



# B.C. INTER-PROFESSIONAL PALLIATIVE SYMPTOM MANAGEMENT GUIDELINES

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# DEHYDRATION

## DEFINITION

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**Dehydration** is intracellular water depletion with hypernatremia (hyperosmolality); it usually presents with symptoms of thirst, anorexia, nausea/vomiting, fatigue and irritability. Physical findings may include lethargy, confusion, muscle twitching and hyperreflexia. **Volume depletion** is the loss of intravascular water (with varying sodium levels) and presents with diminished skin turgor/capillary refill and orthostatic hypotension and dizziness.<sup>1</sup> **Artificial hydration (AH)** involves the provision of water or electrolyte solutions by any route other than the mouth. This can be achieved by intravenous, subcutaneous (hypodermoclysis)<sup>2</sup> and dermal (dermoclysis).<sup>3</sup> **Overhydration** related symptoms include: bronchial secretions, respiratory congestion, pleural effusion, nausea/vomiting, ascites, peripheral edema.<sup>4</sup>

## PREVALENCE

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In older adults, dehydration is one of the 10 most frequent diagnoses for hospitalization. In frail elderly people, it is the most common fluid and electrolyte disorder.<sup>5</sup> In one study of palliative patients with cancer diagnosis, hypernatremia was present in 55% of clients; hypercalcemia was present in 23%.<sup>6</sup>

## IMPACT

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In the clinical setting, it is not uncommon for distressed patients who are unable to eat or drink (and their families) to emotionally plead with healthcare providers to intervene.<sup>7, 8</sup> When patients with a life-limiting illness are unable to adequately take in nutrition and fluids, the issue of perceived starvation and eventual death rises to the forefront, resulting in stress on both health providers and families. Dehydration causes few symptoms for patients who are comatose and comfortable, but can contribute to a delirium.<sup>9</sup> During the dying process, patients may have diminished awareness, which may decrease their perception of thirst and hunger as they naturally progress toward coma and death.<sup>3</sup>

## STANDARD OF CARE

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### Step 1 | Goals of care conversation

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

### Step 2 | Assessment

#### Dehydration Assessment: Using Mnemonic O, P, Q, R, S, T, U and V<sup>22</sup>

<b>Mnemonic Letter</b>	<b>Assessment Questions</b> <i>Whenever possible, ask the patient directly. Involve family as appropriate and desired by the patient.</i>
<b>O</b> nset	When did you start to feel dehydrated? Have you experienced it before? How long does it last? How often does it occur?
<b>P</b> rovoking /Palliating	What brings it on? What makes it better? What makes it worse?
<b>Q</b> uality	What does it feel like (dry mouth / skin, thirst)? Can you describe it?
<b>R</b> egion/Radiation	Not applicable
<b>S</b> everity	How severe is this symptom? What would you rate it on a scale of 0-10 (0 being none and 10 being the worst possible)? Right now? At worst? On average? How bothered are you by this symptom? Are there any other symptom(s) that accompany this symptom?

Dehydration assessment: using mnemonic O, P, Q, R, S, T, U and V continued on [next page](#)

## Dehydration Assessment: Using Mnemonic O, P, Q, R, S, T, U and V *continued*

<p><b>Treatment</b></p>	<p>What medications and treatments are you currently using? Are you using any non-prescription treatments, herbal remedies, or traditional healing practices? How effective are these? Do you have any side effects from the medications and treatments? What have you tried in the past? Do you have concerns about side effects or cost of treatments?</p>
<p><b>Understanding</b></p>	<p>What do you believe is causing this symptom? How is it affecting you and/or your family? What is most concerning to you?</p>
<p><b>Values</b></p>	<p>What overall goals do we need to keep in mind as we manage this symptom? What is your acceptable level for this symptom (0-10)? Are there any beliefs, views or feelings about this symptom that are important to you and your family?</p>

### Symptom Assessment: Physical assessment as appropriate for symptom

It is often difficult to assess hydration in people with advanced illness; therefore, findings from a variety of observations and assessments are most reliable.<sup>10</sup>

**History** – assess appetite, oral intake, associated symptoms (e.g., nausea, vomiting, diarrhea, drowsiness, fatigue, and confusion). **Physical Examination** – assess skin and oral cavity, dry mucous membranes, jugular venous pressure, blood pressure, pulse, temperature, ascites, muscle weakness. Urine may be darker in colour due to dehydration or other factors, such as jaundice.

