

The effects of dehydration and why prevention is not as straightforward as it seems

Dehydration: why is it still a problem?

In this article...

- The physical and financial consequences of dehydration
- Identifying and diagnosing dehydration in older people
- Useful strategies to prevent the occurrence of dehydration

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Reports from organisations such as the Care Quality Commission have identified many hospital patients, particularly older people, are suffering from dehydration. A range of national initiatives have emphasised the importance of hydration and nutrition, and offered guidance to help address shortcomings, yet the problems persist. This article examines the interplay of factors that affect the assessment and identification of dehydration, and its prevention. It also offers strategies to help nurses to ensure patients receive adequate hydration.

It is universally recognised that dehydration in older people can be easily prevented or treated by ensuring they have enough to drink, unless they have problems such as swallowing difficulties. However, despite this apparently simple and cost-effective preventive measure, dehydration is still a major problem for older people in hospitals and community care, affecting health services throughout the developed world (Begum and Johnson, 2010). In the UK the issue has been highlighted repeatedly by independent organisations (Health Service Ombudsman, 2011; The Patients Association, 2010).

Preventable dehydration has long been associated with neglect and is an indication of poor quality care. The key princi-

ples of helping a patient to drink have remained unchanged and are clearly reflected in evidence-based national guidelines (Royal College of Nursing and National Patient Safety Agency, 2007; Department of Health, 2001). Understanding why nurses are failing to prevent or detect and manage the early signs of dehydration is crucial; only then can sustainable measures be identified to support patients and staff.

Recently the Care Quality Commission, the independent regulator of health and adult social care services in England, raised serious concerns about how older people are treated in hospital. It published the first 12 reports from an England-wide inspection programme looking at standards of care in 100 hospitals; dehydration was a concern in several hospitals, and staff in one said they sometimes had to prescribe drinking water on medication charts to ensure patients received regular drinks (CQC, 2011a).

Dehydration can result in a chain of adverse events (Box 1), leading to unacceptable patient suffering, increased staff workloads and escalating healthcare costs caused by avoidable admissions and prolonged lengths of stay (Box 2). Unless it is addressed quickly dehydration can cause rapid deterioration requiring complex, costly and invasive clinical interventions, involving a wide range of health professionals. For many patients the long-term outcomes can be devastating, resulting in loss of independence and dignity, and even an untimely and undignified death (RCN and NPSA, 2007; Mentis, 2006; Kayser-Jones et al, 2003).

5 key points

1 Although dehydration is easy to prevent, it is still a major problem for older people in hospital

2 Dehydration can cause patient suffering, more work for staff and higher healthcare costs

3 Dehydration is not easy to diagnose but should only be excluded after due consideration

4 Blood tests may only show dehydration when it is already at an advanced stage

5 Failing to diagnose dehydration could be life-threatening



Using the Hydrant (top) and red jug initiative (above) can help prevent dehydration

● This article has been double-blind
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Older people are at increased risk of dehydration due to changes occurring in the natural ageing process that can be complicated further by underlying medical conditions (Box 3).

National initiatives

The initial *Essence of Care* reinforced the importance of fundamental aspects of nursing care including nutrition and hydration (DH, 2001). However, by 2007 and in response to the Nutrition Now campaign, the RCN and NPSA recognised the need to focus specifically on hydration and produced an online toolkit providing a wealth of information and strategies to reduce dehydration; this suggested a minimum fluid intake goal of 1,600ml and recommended that patients' fluid intake be monitored (RCN and NPSA, 2007). The high-impact action Keeping Nourished, Getting Better shows nurses recognise that good hydration will improve quality of care while simultaneously producing cost savings (NHS Institute for Innovation and Improvement, 2010). The updated *Essence of Care* has re-emphasised best practice (DH, 2010).

Although nurses may understand the importance of hydration, the reports from the CQC, Health Service Ombudsman and The Patients Association demonstrate that this does not always translate into clinical practice. Bridging the theory-practice gap is a constant challenge but sharing experiences of best practice can help break down barriers. The Department of Health has launched Energise for Excellence, a quality framework developed to encourage nurses to take this approach (tinyurl.com/Energise-for-excellence).

