Evaluation of Hydrate in Care Homes

Kent Surrey Sussex Academic Health Science Network
April 2017
Hydrate in Care Homes
Project Evaluation

Executive Summary

“Two of our key aims for the Living Well For Longer programme are to reduce hospital admissions and to support capability in Care Homes. This project has contributed to both those goals but in particular, it should be celebrated because of the fantastic engagement and commitment of almost 100 care homes across Kent, Surrey and Sussex. My colleagues, Frances Scott and Dr Sarah O’Callaghan have really championed and led this project with great energy and passion. I hope that you will find the evaluation helpful. We are keen to share our learning and experience to enable others to support residents in care homes be properly hydrated and to enable them to live well for longer.”

Tracey Faraday-Drake, Director for Living Well for Longer Programme

“Good hydration is a core element of care and plays a role in the prevention of avoidable harm associated with other known patient safety issues.”

Caroline Lecko, NHS England Patient Safety Lead, July 2013

The Hydrate in Care Homes project ran from April to October 2016 and aimed to reduce illness and unnecessary hospital attendance for care home residents through improving hydration awareness and practices among care home staff. A total of 89 care homes completed the project from four pilot localities representing five clinical commissioning groups (CCGs). The project had a potential impact on approximately 3,100 residents.

Significant reductions in admissions associated with fractured neck of femurs (#NOF) were achieved in three localities while two localities showed reductions in admissions associated with a fall. Nursing homes showed markedly greater reductions in falls and urinary tract infection (UTI) admissions than residential homes. This translated into cost savings of £202,531 (18% year on
year reduction) across the CCGs. Comparing this with the performance of the homes not involved in the project, the hydrate homes produced an 11% greater reduction in admission costs. Across all localities 564 potential bed days were saved over the 5 months during which the homes implemented changes.

The evaluation of the Simple Measures™ Reliance On a Carer to Drink (ROC to Drink) dehydration risk assessment tool and care plan summary produced positive user feedback. 76% of the randomly allocated ROC homes implemented its use and all those who gave feedback stated that they would opt to continue to use the tool and care plan summary in the future. ROC homes had markedly reduced UTI admissions and greater reductions in falls admissions, compared with other homes.

A key element of the project was empowerment of the care homes hydration champions, many of whom were health care assistants. All the champions enjoyed their role which they would recommend to others. Similarly all managers would recommend participation in the project to other homes and 96% felt it had changed long term hydration practice in their home. Regular hydration related activities proved to be effective and popular with staff and residents.

The project was designed to be easily understood with achievable goals in a format that was practical, rewarding and had a ‘fun’ element. The overwhelming positive feedback from managers and champions suggests this goal was fulfilled.

We hope that other organisations will consider following the format of this project to facilitate the delivery of optimal hydration to care home residents. We commend the project to them with the aim of reducing the associated morbidity, mortality and distress that inadequate hydration can cause in this vulnerable population group.

**Recommendations**

The results from the evaluation have been encouraging and we recommend the adoption of this initiative using the resources and tool kit that Kent Surrey Sussex Academic Health Science Network (KSS AHSN) have developed, to suit your locality.

**Dr Sarah O’Callaghan, Hydration Clinical Lead & Frances Scott, Improvement Manager for the Hydrate in Care Homes Project  KSS AHSN, February 2017**
Key Outcomes

- **89 care homes** completed the project with **3100 residents involved**.
- **206 hydration champions** trained
- **£202,531 reduction in admission costs**
- **564 potential bed days saved**
- Nursing homes greater admission reductions than residential homes
- Reduction in #NOF admissions most significant outcome
- **100% of hydration policies** developed or updated
- **100% of managers recommend participation** in the project to others
- **100% of champions enjoyed** their role
- **96% of managers** felt the project had **changed long term practice** in their home
- **72% of residents** felt they were **drinking more** than in the previous 3-6 months (reflecting length of the project)

**Homes that implemented** the ROC dehydration risk assessment tool and care plan summary had **significantly greater reductions** in UTI admissions than those who did not

- **100% would opt to continue to use** the ROC tool and care plan summary **after the end of the project.**
Introduction including Aims and Objectives

Care home residents are among the most frail and vulnerable element of the population. They are at risk of dehydration due to a combination of age related changes, reliance on others to support them to drink and behavioural and cognitive factors such as the presence of dementia.

In Jan 2015 a paper in the Journal of Royal Society of Medicine by Wolff, Stuckler and McKee reported on the incidence of dehydration in acute medical admissions among patients aged 65 and above. The findings showed that patients admitted from care homes were ten times more likely to be dehydrated than those admitted from their own homes. The rate was still five times higher after adjustments for age, gender, mode of admission, dementia and other variables. Hooper and Bunn (2016) reported a dehydration incidence of 20% among a sample of care home residents with increased risk of dehydration being associated with increased severity of dementia.

The Hydration for Health Initiative in 2012, highlighted evidence that dehydration has a negative impact on the elderly population. It is associated with increased mortality rates, hospital admissions and the development of various morbidities, including constipation, urinary tract infections, impaired cognitive function, falls, orthostatic hypotension and salivary dysfunction.

Bearing in mind the impact of dehydration in terms of morbidity and mortality particularly in association with other conditions, these results confirmed the importance of focusing on improving hydration among care home residents. To try to address these challenges, KSS AHSN developed the Hydrate in Care Homes project from an initial project in North East Hampshire and Farnham Clinical Commissioning Group (NEH & F CCG). The AHSN has worked in partnership with 96 care homes (the Hydrate homes) potentially involving over 3,500 residents in five pilot CCG localities - Coastal West Sussex (CWS); Thanet; Horsham, Mid Sussex and Crawley (HMSC) and Guildford and Waverley (G&W).

A total of 206 care home staff trained to become hydration champions. Training included improving hydration awareness and practices, with guidance on techniques to increase residents' fluid intake and ideas for hydration related activities. They were encouraged to share their learning with the rest of the staff in their homes. Participating homes committed to encouraging residents to drink appropriately, aiming for between six and eight drinks every day. Some residents may have been unable to drink this amount for a number of reasons. In these situations, homes aimed for 'optimal hydration' - doing the best they could under the circumstances.
The original NEH & F CCG project lasted 12 months and demonstrated reductions in actual admissions due to #NOF as the result of a fall, and potential admissions due to UTIs and falls. The latter mirrored the results from two historical initiatives in Buckinghamshire 2005 and E Anglia 2006.8 9

The KSS AHSN project ran from April to October 2016 with the primary aim of producing similar admission results associated with a reduced incidence of falls and UTIs among care home residents. This would confirm that this type of intervention could improve well-being and reduce morbidity in this vulnerable group and encourage other organisations to consider undertaking similar initiatives. Appendix 1 provides the evidence base behind this choice of outcomes.
Additional aims and objectives

Evaluation of Reliance On a Carer (ROC) to drink dehydration risk assessment tool and care plan summary

An additional aim of the project was to undertake evaluation of this dehydration risk assessment tool and care plan summary. NICE (2013) highlighted that reliance by one individual on another for access to oral fluids, was a key risk factor for dehydration.\textsuperscript{10} Trying to address this challenge was one of the factors that led to the development of ROC by Naomi Campbell, RGN\textsuperscript{11}, as part of her hydration work for Peninsula Community Health CIC. They have since funded her to become director and founder of Simple Measures\textsuperscript{TM} a not for profit social enterprise focused on providing quality improvement initiatives for hydration care at scale (See Appendix 5 for details). In 2016 Naomi was awarded ‘Nurse Innovator of the Year’ by the British Journal of Nursing for her creation of ROC along with other simple and practical hydration innovations. Informal evaluation of ROC had taken place in Cornish community hospitals and the hydrate project provided the opportunity to examine its application to the care home setting.

Care Home Staff Engagement

The project also gave the opportunity to engage with some of the more junior staff in homes. The recommended criteria for hydration champions suggested that a champion did not need to be a nurse or manager as they were likely to have other roles. Many of the champions who attended training were care assistants. One of the aims of training was to empower this group of staff within the home by giving them a named role and providing supportive resources.
Project Approach and Timeline

KSS AHSN aimed to expand the previous project approach taken by NEH & F CCG to cover 100 Care Homes. As part of an engagement process CCGs were approached in November 2015, and five CCGs expressed an interest: Coastal West Sussex(CWS), Horsham & Mid Sussex and Crawley(HMSC), Guildford & Waverley (G&W) and Thanet. HMSC combined to one locality for the project, which produced a total of four pilot areas. The project had an overall project manager and an Improvement Practitioner for each locality. The team had support from a hydration clinical lead.

The timeline outlined on page 9 shows an overview of the project plan and key stages.

**January to March – Design**

The locality Improvement Practitioners were recruited and appointed. They included a community dietician, a community nutritional management specialist, an occupational therapist and a nutritionist, giving a range of skills. Working with the KSS AHSN Informatics team and the identified informatics leads at each CCG, baseline admissions data was collected for UTIs, Falls and #NOFs. Monthly incidence data on falls and UTIs treated with antibiotics was requested and collected retrospectively from the participating homes.

**April to May – Delivery of Training**

The initial roll-out of training started in the four localities in April, phased in line with the availability of the improvement practitioners.

Each locality had a project launch where care home managers signed up to the project ‘Charter’ agreeing to follow the aims and focus on hydration issues:

- Improve hydration awareness among staff and residents
- Encourage optimal hydration by meeting the hydration needs of all residents
- Ensure access to clean drinking water and hot drinks 24 hours a day
- Reassure residents that prompt assistance with all toileting needs will be provided

Following this, each home nominated at least two hydration champions to attend the small group interactive training sessions led by the improvement practitioner, held in a local easily accessible venue. Homes with 50 beds or more were advised to nominate at least three champions.
During training each champion produced two action plans which they felt would improve hydration among the residents of their individual home. The importance of personal hydration for care home staff was emphasised.

The champions were provided with a resource pack with a variety of promotional materials, monthly tally sheets on the incidence of falls and UTIs and posters. A total of 206 staff underwent initial training.

The improvement practitioners undertook follow up visits with the champions and care home managers to aid implementation of the action plans and to encourage sharing of the champion’s learning.