Note: In severe cachexia, the skin turgor is hard to assess and is often not reliable. Similarly, thirst and edema are not good indicators of hydration status.<sup>10</sup>

### Diagnostics: consider goals of care before ordering diagnostic testing

- May include serum urea, creatinine, sodium, hematocrit, albumin and glucose.

## Step 3 | Determine possible causes and reverse as possible if in keeping with goals of care

Fluid deficits in terminally ill patients are frequently multifactorial. Regardless of the cause, the end result is total body water depletion and decreased renal function. There are 2 broad categories of fluid deficit disorders which may present separately or together:

- **Dehydration**, which results from total body water depletion.
- **Hypovolemia or volume depletion**, which results from loss of both salt and water, mainly from the extracellular (intravascular) space.<sup>3</sup>

## PRINCIPLES OF MANAGEMENT

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

- Capable adults have the right to decide for themselves whether to stop eating and drinking and whether or not they would like to withdraw or withhold artificial nutrition and hydration.
- Decisions for patients who lack decision-making capacity should be made in accordance with advance directives and/or persons legally designated by the patient or the Temporary Substitute Decision Maker.<sup>3</sup>
- If the effort to eat and drink becomes too burdensome or is not welcome, the patient should not be pressured to make this effort.<sup>3</sup>
- Dehydration in dying persons is associated with some benefits: reduced urine output with reduced need to void or use catheters; less gastro-intestinal fluid with decreased frequency and severity of edema and ascites; may act as a natural anesthetic for the central nervous system.<sup>8</sup>
- When deciding to initiate or stop hydration, discuss goals of care, risks and benefits along with the patient's preferences.<sup>1</sup>
- In case of uncertainty of the benefits and risks of parenteral hydration in a particular patient, a brief trial with clearly defined goals may be appropriate to initiate, followed by re-assessments of its clinical benefits and harm.<sup>7</sup>

## Step 4 | Interventions

### LEGEND FOR USE OF BULLETS

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

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

### Non-pharmacological interventions

#### Interventions available in the home and residential care facilities

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**Oral intake** is the preferred route as long as it is well tolerated. Popsicles, frozen yogurt, ice chips made from water or fruit juice, and commercial instant breakfast drinks or milkshakes can be offered. Bendable straws and sports bottles can be helpful.<sup>10</sup>
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Dry mouth can be treated with an intensive, every-2-hour **schedule of mouth care**, including hygiene, lip lubrication, artificial saliva and ice chips.<sup>3</sup>

*Non-pharmacological interventions continued on [next page](#)*

## Non-pharmacological interventions *continued*

### Interventions requiring additional equipment or admission to acute care

#### Artificial hydration (AH) - see [Dyhydration extra resources or assessment tools](#) for burdens and benefits

-  Research does not support that parenteral hydration improves signs of dehydration, survival or quality of life; in temporary, short-term situations, it may alleviate symptoms related to dehydration and decreased mental cognition.<sup>1</sup>
-  Mixed evidence to support hydration and possible opioid rotation to improve delirium symptoms related to opioid toxicity.
-  Parenteral AH can be administered through hypodermoclysis (fluid infused into the subcutaneous tissue) or Intravenous. Hypodermoclysis lacks firm evidence of benefit. Trial only for symptomatic dehydration.<sup>15</sup> Refer to your local policies and pre-printed orders if trialing hypodermoclysis.

### Questions re AH decisions include

- Will it prolong survival?
- Will it alleviate symptoms? Improve quality of life?
- If so, what method of AH is best?<sup>14</sup>
- What are the implications for the patient remaining in their place of choice?

Refer to [Dyhydration extra resources or assessment tools](#) for further decision support.

## Pharmacological interventions

-  **Reduce or remove any drugs, if possible, that may cause or contribute to dehydration** such as diuretics, alcohol, excessive laxative use or lithium which also pose a risk.<sup>16,17</sup>

