



Transforming evidence from multiple guidelines into user friendly clinical practice tools: COSTaRS project

D Stacey RN, PhD; M Carley BSc, M Harrison RN, PhD for the
Pan-Canadian Oncology Symptom Triage and Remote
Support (COSTaRS) project

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Pan-Canadian Oncology Symptom Triage and Remote Support (COSTaRS) Project

<http://www.ktcanada.ohri.ca/costars/>



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Purpose

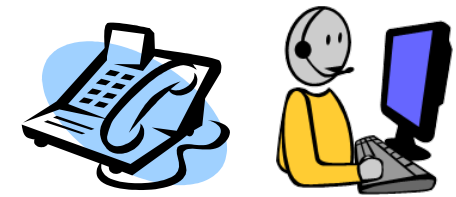
- To transform evidence from guidelines for clinical practice tools for remote management of patients experiencing symptoms related to cancer treatment



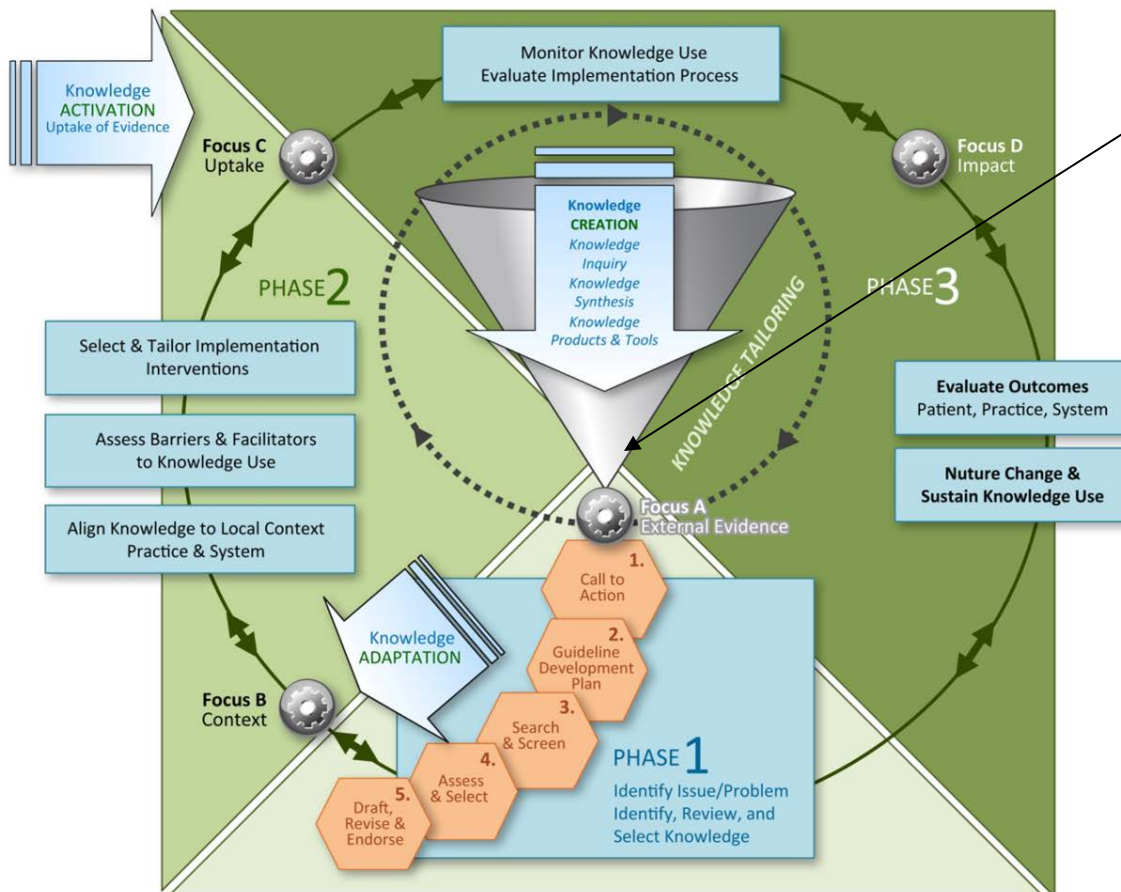
Methods

Mixed methods descriptive study guided by CAN-IMPLEMENT©:

- a) conducted a systematic search for clinical practice guidelines for each symptom;
- b) appraised each guideline for methodological quality using AGREEII;
- c) developed symptom-based clinical practice KT tool using evidence from guidelines
- d) convened pan-Canadian panel to reach consensus on a template for the symptom-based KT tools
- e) used template to create KT tools for 13 symptoms and validated KT tools by oncology nurses and researchers from across Canada



CAN-IMPLEMENT© Guideline Adaptation



ACTION CYCLE (Application)

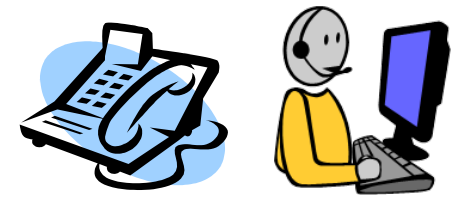
Knowledge to Action Process (Graham, Logan, Harrison et al. 2006)

Clinical practice KT tools

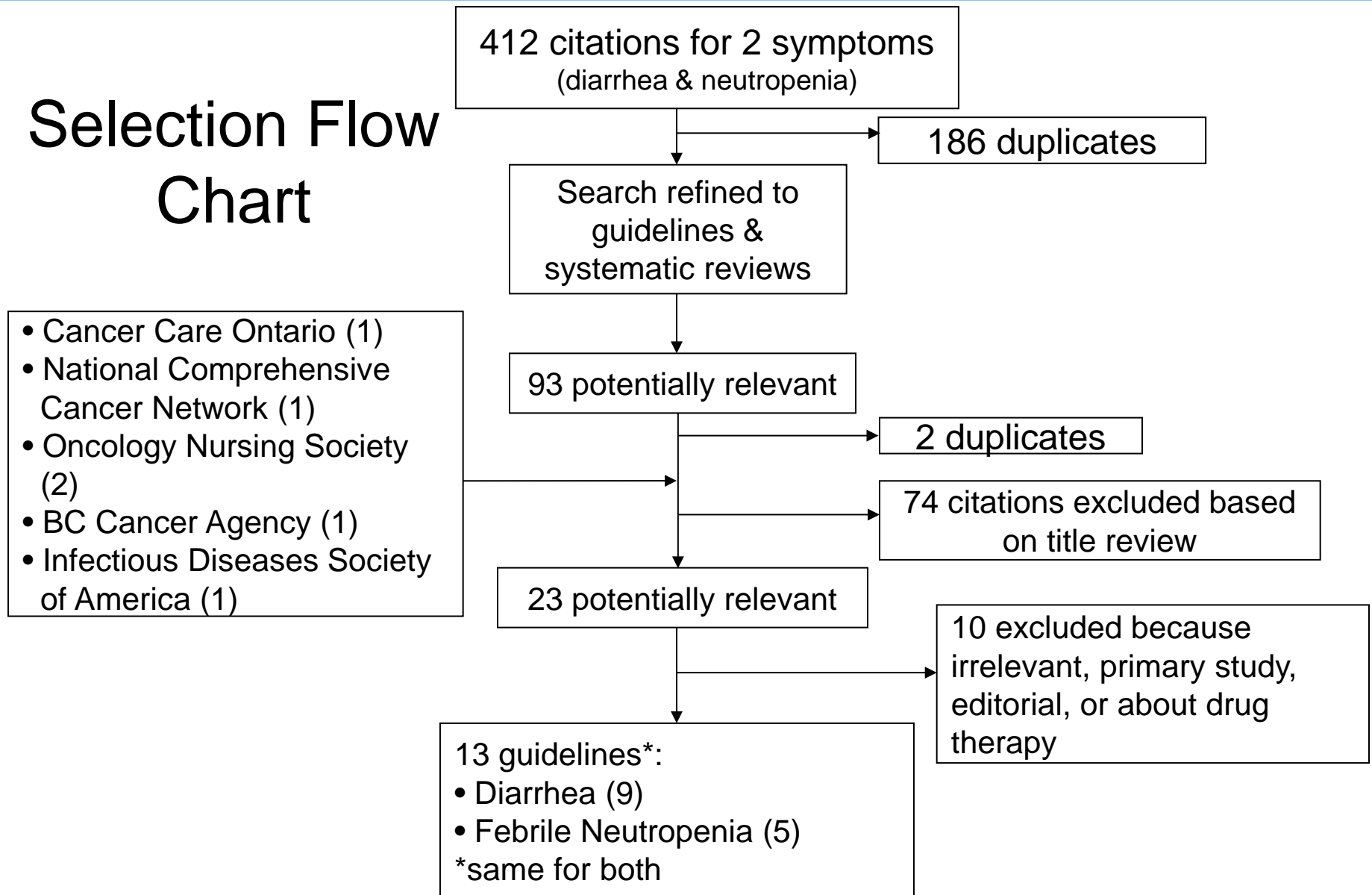
KT tools to support patient care by nurses.