A total of 50 (50%) of the participating homes were randomly allocated to the ‘ROC’ care home group and 103 Champions were given an hour of case study based additional training to support the implementation and roll out of the tool.

**June to October - Delivery of Monitoring and Support**

On-going motivational support was provided with follow up telephone contact, face to face meetings and further short training sessions on related topics provided to care home staff at the locality Care Home Forums. Each home developed or updated their hydration policy with support from the improvement practitioners if required. Further support and information was provided via newsletters and additional practical resources made available via the KSS AHSN website.

Emphasis was made on using hydration related activities to promote the concepts of the project and to introduce an element of fun for staff, residents and their relatives.

As part of the on-going monitoring, the improvement practitioners collected monthly outcome data on the incidence of falls and UTIs treated with antibiotics from homes.

Mid project questionnaires were sent to the champions to monitor progress.
HYDRATE PROJECT TIMELINE 2016

Design

Implementation/Delivery

Evaluation/Close

JAN FEB MAR
Qualitative Information
- Pre-project Training
- Audit
Quantitative Information
Local Monthly/Incidence UTIs and falls from care homes

APR MAY JUN JUL AUG SEP OCT
Qualitative Information
- Post Training
- Progress Feedback
Quantitative Information

Admissions Data

Local Monthly data UTIs/ falls

CWS Close

HMS Close
GW Close
THANET Close

Analysis and Conclusions
- Report to LWFL Board
- PMO Update

NOV DEC

(Pre Project-admissions data.
May-Oct 2015 Hydrate + non-hydrate.)
Final evaluation questionnaires were delivered to homes and staff in September 2016 to provide feedback from:

- Care home managers
- Champions
- Residents

These were returned to the AHSN via a confidential stamped addressed envelope.

The informatics team at the KSS AHSN co-ordinated the return of data from the relevant CCGs, on acute admissions for Hydrate homes and non-Hydrate homes from the relevant CCGs in each locality, over the project period. This was then compared to the corresponding period in 2015 to provide the baseline for admissions associated with a fall, #NOF and UTIs.

Celebration events were held in each locality during November and December to thank the homes for their participation and provide interim evaluation results. This gave an opportunity for further feedback and discussion. Homes that had not been allocated to the ROC cohort were offered implementation training for the tool and care plan summary at the end of the event.

**Details of Champion Training**

The training presentation was based on the presentation developed in the NEH & F CCG project, which had been previously well received. Having been updated by the clinical lead, the improvement practitioners tailored it to their individual styles.

Each locality offered two dates for the training sessions which allowed staff some flexibility to attend. The session was approximately three hours long, and included practical interactive tasks to involve the champions and get them thinking. There was plenty of opportunity to network and discuss issues with colleagues including the two practical actions each champions developed to improve hydration in their home.
Reliance on a Carer (ROC) to drink Evaluation

April to October 2016

The ROC to drink tool focused on the three most important areas of care that affect a person’s ability to drink and therefore remain adequately hydrated - support with swallowing; assistance to safely hold a drink to the mouth; and encouragement to drink. It used the simple red, amber, green traffic light system to identify if a person required a high, medium, or low level of care for each of these three areas, (identifying their ROC rating). The area which had the highest level would also identify the individual’s risk of dehydration caused by inadequate fluid intake. The appropriately coloured care plan summary could then be added to their individual care plan.

This assessment tool aimed to help all staff understand the fundamental importance of providing the right level of hydration care in order to reduce the risk of dehydration, and provided the basis of an individualised drinking regime for each resident.

Details on how to access the ROC to drink tool and care plan summary are available in Appendix 5.
Outcomes

Qualitative Evaluation Results from Care Home Staff and Residents

Qualitative evaluation was provided from the various questionnaires delivered throughout the project. Results from all the localities have been summarised to produce an overall view. Full details are presented in Appendices 4, 5, 6 & 7

Audit of pre-project hydration training

Less than 50% of champions had had previous training on the importance of optimal hydration. In over 70% of cases this had occurred in the preceding 18 months. The timing may have been related to the new Skills for Care, care certificate introduced in 2015 which includes an e-learning module on fluids and nutrition for staff new to care. The focus of training however was variable with less emphasis on assessment of residents’ hydration needs and improving intake. This contrasted with the hydrate training which focused on practical solutions to these challenges. See Appendix 2 for full results.

Initial Training Feedback

Feedback revealed that 100% felt that the training covered topics relevant to them, was well organised and easy to follow as well as meeting their expectations. Appendix 3 summarises the training evaluation feedback.
Final Feedback

Final Feedback from hydration champions and managers

There were overwhelmingly positive results on the impact of the project on staff and residents from both champions and managers. The results from those managers, who were also champions, were included in the managers’ results. Feedback was received from 62% of managers and 44% of champions.

All managers would recommend participation in the project to other homes and all champions enjoyed their role and would recommend it to other staff and homes.

In the future the managers would have a hydration champion in their home and use the resources provided. 96% felt that participation in the project had changed long term practice in their homes and would continue to have regular hydration based activities.

Looking at the perceived impact on residents, 94% of managers and 83% of champions felt that the hydrate project had improved the general well-being and alertness of their residents. Over 50% of managers and champions felt that the incidence of falls and UTIs had reduced.

All champions had had the opportunity to share their learning with 62% of champions involving at least 75% of the other staff. Virtually all champions and managers felt that sharing learning had made a difference to staff attitudes and awareness of hydration as well as changing practice.

Implementation of ideas to improve hydration in their home had been possible for almost all champions and managers and details of the ideas that had worked particularly well were provided.

96% of managers stated implementation of ideas had improved both staff attitudes and awareness and hydration in general in their home.

Final Residents’ audit

The residents audit produced a sample of 65 anonymised replies. Residents were involved in completion in 92% of these with or without assistance and 66% of residents were aware that their home was participating in the hydrate project.

While 86% of Residents had been encouraged to drink more often, 72% stated that they felt they had been drinking more over the length of the project mainly due to this encouragement.
Feedback from ROC Hydration Champions.

Twelve of the original 50 homes did not implement ROC mainly due to either being part of large organisations using their own tools or having changes in staff and management.

This resulted in a sample of 38 care homes whose hydration champions were invited to complete a feedback questionnaire in September. This sought to assess how applicable the tool was in the care home setting and in particular how often the staff reassessed a residents' ROC rating. In the community hospital this had been done weekly or at any other point, when there was a noticeable change in the residents’ ability to drink.

There was a response rate of 47% to the questionnaire. Overall results were very positive with all champions feeling that the tool was a standardised, quick and easy way to assess how much basic support an individual needed to safely drink. They also all felt that it identified and raised awareness of a resident's potential risk of dehydration The positive results were reflected in fact that all stated that they would opt to continue to use the screening tool and care plan summary after the end of the project. 94% felt that staff were confident in the use of the screening tool and care plan summary and all felt it helped fulfil the hydration requirements of CQC Regulation 14. See Appendix 5 for full results.
Discussion

Implementation of change

The project was planned to last six months which included the induction of the improvement practitioners. Starting times varied dependent on their availability. Champion training commenced from the end of April for CWS and until the end of May for the rest of the localities. Consequently the results reflect implementation lasting a maximum of five months with CWS finishing at the end of September and the others in mid-October.

Five months is a comparatively short time to initiate and embed significant behavioural change especially with the high staff turnover commonly seen in care homes. Comments from the improvement practitioners confirmed this, with homes being at different stages by the end of the project. Some had implemented a lot of actions and seen improvements but several had only really started making changes after four to five months with a considerable lag between intentions and actions as competing demands took precedence. All the practitioners however were surprised by the efforts many champions made to drive improvement. The challenge of achieving adequate hydration in a care home setting should not be under estimated. It requires understanding of the individual, persuasion and good communication skills to provide optimal hydration which matches an individual’s needs and maintains their dignity. The hydration champions showed imagination and enthusiasm in implementing change.

This was particularly true for one of the practitioners for whom the project was her first experience of working both in the public sector and in a care home setting.

One improvement practitioner was astounded by the level of dedication and commitment shown by those participating in the project. The focus on personalised care and individual preferences and the time and thought that went into improving hydration practice was hugely inspiring to witness first hand.

Less than half the champions had had any previous training on hydration which had taken place predominantly in the previous 18 months and may have assisted the hydrate training. There was variation in previous training experiences between localities, with G&W having the least and CWS the most but all had experienced less emphasis on the assessment of hydration needs and how to
improve intake. The hydrate training particularly focused on these aspects and had a strong practical element with an emphasis on developing hydration related activities in the home. These were deliberately designed to be ‘fun’ and feedback from the homes shows this was a very popular concept that all homes embraced with activities occurring at least weekly.

The importance of ensuring that staff themselves were well hydrated, was emphasised and examples of changes in practice frequently reflected this.

The resources were well received with the monthly ‘tally’ charts on the incidence of falls and UTIs seen as a helpful, visual way of identifying quality improvement for the whole care home team.

Effective implementation of change was dependent on the engagement of the care home managers and it was important for the improvement practitioners to appreciate the demands and weight of responsibility they carried. This was particularly evident to those new to working with care homes and timely reminder for all the team. Most interventions had a practical aspect and these may have been easier to deliver on a day to day basis if the champion was a care assistant on the ‘shop floor’ rather than a manager. On occasion the improvement practitioners carried out additional training in homes particularly if, as in some cases, a champion had left. While this produced effective engagement, it was time consuming and there was no opportunity for peer discussion and networking with other homes.

The project did not definitively demonstrate that improving hydration awareness and practice in a care home leads to increased fluid intake among residents. However the results of the residents audit did imply that this had occurred, with almost three quarters stating that their intake had increased during the project mainly as a result of increased encouragement from staff.

