
	ADDED: Methylphenidate was added to the list of medications given three guidelines suggest that methylphenidate may help manage fatigue in patients receiving active treatment, however this medication should only be considered after ruling out other causes of fatigue. Level of evidence: Expert Opinion. The following cautionary statement was added under the medications table “Methylphenidate may be considered with caution after ruling out other causes of fatigue” given this medication may worsen pre-existing anxiety and insomnia.	NEW
	ADDED: Corticosteroids (i.e. dexamethasone (Decadron®), prednisone) was added to the list of medications given four guidelines have indicated there is evidence supporting the effectiveness of corticosteroids in providing short-term relief for fatigue and improving quality of life. Level of evidence: Benefits Balanced with Harms. The following cautionary statement was added under the medications table “Corticosteroids offer short-lived benefit; long-term use is associated with significant toxicities” given long-term use of may lead to increased risk of adverse events.	NEW
Self-Care Strategies	ADDED: “Do you have a diary to track your fatigue patterns to help with planning activities?” with supporting evidence from two guidelines.	NEW

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	ADDED: “Staying hydrated and a balanced diet (e.g. vitamins, minerals) can help fatigue.” was added to the item “Do you think you are eating/drinking enough to meet your body’s energy needs?”. Supporting guidelines indicated modifying dietary intake, adequate hydration, and electrolyte balance is essential for preventing and treating fatigue; imbalances in sodium, potassium, calcium, iron, and magnesium serum level are often reversible and with appropriate supplementation may reduce fatigue.	Update
	MOVED: For the item “Have you tried activities to make you more relaxed”, the examples “relaxation therapy, deep breathing, guided imagery” were separated from “massage with or without aromatherapy” given there is variation in the levels of effectiveness for these types of interventions. Progressive Muscle Relaxation Guided Imagery, Relaxation and Visual Imagery, and Relaxation Therapy are supported by Expert Opinion, while Massage/Aromatherapy Massage is likely to be effective.	Update
	ADDED: “Ensure light exposure soon after waking” was added to the item “Have you done any of the following to improve the quality of your sleep?” given the pan-Canadian Sleep Disturbances guideline by Howell et al. 2012 explains: exposure to natural or artificial light is thought to be an important regulator of sleep–wake rhythms. Light exposure can help “set” a patient’s circadian clock, making it easier for them to continue with the same wake up time.	Update
	ADDED: “Have you tried home-based bright white light therapy?” with supporting evidence from one guideline.	NEW
References	14 new evidence sources; 0 outdated sources removed	NEW
Section of guide	Changes for FEBRILE NEUTROPENIA	Status
Definition	CHANGED: Definition revised based on the most current definition from NCCN 2018 “An absolute neutrophil count (ANC) < 500 cells/mcl OR an ANC < 1000 cells/mcl and a predicted decline to 500 cells/mcl or less over the next 48 hours AND a single oral temperature of ≥38.3° C (101 °F) or a temperature of ≥38.0° C (100.4 °F) for ≥1 hour.” Equivalent measures have been added in brackets to facilitate communication with health providers: “< 500 cells/mcl (equivalent to < 0.5 x 10 ⁹ /L); < 1000 cells/mcl (< 1.0 x 10 ⁹ /L).	Update
Assess severity	ADDED: New assessment item “What was the date of your last chemotherapy or immunotherapy treatment?” given this was identified as a key item based on external expert review of the practice guide and supporting evidence from 8 source guidelines.	NEW
	ADDED: New assessment item “Have you been recently taking any antibiotics? With response options “ <input type="checkbox"/> No <input type="checkbox"/> Yes <48 hours <input type="checkbox"/> Yes ≥48 hours” given patients who have been on antibiotics for less than or more than 48 hours should be taken into consideration with evidence from 7 source guidelines.	NEW

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	ADDED: New response option for the question “Do you have an oral temperature of $\geq 38.0^{\circ}\text{C}$ ” added “Yes for <1 hour” for Moderate and “Yes” in the severe column changed to “Yes for ≥ 1 hour” for consistency with the definition of Febrile Neutropenia	NEW