KT tools narrow the know-do gap by :

- presenting best available evidence
- using format sensitive to how nurses think and what nurses do



Selection Flow Chart





Results: 42 Guidelines for 13 Symptoms

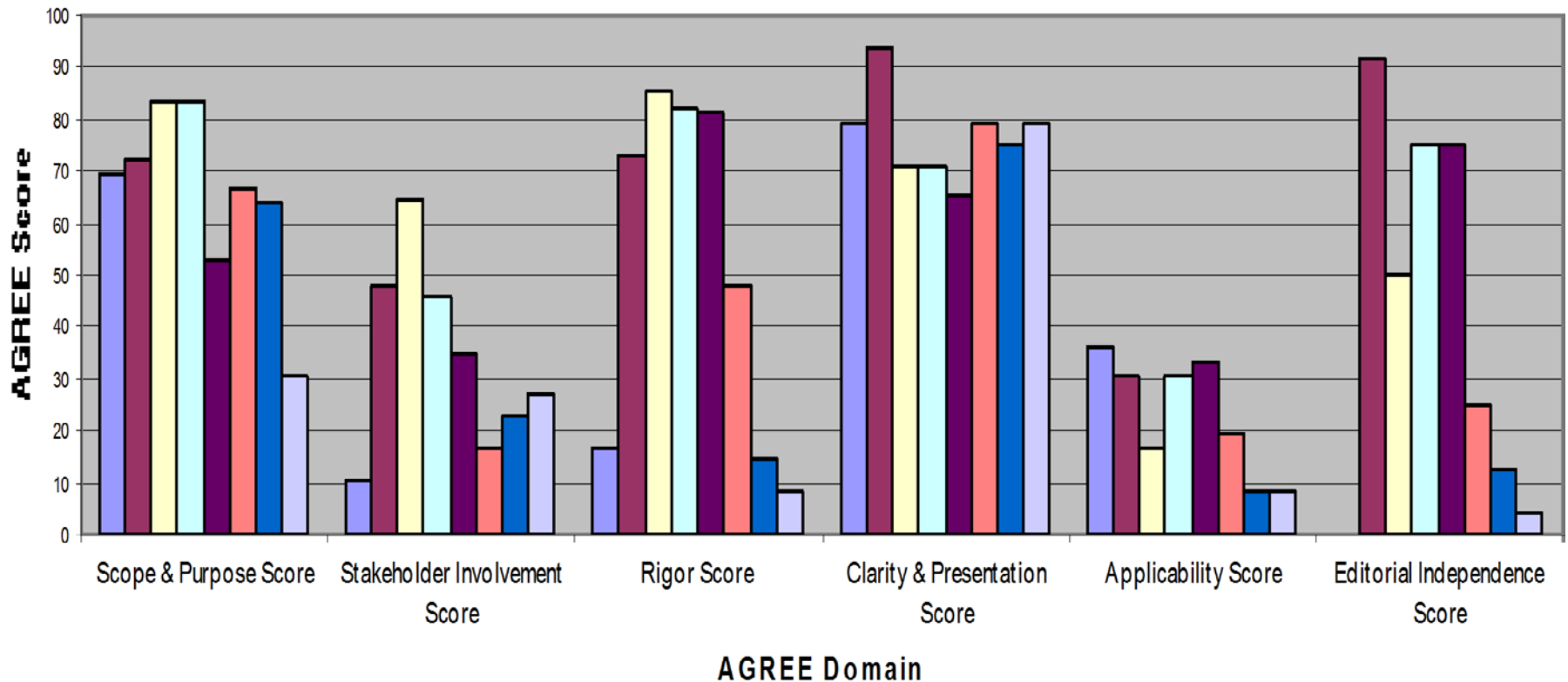
median 3 guidelines; range 1 (bleeding) to 7 (vomiting)

