

Hydration at Home: Evaluating an approach to improve hydration in domiciliary care

Evaluation Report by Wessex AHSN, July 2020

1.0 Executive Summary

This project involved evaluating an approach to improve hydration among older people receiving care at home by two domiciliary care branches in Hampshire ('Havant branch' and 'Portsmouth branch'). The project was built on the findings and recommendations from a small feasibility trial which had been carried out with one branch beforehand.



The baseline phase involved collecting three months of baseline data (including hydration support requirements, amounts of fluid drunk, perceived health and wellbeing, number of falls and incidences of antibiotic prescriptions for urinary tract infections (UTIs)). Following this, care staff were provided with face to face training by a dietitian. The intervention phase followed which involved care staff implementing the learning from the training and carrying out actions to improve hydration among the people they cared for. This included more active encouragement to drink and trialling the Droplet® smart hydration cup¹. Data was repeated at the end of the intervention phase and compared to baseline.

Summary of key results:

- Training provided to 39 carers. Feedback on training from staff at both branches was very positive
- 44 clients were recruited from across both branches. Recruitment was a challenge due to various issues, e.g. clients thought they already had good hydration and the requirement to obtain written consent
- Recorded drinks intake and wellbeing scores decreased between the start and end of baseline and then increased again by the end of the intervention phase. The data suggested that drinks intake and wellbeing were positively related
- Clear improvements in perceived health and wellbeing were seen among the Portsmouth clients in particular
- The Droplet® smart hydration cup was used with around six clients – with clear benefits for one client reported by care staff. However, 80% of carers said they found the Droplet® cup useful in the end of project questionnaire (lack of client uptake prevented them using it more)
- There was positive feedback on project implementation from Portsmouth carers, but none from the Havant carers due to unforeseen circumstances. For example, all carers felt there had been 'some' or 'major' improvement in general wellbeing, alertness and communication with clients; all carers said the hydration assessment tool and care plan were easy to use and helped ensure clients were drinking enough; all carers found the drinks record chart and wellbeing forms easy to complete.

Despite the challenges in obtaining outcome data (due to small numbers of clients recruited and limitations of data collection), the project demonstrated invaluable learning from every stage of the process. A summary of the challenges and recommendations for overcoming these will hopefully facilitate the development of similar projects by other organisations looking to work within the domiciliary care setting in the future.

¹ <https://www.droplet-hydration.com/products/>

2.0 Project Background and Introduction

2.1 Context

Keeping well hydrated is an essential part of healthy ageing. The number of people suffering from dehydration in the UK is not known and no information is available on incidence of dehydration amongst people living in their own homes (or in the subset receiving domiciliary care). Part of the challenge is the lack of a recognised screening tool to detect dehydration and methods of diagnosing dehydration can differ amongst healthcare professionals. One study showed that 37% of acute admissions over the age of 65 years of age were dehydrated on admission to hospital². Dehydration is also more common in people with cognitive impairment and changes to functional ability, including swallowing issues, dementia and poor-controlled diabetes³ (common among people receiving care at home).

In 2018-19, Hampshire County Council (HCC) and Wessex Academic Health Science Network (AHSN) worked in collaboration on an approach to improve hydration in 17 HCC owned care homes. The approach in care homes was based on the Hydrate in Care Homes work, which was originally undertaken by North East Hampshire and Farnham CCG, and later developed further, implemented and evaluated by Kent Surrey and Sussex AHSN⁴. At the same time, HCC also approached Wessex AHSN to discuss whether the work could be adapted to pilot an approach for improving hydration among people living in their own homes in receipt of domiciliary care.

In response to this request, a small feasibility trial⁵ was developed to test an approach overseen by a hydration steering group. This involved a small number of carers from a single 'care round' within one branch of a domiciliary care agency (in Hampshire) receiving training on hydration. They were then asked to implement appropriate actions to improve hydration depending on the outcome of an assessment of the client's hydration needs using the ROC Hydration Care Assessment Tool⁶. The approach also trialled the use of coloured coasters and the Droplet[®] smart hydration system to evaluate whether their use would further facilitate improvements in hydration. It also involved trialling data collection methods such as the Drinks Diary⁷, wellbeing and mood measures.

The results from this feasibility trial informed the design of the Hydration at Home approach. Key findings from the feasibility trial which were addressed as part of the project design included a) training, which was very positively evaluated and should be integral to the approach, b) data collection sheets, which were too complex and needed simplifying further, c) ensuring more effective routes of communication with the care staff were achieved, and d) support with data collection was needed.

2.2 Aim

To evaluate an approach for improving hydration that worked in the domiciliary care setting – involving older people using two branches of a domiciliary care agency in Hampshire.



2.3 Objectives

- To evaluate the provision of training to care staff on the importance of good hydration and how to improve hydration in the domiciliary care setting

² El-Sharkawy et al. (2015). Hydration and outcome in older patients admitted to hospital (The HOOP prospective cohort study). *Age and Ageing*, 44 (6): 942-947.

³ The British Nutrition Foundation (<https://www.nutrition.org.uk/bnfevents/events/83-nutritionscience/life.html>)

⁴ <https://www.kssahsn.net/what-we-do/moderating-demand/Hydrate/Pages/default.aspx>

⁵ Feasibility study evaluation report:

<https://wessexahsn.org.uk/img/projects/Feasibility%20Trial%20evaluation%20report%20FINAL%202011.11.19.pdf>

⁶ The ROC hydration care assessment tool: <https://www.hydrationscareconsultancy.co.uk/roc-hydration-care-assessment-tool/>

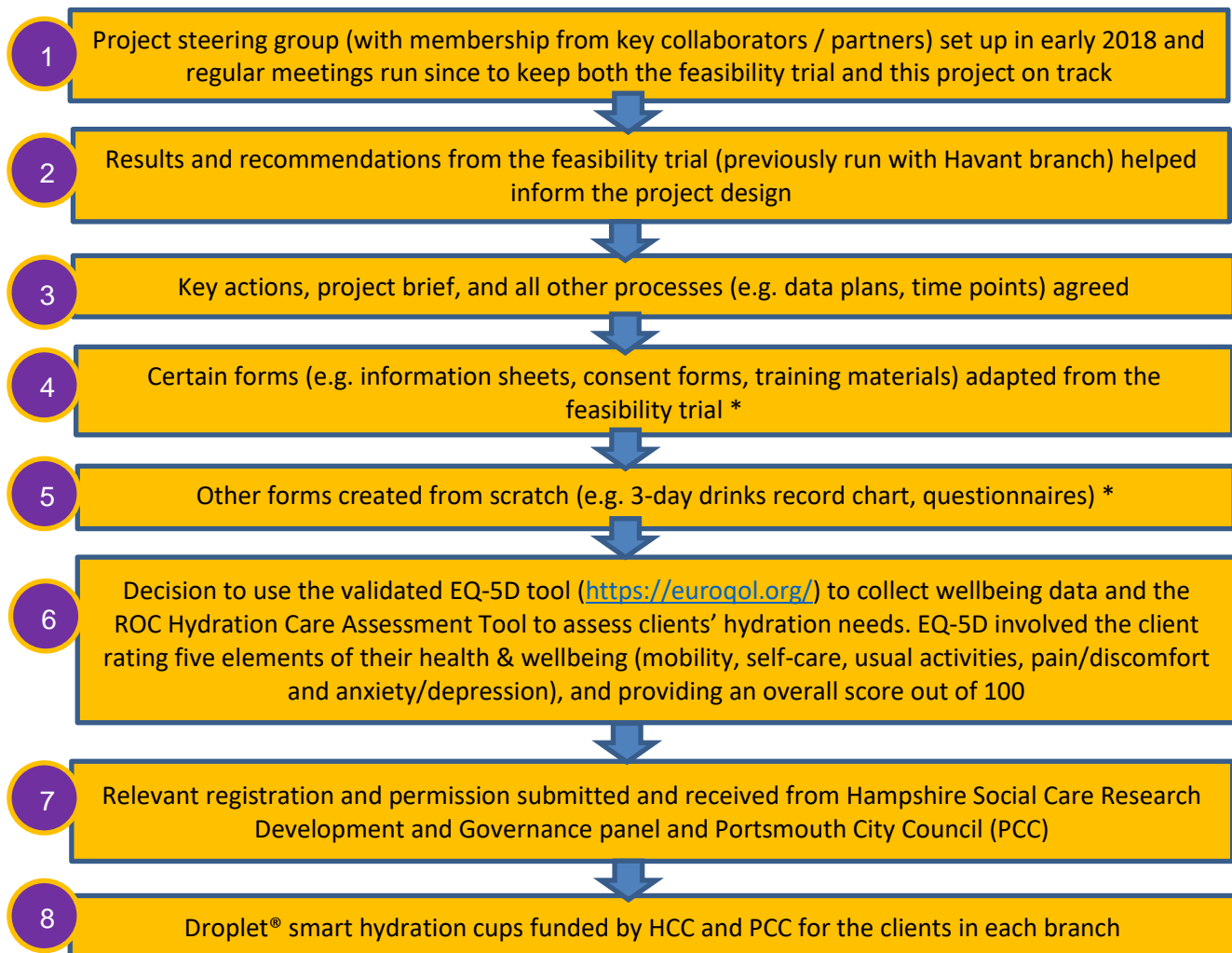
⁷ <https://www.uea.ac.uk/medicine/research/research-evidence-studies/drinks-diary>

- To evaluate the use of the tools including the Droplet® smart hydration system and colour-coded magnets in the domiciliary care setting
- To evaluate the impact of the approach on the clients receiving care by the care staff (e.g. amounts drunk, changes to perceived health and wellbeing)
- To evaluate the impact and acceptability of the approach on the care staff and care agency
- To complete a structured evaluation

3.0 Methods

3.1 Project development

The following flowchart shows the steps taken in the development of the project:



* A copy of the project documentation including the training slides, assessment forms, data collection forms, questionnaires and focus group guide can be found on the Wessex AHSN website⁸.