It is not possible to separate the impact of increased fluid intake from the effect of improved social interaction due to the regular offering of drinks and involvement in hydration associated activities. During these periods, care home staff would have the opportunity to observe the resident closely and this could have an impact on the holistic care an individual received. Abdelhamid et al 2016 found that a strong social element around drinking was associated with improved quality of life among people with dementia.
Impact on Acute Admissions – See Table 1 – all results

Comparing the hydrate and non-hydrate homes performances across all localities,

- **Hydrate had 5% greater reduction in admissions associated with falls**
- **Hydrate had 35% greater reduction in # NOF admissions**
- **Hydrate had 6% smaller reduction in UTI admissions.**

One would have expected that the results from UTI admissions would produce a greater reduction among the hydrate homes compared with the non-hydrate, but this was only achieved in two localities G&W (7% greater) and HMS (15% greater) In contrast CWS had a 25% greater increase in the hydrate homes compared with the non-hydrate, with Thanet having a 21% greater increase.

The most significant reduction was in # NOF admissions which mirrored the results from the original project in all localities except Thanet. Particularly good results were achieved by G&W (72% greater reductions) and HMS (61%) compared with their non-hydrate homes who had a significant increase. Any reduction in the incidence of #NOF has a critical impact among residents as this is commonly a negative life changing event for an individual. In addition there are major cost implications.
Table 1

Differences in admissions between nursing and residential homes (3 localities) See Table 2

These comparative results show data from 67 rather than 89 hydrate homes as data from the 22 Thanet CCG homes was not available. There were a total of 43 nursing and 46 residential homes in the project.

Comparing hydrate nursing homes with hydrate residential homes:

- Nursing homes had 29% greater reduction in admissions associated with a fall
- Nursing homes had 5% greater reduction in #NOF admissions
- Nursing homes had 46% greater reduction in UTI admissions.
This suggests that in three pilot localities, improving hydration awareness and practices among nursing home staff had a wider impact on their residents, with significant reductions in both falls and UTI admissions, than in residential homes. Percentage reductions in #NOF admissions were marginally greater for nursing homes. These results were not unexpected as nursing home residents are likely to be frailer and more dependent on others for access and encouragement to drink.
Table 2 - Comparison of Nursing vs Residential Hydrate Care Home Non – elective Admissions

Disaggregated data was only available from three localities with Thanet CCG homes excluded.

The results show considerable differences in acute admission outcomes between the four localities. These variations could be related to the differing numbers of participating nursing and residential homes in each locality.
Table 3 – Percentages of Hydrate Care Homes that are Residential or Nursing in the four localities

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<thead>
<tr>
<th></th>
<th>Residential</th>
<th>Nursing</th>
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</thead>
<tbody>
<tr>
<td>Thanet</td>
<td>68%</td>
<td>32%</td>
</tr>
<tr>
<td>CWS</td>
<td>68%</td>
<td>32%</td>
</tr>
<tr>
<td>HMS C</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>G &amp; W</td>
<td>25%</td>
<td>75%</td>
</tr>
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If one presumes that the Thanet homes are likely to show similar variations in results between nursing and residential homes as the other localities, these differences in percentages reflect some of the differences in admission outcomes. This was particularly true for #NOF admission reductions, where Thanet had the lowest percentage of nursing homes and no reduction and G&W had the highest percentage of nursing homes and the greatest reduction in admissions.

Thanet and G&W are at the opposite ends of the admissions outcomes spectrum in all areas. It is useful to compare and contrast them in seeking further explanations for this variation. G&W had the lowest percentage of pre-project hydration training among the champions and the highest proportion of champions per home at 2.55 (See Appendix 3). Thanet had the lowest proportion of champions per home at 1.62 and second highest proportion of previous training. It also had the highest proportion of champions who were managers at 35% compared with G&W at 4%.

Both have care home forums mainly attended by managers. There are no specialist care home nurses in the Guildford locality, but they are in the second year of a risk stratification initiative around frailty which will have been applied to most care home residents. In addition there has been a lot of work with South East Coast Ambulance Service on admission avoidance and many residents have had polypharmacy reviews which may be relevant to falls incidence.

Thanet has a clinical nurse specialist for older people in care homes who has a close relationship with many homes and facilitates the distribution of best practice information. There has been some awareness training on frailty and a few homes have had training to undertake baseline observations and recognising changes in resident’s clinical condition. The Thanet improvement practitioner noted that some of her homes were already providing excellent hydration care and although they all strived for continued improvement, it may have been that there was little impact on the previous improvements in outcomes they had already made.
Impact of the use of the ROC assessment tool and care plan summary on admissions – Table 4

Disaggregated data was only available from three localities making a total of 67 homes with Thanet CCG homes excluded.

Comparing the homes allocated to using ROC and the others (Non ROC)

- ROC had 22% greater reduction in admissions associated with falls
- ROC had 9% greater reduction in #NOF admissions
- ROC had 85% greater reduction in UTI admissions

When considering these results, it is important to remember that half the hydrate homes were randomly allocated to the ROC cohort. There was some difference in the numbers of nursing and residential homes between the two cohorts. The ROC group had 60% nursing and 40% residential while the non-ROC group had 47% nursing and 53% residential. Whilst these differences may have had some influence on the results, it is unlikely that this provides sufficient explanation for the marked reduction in UTI admissions shown by the ROC group.

There are a number of reasons why these outcomes may have occurred. The use of a standardised assessment tool looking at the three most important aspects of an individual’s ability to safely achieve optimal hydration, may have assisted in the production of a more detailed care plan covering their hydration needs. The tool could have helped highlight previously unappreciated subtle needs for extra care for example the need for some encouragement to drink in a resident who is otherwise fully independent. Many homes used the appropriate ROC rating colours to remind staff which residents needed extra hydration care. This was done in a variety of ways from using coloured coasters or glasses, to putting a coloured water drop sign discretely on the door of an individual’s room and aided communication across the whole team.
Impact on monthly incidence of falls and UTIs in the care homes

Individual monthly incidence figures for falls and UTIs treated with antibiotics were collected from all hydrate homes from January 2016 until the end of the project.

There was 100% data provision which was a tremendous achievement.

Numbers from January until May 2016 when implementation started in the homes, formed the incidence baseline as comparative data from the equivalent project period in 2015, was not available in all localities. This meant that seasonal effects on incidence could not be discounted. This may have been relevant to UTIs where for example, the locality team in Thanet felt the summer had been hotter and longer than usual. This is confirmed by the Met Office. 13
While some individual homes had reductions in the incidence of falls and UTIs, overall figures across all localities were inconclusive. However in CWS there was a suggestion of a reducing incidence for falls with G&W possibly similar. For UTIs the incidence appears to have increased in the summer months. These results are disappointing particularly as over 50% of managers and champions felt incidences for both events had reduced. However they may reflect variables outside the scope of the project for example the opening of a new dementia unit in one home in Thanet during the project. This caused a marked increase in falls while residents settled in, which continued to have an impact over the relatively short five month implementation period.
Financial impact

Admission costs

In summary, the project saved £202,531 acute admissions costs in the period April to October 2016 which represented an 18% reduction in costs compared with the same period in 2015. By comparison there was a 7% reduction in costs among the non-hydrate homes producing a 11% greater reduction in costs from the hydrate homes. Almost 50% of cost savings were related to the reduction in the incidence of #NOF. Details of results including those for individual localities are in Appendices 9-13.

Impact on Acute Trust Bed Days

In the current NHS climate, it seemed particularly relevant to examine any savings in terms of acute trust bed days. The average length of stay in the trusts across the localities was 12.4 days for #NOF admissions, 6.74 for UTIs and 5.79 for falls. In total the hydrate homes results translated into a potential saving of 564 bed days across all localities, over the period of the project. See Appendix 14 for details.

The project has produced considerable financial savings in acute admission costs. This represents a 88% return on the investment into the project by the AHSN. Appendix 15 gives details of the project budget. For acute trusts the impact of bed days saved is significant. The reduction in the number of #NOF admissions both in terms of cost and bed days has had a major influence on these results.

It was important that any costs to the participating homes were minimal both in staffing and material terms. Whilst the overwhelming majority of champions were able to carry out their ideas, cost was not cited as a reason by the few who were unsuccessful. Feedback from the care homes at the celebration events confirmed this.
Lessons Learnt and Feedback from Homes and Stakeholders

The model for delivery
Using a different model for delivery could have potentially reduced the delivery resource costs. Improvement Practitioners (band 7) for each locality were designed with a dietician in mind, but use of other skilled roles proved as beneficial. Access to dietician services to refer to was deemed to be of value but delivery of training and monitoring could be provided by other staff and at a potentially lower banding.

Project length - extend to 12 months
Running this project for a period of six months has shown a reduction in the outcomes measured. However it is recommended that for a similar future project, a period of 12 months at least, would be more effective. This would provide an extended period to collect data, provide a longer period of time to change practice and behaviours and improve the sustainability of the outcomes. A longer period would also negate the seasonality impact on metrics. A significant proportion of the costs were front loaded into the six months with events to engage the homes, training a large number of champions and the development of resources. Costs for a further 6 months would be less.

Branding and logos
Use of logos and intellectual property proved challenging in communications and printed materials. It is suggested that more guidance would have been valuable to support the project team with decisions and production of materials.

Governance
Stakeholder steering meetings were established to move around the localities as the project covered a wide area of Kent, Surrey and Sussex. Full use of teleconference facilities and a fixed location may have provided more consistent attendance.

Engagement of Care Homes
The engagement of care homes commenced too early in the project timeline. This proved problematic in getting homes to commit to the project, when there were no dates fixed for training
pending the recruitment of the improvement practitioners. Using a different delivery approach may ease this and support a more robust plan for getting started.

**Contacting Care Homes and Champions**

Care home advised email was not always the best format for communication and engagement. In relation to the process of recruitment of care homes to the programme, they suggested that using a mailshot invitation to take part may have been more effective with a follow up phone call. Many of the champions did not have a work email address and therefore they were reliant on the passing of emails and messages via the administration (general email) or via the manager.

The ability to book the next follow up visit was also complicated by the lack of personal email and the difficulty in phoning the specific nominated champion. Improvement practitioners recommended that future projects should consider booking the next visit whilst on site with the champion.

**Networking**

Throughout the project, care home staff have indicated throughout the project the value of networking and the wish to have peer discussions with staff from other homes. They suggested that for future projects it would be helpful to build in a readily accessible on-going networking opportunity for staff to attend.