Legislation and guidance

In response to escalating concerns about failing standards of care, the Health and Social Care Act 2008 established the CQC and gave it statutory powers to ensure care providers meet essential standards of quality and safety (CQC, 2010; 2009) – a clear indication that poor outcomes of care related to fundamental issues such as dehydration and malnutrition will not be tolerated. The CQC provides a list of prompts to ensure an adequate level of care (Box 4); failure to meet these standards could result in the CQC issuing warnings or fines and, if necessary, preventing further admissions, closing failing services or even prosecuting care providers. These prompts reflect similar principles to those outlined in the updated *Essence of Care* (DH, 2010); collectively these represent three core issues:

BOX 1. COMPLICATIONS

Common complications associated with dehydration

- Low blood pressure, dizziness and increased risk of falls
- Urinary infections and incontinence
- Skin conditions
- Pressure ulcers
- Poor oral health
- Nausea and reduced appetite
- Constipation and kidney stones
- Renal failure
- Cognitive and physical impairment
- Hospital-acquired delirium
- Poor management of diabetes
- Community-acquired pneumonia
- Cardiac disease
- Two-fold increase in the mortality of stroke patients

Source: Royal College of Nursing and National Patient Safety Agency (2007)

BOX 2. COSTS

Annual NHS costs of dehydration or associated complications

- Proper hydration alone could lead to savings of **£0.95bn**; dehydration accounted for 83,000 bed days in 2004–2005
- Pressure ulcers account for 4% of the NHS budget at **£1.4–2.1bn**
- Falls cost £15m
- Malnutrition costs £7.3bn
- Urinary tract infections account for an additional 798,000 bed days and figures from the 1990s suggest costs of £124m
- Constipation accounts for 135,273 occupied bed days

Source: NHS Institute for Innovation and Improvement (2010) and NHS Information Centre (2011)

- » Identification and assessment;
- » Monitoring fluid intake;
- » Bedside care.

In addition a fluid management bundle published by NHS East of England (2011) lists three areas proven to be directly linked to ineffective and inconsistent fluid management:

- » Inadequate staff knowledge and competence within the overall context of holistic clinical assessment and care;
- » Weaknesses in the systems and processes that support effective fluid management;
- » Insufficient governance and accountability.

Inadequate staffing levels have also been recognised as a major factor linked to

dehydration (CQC, 2011b; Menten and Wang, 2011; Shipman and Hooten 2007; Kayser-Jones et al, 2003). However, this should not detract from the issues raised by the CQC (2009) and NHS East of England (2011), which provide a framework to help identify other factors and gaps in existing evidence that may account for the ongoing problem of dehydration.

Identification and assessment

Nurses are expected to identify patients at risk of dehydration, inform them of their hydration requirements and document how identified risks will be managed (CQC, 2010) but there is no structured assessment tool to help them identify at-risk patients. This leaves patients exposed to variations in practice (Menten and Wang, 2011; Vivanti et al, 2010).

Attempts to develop a ratified dehydration assessment tool have been hampered by the lack of an agreed universal definition for dehydration; however, the following clearly identify the different underlying causes:

- » **Chronic dehydration:** This is the direct result of an inadequate oral fluid intake over a prolonged period and is commonly associated with older people. It can usually be prevented or effectively treated by having enough to drink;
- » **Acute dehydration:** this can affect all ages but especially children, and is caused by sudden fluid loss due to vomiting, diarrhoea, sweating or blood loss. It is often treated with intravenous fluids but may also respond to oral fluids (Begum and Johnson, 2010; Bennett et al, 2004).

Although an assessment tool would make it easier to identify at-risk patients, it is possible to identify risk factors during patient assessments. Standard admission procedures, along with tools designed to assess pressure ulcer and dementia risk provide a range of data to identify most risk factors associated with dehydration, such as age, impaired mobility, cognitive problems, communication difficulties, medication and continence problems. However, dehydration is not always specifically mentioned in proforma-style documentation; it is often listed under malnutrition and specific questions related to hydration are not necessarily prompted. Anecdotal evidence also suggests some confusion surrounding the purpose of the malnutrition universal screening tool (MUST) as it is not designed to include screening for dehydration.