	ADDED: “Do you have any other symptoms? <input type="checkbox"/> Bleeding, <input type="checkbox"/> Breathlessness, <input type="checkbox"/> Constipation, <input type="checkbox"/> Diarrhea, <input type="checkbox"/> Fatigue, <input type="checkbox"/> Mouth sores, <input type="checkbox"/> Mouth dryness, <input type="checkbox"/> Nausea, <input type="checkbox"/> Vomiting, <input type="checkbox"/> Skin reaction to radiation” for consistency with symptom guides that ask whether fever is present.	NEW
Triage patient	NEW: New triage column for Moderate was added for patients with an oral temperature of $\geq 38.0^{\circ}$ for less than 1 hour, and/or having other concurrent symptoms, and/or are very worried about their fever. Triage instructions for Moderate include: <input type="checkbox"/> Review self-care. <input type="checkbox"/> Advise to notify if symptom worsens or new symptoms occur in 12-24 hours. <input type="checkbox"/> If $\geq 38.0^{\circ}$ for <1 hour, advise to notify if still ≥ 38.0 after 1 hour has elapsed.	NEW
Review medications	ADDED: For “G(M)-CSF” it was noted this treatment is recommended “for at risk patients” and the following footnote was added under the medications table “G-CSF is generally recommended for patients with a >20% risk of developing febrile neutropenia”.	Update
	ADDED: For “Antibiotics to prevent infection” it was noted this treatment is recommended “for high risk patients” and the following footnote was added under the medications table “Prophylactic antibiotic use should be limited to high risk patients with an expected duration of neutropenia for >7 days as it may promote antibiotic resistance”. The level of evidence for antibiotic prophylaxis was changed from “Mixed recommendations” to “Effective”.	Update
	ADDED: “Antifungals to prevent infection for at-risk patients” was added to the Medications section with level of evidence “Effective” and the following footnote was added under the medications table “Antifungal prophylaxis should be reserved for a targeted group of high-risk patients with an expected duration of neutropenia for >7 days”.	NEW
	ADDED: “Antivirals for select at-risk patients” was added to the Medications section with level of evidence “Effective” and the following footnote was added under the medications table “Antiviral prophylaxis is recommended for select patients at risk for certain viral infections or reactivation of viral infection”.	NEW
Self-Care Strategies	ADDED: For the self-care item “If temperature not $\geq 38.0^{\circ}\text{C}$, are you checking your body temperature with a thermometer?” the statement “Avoid rectal temperature measurements” was added based on multiple guidelines indicating rectal temperatures should be avoided.	Update
	ADDED: For the self-care item “Are you washing your hands frequently” added “and/or using alcohol-based sanitizer” given hand hygiene with alcohol sanitizer has been identified as effective in infection prevention for at-risk patients with cancer.	Update

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	ADDED: “Are you trying to drink fluids, 6-8 glasses per day to stay hydrated?” given the Multinational Association for Supportive Care in Cancer (MASCC) Risk Index for Febrile Neutropenia cited by 8 source guidelines indicates hydration status as a risk factor for complications.	NEW
	ADDED: For the self-care item “Are you avoiding enemas, suppositories, tampons, and invasive procedures?” added “Constipation and straining during bowel movements can cause trauma to rectal tissue”	Update
	ADDED: For the self-care item “Are you checking your skin for potential sites of infection” added “your mouth” based on four guidelines recommended assessing this area given the mouth and esophagus are common sites of infection in patients with fever and neutropenia.	Update
	ADDED: New self-care item “Have you spoken to a clinician about getting an annual flu shot and other vaccines (with inactivated vaccine)? All visitors and household members should be up-to-date with vaccines (e.g. influenza, measles, mumps, rubella, and varicella.)” based on supporting evidence from five guidelines.	NEW
References	9 new evidence sources; 1 outdated source removed	NEW
Section of guide	Changes for MOUTH SORES/ STOMATITIS	Status
Assess severity	ADDED: “Do you have a fever > 38° C?” given concerns with oral complications can include systemic infection (sepsis) or local oral infections which may be accompanied with symptoms such as fever and supporting evidence from three guidelines.	NEW
	ADDED: To the assessment item “Are you able to eat?” Response option “Yes, soft food” was added for triage level Moderate.	Update