3.2 Recruitment

The Havant branch agreed to continue being involved following the feasibility trial. In addition, the Portsmouth branch was contacted and recruited in April 2019. Clients were recruited by the carers, who explained the project

⁸ <https://wessexahsn.org.uk/projects/204/hydration-at-home>

verbally, provided the information sheet and obtained signed consent from those willing to take part. Carers themselves were also asked to provide signed consent.

3.3 Project structure

It was agreed that the project would involve two phases; a three-month 'baseline phase', followed by training and then a three-month 'intervention phase', as follows:

The baseline phase

- Data collected at the start and end of the phase to obtain information on client fluid intake, wellbeing, hydration care needs, (see section 3.4), along with questionnaires for carers and clients before any changes were made
- It was decided to have two data collection points (start and end) to account for any natural changes, e.g. seasonal variations in fluid intake
- Carers were asked not to change anything in terms of the hydration care or messages they were giving to clients – they were asked to continue as usual.

The intervention phase

- Occurred straight after the training, and aimed to assess the extent to which various actions affected hydration and outcome measures
- Care staff following an action plan, depending on the client's ROC assessment rating. Actions included:
 - ❖ Providing active support with swallowing, assistance and encouragement to drink according to needs
 - ❖ 'Thinking outside the box' – considering different drinks and fluid-rich foods that could improve hydration
 - ❖ Involving family and friend
 - ❖ Considering onward referral to services such as GP, dentist, voluntary sector organisations according to need
 - ❖ Offering / providing Droplet® smart hydration cups to clients who had amber or red rating
 - ❖ Providing fridge magnets, corresponding in colour to their ROC rating (green, amber or red) to serve as visual reminders
- Data was collected at the end of the phase to evaluate the project outcomes compared to baseline (see section 3.4).

3.4 Data collection

Data was collected at three time points – T0 (start of baseline), T1 (end of baseline / before start of intervention phase) and T2 (end of the intervention phase). In addition, care staff were asked to fill in the 'incident tracker' every day of the six-month project period. This form recorded whether the client had suffered from a fall or was taking prescribed antibiotics for a UTI.

Data collection at each time point was facilitated by a project assistant employed by Wessex AHSN. The project assistant attended each branch to transfer the pseudonymised data from the paper forms to a secure Excel spreadsheet. An administration assistant from HCC also helped collect the data for T0, but as the numbers of clients recruited was lower than anticipated, it was agreed that the Wessex AHSN project assistant would be able to collect the data for T1 and T2.

The data collection methods for each time point are outlined in **Table 1**.

Table 1: Data collected at each time point

Data collection time point	Data collected
T0 (Start of baseline phase)	<ul style="list-style-type: none"> • Drinks record chart (a three-day record of how much clients were drinking - completed by clients themselves if they are able to with support from care staff where needed or completed by the care staff themselves) • Wellbeing data collection form • ROC Hydration Care Assessment tool • Care staff questionnaire • Client questionnaire
T1 (End of baseline phase)	<ul style="list-style-type: none"> • ROC Hydration Care Assessment tool • Drinks record sheet (completed for a three-day period) • Wellbeing data collection form
T2 (End of intervention phase)	<ul style="list-style-type: none"> • Drinks record chart (completed for a three-day period) • Wellbeing data collection form • ROC Hydration Care Assessment tool • Care staff questionnaire • Family member questionnaire • Client questionnaire • Staff telephone interviews (carried out mid-way through the intervention phase to review how things were going and provide an opportunity to make changes) • Staff focus groups (led by two members of the Wessex AHSN Healthy Ageing team). Questions were agreed in advance and approved through HCC governance and the hydration steering group • Collection of case studies / 'client stories'

3.4 Training

Training materials were adapted from those created for the feasibility trial which included a PowerPoint presentation with case studies. Training sessions were delivered by a registered Dietitian and were interactive and informal, involving plenty of group discussion. A representative from Droplet[®] also attended each training session to talk about how to use Droplet[®], and then to let staff try it out and ask any questions. Pre- and post-session knowledge / confidence questionnaires and end of session evaluation forms were put together. The training resources can be viewed / downloaded from the Wessex AHSN website⁹.

3.5 Evaluation methods

The following evaluation methods were used:

- Evaluation of training: pre- and post-session knowledge and confidence questionnaires were completed by carers at the start and end of the training session
- Evaluation of care staff views: short mid-intervention phase telephone interviews, end of the project focus groups and care staff pre and post project questionnaires
- Evaluation of the client data: the data collection forms were reviewed and anonymously copied into an Excel spreadsheet to allow for analysis. Analysis of the data collection forms included looking for any trends in the data and case study stories.

⁹ Training resources available at: <https://wessexahsn.org.uk/projects/204/hydration-at-home>

4.0 Results

4.1 Training sessions

4.1.1 Attendance at training

A total of six training sessions were provided across both branches, training a total of 39 care staff. Of these, 38 described themselves as ‘carers’ and one ‘manager’ from Portsmouth branch. **Table 2** (below) shows the numbers of sessions delivered the care staff trained.

Table 2: Numbers of staff attending training at each session

	Havant branch (12 th November 2019)	Portsmouth branch (18 th November 2019)
Number of sessions delivered	4	2
Total number of care staff attending	24	15

4.1.2 Change in knowledge and perceived confidence levels

Attendees were asked some simple questions to gauge their pre-training knowledge around hydration messages for older people, as shown in **Table 3** below. Knowledge (for questions 1-3) increased from an average of 28% on the pre-training questionnaire to 77% post-training, representing an average increase in knowledge of 178%. **Table 4** (appendix 1) shows the percentage of participants selecting the correct answer for Q1-3.

Table 3: Pre- and post- training knowledge questions

Question	Answer options	Correct answer
1. Roughly how much fluid should someone drink each day for good hydration?	½ - 1 litre 1 – 1 ½ litres 1 ½ - 2 litres 2 – 2 ½ litres 2 ½ - 3 litres	1.5 – 2 litres
2. Feeling thirsty is a good indicator of whether an older person needs more fluid	True or false	False
3. Water is more hydrating than tea	True or false	False
4. What would you use to assess if an older person was dehydrated?	<ul style="list-style-type: none"> • Pinch test (skin turgor) • Urine colour • Amount of urine passed • Tiredness • Confusion • Thirst • Comparing a collection of signs/symptoms with what the person is usually like 	Comparing a collection of signs/symptoms with what the person is usually like

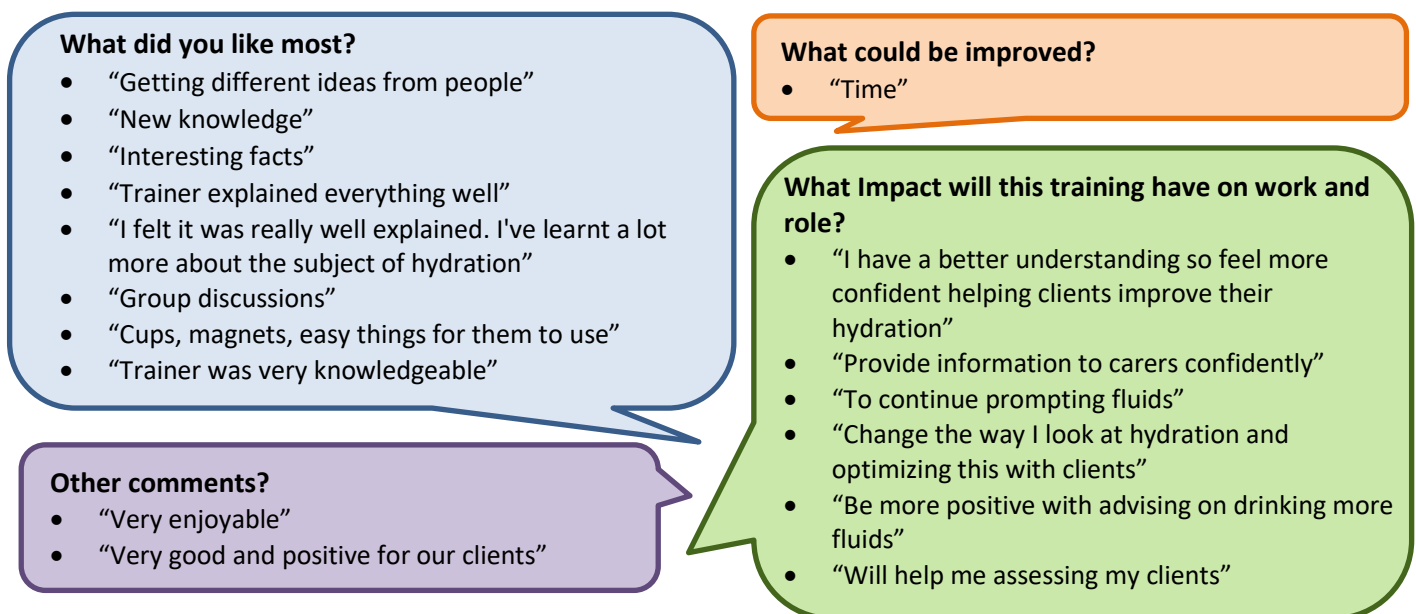
Question 4 was more challenging to assess, as the majority of attendees not only selected the correct answer but also selected other responses. As one of the aims of the training was to debunk some of the myths around hydration in older people (e.g. urine colour should not be used; there is no one sign/symptoms to tell if an older person is dehydrated), the results from this question were assessed based on the number of attendees who mentioned ‘urine colour’ and the ‘pinch test (skin turgor)’. Pre-training, 22% said they would use urine colour as opposed to only 2% post-training. The full data can be seen in **Table 5** (appendix 1).

Attendees were asked to rate how confident they felt (out of 10) for eight statements, including how confident they felt on assessing hydration status, creating an action plan and talking to colleagues and clients' families about hydration. The perceived confidence (across all eight statements) was converted into an overall percentage. Data on perceived pre- vs post-session confidence is shown in **Table 6** (appendix 1). Attendees tended to give high ratings of confidence pre-training, as they perceived that they already had a good awareness of hydration. However, an average increase in total confidence of 18% was seen.