**Staffing Issues**

Care homes felt it was difficult to free up staff to attend training. A lead time of six to eight weeks for the training dates would be beneficial in future to give sufficient time to organise cover. This is likely to be an on-going problem but the provision of free training and resources as in this project, should help to address the issue.

Another option of delivering smaller group training in the home was explored, but this was prohibitive in terms of resources required to cover 90+ homes in the project. This was more effective in the larger homes.

**Multidisciplinary Project Team**

The skill mix of a dietician, a nutritional management specialist, an occupational therapist with a background of working with dementia patients and a nutritionist, proved invaluable to the project and worked extremely well to bring a holistic approach to the development of the training
resources and on-going support to each other. The project also benefitted from working closely with local County Council, the community staff and involvement with the local CCG.
Recommendations for Spread of the Project and Sustainability

Reflections from the Improvement Practitioners, Clinical lead and AHSN team members have all been considered to address the challenge of extending and sustaining the project. The conclusion has been to recommend the production of a toolkit for commissioning groups, community teams and others.

The toolkit would provide the following:-

- Training presentation
- Reference booklet
- Training plan
- Outline budget and details of promotional resources
- Copies of supporting information leaflets
- Resident carer leaflet
- Posters and Tally monitoring charts
- Evaluation questionnaires
- Data monitoring form
- Sample newsletters

This should facilitate other organisations to develop their own programmes for improving hydration in care homes.

Other recommendations to sustain the project include provision of refresher and top-up training updates. These could be delivered bi-annually in tailored workshop sessions or as part of a care home forum meeting if established in the locality which would also provide networking opportunities between staff. Care homes should have access to the results of any programme to assist with the development of best practice and to illustrate what differences they have made to the care of their residents.

The finding that reductions in acute admissions were more significant among nursing home residents than those in residential homes was not unexpected. Bearing in mind these followed a five month implementation period, organisations undertaking similar projects in the future may consider targeting nursing homes initially to demonstrate comparatively early impact. However residential homes should follow as their residents had almost as great reductions in #NOF
admissions as those in nursing homes, with the associated reductions in morbidity and potential mortality in this age group.
Conclusion

The Hydrate in Care Homes project aimed to improve hydration awareness and practice within the care homes of the pilot localities. This has been shown to have had a significant impact on the well-being of the residents with reductions in acute admissions with the impact on #NOF admissions being the most marked. One of the aims of the project was to determine whether the outcomes from the smaller original initiative would be mirrored in a much larger project involving four different localities. Considering the shorter implementation period of the latter, the results are in line with these outcomes. The most significant reductions were found in two cohorts of hydrate homes. Firstly nursing homes compared with residential homes and secondly homes who used the Simple Measures™ ROC to drink dehydration risk assessment tool and care plan summary and those who did not. User feedback on ROC suggested that this was a readily accessible system to help care homes assess the support required for an individual to safely drink and their potential risk of dehydration.

The project has had positive feedback from the homes, the overwhelming majority of whom have enjoyed their participation and will continue to implement the changes in practices and hydration related activities that they have initiated. Training focused on empowering the hydration champions to implement change and they showed imagination and enthusiasm in achieving this. To quote one improvement practitioner,

‘Changes did not need to be expensive or create another job for someone in the home. Where the right changes were implemented with support from management, changes seamlessly slipped into everyday life in the home and begin to filter into the existing culture.’

It is to be hoped that the concept of this project and the associated results, will encourage other organisations to address the challenge of ensuring that the hydration needs of our care home resident populations are fulfilled as optimally as possible under the circumstances, with all the associated benefits this will bring.
We leave the final words to participating care home……

“Huge benefit to the health of our residents and their dependency as well as staff knowledge and development“

“It’s good to get the carers involved with residents in a fun way which also teaches them extra knowledge and builds relationships between staff and residents from which the resident then benefits.”

“It has been a great joy to see a drop in UTIs, residents looking alert and not sleepy and constipation prevented. Lots and lots of benefits/positivity”

“It highlights the importance of dehydration and how to improve/manage it. At present it is all about malnutrition in residents”

“Fantastic opportunity to improve residents and staff hydration. All involved in the project were really taking on all the information. Very good programme. Staff have far more awareness about good hydration”

“I saw the staff enthusiasm when they were doing the project. They felt important”

Dr Sarah O’Callaghan, Hydration Clinical Lead & Frances Scott, Improvement Manager for the Hydrate in Care Homes Project KSS AHSN February 2017
Case Study

provided by a Care Home in Coastal West Sussex

A resident with poor mobility was constantly asking to go to the toilet, usually every 15-20 minutes but was passing very little urine. She advised staff she would not drink much at all for fear of wetting herself.

After training, the champions used their new skills and knowledge to speak with this resident and educated her on the importance of good hydration and the potential positive impact on her toileting habits.

The resident agreed to a short term trial to see if it would help.

The care home staff advised that the resident is now drinking over 1500ml daily and passing good amounts of urine only a couple of times a day.

This was a positive outcome for resident and staff!

June 2016

Our thanks go to all the participating care homes who have embraced the concepts of the project so well. Thanks to all the stakeholders, Commissioners and Informatics teams at Coastal West Sussex CCG, Horsham and Mid Sussex CCG, Crawley CCG, Guildford & Waverley CCG and Thanet CCG, Kent County Council and the Care and Business Support Team and West Sussex County Council. A big thank you to Tom D’Auvergne, Informatics Lead at KSS AHSN for his diligence and expert analysis of all the project data. Final thanks to the improvement practitioners who worked so hard to motivate and support their homes and champions, Anna Larkham, Laura Perkins, Fiona Waters and Louisa Popplewell.
APPENDIX 1

Evidence base for the choice of outcomes

Incidence of Urinary Tract Infections (UTIs)
Inadequate hydration has been linked to increased incidence of UTIs (Beetz R et al 2003)\textsuperscript{14} and there is evidence that good hydration reduces the incidence of UTIs (Lin SY 2012),\textsuperscript{15} NHS Choices 2016 recommends that patients should stay well hydrated to prevent UTIs\textsuperscript{16}.

Incidence of Falls and Fractured neck of Femur (#NOF)
While there are multiple factors causing falls, an increased risk is listed as a health outcome of dehydration related to orthostatic hypotension, in Patient.Uk Prevention of Falls in the Elderly.\textsuperscript{17} 5% of falls in the community in older people and 10-55\% of falls in nursing homes and hospitals result in a fracture (NICE CKS Jan 14)\textsuperscript{18}.

A #NOF is one of the most serious outcomes of a fall, both in terms of the impact on an individual’s quality of life and the associated costs. 95\% are due to falls (Parkkari et al)\textsuperscript{19} and about 10\% of people with a hip fracture die within 1 month with about one-third within 12 months. This is mostly due to associated conditions reflecting the high prevalence of comorbidity\textsuperscript{20}. Bearing these facts in mind, the diagnosis of #NOF was used as an additional “falls marker” to give some measurement of falls outcomes. It is a defined diagnosis while a fall can be ill-defined and therefore possibly not always included in the coded diagnoses of an admission.
APPENDIX 2

Hydration training prior to Hydrate in Care Homes Project

When looking at what training champions had received prior to the Hydrate in Care Home project, a convenience sample of one champion per care home in the survey was used. (Total sample size 62)

Pre-project Audit on Previous Hydration Training

67% Questionnaires completed (Using sample size of one champion per care home)

43% of champions had received prior training on importance of optimal hydration.

34% of champions had received prior training on how to improve a resident’s fluid intake

24% of champions had received prior training on how to assess of a resident’s hydration needs

81% of champions had received their previous training in past 18 months (introduction of the Care Certificate in 2015)
Analysis completed by Fiona Waters, Improvement Practitioner, Horsham Mid Sussex and Crawley
APPENDIX 3 – Post Training Feedback

Champions Details

The following chart (1) shows the breakdown of Champions' roles in their care home, and identifies that 115 (59%) were junior care staff. The project recommended champions were ideally from junior care staff rather than management roles as the latter were deemed to have multiple duties and roles. Consequently they might not have been able to give the required focus to this additional role.

When comparing the breakdown per locality, the two CCG’s with best outcomes had a higher proportion of champions from junior roles.

Chart 1: Breakdown of Roles for Champions trained

<table>
<thead>
<tr>
<th>Role</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home managers</td>
<td>13%</td>
</tr>
<tr>
<td>Deputy manager</td>
<td>6%</td>
</tr>
<tr>
<td>Training manager/officer</td>
<td>1%</td>
</tr>
<tr>
<td>RGN team leader</td>
<td>9%</td>
</tr>
<tr>
<td>Care assistant</td>
<td>51%</td>
</tr>
<tr>
<td>Team leader</td>
<td>13%</td>
</tr>
<tr>
<td>Activity coordinator</td>
<td>3%</td>
</tr>
<tr>
<td>Kitchen staff</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
</tr>
</tbody>
</table>

Equally of interest, the two localities with better reported outcomes had higher numbers of champions in their homes.
Thanet locality had by far the highest proportion of Care home managers who were nominated as champions. See table below.

<table>
<thead>
<tr>
<th>Locality</th>
<th>G&amp;W</th>
<th>HMS C</th>
<th>CWS</th>
<th>Thanet</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Care Home Managers who were Champions</td>
<td>4%</td>
<td>4%</td>
<td>13%</td>
<td>35%</td>
</tr>
</tbody>
</table>

Post Training Feedback

77% post training evaluation questionnaires were completed.