	ADDED: Assessment for dehydration “Are you feeling dehydrated, which can include feeling dizzy, a dry mouth, increased thirst, feel faint, rapid heart rate, decreased amount of urine, dark urine?” with supporting evidence from 4 guidelines.	NEW
	CHANGED: Assessment of food and fluid intake into 2 items for a more comprehensive assessment: “Are you able to eat and drink ? If no, can you open and close your mouth?” “How much fluid are you drinking per day?” with response options: Mild “6-8 glasses”; Moderate “1-5 glasses”; Severe “Sips/Unable to swallow”	Update
Review medications	ADDED: morphine mouth wash was added to the list of medications for pain relief with supporting evidence from one guideline and level of evidence “Expert opinion”	NEW
	ADDED: topical anesthetics (lidocaine) was added to the list of medications for pain relief with supporting evidence from three guidelines and level of evidence “Expert opinion”	NEW
	ADDED: transdermal fentanyl was added to the list of medications for pain relief with supporting evidence from two guidelines and level of evidence “Expert opinion”	NEW
	ADDED: For Doxepin mouth rinse it was clarified that this intervention is intended for pain relief “0.5% Doxepin mouth rinse for pain”	Update

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	ADDED: “Mucosal coating agents for pain (Gelclair®)” which provide a temporary physical barrier with supporting evidence from four guidelines and level of evidence “Expert Opinion”.	NEW
	ADDED: “Saliva substitutes (Biotene®, Moi-Stir®, Caphosol®)” which may help moisten the mouth and provide temporary relief to facilitate speech, chewing, and swallowing with supporting evidence from four guidelines and level of evidence “Expert Opinion”.	NEW
	ADDED: “Topical steroids for mouth sores from targeted therapies” for example, dexamethasone mouth rinse, or clobetasol gel or ointment with supporting evidence from two guidelines and level of evidence “Expert Opinion”.	NEW
	ADDED: “Nystatin for oral candida” given oral candidiasis is common in adults undergoing cancer treatment with supporting evidence from three guidelines and level of evidence “Expert Opinion”	NEW
	ADDED: The following cautionary footnote was added under the Medications table: “Some benzydamine HCl formulations contain alcohol and can cause stinging”	
	ADDED: ““Magic” Mouthwash (mixed medication mouthwash) is not recommended for practice” was added as a footnote under the Medications table given one guideline explicitly stated this intervention is not recommended for practice and three guidelines stated there is insufficient evidence.	NEW
	ADDED: The following cautionary footnote was added under the Medications table “Local anesthetics for short term pain relief can make it hard to swallow; patients should be advised about increased risk of choking when eating.” with supporting evidence from two guidelines.	NEW
Self-Care Strategies	CHANGED: For the self-care item “Are you trying to brush your teeth at least twice a day using a soft toothbrush and flossing daily or as tolerated...” the suggestion about flossing was changed to “Floss daily if it is your normal routine and tolerated” given multiple guidelines indicated that patients that are not used to interdental cleaners on a regular basis should not start with it while on cancer therapy since it can break the epithelial barrier.	Update
	REMOVED: “water-based” was removed from the self-care item “Are you using moisturizers to protect your lips?” given lack of consensus across guidelines about what kinds of moisturizers should be recommended.	Update
	REMOVED: “Xylitol lozenges or chewing on xylitol gum (max. 6 grams per day) for dry mouth?” was removed given self-care interventions for dry mouth such chewing on sugar-free gum or sucking on hard candy to help promote saliva production will be included in the new Mouth Dryness/Xerostomia Practice Guide.	Update
	ADDED: New self-care strategy “If on pain medicine, have you tried taking before meals for pain relief while eating?” with supporting evidence from four guidelines.	NEW

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	REMOVED: “very cold” from the item “Are you avoiding foods/drinks that are acidic, salty, spicy, or very hot?” due to inconsistent reporting across source guidelines.	Update
	ADDED: New self-care strategy “If eating is difficult, have you spoken with a dietitian or considered meal supplements?” with supporting evidence from five guidelines.	NEW