4.1.3 Session evaluation

Attendees were asked to complete an evaluation form to evaluate the session as a whole and give specific feedback. 36 of the 39 attendees (23 in Havant; 13 in Portsmouth) completed the form. Data on this evaluation is recorded in **Table 7** (appendix 1), showing very high satisfaction scores with the averages being over 9 / 10 for all seven statements. **Figure 2** shows some of the additional comments provided by attendees for both branches. Attendees were also asked to provide an overall rating for the training session; all participants rated it as 'excellent' or 'good'.

Figure 2: Post course evaluation data – additional questions (feedback from both branches)



4.2 Recruitment

4.2.1 Care staff recruitment

- 39 care staff were trained as part in the project
- Additional care staff were also involved in the project but did not attend the formal training at the end of the baseline phase (no information about these additional care staff was available).

4.2.2 Client recruitment

- 44 clients were recruited; 19 clients from Portsmouth and 25 clients from Havant
- The majority of clients were recruited by the branch manager to ensure that messages given to the client about the project and what would be involved, were consistent
- No data was available on gender, accommodation, number of care visits each day (and whether there had been any change), or primary reasons for receiving care (this data was requested in retrospect but was not provided)
- The number of clients did reduce as the project went on, for example some clients passed away, were moved to another setting or decided not to take part. No data was available on precise dropout rate and reasons.

4.2.3 Challenges with client recruitment

The challenges with client recruitment were fed back to the Wessex AHSN project team by the branch managers and were in turn shared with the hydration steering group at meetings. Care staff at Portsmouth also discussed these challenges as part of the end of project focus group.

Key challenges were reported as follows:

Having to sign the project consent form

Clients did not wish to sign this. However, there was no way to mitigate against this, as written consent was a requirement by HCC research governance

Too much paperwork – some clients were put off by the paperwork required. In reality, the only paperwork that clients were asked to complete were 1) consent form and 2) drinks record sheet. However, there were extra questions asked of them at the start (e.g. wellbeing questionnaires and the participant information sheet, the latter of which was a requirement to leave with the client as part of the HCC research governance process)

Clients and/or the partners/family members of clients said they already had good hydration awareness – they did not feel that participating in the project would benefit them. In particular, clients with partners / family members living with them felt they already knew how much the person needed to drink and were already doing what they could to promote hydration, and therefore felt that they didn't need to take part. This was despite communication from the branch manager that the project would benefit anyone regardless of current hydration awareness (this was a factor supporting the need for a new hydration leaflet, which was produced as part of the Hydration at Home toolkit:
<https://wessexahsn.org.uk/img/projects/HydrationLeaflet-1582637476.pdf>)



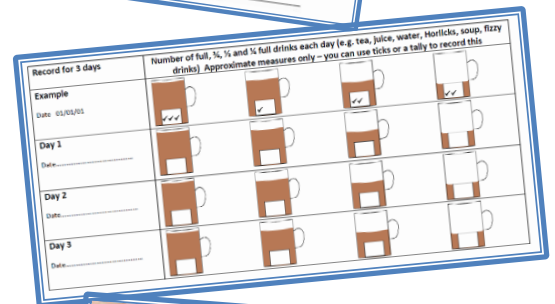
Consent form: Improving Hydration in Dementia Care settings in Hampshire - an evaluation of the impact of addressing hydration in the community

Thank you for considering taking part in this research. If you have any questions please ask a member of the research team before you decide whether to take part. You will be given a copy of this consent form to keep and refer to at any time.

Please tick if you agree to the following statements:

- confirm that I have read and understood the information sheet dated June 2019 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
- understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my care or legal rights being affected.
- agree for my pseudonymised data to be shared with Hampshire County Council Science Network (AHSN).
- understand that the pseudonymised results of the study may also be shared within the project team, made up of regulatory authorities, local authorities and NHS trusts.
- understand that if I withdraw from the study the data collected up to that point will be destroyed.
- agree to take part in the study.

Name of participant (please print): _____
Signed: _____ Date: _____



Record for 3 days

Number of full, ½, ¼ and ⅓ full drinks each day (e.g. tea, juice, water, Horlicks, soup, fizzy drinks) Approximate measures only – you can use ticks or a tally to record this

	Full	½	¼	⅓
Example Date: 01/05/20	✓	✓	✓	✓
Day 1 Date: _____				
Day 2 Date: _____				
Day 3 Date: _____				



4.3 Impact of the project on client hydration, wellbeing and clinical incidents

4.3.1 ROC Hydration Care Assessment Tool data

- Clients were assessed at T0, T1 and T2 (see **Tables 8 and 9**, appendix 2 for full data)
- Data showed that a **higher percentage of Portsmouth clients had amber or red scores** (only 6% of Portsmouth clients were green, compared to 47% of Havant clients). Portsmouth had more clients with swallowing issues (a summary can be seen in **Table 10**, appendix 2)
- No data was available on specific actions taken for clients with amber and red ratings during the project intervention phase (e.g. onwards referrals, signposting, discussions with family/friends)
- Data was only collected at T0 for Havant clients. Data was collected at all three time points for Portsmouth clients, but the ROC ratings remained unchanged across these time points.

4.3.2 Fluid intake and Wellbeing

- T1 and T2 drinks intake data (measured using the drinks record chart) was collected on the same three days for all clients in both branches (T1: 28 – 30 October 2019; T2: 24 – 26 February 2020)

- Wellbeing data at T1 and T2 was collected on roughly the same day for all clients at both branches
- T0 data was collected on or just after recruitment, so dates varied slightly
- The complete dataset from the drinks record charts and wellbeing forms can be seen in **Tables 11 and 12** (appendix 2) for Havant and **Tables 13 and 14** (appendix 2) for Portsmouth
- Data from both branches suggested fluid intake and wellbeing scores were related
- Feedback from both clients and care staff suggest that the drinks record charts were poorly completed and therefore it is likely that they under-represent the amounts of fluid clients were actually drinking
- A summary of this data is as follows:

Havant
Branch

- Data across all three data collection points was available for **three clients**
- Fluid intake increased across baseline (T0 to T1) but had decreased by T2
- Wellbeing scores followed a similar trend
- Data on fluid intake and wellbeing can be seen in **Table 15** below, and also in graph form in **Figure 3**, appendix 2
- Data for T0 and T1 were available for an additional nine clients. This also showed a trend of increased fluid intake across baseline

Table 15: Average fluid intake (from the drinks record charts) and wellbeing for the 3 clients

	Average drinks per day	Average wellbeing out of 100
T0	3.9	43
T1	6.5	75
T2	1.7	43

Portsmouth
Branch

- Drinks intake data across all three data collection points was available for 16 clients. Complete wellbeing data was available for 14 clients
- Fluid intake and wellbeing decreased across baseline and then increased again at T2, as shown in **Table 16** below. **Figures 4 & 5** (appendix 2) show this in graph form

Table 16: Average fluid intake (from the drinks record charts) and wellbeing

	Average drinks per day	Average wellbeing out of 100
T0	5.4	62
T1	2.6	53
T2	5.3	70

4.3.3 Clinical incidents

- **Havant branch** - no incidences of falls or antibiotic prescription for UTIs were recorded for any clients
- **Portsmouth branch** - Six clients had falls and/or UTIs recorded at some point. In total, there were 10 reported falls and one UTI episode during the baseline phase, and four falls and four UTI episodes in the intervention phase. Data suggests improvements in two clients, worsening in three clients and no changes in one client. Due to the small numbers, it is difficult to draw any conclusions. See **Table 17** (appendix 2) for the full data.

4.3.4 Data from client questionnaires

- Only clients who had data from both the questionnaire at the project start and end were included in this analysis. This data was available for **20% of the clients from Havant branch** and **84% of clients from Portsmouth branch**.
- The complete dataset from each agency branch was compared and is presented in **Table 18** (appendix 2)
- A summary of the data and any changes for particular clients is highlighted below:

Havant
Branch

- All clients said they had been encouraged to drink more in the intervention phase
- 1 client reported to have had 2-3 falls in the 3-month period prior to T0. This client reduced their falls frequency to one episode during the intervention phase
- 3 clients experienced one fall during the intervention phase (but had not reported any falls during the 3-month period preceding baseline)
- 1 client reduced their frequency of UTIs (from '4 or more' in the three months prior to baseline, to '1' in the 3-month intervention phase)
- 2 clients said the project had made a difference to their hydration, 2 said the project had made no difference their hydration; the rest were 'unsure'