*Pharmacological interventions continued on [next page](#)*

## Pharmacological interventions *continued*

-  **Consider consultation with a pharmacist** when drug-related dehydration problems are suspected such as: Dry mouth (antidepressants, antihistamines, anticholinergics), reduced thirst sensation (antipsychotics), greater sweating (venlafaxine, opioids), or sedation and reduction in judgement (benzodiazepines).<sup>1,17</sup>
-  **Assess risk of drug toxicity** due to fluid loss, or if renal function reduces elimination of drugs or their metabolites.<sup>3</sup>
-  Adjust dose to accommodate reduced drug clearance, discontinue/taper drugs or switch to drugs more suitable for poorer renal function.
-  If reduced renal function review analgesics, psychoactive drugs, antibiotics, metoclopramide, gabapentin, digoxin, ACE inhibitors, and others.
-  Opioids such as morphine and its metabolite, codeine, should be avoided in presence of kidney disease as they risk inducing toxicity appearing as myoclonus.<sup>18</sup>
-  There is mixed evidence supporting hydration and possible opioid rotation to improve myoclonus or delirium symptoms related to opioid toxicity.<sup>1,18</sup>
-  **Monitor patient performance status in dysphagia** as medication routes capacity; routes and options may be actively changing when dehydration exists.
-  **Update drug management** to best control new or existing symptoms according to goals of care including:
  -  Delirium, sedation, cognition – often distressing to families.<sup>1,3</sup>
  -  Nausea, fatigue, anorexia, dry mouth and thirst – as may occur often.
  -  Hypotension, dizziness, diarrhea, sweating, constipation, fever (including neoplastic), infection, respiratory congestion, neuromuscular irritability, diabetes, heat-related illness.<sup>19</sup>
  -  Overhydration contributes to edema, ascites, respiratory congestion.
  -  Electrolyte management.

Utilize other symptom guidelines and seek consultation with interdisciplinary professionals as appropriate.

## Patient and family education

-  Families need explanation, support and recognition that this is a difficult transition.<sup>9</sup>
-  Communicate clearly with patients and family about the limited evidence of beneficial effects of AH.<sup>1</sup>
-  Help the family to understand that artificial hydration is often not indicated when the patient is dying and will not improve the patient's condition.<sup>3</sup>
-  Explain that the body no longer needs large amounts of energy and the patient's digestive system is progressively slowing down.<sup>12</sup> Help the patient and family understand that the loss of appetite and reduced fluid intake is a normal part of the dying process.
-  Explain that attempts to counteract this process could create unpleasant symptoms from fluid the body cannot process such as bloating, swelling, cramps, diarrhea, and shortness of breath, without improving the outcome.<sup>13</sup>
-  Encourage the family to do mouth care, if appropriate, as a way to contribute to their loved one's comfort.

## ADDITIONAL RESOURCES FOR MANAGEMENT OF DEHYDRATION

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### Resources specific to dehydration

- BC Cancer Agency: Xerostomia  
→ <http://www.bccancer.bc.ca/nursing-site/Documents/18.%20Xerostomia.pdf>

### General Resources

- **Provincial Palliative Care Line** – for **physician** advice or support, call **1 877 711-5757** In ongoing partnership with the Doctors of BC, the toll-free Provincial Palliative Care Consultation Phone Line is staffed by Vancouver Home Hospice Palliative Care physicians 24 hours per day, 7 days per week to assist physicians in B.C. with advice about symptom management, psychosocial issues, or difficult end-of-life decision making.
- BC Centre for Palliative Care: Serious Illness Conversation Guide  
→ <http://www.bc-cpc.ca/cpc/>

*Additional resources for management of dehydration continued on [next page](#)*

## ADDITIONAL RESOURCES FOR MANAGEMENT OF DEHYDRATION *CONTINUED*

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- BC Guidelines: Palliative Care for the Patient with Incurable Cancer or Advanced Disease
  - <http://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/palliative-care>
- BC Palliative Care Benefits: Information for prescribers
  - <http://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/pharmacare/prescribers/plan-p-bc-palliative-care-benefits-program>
- National Centre for Complementary and Alternative Medicine (NCCAM) for additional information on the use of non-pharmacological interventions
  - <https://nccih.nih.gov/>
- Canadian Association of Psychosocial Oncology: Pan-Canadian Practice Guideline: Screening, Assessment and Management of Psychosocial Distress, Depression and Anxiety in Adults with Cancer
  - [http://www.capo.ca/wp-content/uploads/2015/11/FINAL\\_Distress\\_Guideline1.pdf](http://www.capo.ca/wp-content/uploads/2015/11/FINAL_Distress_Guideline1.pdf)
- Fraser Health psychosocial care guideline
  - <https://www.fraserhealth.ca/media/psychosocial%20care.pdf>