	REMOVED: “For mouth sores, have you considered referral for low level laser therapy?” given the evidence is limited to Hematopoietic Cell Transplantation and Head and Neck Cancer and radiotherapy	Update
References	5 new evidence sources; 4 outdated sources removed	NEW
Section of guide	Changes for NAUSEA & VOMITING	Status
Assess severity	REMOVED: Assessment scale (0-10) removed for Vomiting given severity is not typically based on subjective experience, but rather objectively measured in terms of number of emetic episodes and characteristics (i.e. blood or coffee ground vomit).	Update
	CHANGED: ESAS cut-off scores for Nausea were changed from 1-3=Mild and 4-10=Moderate TO 1-3=Mild, 4-6=Moderate, and 7-10 = Severe with supporting evidence from one guideline.	Update
	ADDED: New assessment item “What is the amount of vomit?” with supporting evidence from 3 guidelines.	NEW
	ADDED: New assessment item “Have you lost weight in the last 1-2 weeks without trying?” with supporting evidence from 5 guidelines.	NEW
	CHANGED: Assessment of fluid intake reworded for a more comprehensive assessment: “Have you been able to tolerate drinking fluids?” changed to “How much fluid are you drinking per day?” with response options “6-8 glasses”, “1-5 glasses” and “Sips”.	Update
	ADDED: To the assessment item “Do you have any other symptoms?” added Diarrhea, Fever, Anxiety	Update
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of endocrine toxicity): <input type="checkbox"/> fatigue, <input type="checkbox"/> appetite loss, <input type="checkbox"/> constipation, <input type="checkbox"/> eyes sensitive to light, <input type="checkbox"/> hair loss, <input type="checkbox"/> dry skin, <input type="checkbox"/> puffy face, <input type="checkbox"/> confusion, <input type="checkbox"/> headache”	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of autonomic neuropathy): <input type="checkbox"/> constipation, <input type="checkbox"/> urinary problems, <input type="checkbox"/> sweating changes”	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of aseptic meningitis): <input type="checkbox"/> headache, <input type="checkbox"/> eyes sensitive to light, <input type="checkbox"/> neck stiffness”	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of hepatic toxicity): <input type="checkbox"/> dark urine, <input type="checkbox"/> yellow skin/eyes, <input type="checkbox"/> fever, <input type="checkbox"/> fatigue, <input type="checkbox"/> abd pain”	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of GI toxicity): <input type="checkbox"/> abd pain, <input type="checkbox"/> blood or mucus in stool, <input type="checkbox"/> fever, <input type="checkbox"/> weight loss”	NEW

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	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have (signs of hemolytic uremic syndrome): <input type="checkbox"/> blood in urine/stool or nose/mouth, <input type="checkbox"/> less urine, <input type="checkbox"/> new/unexplained bruises, <input type="checkbox"/> abd pain, <input type="checkbox"/> pale skin, <input type="checkbox"/> fatigue, <input type="checkbox"/> confusion/seizures, <input type="checkbox"/> swelling”	NEW
	ADDED: New assessment item “Are you taking medicines that can cause nausea/vomiting (e.g. opioids, antidepressants, antibiotics, warfarin)?” with supporting evidence from 5 guidelines.	NEW
Review medications	MOVED: Medications were reordered by level of effectiveness and number of supporting guidelines.	Update
	ADDED: Olanzapine (Zyprexa [®]) was added with supporting evidence from 5 guidelines and level of evidence: Effective.	NEW
	ADDED: Netupitant/palonosetron (NEPA) (Akynzeo [®]) was added with supporting evidence from 4 guidelines and level of evidence: Effective.	NEW
	ADDED: Example trade name (Emend [®] IV) was added for Fosaprepitant	Update
	ADDED: Note that Triple Drug is intended for high emetic risk	Update
	ADDED: For Dexamethasone (Decadron [®]) added “alone or in combination”	Update
	ADDED: Progestins was added with supporting evidence from 1 guideline and level of evidence: Likely effective.	NEW
	ADDED: Other medications that may be prescribed for nausea and vomiting Cyclizine (2 guidelines), dimenhydrinate (2 guidelines) and methotrimeprazine (Nozinan [®]) (1 guideline) were added with level of evidence: Expert opinion.	NEW
	REMOVED: The cautionary footnote “Metopimazine is not recommended for practice” was removed. Only one guideline considered this medication and concluded there was insufficient evidence for its effectiveness.	Update