- Diarrhea
 - Nausea/vomiting
 - Anorexia
 - Stomatitis
 - Constipation
 - Bleeding
 - Fever with neutropenia
 - Skin alteration
 - Fatigue*
 - Anxiety*
 - Depression*
 - Neuropathy
 - Dyspnea
- (*primary source Ca Journey Guideline)
- Excluded:
- | | |
|------------------|-------------------|
| <u>Not done:</u> | Cognitive changes |
| Pain | Dysuria/hematuria |



42 symptom guidelines Median AGREE rigour score = 84% (range 8 to 86)

For example: diarrhea guideline AGREE scores





Principles for KT Tool development (with iterative feedback from nurses)

- Evidence-based using appraised clinical practice guidelines
- KT tools meet criteria for being a guideline (AGREE II-rigour)
 - Make explicit the recommendations
 - Link to evidence
 - Based on systematic review for guidelines
 - Reviewed by experts across Canada
- Usable in practice beyond resource on the shelf
- Be able to integrate in electronic health record and clinical practice
 - Used Edmonton Symptom Assessment System question
- Plain language

Diarrhea Protocol

Remote Assessment, Triage, and Management of Diarrhea in Adults Undergoing Cancer Treatment

(not for patients undergoing bone marrow transplant)

Name
Date of Birth
Sex
Hospital card number

Diarrhea: An abnormal increase in stool liquidity and frequency over baseline (> 4-6 stools/day) which may be accompanied by abdominal cramping.^{4,6,7}

Date and Time

1. Assess severity of the diarrhea (Supporting evidence: 7 guidelines)¹⁻⁷

Tell me what number from 0 to 10 best describes your diarrhea

No diarrhea 0 1 2 3 4 5 6 7 8 9 10 Worst possible diarrhea^{9(ESAS)}

How worried are you about your diarrhea?⁷

Not worried 0 1 2 3 4 5 6 7 8 9 10 Extremely worried

Have you been tested for c-difficile? If yes, do you know the results?

Yes No Unsure Results _____

Ask patient to indicate which of the following are present or absent

| | | | | | | |
|---|------------|--------------------------|------------|--------------------------|--------------------|--------------------------|
| Patient rating (see ESAS above) ⁹ | 0-3 | <input type="checkbox"/> | 4-6 | <input type="checkbox"/> | 7-10 | <input type="checkbox"/> |
| Patient rating of worry about diarrhea (see above) ⁷ | 0-5 | <input type="checkbox"/> | 6-10 | <input type="checkbox"/> | | |
| Think about your normal bowel pattern. How many extra bowel movements are you having per day (including at night), above what is normal for you? ¹⁻⁷ | < 4 stools | <input type="checkbox"/> | 4-6 stools | <input type="checkbox"/> | ≥ 7 stools | <input type="checkbox"/> |
| How would you describe your stools (colour, hardness, odour, amount, oily, blood, straining)? ^{3,6,7} | | | | | Bleeding (gross) | <input type="checkbox"/> |
| Ostomy: How much extra output are you having, above what is normal for you? ³⁻⁶ <input type="checkbox"/> N/A | None | <input type="checkbox"/> | Some | <input type="checkbox"/> | Severe | <input type="checkbox"/> |
| Do you have a fever > 38° C? ^{3,4,6,7} <input type="checkbox"/> Unsure | No | <input type="checkbox"/> | | | Yes, with diarrhea | <input type="checkbox"/> |
| Do you have pain in your abdomen or rectum with or without cramping or bloating? ^{3,6,7} | No | <input type="checkbox"/> | Yes, some | <input type="checkbox"/> | Yes, often | <input type="checkbox"/> |
| Does your diarrhea interfere with your daily activities at home and/or at work? ^{3,6,7} Describe. | No | <input type="checkbox"/> | Yes, some | <input type="checkbox"/> | Yes, significantly | <input type="checkbox"/> |
| Do you have any other symptoms? <input type="checkbox"/> Nausea/vomiting ^{3,4,6,7} <input type="checkbox"/> Loss of appetite ⁷ | No | <input type="checkbox"/> | Yes, some | <input type="checkbox"/> | Yes, often | <input type="checkbox"/> |

