

“Traffic Light” Water Jug Lids: A Novel Method To Reduce Dehydration in Hospitalised Patients

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Introduction

Older adults are susceptible to dehydration due to acute and chronic health problems, which impair thirst, reduce the ability to drink sufficiently and/or increase urinary, skin and respiratory fluid loss (1). During hospitalisation negative fluid balance often accompanies infection and is independently associated with poorer outcomes (2-5), longer length of stay and greater costs (6-8). In England, NICE has estimated that the annual impact from acute kidney injury is up to £620 million (7) and that 12,000 cases could be avoided by more pro-active fluid management amongst vulnerable groups such as older adults.

Although it is a clinical priority to recognise and address risks of insufficient oral fluid intake, there is no standardised nurse-led assessment or formal bedside response protocol commonly applied. As such, novel interventions to highlight and mitigate clinical dehydration are warranted.

Methods

As recently first described (9), a “traffic-light” system of water jug lids was piloted on an acute gerontology admissions unit (28 patients) and subsequently a general orthopaedic ward (34 patients) to improve recognition and management of reduced fluid intake.

Patients deemed medically suitable were issued with a red-topped 750ml water jug at 08:00. At 12:00, every patient’s jug was assessed; if empty it was refilled and replaced with an orange-topped lid. The process was repeated at 14:30 and if empty, replaced with a green version. If the jug had not been refilled during the day and hence the lid was still red at 14:30, support workers informed nursing staff and encouragement was given to achieve the minimum daily water intake of 1500ml.

Nursing care records were reviewed before and after the intervention and patient, staff and relative questionnaires were completed to assess the impact of the project.

Results

Mean fluid intake on the gerontology admissions unit increased by over 400ml and was maintained at this elevated level on two episodes of subsequent retesting. A similar increase was noted on the orthopaedic ward with mean intake going up by over 300ml. Allied to this change in hydration, improvements in mean Bristol Stool Scale suggesting constipation had also been positively influenced. Costs were negligible (86p including VAT per jug lid), resulting in the two wards being fully supplied for under £160. Questionnaires highlighted how well the system was received by patients, relatives and staff alike and in view of the positive results and feedback, the project is now on its second trust-wide roll out (10).

Conclusion

A simple, paper-light and likely cost-effective quality improvement project demonstrated a marked and reproducible increase in mean fluid intake and constipation amongst vulnerable older adults. Following careful roll-out, this concept has potential to positively influence dehydration on a much wider scale.