Portsmouth
Branch

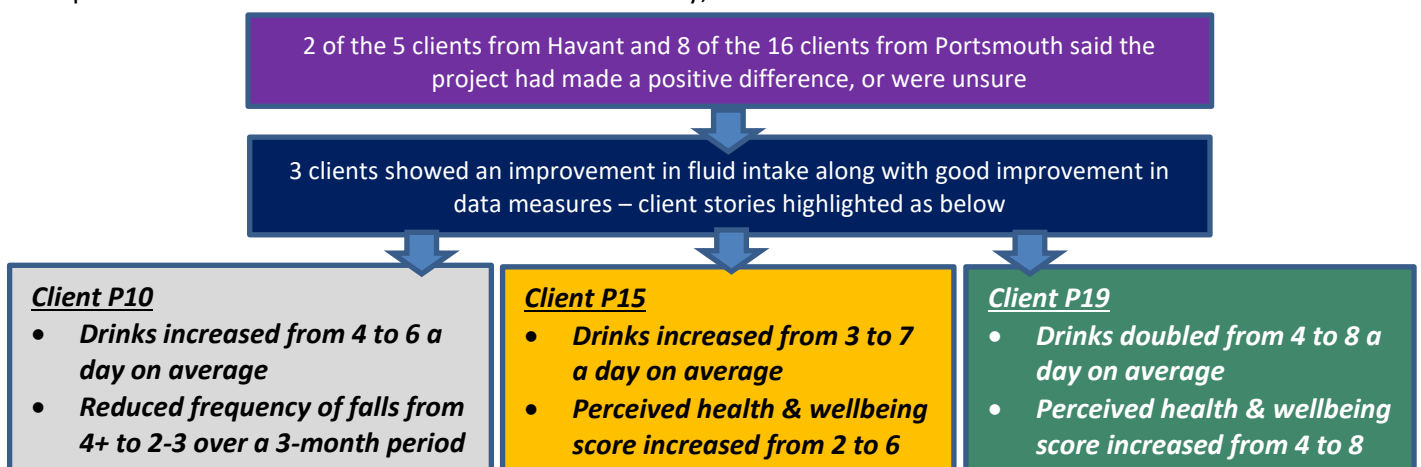
- All clients said they had been encouraged to drink more in the intervention phase
- 38% of clients were drinking more during the intervention phase. This is evidenced in the increase in reported drinking from 6.5 to 7.8 drinks a day on average
- Of the 9 clients who reported 1+ falls in the 3-month period prior to T0, 8 reported a reduction in frequency of falls during the intervention phase
- Of the 9 clients who had reported 1+ UTIs in the 3-month period prior to T0, 4 reported to have a reduction in their frequency of UTIs during the intervention phase, whilst 2 reported an increase in frequency and 3 reported no change
- 25% of clients said the project had made a difference to their hydration
- 31% of clients said their toileting frequency had increased during the intervention phase (the others stated 'unsure' or 'unchanged')
- 2 clients reported a pressure ulcer at T0 but none by the end of the project

4.3.5 Client case studies

No case studies were received back from either branch (using the case study capture form). At the Portsmouth branch end of project focus group, some examples of particular clients were provided by staff, although there was no way of knowing which client the information related to due to the collection of pseudonymised data.

4.3.6 Client data stories

All data sources were reviewed for clients who said the project had either made a positive difference to their hydration, or those who were unsure (based on responses from the client questionnaire). Data from ten clients was reviewed (see **Tables 19 and 20**, appendix 2). From these ten clients, those whose data demonstrated positive improvement in outcomes were looked at more closely, as shown below:



4.3.7 Feedback from clients' family members

Short questionnaires were written before the project started with the aim of asking the family members / partners of clients for their feedback on the impact of the project. No completed forms were returned from either branch, so there was no data available to report on.

4.4 Process evaluation: Feedback from care staff and clients

4.4.1 Care staff feedback (mid-intervention phase telephone interviews)

Short (5-10 minute) telephone interviews were held with two 'carers' and one 'care assistant' from Portsmouth. No interviews were carried out with Havant carers due to lack of contact information provided. **Table 21** (appendix 3) shows a thematic review along with some quotes from these interviews, a summary of which is shown below:

- No issues with consenting clients
- The project was making carers more aware of how much their clients were drinking
- The project was making them think about their own hydration and drink more
- Two carers had used Droplet® – positive experience by one carer, but the other carer cited issues around clients finding the voice annoying, carers putting the base unit in the sink to wash and clients preferring to use their own mugs for hot drinks
- The ROC tool helped increase awareness around clients' hydration needs
- Data collection forms were easy / straightforward to use
- The project is worthwhile, but needs everyone to be on board with it

4.4.2 Care staff feedback (end of the project focus groups)

One focus group was held with care staff from Portsmouth at the end of the project. It was attended by six staff members (four 'carers', one 'senior carer' and one 'care assistant'), including the three care staff who had taken part in the telephone interviews. The Havant focus group was cancelled due to the onset of the COVID-19 pandemic. **Table 22** (appendix 3) shows a thematic review of the focus group with Portsmouth, along with some quotes from the information provided. A summary of these results is provided below:

Recruitment and engagement – care staff generally felt it was a challenge to recruit and engage clients. Care staff also found that several clients dropped out of the project due to passing away
Improvement in client outcomes – care staff were unsure what improvement the project made to clients (one carer felt her client's mood was lower and was sleepier if poorly hydrated)
Call time / frequency - no changes to length of call time or frequency were reported
Things care staff were doing differently – care staff have been giving clients a drink at the start of the visit to ensure they have time to drink it whilst they are there. Care staff also agreed they were talking more to clients about hydration and recording this information better as a result of the project
Experience with Droplet® – three care staff used Droplet® with around six clients. One client really liked Droplet® and had good success with it. Other clients didn't get on so well, citing reasons such as disliking the voice, not being able to use it and preferring usual china tea cups
Experience with fridge magnets – generally good experience – a colourful visual reminder when care staff go to the fridge. However, care staff did not think that the clients knew what the magnets were for
ROC tool – care staff said the results were not communicated with them as the manager tended to complete it. However, care staff knew that most clients were amber or red and were promoting hydration to everyone
Completion of paperwork / forms – main challenges involved the clinical incident forms (e.g. falls and UTIs not being recorded) and the drinks recording charts (e.g. not all carers understood what the forms were for, and clients tending not to fill these in themselves in between carer calls)

4.4.3 Care staff feedback (paper-based questionnaires)

Six care staff from Portsmouth completed end of the project questionnaires following the focus group. All had previously attended the hydration training session. No questionnaires were completed by care staff at Havant. This included questions about how important they thought hydration was for their clients, how confident they felt talking about hydration, any barriers to improving hydration they had experienced, what specific impacts they thought the

project had had on client health and wellbeing, and their thoughts on the ROC tool, Droplet® cup and data collection forms. Data on responses can be seen in **Tables 23-25** (appendix 3), and is summarised as follows:

- Care staff felt confident talking about hydration with carers, clients and family members, although they felt slightly less confident talking to family members
- Most care staff (67%) felt they were drinking enough themselves
- Top 2 project barriers: 'lack of client interest' and 'struggle to talk to / engage with family members'
- All care staff said there had been 'some' / 'major' improvement in general wellbeing, alertness and communication with clients
- 40% of care staff reported less falls, UTIs and anxiety around toileting (remaining 60% said 'no change')
- Feedback on improvement on frequency of toileting was mixed, with 50% saying 'no change', 17% saying less toileting and 33% that toileting was more frequent
- The ROC tool & care plan was easy to use, and helped ensure clients were drinking enough
- 80% of care staff found the Droplet® cup useful
- All care staff found the drinks record chart and wellbeing form easy to complete

4.4.4 Manager feedback and reflections

No personal reflections or written feedback was received from the managers. This is likely to be due to the pressures on the agency due to the onset of the COVID-19 pandemic.

4.4.5 Feedback from clients

- End of project questionnaires were received back from 21 clients (five from Havant and 16 from Portsmouth)
- In addition to asking the questions to assess whether there had been a change in their hydration and hydration-related incidents, they were also asked to describe the project from a selection of options (options were: useful, helpful, positive, kind, important, negative, unhelpful, not important and irritating) and provide any other comments. **Table 26** (appendix 3) shows the feedback from clients
- 15 clients (71%) described the project in a positive way ('useful', 'helpful', 'positive' or 'important'), and six clients (29%) described the project in a negative way ('negative' or 'not important'). Two 'other' comments were provided by Havant clients. These were "Very helpful" and "No, just need to drink more and eat".

4.4.6 Reflections from the hydration steering group team

Several key members of the hydration steering group were asked to provide their feedback on how the project went. They were asked to answer the same three questions. Their responses / quotes can be seen below:

Key things that went well

"Care staff responded positively to the training and there was a definite increase in fluid intake between T1 and T2 for the clients from the Portsmouth branch. Data collection points all happened on time and we had a cohort of clients that saw the project through from start to finish"

Main challenges

- "The manager of the Havant branch left the company half way through the project
- Amount of paperwork that needed to be completed
- Clients not always seeing the same care staff, leading to confusion and inconsistent messages
- Varying commitment levels from care staff
- Relying on the care agencies to recruit clients and persuade them of the value of the project"

What were the main impacts?

- "Number of care staff trained on the importance of good hydration and dispel some of the myths
- Valuable lessons learnt, e.g. the difficulty of recruiting clients; barriers to successful project delivery
- The fluid intake of the Portsmouth clients increased from T1 to T2 and so did their overall health/wellbeing self-assessment scores"

Rob Payne, Programme Coordinator, Wessex AHSN (coordinated the data collection for this project)

Key things that went well

- “All those involved in the development, implementation and evaluation of the project appreciated the challenges involved and showed determination and enthusiasm to overcome these
- Training had very positive feedback and the time spent in obtaining and discussing the views of the project from care staff was invaluable in enhancing design and evaluation
- Strong leadership from the managers was crucial”

Main challenges

“Adaptation of the Hydration at Home project to the highly complex domiciliary care setting was obviously going to be challenging particularly as there were no other similar projects to act as a guide. Implementation and data collection were particularly challenging, and the onset of Covid-19 and other changes in circumstances were unexpected and exacerbated some of the issues”

What were the main impacts?

“With small numbers of clients recruited, significant outcomes were difficult to achieve although improvements in overall health and wellbeing were shown by the Portsmouth clients. The main impact was the considerable learning and consequent recommendations which help future similar projects deal with the challenges of this care setting”

Dr Sarah O’Callaghan, Hydration Clinical Lead, Wessex AHSN

Key things that went well

“We have proved that projects can be run within a domiciliary care setting. Anything is possible despite the challenges and there is always opportunity for learning and sharing. We demonstrated that developing a robust data collection approach (and associated support) pays dividends. The project demonstrated the importance of active listening and transparency – the care staff trusted the project team and were open and honest about what would and wouldn’t work.”

Main challenges

“Delivering a project within a highly pressurised environment, coupled with staffing challenges, CQC visits and different operational and leadership approaches within the same agency made consistent communication to staff members at data collection points variable and challenging.”

What were the main impacts?

“This project demonstrated that service improvement work can be delivered within a domiciliary care setting, and whilst there were challenges, the approach will provide a platform for other agencies to take the learning to develop new and innovative wellbeing and care approaches. It is a fantastic example of what can be achieved through collaborating with external agencies for the benefit of individuals living with frailty in their own homes.”