Chronic dehydration develops over time, which is why detailed, structured,

standardised and regular assessments are needed. For example, a patient admitted for reasons unrelated to dehydration may already have a mild level of undetected dehydration. Any modest changes – such as a warmer environment; changes to normal routines, diet, infection, pain; restricted fluid intake before clinical investigations and changes to medications (especially diuretics) – can rapidly exacerbate the dehydration.

Mentes (2006) notes that staff often forget to consider other key risk factors that are not associated with the physical ability to drink. These include fear of incontinence related to fluid intake, reduced sense of thirst and reduced mental awareness. The RCN and NPSA (2007) discuss strategies to support patients who are concerned about incontinence, but further studies and initiatives should be encouraged to address this.

Identification and diagnosis

The common symptoms associated with dehydration (Box 5) should be familiar to all nurses and healthcare assistants. Making an accurate diagnosis is not easy, especially as other factors such as age-related changes, sun-damaged skin or breathing through the mouth can produce similar symptoms, but dehydration should always be considered first and only excluded after due consideration. Blood tests are not useful in detecting early stages of dehydration and often only confirm diagnosis after it has reached an advanced stage. Urine tests such as colour and specific gravity may provide useful baseline information but are not diagnostic, as results can be affected by existing illnesses, medications and diet (Bennett et al, 2004).

Registered nurses are responsible for assessing hydration needs, formulating care plans and responding to signs of deterioration, but they often rely on HCAs to inform them of any concerns or subtle changes. However, organisational factors may hamper this, such as inconsistent communication channels, lack of accountability and standardised assessment procedures, and variations in training and experience (NHS East of England, 2011). Failure to prevent dehydration or manage it at an early stage is as serious as forgetting to follow the simple rules of basic life support. The effect may not be as immediately obvious, but the long-term consequences can be just as devastating. Consistent strategies to prevent this are urgently needed and should reflect the invaluable role of HCAs.

BOX 3. RISK FACTORS IN OLDER PEOPLE

- Reduced sense of thirst
 - Reduced renal function
 - Increased longevity
 - Female gender
 - Physical weakness and disabilities
 - Communication problems
 - Onset of dementia
 - Fear of incontinence linked to oral fluid intake
 - Multiple pre-existing medical conditions
 - Medications, in particular diuretics
- Source: Wakefield et al (2009); Mentes (2006)

Prevention strategies

Drinking aids

Patients should have access to supportive equipment so they can drink independently (CQC, 2010). Those identified as having difficulties reaching, holding or lifting cups are usually offered standard drinking aids such as flexible straws, spouted beakers or modified mugs. However, in many cases, these do not enable patients to drink independently, forcing them to wait for help or suffer the indignity of spilling drinks. The value and efficacy of drinking aids has not been studied so there is no evidence to support the need for improved equipment. Hodgkinson et al (2003) called for research to determine the optimum method of maintaining adequate oral hydration in older adults.

Developing research into problems with drinking aids may lead to new, practical and cost-effective solutions to tackle dehydration, but there are some recent innovations that may reduce dehydration and the associated complications and costs at minimal expenditure:

- » The Hydrant, available through the NHS supply chain, is a simple, cost-effective device allowing patients to access water independently without having to lift a beaker or jug. Although it cannot be used for hot drinks and is not always suitable for patients who are very frail due to the bite-suck action required to use it, it has been well received by many patients.
- » The red jug scheme is an initiative developed by nurses in which patients at risk of dehydration are given a special red jug that is smaller and lighter to handle than the standard jug. Its bright colour also helps to raise hydration awareness among staff and relatives (NHSIII, 2010).

Monitoring fluid intake

Monitoring fluid intake should be a priority for all patients at risk of dehydration; historically this has been inadequate so many care providers need to make systematic improvements. Standard fluid balance charts have acquired a reputation for being completed inaccurately and therefore of little clinical value (Reid, 2004). A lack of governance has permitted poor documentation to become commonplace and has led many care providers to abandon formal fluid monitoring in older patients. However, failure to monitor fluid intake leaves patients at risk of developing chronic dehydration. The Adult Intelligent Fluid Management Bundle is a valuable practical resource, providing clear clinical initiatives, educational literature and an audit template to support the aims of clinical governance (NHS East of England, 2011).

