



# The Hydrant Trial Final Report March 2013

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## Background

Dehydration occurs when the body loses fluids at a greater rate than it takes in. For some patients, achieving a fluid balance without assistance is difficult and they rely on relatives or health professionals to help them.

The Trust has taken part in the National Hydrant Programme. The project has been managed nationally by Hydrate for Health, in partnership with the Department of Health and the National Health Service.



The Hydrant is an independent drinking system that clips onto the patient's bedframe and enable the patients to drink from a long flexible hose by using bite valves that open and close. A sports bottle is also available with a large wide handle which enable patients who don't have the finer dexterity and motor skills to hold the bottle and drink



independently.

## **Aim**

The aim of the trial was to introduce these two hydration systems onto three wards and review their effectiveness by comparing data measured before and during the three month trial period.

## **Method**

The classification of wards used for the trial is detailed below:

<b>Ward</b>	<b>Classification</b>
Arethusa	Orthopaedics and Trauma
Keats	Gastroenterology and Endocrinology
Tennyson	Care of the Elderly

The Hydrant was also introduced on to the Maternity Lead Unit (MLU) and was used by ladies experiencing a water birth. The results from this area are represented by qualitative data only. Data was gathered on several key performance indicators from October 2011 to September 2012 and the average monthly amount calculated.

Analysis of the data was explored further by calculating the average amount for the same three comparable months, i.e. December – February. This was then compared to data gathered over the trial period: December 2012 – February 2013. Patient and staff questionnaires were also used to capture the qualitative results. The 5 possible answers to the questions were combined into positive, neutral and negative responses to create charts for each question. The overall rating of the hydrant system was scored between 0 - 10. This was then grouped into three ratings: 0 – 3; 4 – 6; 7-10.

The patients were assessed for their suitability with regard to the hydrant and tube system using specific guidelines (Appendix 1) and then offered either the bottle with the drinking tube or the sports bottle as appropriate. After they had tried the hydrant, they were offered a patient questionnaire to complete and were given the opportunity to make comments.

All staff who worked on the wards were encouraged to complete the staff questionnaire so that the broadest view of opinions was captured.

The 12 patients on Tennyson Ward deemed suitable through the assessment guidelines to take part in the trial predominantly used the bottle and drinking tube although two used the sports bottle.

The 38 patients on Arethusa ward were evenly spread between the bottle and drinking tube and the sports bottle.

Keats ward gave the sports bottle or bottle and drinking tube to every patient by default unless they refused to try it. The 165 patients had experience of predominantly the sports bottle.

## **Results**

The data analysis of some of the key areas is detailed below. There are several strategies throughout the Trust that pay particular attention to some of these areas so whilst the introduction of the hydrant cannot be held fully responsible for the improvements, it can certainly be considered as a contributing factor.

<b>Measure</b>	<b>Result</b>	<b>Improvement</b>	<b>Annual Financial impact</b>
Falls	Average monthly falls rate reduced by 1.44 incidences	23% reduction	£1131.84 per ward
Use of Intravenous giving sets	Average monthly usage reduced by 17 sets	10% reduction	£120.36 per ward
Use of Trimethoprim	Average number of boxes used per month reduced by 0.2 box	3% reduction	£0.41 per ward
Use of Nitrofurantoin	Average number of boxes used per month reduced by 0.23 box	55% reduction	£314.64 per ward

The average length of stay has reduced by 1 day, an improvement of 9% and the number of patients admitted with a primary or

secondary diagnosis of a urinary tract infection<sup>1</sup> has achieved a 10% reduction.

None of the patients on the trial who were admitted with a primary or secondary diagnosis of urinary tract infection as per the ICD10 codes were readmitted during the trial period.

The incidence of uptake and total responses are detailed below.

Ward	Number of patients who used the system	Number of staff responses received	Number of patient responses received	Patient Response rate
Arethusa	38	19	34	89%
Keats	165	18	129	80%
Tennyson	12	25	11	92%
MLU	6	3	4	66%

The average patient response rate was 87%. A table of responses by both the patients and the staff can be seen at Appendix 2. 65% of staff and 69% of patients believe that the Hydrant should be offered to all those patients who are able use it (Chart 1 and 2):