100% of champions felt that:

- Training covered was relevant to them
- Participation and interaction were encouraged
- Content was well organised and easy to follow
- Trainers were knowledgeable about the subject
- Trainers were well prepared for the training session
- Room and facilities were adequate and comfortable in 3 localities (In 4th locality only 89% agreed with this statement—comments indicated the room was cold)

94% of champions (3 questionnaires had missed this section) felt that provided materials were helpful and training met their expectations.
APPENDIX 4

Mid Programme Questionnaire and Results

Progress Questionnaire for Hydration Champions

Part 1 – Training

1. Has there been an opportunity to share your learning with other members of staff?
   □ Yes
   □ No - Go to question 4

2. If yes - how has this been done?
   Please tick any of the boxes that apply
   □ Through the use of posters and a display in the home
   □ In handovers
   □ In staff meetings
   □ In informal conversations
   □ Planned training sessions? How long were the sessions? _____ minutes. How many sessions have been run? ______
   □ Other

3. What difference has sharing your learning with other staff made?
   Please grade this from 1-5 where 1 is no difference and 5 is a major difference
   Change in staff attitude/awareness to hydration
<table>
<thead>
<tr>
<th>1 (no difference)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (major difference)</th>
</tr>
</thead>
</table>

   Change in hydration practice in your home
<table>
<thead>
<tr>
<th>1 (no difference)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (major difference)</th>
</tr>
</thead>
</table>

4. If there has been no opportunity to share your learning with other staff, what has prevented this happening?
   □ Lack of champion time due to sickness/holiday
   □ Lack of champion time due to work load
   □ The champion was unsure how to share their learning
   □ Lack of interest by staff
Staffing difficulties
Lack of support from care home management
Other (please describe) ______________________________________________________

Part 2 - Ideas on changes in hydration practice
1. Have you been able to carry out your ideas from the training session on improving hydration in your home?
   □ Yes
   □ No

2. If this has not been possible please tick any of the boxes that apply
   □ Thought to be too expensive
   □ Found to be impractical when attempted
   □ Rest of staff not engaged
   □ Staffing difficulties
   □ Lack of support from care home management
   □ Other reasons (please describe) ______________________________________________________

3. Please rate the difference your ideas have made to staff hydration awareness?
   Please grade this from 1-5 where 1 is no difference and 5 is a major difference
   
   | 1 (no difference) | 2 | 3 | 4 | 5 (major difference) |
   |-------------------|--|--|--|--|---------------------|

4. Please rate the difference your ideas have made to hydration in your home?
   Please grade this from 1-5 where 1 is no difference and 5 is a major difference

   | 1 (no difference) | 2 | 3 | 4 | 5 (major difference) |
   |-------------------|--|--|--|--|---------------------|

5. What has worked particularly well in your care home? Please can you share your idea and how it worked so we can share this with other care homes taking part in the project?
   ____________________________________________________________________________
   ____________________________________________________________________________
   __________________________________________________________

Thank you for your time in completing this survey. Please return in the self-addressed envelope provided, or to Tom d'Auvergne, KSS AHSN, Wentworth House, Crawley Hospital, West Green Drive, Crawley, RH11 7DH.
Mid Programme Progress Feedback

Results from the Mid project assessment of progress on action plan implementation and sharing of learning.

- 43% Questionnaires completed
- 98% had shared their learning with other care home staff
- 90% felt sharing their learning with other staff had made a difference to staff attitude/awareness of hydration and 91% felt this had changed hydration practice in their home
- 100% had been able to carry out their action plans
- 93% felt that their ideas had made a difference to staff hydration awareness and to hydration in general in their home
APPENDIX 5

Evaluation of the Simple Measures™ Reliance On a Carer to Drink (ROC to Drink) dehydration risk assessment tool and care plan summary*

ROC Questionnaire

Evaluation of ROC to Drink for Care Home Staff

There has been a lot of interest in the ROC screening tool and care plan summary throughout the NHS and among care services. As you know there is no national validated hydration screening tool at present and we are hoping to establish whether the ROC tool may fulfil the required criteria. Your feedback is important to help with this process.

Please indicate your role within the care home ------------------------------------------

<table>
<thead>
<tr>
<th>Please indicate how you rate the following statements by ticking your box of choice</th>
<th>1 Not at all</th>
<th>2 Very little</th>
<th>3 Somewhat</th>
<th>4 To a good extent</th>
<th>5 To a great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the ROC Screening Tool</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Provide an easy to use way of assessing how much basic support a resident needs to safely drink</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Provide a quick way of assessing how much basic support a residents needs to safely drink.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Standardise how care staff assess a resident’s ability to drink.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4. Identify a resident’s potential risk of dehydration due to their swallowing and physical difficulties and level of encouragement to drink.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5. Raise awareness about the potential risk of dehydration and the critical role of the carer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Improve communication about a resident’s level of support to drink.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Improve the assessment of a resident’s hydration needs in our care home</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
8. Is the ROC screening tool easy to explain to other staff

<table>
<thead>
<tr>
<th></th>
<th>1 Not at all</th>
<th>2 Very little</th>
<th>3 Somewhat</th>
<th>4 To a good extent</th>
<th>5 To a great extent</th>
</tr>
</thead>
</table>

**The ROC Care Plan Summary**

9. Is easy to explain to other staff.

10. Makes it easier to deliver optimal hydration to the residents in our care home. (Optimal hydration is achieving the best oral intake possible under the present circumstances).

11. All care staff are confident to use them

12. They are making a positive difference to the health and well-being of the residents in our care home

13. They are helping to fulfill the hydration requirements of CQC Regulation 14 (.This requires providers to ensure that people have enough to drink to meet their hydration needs and receive the support they need to do so.)

14. How often did you reassess the ROC rating of your residents? Please tick more than one box if appropriate

<table>
<thead>
<tr>
<th></th>
<th>Weekly</th>
<th>2 Weekly</th>
<th>Monthly</th>
<th>In addition when the resident’s clinical condition changed</th>
<th>Only when the resident’s clinical condition changed</th>
</tr>
</thead>
</table>

Please tell us how you highlighted a resident’s ROC rating.

Please tell us if you have any suggestions on how to improve the ROC screening tool and care plan summary.
Will you continue to use the ROC screening tool and care plan summary after the end of the project? Yes/No

Please add any additional comments.

Thank you very much for completing this form.

This tool has been developed by Peninsula Community Health - CIC
Naomi Campbell RGN, NHS Lead Hydration Nurse, Cornwall

Results from the Hydration Champions Questionnaire on the ROC Screening Tool and Care Plan Summary:

- 50 care homes randomly selected for implementation
- 5 dropped out of the project
- 7 did not implement
- Audit cohort = 38
- 18 /38 (47%) completed questionnaires.

ROC Screening tool

100% felt that the tool:

- Provided an easy way of assessing how much basic support a resident needs to safely drink
- Provided a quick way of assessing how much basic support a residents needs to safely drink
- Standardised how care staff assess a resident's ability to drink
- Identified a resident's potential risk of dehydration due to their swallowing and physical difficulties and level of encouragement to drink
- Raised awareness about the potential risk of dehydration and the critical role of the carer

94% felt that the tool:

- Improved communication about a resident's level of support to drink
- Improved the assessment of a resident's hydration needs in your care home

89% stated that the ROC screening tool was easy to explain to other staff.

The ROC care plan summary

94% felt it was easy to explain to other staff.

89% felt it made it easier to deliver optimal hydration to the residents in their care home.

The screening tool and care plan summary
94% felt all staff were confident in their use, with 72% being confident to a good or great extent

88% felt their use was making a positive difference to the health and well-being of the residents in their care home

100% agreed they were helping to fulfil the hydration requirements of CQC Regulation 14

**ROC rating of residents**

One key part of the evaluation was to assess how often the residents ROC rating was reassessed in the care home setting.

It was suggested that the champions should use the ROC tool to rate the hydration needs of their present residents and all new residents on entry to the home. Reassessment was recommended weekly or at least monthly and additionally when there was a change in a resident’s clinical condition.

- 5% did this only weekly
- 22% did this only monthly
- 66.6% monthly
- 33.3% weekly.
- 66.6% also did this when there was a change in clinical condition

100% would opt to continue to use the tool and care plan summary after the end of the project.

For further details on how to access the Simple Measures™ ROC to Drink dehydration risk assessment tool and care plan summary, please contact [www.simplemeasures.co.uk](http://www.simplemeasures.co.uk)

Simple Measures Community Interest Company (CIC) is a not for profit social enterprise, established with investment from Peninsula Community Health CIC to support the scale up and on-going development of ROC to Drink as a core element of the Simple Measures™ holistic ‘Hydration Care Support System’ which is a proprietary system for sustainable long-term monitoring, review and assessment, aimed at preventing avoidable dehydration in elderly and vulnerable care across the health and care pathway.
Dear Care Home Manager

Thank you very much for supporting the staff in your care home to take part in the ‘Hydrate in Care Homes’ project. Now the project is drawing to a close, we would like to ask you some final questions about your experiences of the project. We are hoping other care homes will follow your lead and improved hydration awareness and practices will spread nationally. Your feedback on the whole project is very important to us, particularly what difference you feel the project has made to the residents and staff at your care home.

1. Approximately how many care staff do you have at your care home? ________

2. Would you recommend participation in the ‘Hydrate in Care Homes’ project to other care homes?
   □ Yes    □ No

3. Why?

4. In your opinion, has taking part in the Hydrate in Care Homes project made any difference to the following?

   Please grade this from 1-5 where 1 is no improvement and 5 is major improvement

   a) General well-being of residents

<table>
<thead>
<tr>
<th>1 (no improvement)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (major improvement)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
b) Alertness of residents

<table>
<thead>
<tr>
<th>1 (no improvement)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (major improvement)</th>
</tr>
</thead>
</table>


c) Improved resident’s communication where there are communication problems

<table>
<thead>
<tr>
<th>1 (no improvement)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (major improvement)</th>
</tr>
</thead>
</table>

*Please grade questions d) and e) from 1 - 3*

d) Incidence of falls

<table>
<thead>
<tr>
<th>1 (Increased)</th>
<th>2 (No difference)</th>
<th>3 (Reduction)</th>
</tr>
</thead>
</table>

e) Incidence of urinary tract infections treated with antibiotics

<table>
<thead>
<tr>
<th>1 (Increased)</th>
<th>2 (No difference)</th>
<th>3 (Reduction)</th>
</tr>
</thead>
</table>

5. Do you think participation in the ‘Hydrate in Care Homes’ project has changed practice in your home in the long term?

- □ Yes
- □ No

6. Will you continue to do any of the following in the future

   a) Have a hydration champion in your care home?
      - □ Yes
      - □ No
   
   b) Use the resources provided
      - □ Yes
      - □ No
   
   c) Use the training materials provided
      - □ Yes
      - □ No
   
   d) Have hydration based activities regularly
      - □ Yes
      - □ No

7. Has the Champion sharing their learning with the rest of the staff made a difference to the following?

*Please grade this from 1-5 where 1 is no difference and 5 is a major difference*

   a) Change in staff attitude/awareness to hydration
8. Have you been able to implement the ideas from your Hydration Champions and other staff about improving hydration in your home?
   □ Yes (please go to question 3) □ No (please go to question 2)

If not, why? (please tick all that apply)

   □ Not financially viable
   □ Found to be impractical when attempted
   □ Rest of staff not engaged
   □ Staffing difficulties
   □ Other reasons (please describe)
   ____________________________________________________________
   ____________________________________________________________

9. Please rate the difference implementation of the Hydration Champions and other staff ideas have made to staff hydration awareness?
   Please grade this from 1-5 where 1 is no difference and 5 is a major difference

10. Please rate the difference implementation of the Hydration Champions and other staff ideas have made to hydration in your home?
    Please grade this from 1-5 where 1 is no difference and 5 is a major difference

11. What has been the most effective change in practice in your care home?
We are planning to share the results from the project at a future celebration event for your locality. These will include the detailed results from your area and the more general results from all participating areas. Individual results from each care home will be sent to you in due course.