Cheryl Davies, Healthy Ageing Programme Manager, Wessex AHSN

5.0 Discussion

Training

Training was well attended and well evaluated by the carers in both branches. Despite several of the Havant care staff receiving training during the feasibility trial, and then again during this wider project, the training was still very positively evaluated, and there was an increase in knowledge and confidence. Consideration should be made around how to ensure that hydration awareness continues to be high on the care staff agenda and remains a priority area into the future, perhaps by using the new Hydration at Home e-learning module¹⁰ for new starters and an annual refresher. The carers liked being shown the Droplet® cup and having their questions answered. This also made the session more interactive and ‘hands on’.

¹⁰ <https://wessexahsn.org.uk/projects/354/hydration-at-home-toolkit>

Recruitment

Recruitment of clients was a challenge for both branches. Due to the recruitment issues experienced during the feasibility trial at Havant branch (i.e. some staff giving differing information and some negativity communicated in front of clients), the branches decided that the manager would do the majority of client visits to recruit them, so that the messaging would be consistent. Despite this, the branch managers still reported several issues with recruitment. For example, clients (and those with family members living with them) feeling like they already had a good knowledge around hydration, and some clients being put off by the paperwork as well as having to sign a consent form. It was hoped that 100-150 clients could be recruited in total from both agencies – this would have meant that more meaningful conclusions could be drawn about the impact of the project on the health and wellbeing outcomes. During the baseline phase, when it was becoming clear that recruitment was a struggle, several other care agencies in Hampshire were approached to ask if they would consider being involved. However, due to the time and paperwork issues around having to re-apply for Research Governance permission, it was decided (in collaboration with the hydration steering group) to continue with the clients recruited from the original two branches.

Impact of the project on client hydration, wellbeing and clinical incidents

It is clear from reviewing the data from staff focus groups and questionnaires and also client questionnaires, that the project had clear benefits around improved health and wellbeing for the clients. This was more marked for clients at Portsmouth branch, where there was more data available to review. However, the paperwork (in particular drinks record charts and clinical incident forms) was not completed well and this meant that this could not be 'proven' from the data. For example, at Havant branch, there was no data completed on the clinical incident forms for any of the clients; feedback from staff was that the drinks record charts were not well completed (e.g. staff were only completing it for the drinks they gave and left with the client, and some clients were filling it in, whilst others were not). The decrease in drinks intake (from the drinks record charts) between T0 and T1 in baseline fits with what would be expected from seasonal variation (e.g. T0 data collection was during the summer, and T1 in the autumn, when people may naturally drink less). However, clients were drinking more again by T2 (into winter) – a similar level to T0 (in the summer) which was positive.

Feedback from care staff

Feedback from care staff at Portsmouth was largely positive, suggesting that the project was worthwhile, improved the alertness of and communication with clients and reduced frequency of falls and UTIs. The onset of the Covid-19 pandemic meant feedback from staff at Havant was unable to be obtained.

Care staff engagement

It was clear from the quality of data and feedback from the care staff that engagement was better with the care staff from Portsmouth branch than Havant. This may be due to a number of factors, such as:

- Havant branch were involved in the initial feasibility trial. The point of the feasibility trial was to test an approach and make amendments before carrying out this project. As such, carers from Havant branch may have been put off by the amount of paperwork in the feasibility trial and this may have affected engagement for this project (even though the paperwork / data collection load had been significantly reduced)
- Portsmouth branch was not part of the initial feasibility trial, so this project was new to them, and as such, they perhaps did not come to this project with pre-conceived ideas. In addition, a briefing session was carried out with the Portsmouth branch prior to commencing the project so they knew what was involved. This was part of the learning from the feasibility trial and the approach was adapted as a result. A three-minute informal briefing video was filmed and sent to the Havant branch manager to inform the staff of the involvement and commitment (rather than face to face), but it is unclear whether this was actually passed on to the care staff in the branch
- The branches were organised differently in the way they worked with clients. Care staff at Portsmouth branch tended to see the same clients (as the clients were grouped by postcode), whereas in Havant, care staff did not have the same continuity, thereby affecting the engagement of care staff and clients
- The branch managers were different in their approach, communication methods and administration, and ran their branches in different ways
- The Havant branch manager left part-way through the intervention phase (which affected the data quality and follow up with care staff), and the Portsmouth manager was left to cover both branches.

6.0 Lessons learnt and recommendations

Lesson	Rationale	Recommendations
Carrying out a feasibility study / pilot before launching a large project was worthwhile	Carrying out and evaluating the feasibility study enabled us to identify things that needed to be changed to help improve the success of this project, e.g. adapting data collection forms; planning communication channels	Consider carrying out a small pilot or PDSA cycle before launching into a large project. This will help highlight potential challenges
Training – face to face training worked well and should be incorporated in similar projects	Training was well evaluated and resulted in an increase in knowledge and confidence – despite carers initially saying they knew all about hydration	Training is key – use of the Hydration at Home Toolkit ¹¹ is an ideal tool to use going forward, where face to face training is not available
A simple recruitment process is needed to improve the numbers of clients recruited. Everyone should be on board with recruitment, rather than just the managers	Having to provide written consent was off-putting for some clients	<ul style="list-style-type: none"> Recruiting more clients would make it more likely to be able to demonstrate clear outcomes Put into place research governance procedures that enable clients to give verbal (rather than written) consent Recruitment may be improved by having everyone being on board, not just managers
Limit the amount of paperwork / data collection forms used and work with the agency's existing data collection methods wherever possible	We used extensive forms and data collection methods to maximise opportunities to demonstrate the impact of the project. The agencies had just started using a new app system to record data although we were not able to use this for data collection because of the limited functionality. It was also felt that if the paperwork was kept in the client's home, it would be a reminder to fill it in	<ul style="list-style-type: none"> Use existing data collection methods where possible, e.g. app, existing client file Where electronic recording is in use, ensure you have enough time to make changes to this / add templates etc to support data collection, and consider having data analyst oversight
Lack of awareness of hydration messages	Clients not realising the need to improve their own hydration – feeling they already have good hydration	Promoting the public health resources as part of the Hydration at Home Toolkit
Having all carers engaged with the project	Not all carers were engaged and some mixed messages were given, e.g. use of Droplet®. Managers were doing the bulk of the ROC and wellbeing data collection – spreading the load may help	<ul style="list-style-type: none"> Appointing care staff to act as 'Hydration Champions' may help support the management in increasing engagement from the whole staff team Improved communication between care staff and clients about colour-coded magnets and Droplet® and their use

¹¹ <https://wessexahsn.org.uk/projects/354/hydration-at-home-toolkit>

<p>Manager engagement driving the project from the top</p>	<p>The branch with the more engaged manager produced better quality data and staff engagement</p>	<ul style="list-style-type: none"> • Consider the manager engagement from the start and throughout the project • Be aware that unforeseen circumstances may occur and agree how they will be managed within the project deliverables • When signing up collaborators, be clear about the project expectations and formalise with governing organisations
<p>Engaging domiciliary care settings is a challenge – acknowledge the issues around staff turnover, time with clients etc</p>	<p>Our project enabled us to acknowledge the challenges that exist in this setting, such as the limited time carers have available with clients, their workload etc</p>	<p>The learning and knowledge captured as a result of this project can be used for other care agencies/organisations to replicate</p>
<p>More work is needed to engage the domiciliary care setting and improve hydration in older people accessing care at home</p>	<p>Limited work / projects have been done with domiciliary care settings. Our work has been limited to only two branches within one organisation – there is still a lot more to be done</p>	<p>A call to action is needed – others need to pick up this approach and adapt it for settings in their local area, e.g. use the e-learning module to train staff. Whilst there are challenges in this setting, this should not put you off from trying to influence change</p>

7.0 Conclusion

This report has detailed the development, implementation and evaluation of a hydration project in the domiciliary care setting. From the beginning the Hydration Steering group and other colleagues were aware of the challenges this type of project presented, highlighted by the fact that we are not aware of any other projects in this care setting covering similar issues.

A pragmatic view was taken that even if it was problematic to obtain useful outcome data, there would be invaluable learning from the process. With small numbers of clients involved, the outcomes have been limited, although there was clear benefit around improved health and wellbeing among the Portsmouth clients in particular. Feedback on training from staff at both branches was very positive. There was positive feedback on the project implementation from the Portsmouth carers but none from the Havant team due to unforeseen circumstances.

The considerable list of learning and recommendations from every stage of the project will hopefully facilitate the development of similar projects by other organisations. The population of older people in receipt of domiciliary care is growing and the incidence of dehydration with its consequences is unknown, although there are a number of studies that indicate the significant prevalence of dehydration among hospital admission for the over 65s. As all older people should be considered at risk of dehydration due to the ageing process, improving hydration care should be integral to care provision in the domiciliary care setting. We hope this project contributes towards this goal.

