Section 21

Dehydration CAP

Problem

The Dehydration CAP alerts the care professional to the need to assess for possible dehydration. Normally, the body maintains an appropriate quantity of fluid within its cells and the vascular system. This involves maintaining a balance between the amount of water taken in and the quantity excreted by the kidneys and lost in breathing, sweating, and defecating. Dehydration is a condition where the amount lost exceeds the amount taken in by a person who has the appropriate amount to start with.

A physical examination may provide evidence that the person is dehydrated. However, in older persons, diagnosing dehydration by assessing the degree of tenting of the skin when pinched or the dryness of the mucous parts of the mouth is usually not recommended. Laboratory studies often offer an important indication of the presence of dehydration. In a dehydrated person, the BUN/creatinine ratio in blood almost always increases above approximately 25, and the concentration of hemoglobin in the blood may rise as well. Under most circumstances, the concentration of sodium in the serum rises, as the body usually loses water in excess of salt. If there is a significant degree of dehydration, the person's blood pressure may fall and there may be an associated increase in the pulse rate.

Dehydration is associated with a long list of medical conditions including gastroenteritis, diarrhea, infection, renal disease, and excessive use of diuretics. Older persons may become dehydrated in very hot weather when they do not increase their fluid intake appropriately. Fluids may need to be administered orally or intravenously, depending on the cause of the dehydration and the severity of the condition. Appropriate monitoring of the serum sodium and potassium levels as well as renal function is often required.

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Overall Goals of Care

- Identify and treat the underlying cause(s) of dehydration.
- Rehydrate the person, with the course of treatment dependent on the extent of the deficits.
- Establish an appropriate approach to monitoring and laboratory testing to ensure recovery and maintenance of an appropriate fluid balance.
- Prevent associated complications (hypotension, falls, delirium, constipation).
- Provide comfort to those for whom treatment is primarily supportive.

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Dehydration CAP Trigger

This CAP is based on two items in the interRAI assessment instruments: dehydration and insufficient fluid. Both have relatively low prevalence. The rate of dehydration

reported on interRAI assessment instruments ranges from less than 1% up to about 5%, while insufficient fluid rates of 3 to 10% are common. When both problems are present, the clinical significance is likely to be more serious. Two trigger levels, high and low, are specified. Persons in the high-level group have one or more obvious causes for or complications of dehydration. Their clinical course mandates immediate review by a physician. Persons in the low-level group, while still requiring close clinical oversight, may be able to be managed by increasing fluid intake and monitoring the person closely.

Over a 90-day period, about one-half of the persons assessed as dehydrated (based on these two items) will typically no longer be assessed as dehydrated. Thus, there are two keys to this CAP. First, be vigilant to ensure that a person with these problems is identified as requiring treatment. Second, intervene to make sure the person is rehydrated properly and his or her associated clinical problems are addressed.

TRIGGERED — HIGH RISK

Persons in this category have first been assessed as dehydrated and/or receiving insufficient fluids. Second, they have been assessed as having one or more of the following causes for or complications of dehydration:

- Diarrhea
- Vomiting
- Delirium (for example, the recent onset of one or more of the following conditions: easily distracted, restlessness, varying mental function, lethargy, disorganized speech, and altered perception)
- Fever
- Dizziness
- Syncope
- Constipation
- Weight loss (5% or more in the last 30 days)

This group includes about 2 to 6% of persons in long-term care facilities, 1% of persons receiving home care, and less than 1% of older adults living independently in the community.

TRIGGERED — LOW RISK

Persons in this category have been assessed as dehydrated and/or receiving insufficient fluids. However, they do **not** have any of the associated conditions noted previously. This group includes about 2% of persons in long-term care facilities, 4% of persons receiving home care, and less than 1% of older adults living independently in the community.

NOT TRIGGERED — All other persons. This group includes about 97% of persons in long-term care facilities, 94% of persons receiving home care, and 99% of older adults living independently in the community.

Dehydration CAP Guidelines

Identification of the Person's Capacity to Be Involved in His or Her Own Treatment

Many persons triggered by the Dehydration CAP, no matter where they live, will present with a functional or cognitive problem. The first step in designing a care plan is to assess the seriousness of the problem and then the likelihood the person can take a meaningful role in resolving it. For this CAP, it is assumed that such a role can be played when the person has the following three capabilities.