**End of Programme Questionnaire for Hydration Champions**

Dear Champion

Now the project is nearing its’ end, you will be pleased to know these are the last questionnaires we will be asking you to complete. We are hoping other care homes will follow your lead and improved hydration awareness and practices will spread nationally. So your feedback on the whole project is very important to us particularly what difference you feel the project has made to the residents and staff at your care home. The homes who have used the ROC tool and care plan have an extra questionnaire to complete to help us evaluate the tool.

**Part 1 - Training**

1. Thank you for being a hydration champion
   Have you enjoyed the role?
   - Yes
   - No

   Would you recommend the role to other care homes and staff?
   - Yes
   - No

   Please describe what you have enjoyed most…

2. Has there been an opportunity to share your learning with other members of staff?
   - Yes
   - No - Go to question 4
3. If yes - how has this been done?

*Please tick any of the boxes that apply*

- Through the use of posters and a display in the home
- In handovers
- In staff meetings
- In informal conversations
- Planned training sessions? How long were the sessions? _____ minutes. How many sessions have been run? ______
- Other

4. In your role as hydration champion, how many (estimated) members of staff have you managed to give hydration training to?

- Up to a quarter, 25%
- About a half, 50%
- About three quarters, 75%
- More than three quarters >75%

5. Have you had the opportunity to share your learning with [new] members of staff who have joined your home during the project?

- Yes
- No  *Go to Question 9*

6. If you have answered yes approximately how many of the new staff did you share your learning with?

- Up to a quarter, 25%
- About a half, 50%
- About three quarters, 75%
- More than three quarters >75%

7. How was the learning shared with new staff?

8. What difference has sharing your learning with staff made?

*Please grade this from 1-5 where 1 is no difference and 5 is a major difference*

a) Change in staff attitude/awareness to hydration

<table>
<thead>
<tr>
<th>1 (no difference)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (major difference)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
b) Change in hydration practice in your home

<table>
<thead>
<tr>
<th>1 (no difference)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (major difference)</th>
</tr>
</thead>
</table>

9. If there has been no opportunity to share your learning with other staff, what has prevented this happening?

☐ Lack of champion time due to sickness/holiday
☐ Lack of champion time due to work load
☐ The champion was unsure how to share their learning
☐ Lack of interest by staff
☐ Staffing difficulties
☐ Lack of support from care home management
☐ Other (please describe) ____________________________________________________

10. Have you been able to carry out your ideas on improving hydration in your home throughout the project?

☐ Yes
☐ No

11. If this has not been possible please tick any of the boxes that apply

☐ Thought to be too expensive
☐ Found to be impractical when attempted
☐ Rest of staff not engaged
☐ Staffing difficulties
☐ Lack of support from care home management
☐ Other reasons (please describe) _____________________________________________

12. What has worked particularly well in your care home? Please can you share your idea and how it worked so we can share this with other care homes in the future?
13. What hydration associated activities were most popular with your residents?

14. Has taking part in the HYDRATE project made any difference to the following:

a- General well-being of residents

Please grade this from 1-5 where 1 is no improvement and 5 is major improvement

<table>
<thead>
<tr>
<th>1 (no improvement)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (major improvement)</th>
</tr>
</thead>
</table>

b- Alertness of residents

Please grade this from 1-5 where 1 is no improvement and 5 is a major improvement

<table>
<thead>
<tr>
<th>1 (no improvement)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (major improvement)</th>
</tr>
</thead>
</table>

c- Improved resident’s communication where there are problems –

Please grade this from 1-5 where 1 is no improvement and 5 is a major improvement

<table>
<thead>
<tr>
<th>1 (no improvement)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (major improvement)</th>
</tr>
</thead>
</table>

d- Incidence of falls

Please grade this from 1-3

<table>
<thead>
<tr>
<th>1 (Increased)</th>
<th>2 (No difference)</th>
<th>3 (Reduction)</th>
</tr>
</thead>
</table>

e- Incidence of urinary tract Infections treated with antibiotics:

Please grade this from 1-3

<table>
<thead>
<tr>
<th>1 (Increased)</th>
<th>2 (No difference)</th>
<th>3 (Reduction)</th>
</tr>
</thead>
</table>
15. Do you have any advice for future hydration champions?

We are planning to show you the results from the project at a celebration feedback event for each locality. These will include your own individual results and the results from all the localities involved.

Thank you for your time in completing this questionnaire.

Please return in the self-addressed envelope provided, or to Tom d’Auvergne, KSS AHSN, Wentworth House, Crawley Hospital, West Green Drive, Crawley, RH11 7DH. Please send your responses by Friday 30th September 2016.
Results from Care Home Managers and Champions End of Project Feedback

- **62% Completed Questionnaires** received from managers and **44% from champions**
- **100% of managers** would recommend participation in the Hydrate in Care Homes Project **to another home**
- **100% of champions enjoyed their role and would recommend** the role to other care homes and staff
- **96% of managers** said that participation in the project had changed long term practice in their homes
- **In the future 100% would have a hydration champion** in their home and use the resources and **98% would use the training materials provided. 96% would have regular hydration based activities**

**Perceived Impact on Residents**

- **94% of managers and 83% of champions** felt that the Hydrate project had improved the general well-being and alertness of their residents
- **95% of managers and 66% of champions** felt that there had been an improvement in residents’ communication where there were problems (this can be difficult to judge with severe dementia)
- **53% of managers and 54% of champions** felt there had been a reduction in the incidence of falls but **4% of managers** felt they had increased
- **58% of managers and 64% of champions** felt there had been a reduction in UTIs treated with antibiotics.

**Champions Sharing Learning**

- **100%** had an opportunity of sharing their learning with other care home staff-
- **23% reported limited opportunity to share learning** mainly due to lack of time due to work load or sickness/holiday and staffing difficulties.
- **62% had given hydration training to 75% or more other members of staff**
- **97% of champions and 98% managers** felt sharing their learning had made a difference to staff attitude and awareness of hydration
- **90% of champions and 94% of managers** felt sharing their learning had changed hydration practice in their home Need to decide if little improvement counts as ‘no otherwise these 2 questions are 100% for both—we have counted little as something in the alertness etc same applies below

**Implementation of ideas to improve hydration**

- **99% of champions** had been able to carry out their ideas on improving hydration in their home.
- **98% of managers** had been able to implement the ideas from the hydration champions and other staff to improve hydration in their home.
• 96% of managers felt that implementation of the ideas had made an improvement in staff attitude/awareness with 61% making a major or significant difference.

• 97% of managers felt implementation of the ideas had improved hydration in general in their home with 67% stating that this had made a major or significant difference.

• 96% of champions provided details of the ideas that had worked particularly well in their homes.
APPENDIX 7

Care home resident and carers questionnaire

Hydration audit development project

Care homes - Resident Questionnaire

Care home name:  Date

This questionnaire was answered by: The resident alone

☐ The resident and a member of staff The resident and a relative or friend A friend or relative on a resident’s behalf

This questionnaire asks questions about your experiences of Hydration care in this care home. This will help us to improve the quality of services the care home provides. Please refer to the information sheet for further details.

The questionnaire does not ask for your name, so any information you give us will be completely anonymous. It is your decision whether to fill in the questionnaire. Your decision whether or not to complete this questionnaire will not affect your care.

We would welcome feedback on the content of this questionnaire. Please write any comments next to questions or at the end of the questionnaire.

An envelope has been provided with this questionnaire. Once completed, please put the questionnaire into the SAE envelope provided by the Care home staff who will ensure this is posted.

☐ I consent to the processing of my personal information for the purposes of this research study. I understand that such information will be treated as strictly confidential and handled in accordance with the provisions of the Data Protection Act 1998.
Confidentiality Statement

The information is strictly confidential and is available for review only to appropriate study personnel, appropriate regulatory authorities, and appropriate Ethics Committee(s).
Thinking about the past 3-6 months:

1. Have you been aware that your care home is taking part in a hydration project - Hydrate in Care Homes?
   - Yes
   - No
   - Not sure

2. Have you seen any Hydrate Project leaflets for residents and relatives?
   - Yes
   - No
   - Not sure

3. Have you seen any new information about hydration around your care home for example – posters or notices?
   - Yes
   - No
   - Not sure

4. Have you been encouraged to have a drink more often?
   - Yes
   - No
   - Not sure

5. How often are you encouraged to drink throughout the day
   - Not at all
   - Occasionally
   - Regularly
   - I don’t need encouragement
6. Has the choice of drinks offered in your care home increased?
- Yes
- No
- Not sure

7. Have there been any activities in your care home which have highlighted the importance of hydration?
- Yes
- No
- Not sure

8. How often are there any activities in your care home which highlight the importance of hydration?
- Never
- Occasionally
- Monthly
- Weekly
- Daily
- Not sure

9. Do you think you are drinking more now than you were 3-6 months ago?
- Yes
- No
- Not sure
10. If yes, what do you think has made the biggest difference

☐ Information /leaflets/posters about hydration
☐ Staff providing more assistance to drink
☐ Staff providing more assistance to drink
☐ Staff addressing my concerns about drinking
☐ More choice in drinks available
☐ Drinks more readily available
☐ Activities about hydration
☐ Other: ________________________________________________

The Hydrate in Care Homes’ project aims to increase the amount that care home residents drink by increasing hydration awareness and improving practice within care homes.