| | | | | | | |
|---|---|--------------------------|---|--------------------------|---|--------------------------|
| Are you feeling dehydrated, which can include feeling dizzy, a dry mouth, increased thirst, fainting, rapid heart rate, decreased amount of urine? ^{3,4,6,7} | No | <input type="checkbox"/> | Yes, some | <input type="checkbox"/> | Yes, significantly | <input type="checkbox"/> |
| Have you been able to drink fluids? ⁸ | Yes | <input type="checkbox"/> | | | No | <input type="checkbox"/> |
| | 1 Mild | | 2 Moderate | | 3 Severe | |
| 2. Triage patient for symptom management based on highest severity (Supporting evidence: 7 guidelines) ¹⁻⁷ | <input type="checkbox"/> Review self-care. <input type="checkbox"/> Verify medication use, if appropriate. | | <input type="checkbox"/> Review self-care. <input type="checkbox"/> Verify medication use, if appropriate. <input type="checkbox"/> Advise to call back if symptom worsens, new symptoms occur, or no improvement in 12-24 hours. | | <input type="checkbox"/> Refer for medical attention immediately. | |

If patient is experiencing other symptoms, did you also refer to the appropriate protocols? If yes, please specify:

Additional Comments:

3. Review medications patient is using for diarrhea, including prescribed, over the counter, and/or herbal supplements (Supporting evidence: 6 guidelines)¹⁻⁶

| Current use | Examples of Medications for diarrhea | Notes (e.g. dose, suggest to use as prescribed) | Type of Evidence |
|--------------------------|--|---|--------------------------|
| <input type="checkbox"/> | Loperamide (Imodium [®]) ¹⁻⁶ 2mg post each loose bowel movement (max 16mg/day) | | Systematic Review |
| <input type="checkbox"/> | Atropine-diphenoxylate (Lomotil [®]) ^{4,5,6} | | Systematic Review |
| <input type="checkbox"/> | Octreotide (Sandostatin [®]) ¹⁻⁶ | | Systematic Review |
| <input type="checkbox"/> | Psyllium fiber (Metamucil [®]) ⁴ 1-2 tsp. per day | | Randomized control trial |

4. Review self-care strategies (Supporting evidence: 5 guidelines)³⁻⁷

| What strategies are already being used? | Strategy suggested/ education provided | Patient agreed to try | Self-care strategies |
|---|--|--------------------------|---|
| 1. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | What helps when you have diarrhea? Reinforce as appropriate. Specify: |
| 2. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are you trying to drink 8-10 glasses clear fluids per day (e.g. water, sports drinks, broth, diluted fruit juice)? ³⁻⁷ |
| 3. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Do you know what kinds of foods you should be trying to eat? Suggest: applesauce, oatmeal, bananas, barley, cooked carrots, rice, white toast, plain pasta, well cooked eggs, skinned turkey or chicken, mashed potatoes, cooked or canned fruit without skin ³⁻⁷ (high in soluble fiber and low in insoluble fiber) |
| 4. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are you trying to replace electrolytes (e.g. potassium and sodium or salt) that your body may be losing with the diarrhea by eating foods such as bananas and potatoes, drinking sports drinks or peach/apricot nectar, or oral rehydration drink (1/2 tsp. salt, 6 tsp. sugar, 4 cups water)? ^{4,7} |
| 5. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are you trying to eat 5-6 small meals? ^{3,5,6,7} |
| 6. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are you trying to avoid lactose-containing products (milk, yoghurt, cheese) ^{3,4,6,7} |
| 7. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are you trying to avoid alcohol and minimize caffeine (<2-3 servings) (coffee, chocolate) ^{5,7} |
| 8. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are you trying to avoid greasy/fried and spicy foods? ^{4,6,7} |
| 9. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are you trying to avoid large amounts fruit juices or sweetened fruit drinks? ^{3,4,7} |
| 10. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are you trying to avoid raw vegetables, whole grain bread, nuts, popcorn, skins, seeds, legumes? ^{4,6,7} (Insoluble fiber) |
| 11. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are you trying to keep skin around your rectum or ostomy clean to avoid skin breakdown? ^{6,7} |
| 12. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Have you been keeping track of the number of stools you are having and are you aware of other problems you should be watching for with your diarrhea? (e.g. fever, dizziness) ^{3,6} (review criteria listed above in assessment) |
| 13. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Would more information about your symptoms help you to manage them better? If yes, provide |

| | | | |
|------------------------------|--------------------------|--------------------------|--|
| 13. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Would more information about your symptoms help you to manage them better? If yes, provide appropriate information or suggest resources. |
| 14. <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Have you spoken with a doctor or pharmacist about medications you may be taking that can cause or worsen your diarrhea? ⁶ |