ADDED: A caution statement regarding the use of Gabapentin was added below the medications section “Patients are at increased risk of opioid overdose and serious side effects when taking gabapentin with an opioid” based on a Health Canada Advisory issued September 17, 2019. https://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2019/71003a-eng.php	NEW	
Self-Care Strategies	ADDED: To the strategy “Are you taking anti-emetics before meals so they are effective during/after meals?” added “fast-acting”	Update
	ADDED: the strategy “Avoid tobacco and alcohol?” was added to the self-care item about which foods to try and which foods to avoid with supporting evidence from three guidelines.	NEW
	REMOVED: “Are you wearing loose clothing?” was removed given there are no supporting guidelines to recommend this strategy.	Update

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	CHANGED: The item regarding oral care “Are you rinsing your mouth before eating and keeping your mouth clean (brushing, rinsing)?” was changed to be consistent with the Mouth Sores and Mouth Dryness Practice guides “Are you trying to use a bland rinse 4 times/day? For 1 cup warm water, add table salt (2.5 ml (1/2 tsp.)), baking soda (1/2 tsp.) or both (1/4 tsp. each). Swish in your mouth for at least 30 seconds and spit out.” given supporting evidence from one guideline that specifically recommends rinsing the mouth before and after eating and no recommendation for brushing. For this symptom guide the instruction “If vomiting...” was added given this self-care item is not applicable if the patient is only experiencing nausea.	Update
	ADDED: Self-care item “If vomiting, have you been keeping track of the number of episodes per 24 hours?” with supporting evidence from one guideline.	NEW
References	13 new evidence sources; 3 outdated sources removed	NEW
Section of guide	Changes for PAIN	Status
Definition	ADDED: Details were added about types of pain “Types of pain are classified as nociceptive or neuropathic. Nociceptive pain arises from stimulation of pain receptors within the tissue, which has been damaged or involved in an inflammatory process; divided into...”	Update
Assess severity	CHANGED: For the question “Tell me about the pain (location, onset, type)” the word “type” was changed to “what does it feel like” and “what makes it better or worse” was added.	Update
	ADDED: New assessment item to explore possible causative factors of the pain “Do you know what may be causing the pain (surgery, injury, illness, pre-existing pain or arthritis, spinal cord compression)?” with supporting evidence from 6 guidelines.	NEW
	CHANGED: Pain rating at worst and pain rating at best were merged into one item “Rating of worst pain and pain 2hr after medicine?” which is consistent with the self-care item suggesting that patients use a diary to track their pain level when taking medicine and 1-2 hr. after.	Update
	ADDED: New assessment item “Are you able to easily distract yourself from the pain?” with response options “Yes, often”, Yes, sometimes” and “No, never” with supporting evidence from 1 guideline.	NEW
	ADDED: New item added to assess for possible spinal cord compression “Do you have loss of bladder or bowel control, numbness in your fingers, toes or buttocks, feel unsteady on your feet, or difficulty walking?”	NEW
	ADDED: New item added to assess for possible opioid toxicity “Do you feel confused, very sleepy, hallucinate, or have muscle spasms?”	NEW
	ADDED: New assessment item to risk of opioid abuse/misuse/diversion “Do you have (risk factors for opioid misuse): <input type="checkbox"/> past alcohol or drug misuse, <input type="checkbox"/> psychiatric disorder, <input type="checkbox"/> younger age, <input type="checkbox"/> legal problems, <input type="checkbox"/> past sexual abuse, <input type="checkbox"/> poor financial and/or social support, <input type="checkbox"/> current heavy smoker?” with supporting evidence from 3 guidelines.	NEW
	ADDED: “Depression”, “Sleep problems” and “Peripheral neuropathy” were added to the list of other related symptoms.	NEW