Do you have any further comments on the 'Hydrate in Care Homes'
please write in the box below:
Was the questionnaire easy to complete?

Yes ☐ No ☐

Do you have any further comments about this questionnaire?

Many thanks for completing this questionnaire.

Please put the completed questionnaire in the envelope provided, seal the envelope and hand it to a member of staff.
Results from End of Project Residents Audit on the Hydrate in Care Homes Project

- 65 completed questionnaires
- 92.3% were answered by a resident with or without assistance
- 66% were aware of the Hydrate project
- 59% had seen project leaflets for residents and relatives and information notices
- 86% had been encouraged to have a drink more often
- (15% of residents stated they did not need any encouragement to drink)
- 62% were regularly encouraged to drink throughout the day – only 1 resident was not encouraged at all
- 65% had an increase in the choices of drinks
- 71% had had activities highlighting the importance of hydration
- 57% of activities were taking place daily or weekly, with 6% taking place monthly
- 72% of residents felt they were drinking more than in previous 3-6 months (reflecting the length of the project)

Asked what had made the biggest difference the answers were as follows:

- 68% staff providing more encouragement to drink
- 45% drinks more readily available
- 43% hydration related activities
- 38% staff addressing concerns about drinking
- 37% staff providing more assistance to drink
- 31% more choices of drinks
- 22% information about hydration
APPENDIX 8 - Non Elective Admissions for Falls, #NOFs and UTIs for Localities

COASTAL WEST SUSSEX

<table>
<thead>
<tr>
<th>CCG Region</th>
<th>Coastal West Sussex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>April to December</td>
</tr>
</tbody>
</table>

Coastal West Sussex CCG - Non-elective admissions

**Coastal West Sussex Hydrate Homes (n=25)**

<table>
<thead>
<tr>
<th></th>
<th>Number admitted as a result of a fall</th>
<th>Number admitted with a fracture</th>
<th>Number admitted as a result of a UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>April to October 2015</td>
<td>110</td>
<td>13</td>
<td>24</td>
</tr>
<tr>
<td>April to October 2016</td>
<td>124</td>
<td>9</td>
<td>29</td>
</tr>
<tr>
<td>Difference</td>
<td>-10</td>
<td>-4</td>
<td>5</td>
</tr>
<tr>
<td>% Change against previous year</td>
<td>13% increase</td>
<td>31% reduction</td>
<td>21% increase</td>
</tr>
</tbody>
</table>

**Coastal West Sussex Non Hydrate Homes (n=161)**

<table>
<thead>
<tr>
<th></th>
<th>Number admitted as a result of a fall</th>
<th>Number admitted with a fracture</th>
<th>Number admitted as a result of a UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>April to October 2015</td>
<td>640</td>
<td>61</td>
<td>134</td>
</tr>
<tr>
<td>April to October 2016</td>
<td>623</td>
<td>62</td>
<td>128</td>
</tr>
<tr>
<td>Difference</td>
<td>-17</td>
<td>1</td>
<td>-6</td>
</tr>
<tr>
<td>% Change against previous year</td>
<td>3% reduction</td>
<td>2% increase</td>
<td>4% reduction</td>
</tr>
</tbody>
</table>
Horsham Hydrate Homes (n=20)

<table>
<thead>
<tr>
<th></th>
<th>Number admitted as a result of a fall</th>
<th>Number admitted with a fracture</th>
<th>Number admitted as a result of a UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>April to October 2015</td>
<td>65</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>April to October 2016</td>
<td>51</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Difference</td>
<td>-14</td>
<td>-3</td>
<td>-6</td>
</tr>
<tr>
<td>% Change against previous year</td>
<td>22% reduction</td>
<td>25% reduction</td>
<td>40% reduction</td>
</tr>
</tbody>
</table>

Horsham Non Hydrate Homes (n=31)

<table>
<thead>
<tr>
<th></th>
<th>Number admitted as a result of a fall</th>
<th>Number admitted with a fracture</th>
<th>Number admitted as a result of a UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>April to October 2015</td>
<td>110</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>April to October 2016</td>
<td>95</td>
<td>19</td>
<td>21</td>
</tr>
<tr>
<td>Difference</td>
<td>-15</td>
<td>5</td>
<td>-7</td>
</tr>
<tr>
<td>% Change against previous year</td>
<td>14% reduction</td>
<td>36% increase</td>
<td>25% reduction</td>
</tr>
</tbody>
</table>
### Guildford & Waverley Hydrate Homes (n=20)

<table>
<thead>
<tr>
<th>Period</th>
<th>Number admitted as a result of a fall</th>
<th>Number admitted with a fracture</th>
<th>Number admitted as a result of a UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>April to October 2015</td>
<td>42</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>April to October 2016</td>
<td>15</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Difference</td>
<td>-27</td>
<td>-12</td>
<td>-8</td>
</tr>
<tr>
<td>% Change against previous year</td>
<td>64% reduction</td>
<td>55% reduction</td>
<td>40% reduction</td>
</tr>
</tbody>
</table>

### Guildford & Waverley Non Hydrate Homes (n=22)

<table>
<thead>
<tr>
<th>Period</th>
<th>Number admitted as a result of a fall</th>
<th>Number admitted with a fracture</th>
<th>Number admitted as a result of a UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>April to October 2015</td>
<td>34</td>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>April to October 2016</td>
<td>25</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>Difference</td>
<td>-9</td>
<td>2</td>
<td>-9</td>
</tr>
<tr>
<td>% Change against previous year</td>
<td>26% reduction</td>
<td>17% increase</td>
<td>33% reduction</td>
</tr>
</tbody>
</table>
### Thanet CCG - Non-elective admissions

#### Thanet Hydrate Homes (n=22)

<table>
<thead>
<tr>
<th>Period</th>
<th>Number admitted as a result of a fall</th>
<th>Number admitted with a fracture</th>
<th>Number admitted as a result of a UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>April to October 2015</td>
<td>144</td>
<td>8</td>
<td>33</td>
</tr>
<tr>
<td>April to October 2016</td>
<td>119</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td>Difference</td>
<td>-25</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>% Change against previous year</td>
<td>17% reduction</td>
<td>No change</td>
<td>15% increase</td>
</tr>
</tbody>
</table>

#### Thanet Non-Hydrate Homes (n=22)

<table>
<thead>
<tr>
<th>Period</th>
<th>Number admitted as a result of a fall</th>
<th>Number admitted with a fracture</th>
<th>Number admitted as a result of a UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>April to October 2015</td>
<td>237</td>
<td>25</td>
<td>69</td>
</tr>
<tr>
<td>April to October 2016</td>
<td>182</td>
<td>17</td>
<td>65</td>
</tr>
<tr>
<td>Difference</td>
<td>-55</td>
<td>-8</td>
<td>-4</td>
</tr>
<tr>
<td>% Change against previous year</td>
<td>23% reduction</td>
<td>32% reduction</td>
<td>6% reduction</td>
</tr>
</tbody>
</table>
Local data summary – All Localities

All CCG - UTI outcome data

Note: All data is quoted on a per 100 residents basis and is based on submitted data only.
The shaded area of all graphs indicates the pre-project baseline period.

Total number of UTIs per 100 care home residents

All CCG - Falls outcome data

Note: All data is quoted on a per 100 residents basis and is based on submitted data only.
The shaded area of all graphs indicates the pre-project baseline period.

Total number of falls per 100 care home residents
## APPENDIX 9

Table of HRG Reference Costs for Localities and KSS Average

<table>
<thead>
<tr>
<th>Provider Code</th>
<th>Provider Name</th>
<th>Hydrate (NoF)</th>
<th></th>
<th></th>
<th>Hydrate (UTI)</th>
<th></th>
<th></th>
<th>Hydrate (Falls)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Av LoS</td>
<td>£5,414</td>
<td>£472.64</td>
<td>Av LoS</td>
<td>£2,064</td>
<td>£319.22</td>
<td>Av LoS</td>
<td>£1,655</td>
<td>272.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost per admit</td>
<td></td>
<td></td>
<td>Cost per admit</td>
<td></td>
<td></td>
<td>Cost per admit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost per day</td>
<td></td>
<td></td>
<td>Cost per day</td>
<td></td>
<td></td>
<td>Cost per day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RN7</td>
<td>Thanet (D&amp;G)</td>
<td>11.45</td>
<td></td>
<td></td>
<td>6.47</td>
<td></td>
<td></td>
<td>6.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA2</td>
<td>G&amp;W (RSCH)</td>
<td>13.36</td>
<td></td>
<td></td>
<td>7.67</td>
<td></td>
<td></td>
<td>5.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTP</td>
<td>HMS/Crawley (SASH)</td>
<td>11.53</td>
<td></td>
<td></td>
<td>8.84</td>
<td></td>
<td></td>
<td>6.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RYR</td>
<td>CWS (WSHT)</td>
<td>12.15</td>
<td></td>
<td></td>
<td>6.90</td>
<td></td>
<td></td>
<td>6.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KSS AVERAGE</td>
<td>12.40</td>
<td>£5,661</td>
<td>£456.41</td>
<td>6.74</td>
<td>£2,111</td>
<td>£313.24</td>
<td>5.79</td>
<td>£1,664</td>
<td>£287.25</td>
</tr>
</tbody>
</table>

Notes:
Tariff calculation includes MFF uplift

Admission costs were calculated for each locality according to their individual costs for admissions in each diagnostic category. The average costs were used to calculate the cost reductions for the whole project. The same principles applied to bed day savings using length of stay.
All localities

**Potential numbers** = Activity in 2015 with current year costings reflecting costs if activity had been unchanged in 2016.

**Actual numbers** = Activity in 2016 with current year costings reflecting changes in activity in 2016.

Admission costs were calculated for each locality according to their individual costs for admissions in each diagnostic category. The average costs were used to calculate the cost reductions for the whole project. The same principles applied to bed day savings using length of stay.