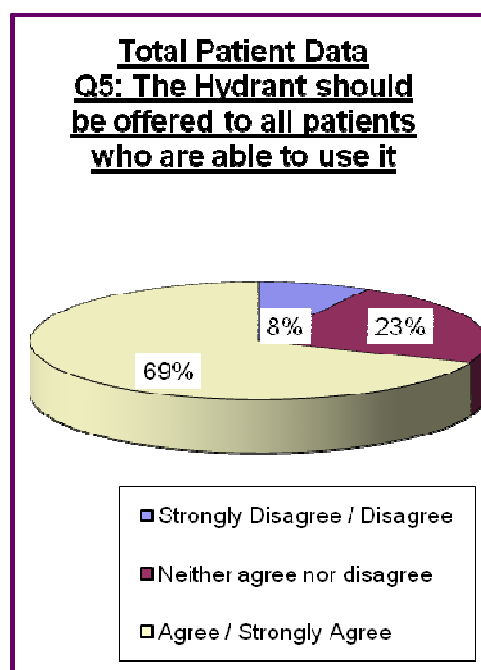
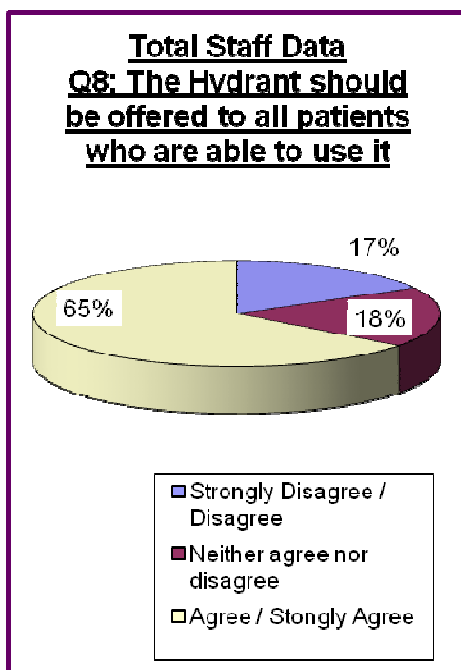
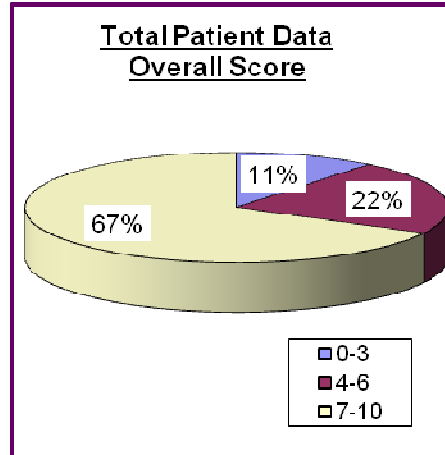
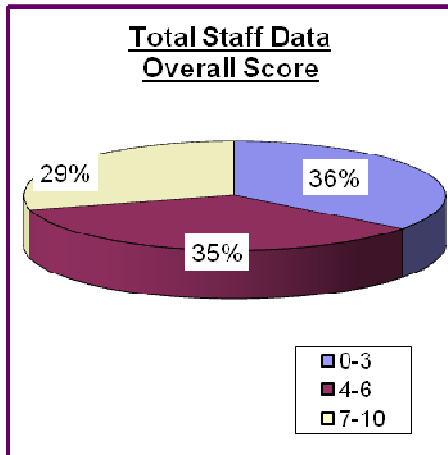


Chart 1 and 2 Staff view Q 8 Patient view Q5

<sup>1</sup> The ICD10 code of N39.0 (Urinary tract infection, site not specified); N39.1 - N39.4, N39.8 and N39.9 were used to identify patients applicable to this study

Only 29% of staff gave the system a score between 7 – 10 (Chart 3) with the majority, 36%, giving a rating of 0-3. 67% of all the patients who rated the hydrant system scored it between 7 -10 (Chart 4)



Charts 3 and 4 Staff and Patient overall scores

The staff overall score however, doesn't reflect the responses in the questions as in 8 out of 10 questions the staff give a predominantly positive answer (Appendix 2).

The patients and staff were given the opportunity to make comments on the hydrant system. Some of the results are detailed below:

Person Responding	Positive Response	Negative Response
Patient	Great for when I am in bed	Flow is a bit fast. Took time to learn to control it
Patient	Nice shape, fits hand well, keeps water cooler	Plastic taste on the tube
Patient	It is good to check my intake with the measure on the side	Drinking spout is hard to pull up
Patient	It stops spillages, especially when lying down	Tube no good as I have no bottom teeth
Nurse	Better for younger	If a patient can use a

	patients especially if having to lie flat	bottle they can use a cup
Health Care Assistant	It has really helped some of the patients on our ward	Some patients have been unable to suck and squeeze the straw at the same time
Physiotherapist	Good idea and well designed especially for those with reduced motor skills	Limited use unless the patient can understand how to use it
Midwife	Used throughout labour. Client drunk more. Great idea	Nowhere to clip the tube on to the client if she is in the pool

## **Discussion**

Many of the negative comments from staff were connected with patients who were diagnosed with dementia or had limited capacity. This suggests that further education with regard to the Hydrant's suitability needed to be carried out so that the staff could form an opinion of the hydration system when considering it for patients who already fit the agreed criteria.