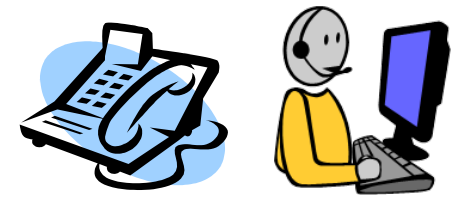
5. Summarize and document plan agreed upon with caller (check all that apply)

| | |
|--------------------------|--|
| <input type="checkbox"/> | No change, continue with self-care strategies and if appropriate, medication use |
| <input type="checkbox"/> | Patient agrees to try self-care items #: How confident are you that you can try what you agreed to do (0=not confident, 10=very confident)? |
| <input type="checkbox"/> | Patient agrees to use medication to be consistent with prescribed regimen. Specify: |
| <input type="checkbox"/> | Referral (service & date): |
| <input type="checkbox"/> | Patient agrees to seek medical attention; specify time frame: |
| <input type="checkbox"/> | Advise to call back in 12-24 hours if no improvement, symptom worsens, or new symptoms occur |

| Name | Signature | Date |
|------|-----------|------|
|------|-----------|------|

References

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8. National Institutes of Health: National Cancer Institute. (2010). Common terminology criteria for adverse events (CTCAE) v4.03. Retrieved from: <http://evs.nci.nih.gov/fp1/CTCAE/About.html>.
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Usability testing

1. Amount of information:

✓ just right

2. Appropriate terms:

✓ yes

3. Readability:

✓ good font type & size,
icons

4. Fits with clinical work flow

✓ 8 yes

5. Self-evident to complete:

~mixed results

– Wanted more guidance on

– assessing

– triaging

– documenting

6. Space for entering data:

60% enough

40% not enough

Patient management strategies rated the highest for usefulness followed by review of medications, triage, and documentation



General comments

- clear, user-friendly, comprehensive assessment
- very thorough yet concise; offers direction without needing to seek more info
- tick boxes saves excessive charting
- links evidence to practice
- logical/ systematic approach
- easy to fill out when talking
- applicable to nearly every cancer
- excellent self-care strategies
- difference b/w mild/mod/severe symptoms



Reflections on the process

- Strengths

- see consistencies across guidelines; used highest quality evidence

- Limitations

- data depended on quality of guidelines (not original studies)

- Issues

- If assessment/triage vague or absent in guidelines used NCI Common Terminology Criteria for Adverse Events v4.0
- Needed to ensure consistency across guidelines (e.g. if blood in vomit listed as severe in diarrhea guideline, then severe on bleeding guideline)
- Method of grading evidence not consistent across identified guidelines (eg. ONS uses Recommended for Practice, Likely to be Effective, etc.)
- When suggestions given, verified link to evidence



Summary

Endorsed and disseminated
on CANO website

- We developed 13 KT tools:
 - created from guidelines
 - to transform evidence into user-friendly protocols
 - for use by nurses when guiding patients at home to better manage their cancer treatment-related symptoms.
- For implementation into clinical practice
 - training needed (e.g. flow of questions, listen to patient)
 - Some adapting at local level (e.g. logo, minimize references)

STUDY PROTOCOL

Open Access

Managing symptoms during cancer treatments: evaluating the implementation of evidence-informed remote support protocols

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Abstract

Background: Management of cancer treatment-related symptoms is an important safety issue given that symptoms can become life-threatening and often occur when patients are at home. With funding from the Canadian Partnership Against Cancer, a pan-Canadian steering committee was established with representation from eight provinces to develop symptom protocols using a rigorous methodology (CAN-IMPI FMENT[®]). Each protocol is based on a systematic



Publications: The COSTaRS Project

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