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	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy: “Do you have (signs of musculoskeletal toxicities): <input type="checkbox"/> joint pain/swelling, <input type="checkbox"/> stiffness after inactivity, <input type="checkbox"/> muscle weakness, <input type="checkbox"/> pain improves with movement or heat”	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy: “Do you have (signs of hepatic toxicity): <input type="checkbox"/> right side abdominal pain <input type="checkbox"/> fatigue, <input type="checkbox"/> yellow skin/eyes, <input type="checkbox"/> dark urine, <input type="checkbox"/> fever, <input type="checkbox"/> nausea”	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy: “Do you have (signs of endocrine toxicity): <input type="checkbox"/> abdominal pain, <input type="checkbox"/> nausea, <input type="checkbox"/> fatigue, <input type="checkbox"/> appetite loss, <input type="checkbox"/> constipation, <input type="checkbox"/> eyes sensitive to light, <input type="checkbox"/> hair loss, <input type="checkbox"/> dry skin, <input type="checkbox"/> puffy face, <input type="checkbox"/> confusion	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy: “Do you have (signs of ocular toxicity): <input type="checkbox"/> pain with eye movement, <input type="checkbox"/> vision changes, <input type="checkbox"/> eyes sensitive to light, <input type="checkbox"/> eyelid swelling	NEW
Review medications	ADDED: Nefopam was added to the list of non-opioid drugs	Update
	ADDED: Tapentadol was added to the list of weak opioids	Update
	CHANGED: “Breakthrough dose” was changed to “Breakthrough pain: extra dose of immediate-release oral opioids” for better clarity.	Update
	ADDED: Transmucosal fentanyl was added for breakthrough pain with level of evidence: Effective.	NEW
	ADDED: “Chronic pain: Transdermal buprenorphine, transdermal fentanyl, systemic anesthetics (e.g. mexiletine)” with supporting evidence from 2 guidelines and level of evidence: Effective.	NEW
	ADDED: “Chronic pain: Cannabis/Cannabinoids” with supporting evidence from 2 guidelines and level of evidence: Likely effective.	NEW
	ADDED: “Refractory pain: Ketamine” with supporting evidence from 2 guidelines and supporting evidence “Benefits balanced with harm”	NEW
	ADDED: “Prednisone for immunotherapy-related pain” with supporting evidence from 5 guidelines and level of evidence: Expert opinion.	NEW
	CHANGED: “Prophylactic constipation treatment – sennosides, bisocodyl, lactulose, Polyethylene glycol (PEG)...” was changed to “Constipation prophylaxis: stimulant (sennosides or bisocodyl) plus osmotic laxative (lactulose or PEG)” based on this combination being the most common prophylactic treatment for preventing opioid-induced constipation.	Update
	REMOVED: docusate sodium from the list of medications for prophylactic constipation treatment. Based on the available literature, docusate has not shown benefit and is therefore not recommended.	Update
ADDED: The following cautionary statements were added below the Medications table: “Use NSAIDS with caution due to risk of renal, GI, or cardiac toxicities, thrombocytopenia, or bleeding disorder” (2 guidelines); “Use opioids with caution in patients with kidney or liver dysfunction.” (4 guidelines); “Avoid tricyclic antidepressants in the elderly.” (1 guideline)	NEW	

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Self-Care Strategies	MOVED: Self-care item “Have you used any physiotherapy or acupuncture?” was merged with the item “Have you tried massage with or without aromatherapy?”	Update
	ADDED: “heat/cold” and “TENS” were added to the self-care item about massage, physiotherapy, and acupuncture.	NEW
	ADDED: “hypnosis” and “mindfulness-based stress reduction” were added to the self-care item “Are you using activities to help you cope with pain such as listening to music, breathing exercises, activities for distraction, relaxation, guided imagery”	NEW
References	15 new evidence sources; 4 outdated sources removed	NEW
Section of guide	Changes for PERIPHERAL NEUROPATHY	Status
Definition	ADDED: To the first sentence “Numbness, tingling, burning, pins and needles, tremor, balance disturbances, pain” added “in hands, feet, legs or arms”	Update
	ADDED: “Other causes of peripheral neuropathy include surgical trauma, treatment with immune checkpoint inhibitors, and radiation involving the spine.”	NEW
Assess severity	ADDED: New assessment question consistent with the Pain practice guide “Tell me about the neuropathy (location, onset, radiating, what does it feel like, what makes it better or worse):” with supporting evidence from 2 guidelines.	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Pain in lower back or thighs” given Guillain–Barré syndrome often starts with sensory symptoms/neuropathic pain localized to lower back and thighs.	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “New rapid onset of weakness in arms or legs” which could be a sign of immune mediated neurotoxicity such as Guillain–Barré syndrome and triaged at a higher level.	NEW
	MOVED: The assessment items about being constipated and difficulty emptying bladder were separated into two separate items.	Update