### Resources specific to health organization/region

- Fraser Health
  - <http://www.fraserhealth.ca/health-professionals/professional-resources/hospice-palliative-care/>
- First Nations Health Authority
  - <http://www.fnha.ca/>
- Interior Health
  - <https://www.interiorhealth.ca/YourCare/PalliativeCare/Pages/default.aspx>
- Island Health
  - [http://www.viha.ca/pal\\_eol/](http://www.viha.ca/pal_eol/)
- Northern Health
  - <https://www.northernhealth.ca/Professionals/PalliativeCareEndofLifeCare.aspx>

*Additional resources for management of dehydration continued on [next page](#)*

## ADDITIONAL RESOURCES FOR MANAGEMENT OF DEHYDRATION *CONTINUED*

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- Providence Health  
→ <http://hpc.providencehealthcare.org/>
- Vancouver Coastal Health  
→ <http://www.vch.ca/your-care/home-community-care/care-options/hospice-palliative-care>

### Resources specific to patient population

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

## UNDERLYING CAUSES OF DEHYDRATION IN PALLIATIVE CARE

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Information is included in the body of this document

## MEDICATIONS FOR MANAGEMENT OF DEHYDRATION

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Medication information is included in the body of this document

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

## DEHYDRATION MANAGEMENT ALGORITHM

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No management algorithm included in this document

## DEHYDRATION EXTRA RESOURCES OR ASSESSMENT TOOLS

Artificial hydration (IV/SC fluids) during the dying phase: to use or not to use?<sup>1,4,7,8,20, 21</sup>

Global Benefits of Artificial hydration (AH)	Global Burdens of Artificial Hydration (AH)
No strong evidence exists supporting the use of parenteral hydration for the majority of terminally ill patients; however, a <b>subset of patients</b> may derive some benefit. <sup>7</sup>	
<p>May improve:</p> <ul style="list-style-type: none"> <li>• Circulation of drugs to relieve symptoms.</li> <li>• Skin turgor and reduce pressure sores (or not)</li> <li>• Alertness and fatigue.</li> </ul>	<p>May make death less ‘natural’, i.e., medicalized.</p> <p>Family may be less able to cuddle and get close with the pump/drip stand. Family may feel inhibited re closeness due to equipment.</p>
<p>May improve cognitive function if related to terminal agitation secondary to neurotoxicity. May prolong survival in specific, reversible causes such as hypercalcemia or opioid neurotoxicity.</p>	<p>May cause iatrogenic overhydration, leading to exacerbation of physical symptoms such as: pulmonary edema, ascites, vomiting, peripheral edema, respiratory congestion, restlessness from full bladder.</p>
<p>May reduce thirst in some patients (note: good mouth care usually does as good a job). Focus on managing dry mouth.</p>	<p>May deter patients from being at home.</p>
<p>Seems less like care providers are just letting the patient die (but remember, he or she is dying from the disease, not dehydration). Ask: who are we treating really—us, the relatives, or the patient?</p>	<p>Infusion set getting in the way of human touch. May encumber the patient’s movement, mobility and closeness.</p>
<b>Specific to hypodermoclysis – subcutaneous (S/C) delivery</b>	
<p>S/C usage may avoid need for IV insertion or transfers to acute care setting. Can sometimes be administered in the home or residential care settings.</p>	<p>IV tubing, bags, fluid and S/C needles required.</p>
<p>No venipuncture skills required</p>	

*Dehydration extra resources or assessment tools continued on [next page](#)*

## DEHYDRATION EXTRA RESOURCES OR ASSESSMENT TOOLS *CONTINUED*

May enhance effectiveness of pain medication.	Potential for overhydration remains.
Can be administered slowly overnight; can administer low fluid volumes. Lower potential for iatrogenic overhydration than with IV hydration.	Not all residential care settings or community care services have capacity to administer.
<b>Specific to Intravenous delivery</b>	
May improve clinical conditions secondary to medication toxicities.	Venipuncture skills and equipment required. IV catheters/needles are painful and infusion sets are constraining. IVs are invasive and intrusive and can contribute to patient and family discomfort.
Can be administered in acute care and ER settings.	Transfer to acute care or ER may cause patient distress, discomfort and disruption to personal goals and wishes.
Most rapid response to dehydration: monitor closely.	May cause iatrogenic overhydration leading to exacerbation of physical symptoms such as: pulmonary edema, ascites, vomiting, peripheral edema, respiratory congestion, restlessness from full bladder.
While relatively large hydration volumes can worsen or lead to pleural effusion and/or excess bronchial secretions, low volumes (<1000 mL daily) appear to be safely tolerated. <sup>3</sup>	

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