Appendix 1: Training

Table 4: Average percentage of pre- and post-session knowledge (Q1-3)

	Havant branch (data from 23 attendees)		Portsmouth branch (data from 12 attendees)	
	Before	After	Before	After
% of attendees getting the question correct on amount of fluid required each day	35%	74%	46%	77%
% of attendees getting the question correct on thirst as an indicator	27%	50%	25%	75%
% of attendees getting the question correct on whether water is more hydrating than tea	9%	100%	25%	83%
Average knowledge (%)	24%	75%	32%	78%
Average increase in knowledge	213%		144%	

Table 5: Average percentage of pre- and post-session knowledge (Q4)

	Havant branch (data from 22 attendees)		Portsmouth branch (data from 14 attendees)	
	Before	After	Before	After
No. of attendees who mentioned urine colour	n=3	n=0	n=5	n=1
No. of attendees who mentioned the 'pinch test'	n=4	n=0	n=1	n=0
No. of attendees who mentioned thirst	n=2	n=0	n=1	n=0

Table 6: Average perceived pre- and post-session confidence

	Havant branch (out of 23 attendees)		Portsmouth branch (out of 14 attendees)	
	Before	After	Before	After
Average perceived confidence (and range)	75.7% (range: 41-100)	90.1% (range: 67 – 100)	76.5% (range: 40 – 100)	89.6% (range: 60 – 100)
Average confidence increase	19%		17%	

Table 7: Post course evaluation data

Questions asked on evaluation form	Average score (out of 10)	
	Havant	Portsmouth
The training met my expectations	9.5	9.6
I will be able to apply the knowledge / skills learned	9.4	9.6
The content was organised and easy to follow	9.6	9.7
The resources provided were good	9.5	9.8
The slides were easy to read and follow	9.5	9.8
Group participation and interaction were encouraged	9.6	9.8
Adequate time was provided for questions and discussion	9.6	9.3

Appendix 2: Client data

Table 8: ROC Hydration Care Assessment Tool ratings for Havant branch (blank rows indicate missing data)

Client number	ROC rating (T0)					
	Swallow	Assistance	Encouragement	Pour drink	Get drink	Overall
1	G	G	G	G	G	G
2	G	G	G	G	G	G
3	G	G	A	G	R	R
4						
6	A	A	G	R	R	R
7	G	G	G	G	G	G
8						
9	A	A	G	A	A	A
10	A	G	A	R	R	R
11						
12	G	G	A	G	G	A
13	G	G	G	G	G	G
14	A	G	A	R	R	R
15	G	G	G	G	G	G
16						
17						
18						
19						
20	G	G	G	G	G	G
21	G	G	G	R	R	R
22	G	A	G	R	R	R
23	G	G	G	G	G	G
24	G	G	G	G	G	G
25	G	G	A	G	A	A

Table 9: ROC Hydration Care Assessment Tool ratings for Portsmouth branch (blank rows indicate missing data)

Client number	ROC rating (T0)						Changes at T1 or T2
	Swallow	Assistance	Encouragement	Pour drink	Get drink	Overall	
1	G	G	A	R	R	R	No change
2	G	A	A	A	A	A	No change
3							
4	G	G	A	G	G	A	No change
5	G	G	A	R	R	R	No change
6	G	G	A	R	R	R	No change
7	G	A	A	A	A	A	No change
8							No change
9	G	G	A	A	A	A	No change
10	G	G	A	R	R	R	No change
11	G	G	G	A	A	A	No change
12	G	G	R	R	R	R	No change

13							
14	G	G	A	A	A	A	No change
15	G	G	A	R	R	R	No change
16	G	G	G	G	G	G	No change
17	G	G	A	A	A	A	No change
18	G	G	A	A	A	A	No change
19	G	G	A	A	A	A	No change

Table 10: Summary of ROC rating data

	% of clients with a recorded ROC rating at T0	Percentage of clients with each ROC rating at T0			Other observations
		% with green ROC rating	% with amber ROC rating	% with red ROC rating	
Havant branch	68%	47%	18%	35%	<ul style="list-style-type: none"> Ability to get drinks appeared to be the aspect of the tool that most clients needed support with No clients had swallowing problems
Portsmouth branch	84%	6%	56%	38%	<ul style="list-style-type: none"> Encouragement appeared to be the aspect of the tool that most clients needed support with 24% had swallowing problems

Table 11: Fluid intake recorded on charts (Havant branch)

Client	T0				T1				T2				T0-T1 % +/-	T1-T2 % +/-
	Day 1	Day 2	Day 3	Average	Day 1	Day 2	Day 3	Average	Day 1	Day 2	Day 3	Average		
1					1.5	1.75	3.5	2.3						
2	3	3.75	3.25	3.3										
3	6.25	5.75	7.25	6.4	5	6	5	5.3	1	1	1	1	-31.03%	-80.00%
4														
5														
6	3	3.5	3.25	3.3										
7	7.5	6.75	7.25	7.2	6.5	6.5	7.25	6.8					0.00%	
8	9	7	8	8	8	9	9	8.7					12.50%	
9	8	8	5.5	7.2	6	5	5	5.3					-9.09%	
10	4.25	2	2.5	2.9										
11	4	5	4	4.3	7	7	7	7					75.00%	
12	7.5	6.25	8	7.3	2.75	3.5	3	3.1					-62.50%	
13	7	8.75	7	7.6										
14	8	7.25	7.25	7.5	11	11	11	11					51.72%	
15	4	4.5	4.5	4.3					3	2.75	2.75	2.8		
16														

17																	
18																	
19																	
20	3	3	3	3	5	5.25	6.5	5.6								116.67%	
21	5.25	6	6.25	5.8													
22	3.25	3.5	4.5	3.8	8	8	8	8								77.78%	
23	3	4	5	4													
24	2	2	3.25	2.4	6	6	6	6	3	3	3	3				84.62%	-50.00%
25	2.5	3.5	2.5	2.8	8.5	9.5	7	8.3	1	1	1	1				180.00%	-85.71%

Table 12: Wellbeing data (Havant branch) %

Collection period	Total number of clients	Mobility 1	Mobility 2	Mobility 3	Self-Care 1	Self-Care 2	Self-Care 3	Usual Activities 1	Usual Activities 2	Usual Activities 3	Pain/Discomfort 1	Pain/Discomfort 2	Pain/Discomfort 3	Anxiety/Depression 1	Anxiety/Depression 2	Anxiety/Depression 3	Health Rating average
T 0	18	17	50	33	0	61	39	11	44	44	39	56	6	56	33	11	67
T 1	12	17	67	17	0	58	42	0	33	67	33	58	8	83	17	0	75
T 2	5	0	100	0	0	60	40	0	80	20	0	20	80	20	40	20	45

Table 13: Fluid intake recorded on charts (Portsmouth branch)

Client	T0			Average	T1			Average	T2			Average	T0-T1 % +/-	T1-T2 % +/-
	Day 1	Day 2	Day 3		Day 1	Day 2	Day 3		Day 1	Day 2	Day 3			
1	5.5	2.25	2.5	3.4	3	4.5	3.75	3.8	4.25	5	3.25	4.2	9.8%	11.1%
2	7	6.5	5.75	6.4	2.5	3.25	2	2.6	4	4	5	4.3	-59.7%	67.7%
3	7.5	7.5	7.5	7.5										
4	11.25	8.5	10.75	10	4	4	3.25	3.8	5	5	5.5	5.2	-63.1%	37.8%
5	4	4.5	4.5	4.3	3.5	3	2.25	2.9	7	6.5	6.5	6.7	-32.7%	128.6%
6	5.5	6	4	5.2	2.5	2.5	2.75	2.6	3.5	6.25	6.75	5.5	-50.0%	112.9%
7	6.5	6.75	7.75	7	3	3	3	3	4.5	4.25	4.25	4.3	-57.1%	44.4%
8	8.75	7.75	7.5	8										
9	8	8.75	6	7.6	4	4	3.5	3.8	9	9	9	9	-49.5%	134.8%
10	4.75	4.5	4.5	4.6	2.5	3.25	2.5	2.8	5.25	5.5	5	5.3	-40.0%	90.9%
11	6.25	7	8	7.1	3	3	3	3	5	6.5	5.5	5.7	-57.6%	88.9%
12	4.75	3	5.25	4.3	2	2	2	2	3.5	3.25	3.25	3.3	-53.8%	66.7%
13	6	6.5	4	5.5	3	2.75	3.25	3					-45.5%	
14	6	7.25	8.75	7.3	2.5	2.25	2.25	2.3	6	7	7	6.7	-68.2%	185.7%
15	3.5	2.25	2.5	2.8	2	2	3.25	2.4	3.5	4.5	3.5	3.8	-12.1%	58.6%
16	5	5.5	6.25	5.6	2.25	2.25	3	2.5	5	5	5	5	-55.2%	100.0%
17	4	3	5	4	4.25	3.25	1	2.8	4.5	5	3.5	4.3	-29.2%	52.9%
18	1.25	3.125	3.125	2.5	2.5	2.5	5.5	3.5	5	4.5	4.75	4.8	40.0%	35.7%
19	5.5	3.75	5	4.8	1	1	1.75	1.3	5.5	6	6.5	6	-73.7%	380.0%

Table 14: Wellbeing data (Portsmouth branch) %

Collection period	Total number of clients	Mobility 1	Mobility 2	Mobility 3	Self-Care 1	Self-Care 2	Self-Care 3	Usual Activities 1	Usual Activities 2	Usual Activities 3	Pain/Discomfort 1	Pain/Discomfort 2	Pain/Discomfort 3	Anxiety/Depression 1	Anxiety/Depression 2	Anxiety/Depression 3	Health Rating average
T 0	19	11	79	11	5.3	79	16	5	63	32	21	58	21	47	37	16	61
T 1	17	18	76	5.9	12	76	12	12	76	12	18	59	24	53	47	0	53
T 2	16	19	75	6.3	13	81	6.3	13	69	19	13	81	6	63	38	0	70

Figure 3: Fluid intake as number of drinks a day (line graph) and overall wellbeing scores out of 100 (bar graph) for Havant branch clients H3, H24 and H25. Each colour denotes a different client and shows the wellbeing (out of 100) as a bar chart with the average number of daily drinks as a line graph (figures in circles) superimposed to show the relationship