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Constipation or urinary problems” which could be a sign of immune mediated neurotoxicity and triaged at a higher level.	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Neuropathy interferes with daily activities” which could be a sign of immune mediated neurotoxicity and triaged at a higher level.	NEW
	ADDED: New assessment item for patients on Immune Checkpoint Inhibitor therapy “Do you have: <input type="checkbox"/> Difficulty walking, <input type="checkbox"/> Vision changes, <input type="checkbox"/> Breathlessness, <input type="checkbox"/> Swallowing or speaking problems, <input type="checkbox"/> Nausea, <input type="checkbox"/> Sweating changes?” given these symptoms could signify one of several immune mediated neurological adverse events such as Peripheral Neuropathy, Myasthenia Gravis, or Guillain–Barré syndrome.	NEW
Review medications	ADDED: “Gabapentin and opioid combination” was added with level of evidence Likely Effective with supporting evidence from 2 guidelines.	NEW

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	ADDED: “Corticosteroids - prednisone/methylprednisolone” was added with level of evidence Expert Opinion with supporting evidence from 8 guidelines.	NEW
	ADDED: Tapentadol and methadone were added to the list of opioids commonly prescribed.	Update
	ADDED: “Tricyclic Antidepressants should be avoided in the elderly” to Medication footnote section	NEW
Self-Care Strategies	ADDED: New self-care strategy “Neuropathy in hands: Do you wear gloves when cooking, using the oven, or doing dishes?” with supporting evidence from 2 guidelines.	NEW
	ADDED: New self-care strategy “Are you avoiding exposing your fingers and toes to very cold temperatures?” with supporting evidence from 1 guideline.	NEW
	ADDED: New self-care strategy “For urinary issues do you try to empty bladder at same time every day, bladder re-training exercises, and drink adequate fluids?” with supporting evidence from 1 guideline.	NEW
	ADDED: Additional complementary alternative therapies “massage, yoga, deep breathing, meditation, or guided imagery” were added to the item “Have you tried acupuncture” with supporting evidence from 2 guidelines	Update
	ADDED: New self-care strategy “Have you spoken with a clinician or pharmacist or dietitian about the peripheral neuropathy?” with supporting evidence from 2 guidelines. If the symptom is related to chemotherapy and it is new or worsening, the patient should be encouraged to communicate this to their oncology team as a dose may need to be adjusted/reduced. If the patient is not on any medications they may benefit from the introduction of medications.	NEW
References	10 new evidence sources; 2 outdated sources removed	NEW
Section of guide	Changes for SKIN REACTION TO RADIATION THERAPY	Status
Assess severity	ADDED: New assessment item “Size of skin reaction(s)” with supporting evidence from 1 guideline.	NEW
	ADDED: New assessment item “Do you feel itchy at the skin reaction area?” with response options “No/mild”, “Yes, often” and “Yes, constant” with supporting evidence from 4 guidelines.	NEW
	ADDED: New assessment item “Is there any odour from the skin reaction area?” with response options “No” and “Yes, strong/foul” with supporting evidence from 2 guidelines.	NEW
	CHANGED: Response options for “Do you have any bleeding?” were changed from Mild=No, Moderate=Yes, some, Severe=Yes, gross to Mild=No and Severe= “Yes, from minor trauma” given Severe Dermatitis radiation is defined as “Moist desquamation in areas other than skin folds and creases; bleeding induced by minor trauma or abrasion” based on evidence from the source guidelines and NCI-CTCAE grading.	NEW
Review medications	CHANGED: Level of evidence for “Low-dose corticosteroid cream” was changed from Expert opinion to Likely effective.	Update

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	CHANGED: For “Low-dose corticosteroid cream” it is specified that this is intended for pruritus.	Update
	REMOVED: “Mild-moderate: Lanolin free hydrophilic cream (i.e.: glaxal base or Lubriderm)” from the Medications section given this is included as part of the Self-care section.	Update
	CHANGED: For “Silver Sulfadiazine (Flamazine)” specified that this is intended if infection is confirmed.	Update
	CHANGED: “Dressing changes” to “Hydrocolloid & hydrogel Dressings” with supporting evidence from 3 guidelines.	Update
	ADDED: “Infection: Topical antibiotics” with supporting evidence from 2 guidelines and level of evidence Expert opinion.	NEW