- First, the person has a Cognitive Performance Score of less than 4.
- Second, the person has the ability to move about his or her living space (by walking or in a wheelchair) without the physical help of others and has access to appropriate fluids.
- Third, the person will participate in an appropriate monitoring activity to be sure the dehydration and its cause are adequately addressed.

This definition applies to about 20% of triggered persons in long-term care facilities, 70% of triggered persons receiving home care, and almost all triggered older adults living independently in the community.

Physician Communication and Involvement in Assessing and Care Planning

Initial management. Clinicians must note that the Dehydration CAP has been triggered and assess the person with respect to the degree of dehydration and whether the person has a high- or a low-level trigger for dehydration. When the person has a high-level trigger, an immediate response is warranted. The clinician should communicate these findings to a physician. In addition, factors that may have contributed to or caused dehydration should be brought to the physician's attention. The more comprehensive the information, the easier it will be to determine an appropriate course of action in a timely fashion. For example, knowing that the person has a low-grade fever (which is a high-level trigger feature) and has not been taking fluids well while continuing to take a diuretic will help formulate the course of action.

Clinical Observations (many of which can be drawn from the interRAI Assessment)

Are there signs suggesting the presence of dehydration?

- A rapid pulse or a significant increase in the pulse rate upon assuming an upright position.
- Hypotension, or a change in blood pressure of more than 20 mm Hg upon assuming an upright position.
- Is the person lethargic, confused, or delirious?

Are there signs of an infection?

- Specifically, is there fever, cough, lethargy, dysuria, mental status change, diarrhea, or vomiting?

Changes in the person's oral intake:

- Does the person leave food uneaten, consuming less than 25% of meals?

- Has the person taken in an adequate quantity of fluid?
- Is the person taking an excessive dose of a laxative?
- Does the person have a swallowing problem?
- Does the person tell you that he or she is thirsty?
- Does the person limit the input of fluid due to a fear of incontinence?

Other considerations that may be relevant to dehydration:

- Is the person on a diuretic or has the dose been increased recently?
- Is the person on a fluid restriction?
- Is the person on a newly prescribed diet?
- Is the person on a restricted diet?
- Is an intake and output record kept?
- Does the person have a disease known to increase the likelihood of dehydration?
- Does the person have a history of dehydration?
- Does the person have abdominal pain, with or without diarrhea, nausea, or vomiting?

Illnesses that predispose to limitations in maintaining normal fluid balance:

- Is the person a diabetic, or has there been a change in the medications prescribed for diabetes?
- Does the person have a swallowing problem that limits the ability to increase fluid intake when needed?
- Does the person have a significant degree of renal failure or a known disease of the kidney?
- Is the person lethargic for any reason?
- Is there newly present constipation, fecal impaction, or weight loss?
- Does the person have any behavioral disturbance that precludes him or her from taking sufficient quantities of fluid?
- Is there evidence of a new stroke or recent change in mental status?
- Is the person medically unstable?
- Did the person have a recent acute event, for example, hip surgery, that might predispose to dehydration?
- Has there been a recent decline in ADLs?
- Does the person have a disease, such as Parkinson's disease, that may require an unusually long time to eat?
- Has the person recently stopped taking steroids for any condition? (This may require immediate medical intervention.)

Additional Resources

Fish LC, Davis KM, Minaker KL. 1997. Dehydration. In Morris JN, Lipsitz LA, Murphy KM, Belleville-Taylor P, eds. *Quality care in the nursing home.* St. Louis, MO: Mosby. **Note:** This chapter provides a comprehensive approach to assessment and management of dehydration in the nursing home. Case examples are presented.

Mentes, JC. 1998. *Hydration management research-based protocol*. The University of Iowa Gerontological Nursing Interventions Research Center, Research Dissemination Core. **Note:** This protocol provides helpful information for developing a comprehensive care plan for persons with dehydration. www.nursing .uiowa.edu

Mentes J, Buckwalter K. 1997. Getting back to basics. Managing hydration to prevent acute confusion in frail elders. *Journal of Gerontological Nursing* 23(10): 48–51.

Palmer JB, Drennan JC, Baba M. 2000. Evaluation and treatment of swallowing impairments. *Am Fam Physician* (April 15) 61(8): 2453–62.

Weinburg A, Minaker K, The Council on Scientific Affairs, American Medical Association. 1995. Dehydration: Evaluation and management in older adults. *JAMA* 274: 1552–56.

Weinburg A, Pals J, Levesque P, Beals L, Cunningham T, Minaker K. 1994. Dehydration and death during febrile episodes in the nursing home. *JAGS* 42: 968–71.

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