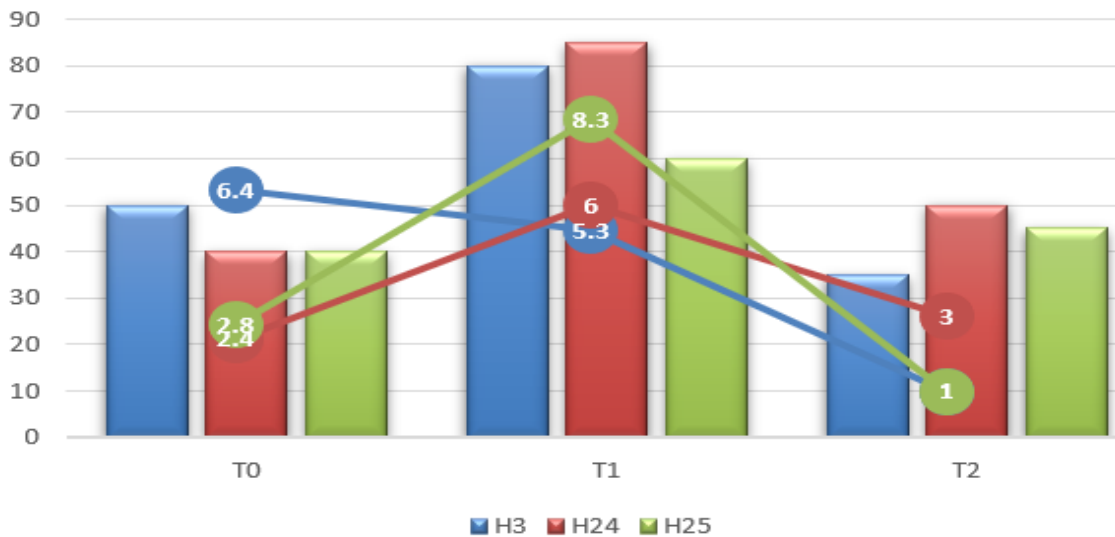


Figure 4: Average drinks per drink according to the drinks record chart for the same 14 clients as wellbeing data is available for

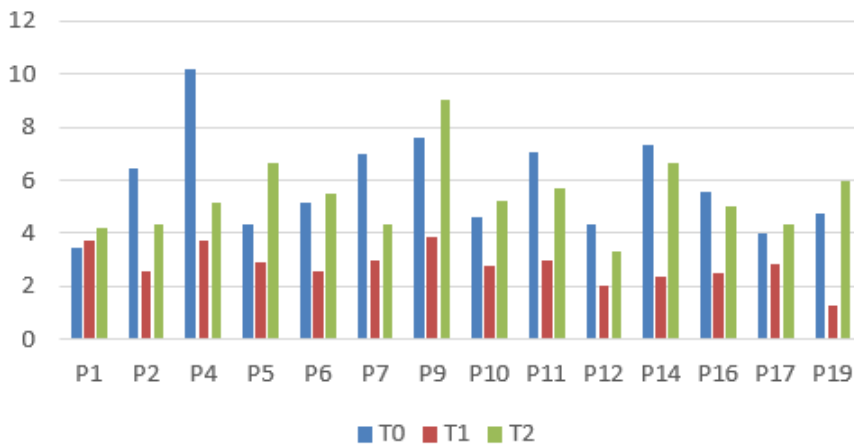


Figure 5: Overall wellbeing scores (out of 100) for the 14 clients

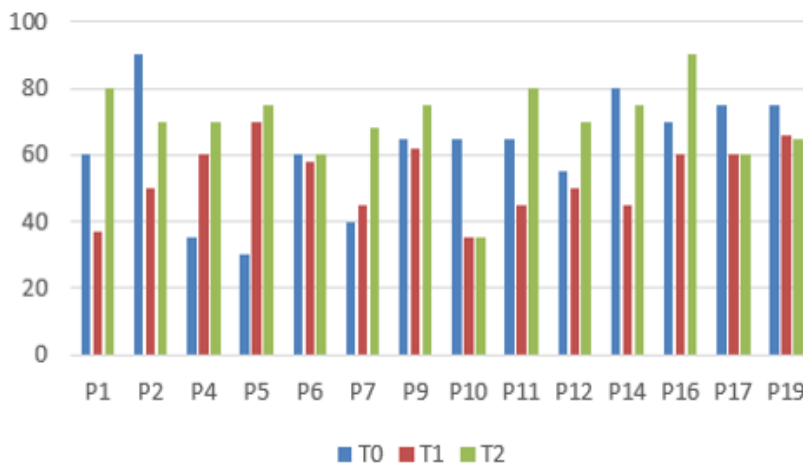


Table 17: Data from clinical incident forms (data available for Portsmouth branch only)

Client number	Baseline phase		Intervention phase	
	Falls	Antibiotics for UTI	Falls	Antibiotics for UTI
1	0	0	0	1 episode (seven days)
6	0	0	0	3 episodes (five days each time)
9	5	0	0	0
10	1	0	1	0
12	3	1 episode (three days)	0	0
14	1	0	3	0

Table 18: Data from client questionnaires

	Havant branch		Portsmouth branch	
	Before	After	Before	After
No. of drinks consumed each day (average & range)	5.6 (range: 3-8)	4.6 (range: 3-7)	6.5 (range: 3-9)	7.8 (range: 5-10)
Do you think you are drinking enough?	Yes	n=2	n=8	n=7
	No	n=3	n=1	n=2
	Unsure	n=1	n=7	n=7
Perceived health rating (average out of 10 & range)	6.4 / 10 (range: 4-8)	5 / 10 (range: 3-6)	5.9 / 10 (range: 3-8)	6.4 / 10 (range: 4-9)
Perceived overall mood rating (average out of 10 & range)	6.8 / 10 (range: 4-9)	5.2 (range: 4-7)	6.4 / 10 (range: 1-10)	6.6 / 10 (range: 4-9)
Approx number of falls in last three months	1	n=4		n=1
	2-3	n=1*		n=2
	4+			n=2



Approx number of UTIs in last 3 months	1		n=1	n=3	n=2
	2-3			n=2	n=3
	4+	n=1		n=1	
Any pressure sores, and if so, their grades		n=0	n=1 (grade 4)	n=2 (no grades given)	n=0
Do you have concerns about increasing fluid intake over the next 3 months? (<i>only asked at T0</i>)	Yes	n=2		n=2**	
	No	n=3			

* Note these were different clients

** The additional comments provided by these clients were: "Having to get to the toilet, spending lots of pennies", "Going to the toilet too much", "due to water tablets going constantly" and "will need to go more and not always convenient"

Table 19: Data from all sources for Havant branch clients who felt the project had made a positive difference to their hydration, and those who were unsure. ‘H’ denotes Havant branch. Column pairs in green represent an improvement and column pairs in dark pink represent a worsening (figures from the client questionnaires were used instead of data collection sheet figures where there are discrepancies). Note: to calculate the baseline data, an average between T0 and T1 was calculated

Client number	No. drinks per day according to client questionnaire (figures from drinks record charts shown in brackets)		No. falls according to client questionnaire*		No. UTIs according to client questionnaire*		Perceived health & wellbeing out of 10 according to client questionnaire (figures from wellbeing form shown in brackets)		Perceived mood out of 10 according to client questionnaire		ROC rating
	Baseline	T2	Baseline	T2	Baseline	T2	Baseline	T2	Baseline	T2	
H24	7 (4.2)	6 (3)	0	1	4+	1	4 (4)	6 (5)	4	5	G
H25	6 (5.5)	4 (1)	0	1	0	0	8 (8)	4 (4.5)	8	4	A

* no figures available from clinical incident form to compare

Table 20: Data from all sources for Portsmouth branch clients who felt the project had made a positive difference to their hydration, and those who were unsure. ‘P’ denotes Portsmouth branch. Column pairs in green represent an improvement and column pairs in dark pink represent a worsening (figures from the client questionnaires were used instead of data collection sheet figures where there are discrepancies). Note: to calculate the baseline data, an average between T0 and T1 was calculated

Client number	No. drinks per day according to client questionnaire (figures from drinks record charts shown in brackets)		No. falls according to client questionnaire (figures from clinical incident form shown in brackets)		No. UTIs according to client questionnaire (figures from clinical incident form shown in brackets)		Perceived health & wellbeing out of 10 according to client questionnaire (figures from wellbeing form shown in brackets)		Perceived mood out of 10 according to client questionnaire		ROC rating
	Baseline	T2	Baseline	T2	Baseline	T2	Baseline	T2	Baseline	T2	
P2	8 (4.5)	7 (4.3)	None (0)	None (0)	None (0)	None (0)	8 (7)	7 (9)	9	8	A
P6	5 (3.9)	6 (5.5)	None (0)	None (0)	None (0)	2-3 (3)	6 (6)	5 (6)	5	5	R
P7	7 (5)	6 (4.3)	2-3 (0)	None (0)	4+ (0)	None (0)	4 (4.3)	6 (6.8)	6	9	A
P10	4 (3.7)	6 (5.3)	4+ (0)	2-3 (2)	None (0)	2-3 (0)	6 (3.5)	6 (6.5)	7	5	R
P14	9 (4.8)	6 (6.7)	4+ (1)	2-3 (3)	2-3 (0)	2-3 (0)	8 (6)	6 (7.5)	9	7	A
P15	3 (2.6)	7 (3.8)	None (0)	None (0)	None (0)	None (0)	2 (no score)	6 (no score)	8	6	R
P18	6 (3)	5 (4.8)	2-3 (0)	1 (0)	2-3 (0)	None (0)	6 (no score)	9 (no score)	1	8	A
P19	4 (3)	8 (6)	None (0)	None (0)	None (0)	None (0)	4 (7)	8 (6.5)	5	5	A

Appendix 3: Process evaluation

Table 21: Thematic review of mid-intervention phase telephone interview with Portsmouth branch carers (some are shown as direct quotes, whilst others are summarised versions of what was said)