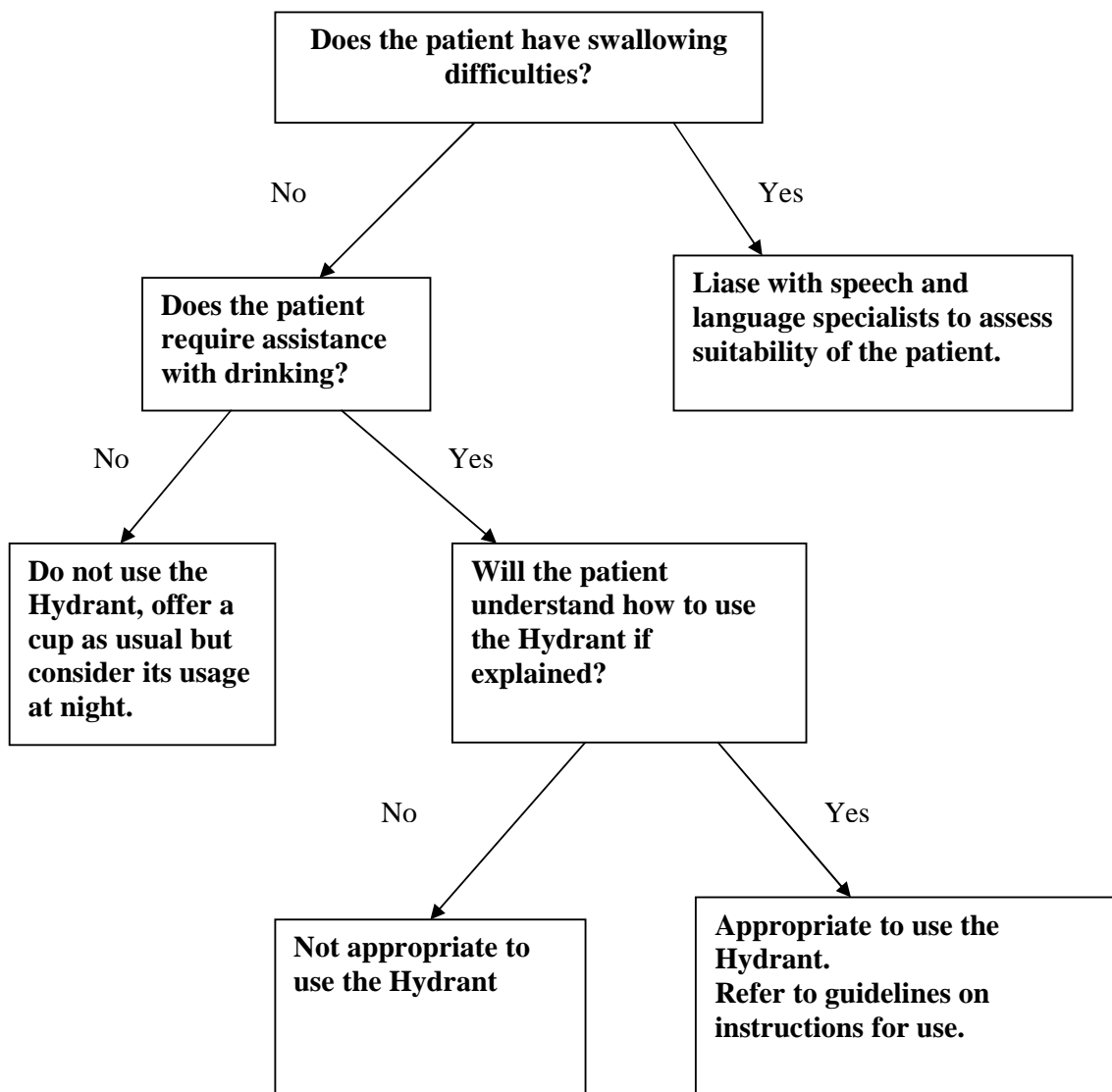
Question 10 on the staff questionnaire and question 8 on the patient questionnaire are more applicable when evaluating the use of the Hydrant on a long term basis out in community. The questions were kept in to retain continuity of the questions hence the predominantly neutral answers from both parties.

## **Recommendations**

This product has value for patients who are unable to grip or have reduced dexterity. It has been well received by women during labour and may continue to be beneficial to women on the Delivery Suite and Maternity Lead Unit. Patients who have been diagnosed with any nerve damage, for example on the stroke unit may also find it useful as long as the assessment criteria are used.



**Hydrant Assessment Tool**



## **Staff and Patient Questionnaire Combined Results**

### **Staff Questionnaire**

Question	Strongly Disagree / Disagree	Neither Agree or Disagree	Agree / Agree Strongly
Helps patients drink unaided	31%	21%	48%
Is an effective alternative to a jug and cup	32%	20%	48%
Is easy to explain to patients	28%	15%	57%
Is easy to set up	12%	17%	71%
Is easy to clean	9%	26%	65%
Patient have drunk more	34%	46%	20%
Has reduced spillage	12%	16%	72%
Should be offered to all patients who are able to use it	17%	18%	65%
Has increased independence	26%	35%	39%
Has reduced urinary problems	29%	60%	11%

### **Patient Questionnaire**

Question	Strongly Disagree / Disagree	Neither Agree or Disagree	Agree / Agree Strongly
Is easy to drink from	26%	2%	72%
Enabled me to drink unaided	18%	4%	78%
Increased my independence	22%	8%	70%
Is easy to understand	7%	4%	89%
Should be offered to all patients who are able to use it	8%	23%	69%
Helped me drink more	28%	17%	65%
Increased my comfort	23%	10%	67%
Helped me prevent urinary issues	9%	72%	17%