Bedside care

As poor outcomes of care and quality of life are directly linked to dehydration (Courtney et al, 2009), understanding why nurses are failing to prevent dehydration in some patients must be made a priority. Hodgkinson et al (2003) stated that the simplest and most logical way of avoiding dehydration is the regular presentation of drinks, ensuring a minimum daily volume of 1,600ml. Despite this apparently simple task, the scale of the problem clearly indicates that nurses are failing to consistently do this. While they must accept professional responsibility for these failures, staffing levels are frequently cited as the primary cause (CQC, 2011b; Shipman and Hooten, 2007). Healthcare providers who fail to recognise the nursing time needed at the bedside to ensure patients are properly hydrated, or who ignore concerns related to staffing levels, should also be considered accountable.

Helping a patient drink requires time and patience. The following list offers an insight into some of the challenges associated with this “simple task”:

- » Gaining patient consent and concordance;
- » Assessing individual physical and cognitive abilities;
- » Correct and safe positioning (often requiring two nurses);
- » Encouragement and assistance;
- » Time spent at the bedside.

Persuading a patient to drink 1,600ml a day is not always easy. For many older people this far exceeds their normal and long-established intake; they may not be naturally thirsty and may also be fearful of incontinence. Many patients prefer to



“Young people can have a condition and be totally asymptomatic – and then just drop dead”

Melanie Doyle ▶ p24

BOX 4. PROMPTS TO MEET NUTRITIONAL NEEDS

- Staff identify where a person is at risk of poor nutrition, dehydration or swallowing difficulties and a referral to an appropriate service is made
- Patients identified at risk have their fluid intake monitored and action is taken as necessary
- Patients know their hydration requirements are identified and reviewed
- The care plan includes how identified risks will be managed
- Patients can be confident staff will support them to meet their drinking needs
- Patients are enabled to drink as independently as possible
- Patients are helped into an appropriate position that allows them to drink safely
- Patients have supportive equipment available to them that allows them to drink independently

Source: Care Quality Commission (2010)

drink little and often and those with conditions such as stroke, Parkinson’s disease or dementia are likely to require significantly more time to be helped to take an adequate fluid intake. This can be challenging, particularly if nurses are constantly interrupted and have to attend to patients with other urgent needs (Ullrich and McCutcheon, 2008).

Another pressing concern the profession cannot ignore is the numerous anecdotal reports of nurses “gossiping” at the nurses’ station, while apparently oblivious to the patients whose drinks have been left out of reach or who are struggling to help themselves. Such public displays of negligence may reflect an underlying indifference that extends to other areas of care and must be challenged whenever they are seen. Staff at all levels must reflect on their own standard of practice and students must be encouraged to follow those nurses whose practice makes them good role models.

Many older patients will have already developed dehydration before being admitted to hospital; tackling this problem is the key to reducing avoidable admissions. Health promotion campaigns such as Dehydration in Older People Awareness Week (tinyurl.com/dehydration-week), organised by the National Association of Care Catering, help raise general awareness among older people, their carers and relatives, highlighting the value of foods with a high water content and encouraging relatives to become more involved in care both at home and in hospitals and care homes.

Conclusion

Finding a sustainable and effective solution to solve the

problem of avoidable dehydration and inexcusable suffering in the community and hospital must be made a nursing priority; it requires all organisations and individuals who provide fundamental care for older people to think differently.

Understanding that this major problem is caused by patients not having enough to drink over a prolonged period of time will help identify underlying risk factors within the systems and processes that deliver patient care. Reducing the scale of dehydration will also create significant cost savings by avoiding admissions, prolonged length of stay and the need to respond to the complications associated with this distressing condition.

Nurses have failed to protect their most vulnerable and frail patients by allowing dehydration to escalate; as such, the profession’s integrity has understandably been called into question. All members of the nursing team must work together to address this vital issue; only by showing consistent improvements in care can the profession hope to restore the confidence of both patients and the general public. **NT**

BOX 5. COMMON SYMPTOMS

- Dry lips and tongue
- Sunken eyes
- Dry, inelastic skin
- Brittle hair
- Dark strong-smelling urine
- Constipation
- Dizziness
- Confusion

Source: Royal College of Nursing and National Patient Safety Agency (2007)

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