Key themes	Carer 1	Carer 2	Carer 3
Challenges in consenting		My clients were eager to do it, so no issues	
Impact on work and impact on clients	Positive: Good, I know how much my client is drinking and he is drinking more.	Positive: I encourage my remaining 3 clients to drink more, I am constantly saying, have a drink. With the gentleman it is easier, with the two ladies, I have always had problems. I have lost two of my clients that were on the project.	Positive: Knowing exactly what they have drinks they have had
Feedback on Droplet®	Droplet® not used on client	Negative: Clients say that the voice gets on their nerves, I say to them it is because they are not drinking enough. 3 x clients are still using the Droplet® and are working well in the setting, however issues with carers putting in the sink to wash up. Clients also using their own favourite mugs for tea and coffee so don't use Droplet® but will use it for orange juice.	Positive: "One service user I go to, he is sitting having breakfast and it will start going off and he will go and get a drink straight away" "we will be chatting away and it will start talking and then the gentleman will get up and go straight away and get the cup and start drinking"
Impact on own hydration	Positive: I forget to drink and don't always drink but I have drunk more and my cough has gone	Positive: "I carry a bottle of water with me and I am drinking more than before the project started"	Positive: It does make you think more about what you are drinking
Feedback on ROC		Positive: I am promoting hydration more	"I am just doing my job, I am always monitoring... but it makes me and the service user more aware of what we should be drinking"
Ease of data collection		No problems	Straightforward forms
Other comments	Very good project	Worthwhile project if everyone is on board...need all carers on board for it to work or you don't know what you are doing. [some of the carers were not part of the initial training so inconsistency between visits, "I leave a big bottle for the client so he can	This project is a good thing. It is something that will work.

	fill up the cup from there [Droplet®] and then when you go back the next day, you think blimey they ain't drinking nothing... but the other carers are filling it up from the tap... so you aren't getting a true reading of him using the cup"
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Table 22: Thematic review of end of project focus group with Portsmouth branch carers (colours denote feedback from the same carers)

Key themes	Responses / quotes
Challenges in consenting / engaging clients	<p>General feeling was that it was a challenge to recruit and engage clients in the project. Carers also found that several clients dropped out of the project due to passing away</p> <ul style="list-style-type: none"> “Clients were not really interested in doing it. I took paperwork round to 5 or 6 clients and 4 came back due to their family not wanting it fill it in or maybe they didn't want the hassle of filling in the forms themselves... or maybe they just didn't have the time or want to get involved” “You know we had to have the gap (for baseline), the clients had forgotten all about the project... we had to explain it again” “A couple of our clients passed away who would have benefitted”
Impact on clients	<p>Three carers expressed that the several of the clients who would have benefitted from the project have passed away. Only one other comments from one carer:</p> <p>“If he's not drunk enough, I've noticed his mood is lower and he's sleeping more”</p>
Impact on work / time at each call	<p>Call time / frequency - no changes to length of call time or frequency were reported. When asked what impact the project has had in terms of the time spent at each call, the following responses were given:</p> <ul style="list-style-type: none"> “You're talking as you're going along anyway so I don't think it's had any impact... Paperwork is what takes longer” “No I don't think it has – cos you're making them drinks anyway and always encouraging them to drink so it's the norm for us” <p>What they're doing differently - carers appeared to think more about getting clients to drink during the visit, particularly giving them a drink at the start of the visit, to ensure they have time to drink it whilst the carer is there. Carers agreed they were talking more to clients about hydration more and recording this information better as a result of the project</p> <ul style="list-style-type: none"> “Even though it's something you do regularly, you're more conscious of it – probably saying it much more than usually” “One client said he'll go rusty if I give him anymore!” “We have to record everything they drink for particular clients” With certain clients, we're recording more... It's shown how much some people are drinking”
Feedback on Droplet®	<p>Numbers using Droplet® - three carers had used Droplet® with six clients in total - “Not many service users have used them”</p>

	<p>Mixed feedback about the usefulness of Droplet® - only one client had used it and benefitted from it:</p> <p>“Another carer put it in the sink and washed it... we got him another cup but the batteries kept running out on it... but he does use it all the time... I’ve noticed that when he has the Droplet® cup, that is the drink that’s always gone... he has two of the Droplet® cups for coffee and juice”</p> <p>Other clients didn’t have a positive experience:</p> <ul style="list-style-type: none"> • “They had the Droplet® cup but didn’t use it” • “One of my clients uses it without the base” • “Most clients would provide the light – the voice got on their nerves” • “I managed to set it up and left it with them, but their family couldn’t work out how to use it, so they ended up not using it... she wanted to put it onto the light and she couldn’t do... after that she decided not to carry on with it” • “I put it on for it to talk but they didn’t like it talking...but this was fine for some other people” • “Two days after, she said ‘I don’t want to use this anymore’... it’s too big – she likes a small china cup”
<p>Feedback on fridge magnets</p>	<p>Fridge magnets all got put into the clients’ homes – general thoughts were that it was working. No feedback from clients on the magnets.</p> <ul style="list-style-type: none"> • “When you go to the fridge, it’s there” • “I’d say it was just a fridge magnet for me! I thought it was advertising something!” • “It indicated what they had – nice and bright”
<p>Impact on own hydration</p>	<p>One carer felt her own hydration had improved - “My cough has gone since I attended the training”</p>
<p>Feedback on ROC</p>	<p>The majority were completed by the managers, Only one of the carers had used this - “It was easy to use but there were some where there was a fine line to decide between the green and amber... it was easier to use your judgement when you know the client”</p> <p>Colour was not communicated to the carers after the assessment was made by the manager, but carers didn’t think they had anyone in the green category - “I just promoted everyone to drink and that was it”</p>
<p>Feedback on data collection forms and recording</p>	<p>General feeling that the clinical incident form was forgotten about and not filled in:</p> <ul style="list-style-type: none"> • “If they have to record the drinks themselves, some people just didn’t do it or remember to do it... Falls and UTIs form was just left in their file... I know someone who had a fall and it wasn’t filled in” • “Unless you look on the PASS system, you’re not aware of that fall” <p>Drinks recording chart. General feeling was that the drinks recording chart was under-reporting. clients were not filling them in themselves - “The main problem was that because it’s not always the same carer, people who’ve not been on the training just didn’t know what it was... you go to somebody different and nothing has been filled in”</p>
<p>Other comments</p>	<ul style="list-style-type: none"> • No comments on how to spread the approach to other agencies • Carers are planning on continuing the approach – encouraging fluids and using Droplet® in the client who’s finding it effective • When asked, carers thought the idea of the e-learning module would be useful for other agencies

Table 23: Carer end of project questionnaires – importance of hydration, confidence talking about hydration, changes to their own hydration and barriers to improving hydration for clients (Portsmouth branch)

Question	Summary of responses
<i>How important is hydration for your clients? (1=not important; 10=extremely important)</i>	83% (n=5) said 10/10 (extremely important) n=1 said 8/10
<i>How confident do you feel talking to clients about the importance of hydration? (1=least confident; 10=extremely confident)</i>	67% (n=4) said 10/10 33% (n=2) said 9/10
<i>How confident do you feel talking to clients about way they could improve their hydration? (1=least confident; 10=extremely confident)</i>	67% (n=4) said 10/10 33% (n=2) said 9/10
<i>How confident do you feel talking to family members about how they can support the client improve their hydration? (1=least confident; 10=extremely confident)</i>	40% (n=2) said 10/10 40% (n=2) said 9/10 20% (n=1) said 7/10 n=1 didn't answer the question
<i>As a carer, do you think you are drinking enough?</i>	67% (n=4) said yes 33% (n=2) said no
<i>What barriers have there been to improving hydration for clients? (they could choose multiple options)</i>	83% (n=5) said 'lack of client interest' 50% (n=3) said 'struggle to talk to / engage with family' 33% (n=2) said 'lack of interest from staff / carers' 17% (n=1) said 'some clients didn't want to do it'

Table 24: Carer end of project questionnaires – impacts on client health and wellbeing (Portsmouth branch)

Question	Summary of responses
<i>What improvement has the project made for the general wellbeing of clients? (no, some or major)</i>	83% (n=5) said 'some' improvement 17% (n=1) said 'major' improvement
<i>What improvement has the project made for the alertness of clients? (no, some or major)</i>	83% (n=5) said 'some' improvement 17% (n=1) said 'major' improvement
<i>What improvement has the project made on communication with clients? (no, some or major)</i>	60% (n=3) said 'some' improvement 40% (n=2) said 'major' improvement n=1 did not answer the question
<i>What improvement has the project made on pressure sores? (no, some or major)</i>	Not answered
<i>What improvement has the project made on number / frequency of falls?</i>	40% (n=2) said less falls 60% (n=3) said no change in falls n=1 did not answer the question
<i>What improvement has the project made on number / frequency of UTIs? (less, no change, more)</i>	40% (n=2) said less UTIs 60% (n=3) said no change in UTIs n=1 did not answer the question
<i>What improvement has the project made on frequency of toileting? (less, no change, more)</i>	17% (n=1) said frequency of toileting was less 50% (n=3) said frequency of toileting was the same 33% (n=2) said frequency of toileting was more
<i>What improvement has the project made on anxiety around continence / toileting? (less, no change, more)</i>	40% (n=2) said less anxiety 60% (n=3) said no change n=1 did not answer the question

Table 25: Carer end of project questionnaires – feedback on tools and paperwork (Portsmouth branch)

Question	Summary of responses
<i>The ROC tool and care plan were easy to use (yes, somewhat, no)</i>	80% (n=4) said 'yes' 20% (n=1) said 'somewhat' n=1 did not answer the question
<i>The ROC tool and care plan helped to ensure clients were drinking enough (yes, somewhat, no)</i>	100% (n=5) said 'yes' n=1 did not answer the question
<i>The Droplet® cup was useful in helping clients to drink more (yes, somewhat, no)</i>	60% (n=3) said 'yes' 20% (n=1) said 'somewhat' 20% (n=1) said 'no' n=1 did not answer the question
<i>The drinks record chart was easy to complete (yes, somewhat, no)</i>	100% (n=6) said 'yes'
<i>The wellbeing form was easy to complete (yes, somewhat, no)</i>	100% (n=6) said 'yes'

Table 26: How clients described the project (whilst they could select more than one option, each client only selected one option from Portsmouth branch. Two clients from Havant branch selected more than one option)

Options provided for clients to select	Number of clients	
	Havant	Portsmouth
Useful	3	2
Helpful	1	1
Positive	2	9
Kind		
Important		1
Negative	1	
Unhelpful		
Not important	1	3
Irritating		