	ADDED: “Moist desquamation: Silicone Dressings” with supporting evidence from 1 guideline and level of evidence Expert opinion.	NEW
	ADDED: The following cautionary statements were added below the Medications table: “Low-dose corticosteroid cream should be used sparingly.” (4 guidelines) “Silver sulfadiazine should not be used if allergy to sulfa, history of severe renal or hepatic disease or during pregnancy.” (1 guideline) “Hydrocolloid & hydrogel dressings are not advised for infected wounds and wounds with heavy exudate, (1 guideline) or applied directly prior to treatment (1 guideline).”	NEW
Self-Care Strategies	ADDED: To the self-care item “Are you avoiding temperature extremes” added “Are you trying to protect the treatment area from the sun and the cold?”	Update
	ADDED: To the self-care item “Are you trying to use normal saline compresses” added “warm or room temperature” and specified this is if the skin is itchy.	Update
	ADDED: To the self-care item about avoiding “tape or Band-aids” added “not rubbing or scratching your skin, and opting to wear loose fitting clothing”	Update
References	4 new evidence sources; 1 outdated source removed	NEW
Section of guide	Changes for SLEEP PROBLEMS-CHANGES	Status
Title	CHANGED: The title of the practice guide was changed to “Sleep Changes” given some individuals have sleep changes from baseline but do not necessarily perceive it as a problem.	Update
Assess severity	ADDED: “Describe the sleep pattern change” to the assessment item “How long have these sleep problems been present?”	Update
Review medications	ADDED: Non-benzodiazepine Hypnotics - e.g. Zolpidem (Ambien®) with supporting evidence from 2 guidelines and level of evidence “Expert opinion”	NEW
	ADDED: Tricyclic Antidepressants - e.g. Amitriptyline (Elavil®) with supporting evidence from 1 guideline and level of evidence “Expert opinion”	NEW
	ADDED: Neuroleptics - Chlorpromazine (Thorazine®, Ormazine®) with supporting evidence from 1 guideline and level of evidence “Expert opinion”	NEW

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	ADDED: Herbal supplements (Melatonin, Kava, Valerian) with supporting evidence from 1 guideline and level of evidence “Expert opinion”	NEW
	ADDED: Melatonin receptor agonists - Ramelteon (Rozerem®) with supporting evidence from 1 guideline and level of evidence “Expert opinion”	NEW
	ADDED: Antipsychotics - e.g. Quetiapine (Seroquel®) with supporting evidence from 1 guideline and level of evidence “Expert opinion”	NEW
	CHANGED: “Need to balance benefits with harms” moved to Medication footnote section and level of evidence for Benzodiazepines changed to “Expert opinion”	Update
	ADDED: “Tricyclic Antidepressants should be avoided in the elderly” to Medication footnote section	NEW
	ADDED: “Antipsychotics are a last option” to Medication footnote section	NEW
Self-Care Strategies	ADDED: “try to go to sleep and” to the item “Do you wake at the same time each day?”	Update
	MOVED: “If you can’t fall asleep within 20-30 minutes, do you get out of bed and return to bed when you are sleepy?” to Self-care item “Do you go to bed when you are sleepy?”	Update
	ADDED: To the self-care item “Do you restrict napping in the daytime?” added “If needed, limit to one nap (20-30 minutes) and spend at least four hours awake before bedtime.” with supporting evidence from one guideline.	Update
	ADDED: “Do you have a comfortable sleep environment?” to Self-care item “If noisy or too much light, do you use ear plugs or eye masks?” and added “Suggest to remove bedroom clock and avoid computer screens.”	Update
	ADDED: “Do you know what to avoid? Suggest: limiting caffeine after noon, limit smoking or alcohol, spicy or heavy meals, excessive fluids, and intense activities close to bedtime.”	NEW
References	2 new evidence sources; 0 outdated sources removed	NEW
Section	Changes for EXAMPLE GENERAL ASSESSMENT	Status
	CHANGED: “Caller” was changed to “Type of encounter (phone/in-person)” given the COSTaRS practice guides may also be used by health care providers during face to face encounters.	Update
1. Which symptom(s)	ADDED: <input type="checkbox"/> Mouth dryness/Xerostomia and <input type="checkbox"/> Skin Rash given these two symptoms have been added in the current update.	NEW
3. Conduct general symptom assessment	ADDED: To the section “Receiving cancer treatment” the following were added: “Immune Checkpoint Inhibitor Therapy: Name of Immune Checkpoint Inhibitor”; “Other systemic therapy (e.g. antiestrogen, monoclonal antibodies, targeted therapies): Name of therapy”; and “Surgery”	NEW