<table>
<thead>
<tr>
<th></th>
<th>Falls</th>
<th></th>
<th>Costs Saving</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>potential numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>361 = 361 x 1664 =</td>
<td>£600,704.00</td>
<td>£86,528.00</td>
</tr>
<tr>
<td>actual numbers</td>
<td></td>
<td></td>
<td>14.4%</td>
</tr>
<tr>
<td></td>
<td>309 = 309 x 1664 =</td>
<td>£514,176.00</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Hydrate</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>potential numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>55 = 55 x 5661 =</td>
<td>£311,355.00</td>
<td>£107,559.00</td>
</tr>
<tr>
<td>actual numbers</td>
<td></td>
<td></td>
<td>34.5%</td>
</tr>
<tr>
<td></td>
<td>36 = 36 x 5661 =</td>
<td>£203,796.00</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>UTI</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>potential numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>92 = 92 x 2111 =</td>
<td>£194,212.00</td>
<td>£8,444.00</td>
</tr>
<tr>
<td>actual numbers</td>
<td></td>
<td></td>
<td>4.3%</td>
</tr>
<tr>
<td></td>
<td>88 = 88 x 2111 =</td>
<td>£185,768.00</td>
<td></td>
</tr>
<tr>
<td>Non Hydrate</td>
<td>Falls</td>
<td>potential numbers</td>
<td>1021 = 361 x 1664 = £1,698,944.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>actual numbers</td>
<td>925 = 309 x 1664 = £1,539,200.00</td>
</tr>
<tr>
<td></td>
<td>#NOF</td>
<td>potential numbers</td>
<td>112 = 112 x 5661 = £634,032.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UNCHANGED</td>
<td>112 = 112 x 5661 = £634,032.00</td>
</tr>
<tr>
<td></td>
<td>UTI</td>
<td>potential numbers</td>
<td>258 = 258 x 2111 = £544,638.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>actual numbers</td>
<td>232 = 232 x 2111 = £489,752.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**APPENDIX 10  Guildford and Waverley**

**Potential numbers** = Activity in 2015 with current year costings reflecting costs if activity had been unchanged in 2016.

**Actual numbers** = Activity in 2016 with current year costings reflecting changes in activity in 2016.

Admission costs were calculated for the locality according to their individual costs for admissions in each diagnostic category.

The same principles applied to bed day savings using length of stay.

<table>
<thead>
<tr>
<th></th>
<th>Potential numbers</th>
<th>Actual numbers</th>
<th>Cost Saving</th>
<th>Total Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falls</td>
<td>42 = 42 x 1638 =</td>
<td>15 = 15 x 1638 =</td>
<td>£68,796.00</td>
<td>£68,796.00</td>
</tr>
<tr>
<td>Hydrate #NOF</td>
<td>22 = 22 x 6203</td>
<td>10 = 10 x 6203</td>
<td>£136,466.00</td>
<td>£136,466.00</td>
</tr>
<tr>
<td>UTI</td>
<td>20 = 20 x 2295</td>
<td>12 = 12 x 2295</td>
<td>£45,900.00</td>
<td>£45,900.00</td>
</tr>
</tbody>
</table>

**Cost Saving**

- Hydrate #NOF: £74,436.00
- UTI: £18,360.00
- Total Savings: £137,022.00
<table>
<thead>
<tr>
<th>Non Hydrate</th>
<th>Falls</th>
<th>potential numbers</th>
<th>Cost Saving</th>
<th>Total Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>34 = 34 x 1638 =</td>
<td>£55,692.00</td>
<td>£14,742.00</td>
</tr>
<tr>
<td></td>
<td>actual numbers</td>
<td>25 = 25 x 1638 =</td>
<td>£40,950.00</td>
<td></td>
</tr>
<tr>
<td>#NOF</td>
<td>potential numbers</td>
<td>12 = 12 x 6203</td>
<td>£74,436.00</td>
<td>-£12,406.00</td>
</tr>
<tr>
<td></td>
<td>actual numbers</td>
<td>14 = 14 x 6203</td>
<td>£86,842.00</td>
<td>NONE</td>
</tr>
<tr>
<td>UTI</td>
<td>potential numbers</td>
<td>27 = 27 x 2295</td>
<td>£61,965.00</td>
<td>£20,655.00</td>
</tr>
<tr>
<td></td>
<td>actual numbers</td>
<td>18 = 18 x 2295</td>
<td>£41,310.00</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

#NOF potential numbers:
- Cost Saving: £74,436.00
- Actual numbers: £86,842.00
- Total Savings: £22,991.00

Falls potential numbers:
- Cost Saving: £55,692.00
- Actual numbers: £40,950.00

UTI potential numbers:
- Cost Saving: £61,965.00
- Actual numbers: £41,310.00
**APPENDIX 11  Coastal West Sussex**

**Potential numbers** = Activity in 2015 with current year costings reflecting costs if activity had been unchanged in 2016.

**Actual numbers** = Activity in 2016 with current year costings reflecting changes in activity in 2016.

Admission costs were calculated for the locality according to their individual costs for admissions in each diagnostic category.

The same principles applied to bed day savings using length of stay.

<table>
<thead>
<tr>
<th>Hydrate</th>
<th>Falls</th>
<th>potential numbers</th>
<th>=</th>
<th>110 x 1776 =</th>
<th>£195,360.00</th>
<th>Cost Saving</th>
<th>= £24,864.00</th>
<th>-12.7%</th>
<th>Total Savings</th>
<th>= £16,371.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>actual numbers</td>
<td>=</td>
<td>124 x 1776 =</td>
<td>£220,224.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrate</td>
<td>#NOF</td>
<td>potential numbers</td>
<td>=</td>
<td>13 x 4657 =</td>
<td>£60,541.00</td>
<td>Cost Saving</td>
<td>£18,628.00</td>
<td>30.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>actual numbers</td>
<td>=</td>
<td>9 x 4657 =</td>
<td>£41,913.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>UTI</td>
<td>potential numbers</td>
<td>=</td>
<td>24 x 2027 =</td>
<td>£48,648.00</td>
<td>Cost Saving</td>
<td>£10,135.00</td>
<td>-20.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>actual numbers</td>
<td>=</td>
<td>29 x 2027 =</td>
<td>£58,783.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</tr>
<tr>
<td><strong>Non Hydrate</strong></td>
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<tr>
<td><strong>Falls</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>potential numbers</td>
<td>640 = 640 x 1776 = £1,136,640.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>actual numbers</td>
<td>623 = 623 x 1776 = £1,106,448.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Savings</strong></td>
<td></td>
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<tr>
<td><strong>#NOF</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>potential numbers</td>
<td>61 = 61 x 4657 = £284,077.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>actual numbers</td>
<td>62 = 62 x 4657 = £288,734.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Savings</strong></td>
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</tr>
<tr>
<td><strong>UTI</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>potential numbers</td>
<td>134 = 134 x 2027 = £271,618.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>actual numbers</td>
<td>128 = 128 x 2027 = £259,456.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Savings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**APPENDIX 12 Horsham mid Sussex and Crawley**

**Potential numbers** = Activity in 2015 with current year costings reflecting costs if activity had been unchanged in 2016.

**Actual numbers** = Activity in 2016 with current year costings reflecting changes in activity in 2016

Admission costs were calculated for the locality according to their individual costs for admissions in each diagnostic category.

The same principles applied to bed day savings using length of stay.

<table>
<thead>
<tr>
<th></th>
<th>Potential Numbers</th>
<th>Actual Numbers</th>
<th>Cost Saving</th>
<th>Total Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Falls</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>potential numbers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>65 = 65 x 1774 =</td>
<td></td>
<td>£115,310.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>actual numbers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>51 = 65 x 1774 =</td>
<td></td>
<td>£90,474.00</td>
<td></td>
</tr>
<tr>
<td><strong>Hydrate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#NOF</td>
<td>potential numbers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 = 12 x 5796</td>
<td></td>
<td>£69,552.00</td>
<td>£17,388.00</td>
</tr>
<tr>
<td></td>
<td>actual numbers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9 = 9 x 5796 =</td>
<td></td>
<td>£52,164.00</td>
<td>£17,388.00</td>
</tr>
<tr>
<td><strong>UTI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>potential numbers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 = 15 x 2607</td>
<td></td>
<td>£39,105.00</td>
<td>£15,642.00</td>
</tr>
<tr>
<td></td>
<td>actual numbers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9 = 9 x 2607 =</td>
<td></td>
<td>£23,463.00</td>
<td>£15,642.00</td>
</tr>
<tr>
<td>Category</td>
<td>Potential Numbers</td>
<td>Actual Numbers</td>
<td>Cost Saving</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
<td>----------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Falls</td>
<td></td>
<td></td>
<td>£26,610.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>110 = 110 x 1774= £195,140.00</td>
<td>95 = 110 x 1774= £168,530.00</td>
<td>13.6%</td>
<td></td>
</tr>
<tr>
<td>#NOF</td>
<td></td>
<td></td>
<td>£81,144.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14 = 14 x 5796 = £81,144.00</td>
<td>19 = 19 x 5796 = £110,124.00</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>UTI</td>
<td></td>
<td></td>
<td>£72,996.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>28 = 28 x 2607 = £72,996.00</td>
<td>21 = 21 x 2067 = £54,747.00</td>
<td>4.5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total Savings £15,879.00</td>
<td></td>
</tr>
</tbody>
</table>
**APPENDIX 13 Thanet**

**Potential numbers** = Activity in 2015 with current year costings reflecting costs if activity had been unchanged in 2016.

**Actual numbers** = Activity in 2016 with current year costings reflecting changes in activity in 2016.

Admission costs were calculated for the locality according to their individual costs for admissions in each diagnostic category.

The same principles applied to bed day savings using length of stay.

<table>
<thead>
<tr>
<th></th>
<th>Falls</th>
<th>#NOF</th>
<th>UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>potential numbers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>144</td>
<td>144 x 1655 =</td>
<td>8</td>
<td>33</td>
</tr>
<tr>
<td>actual numbers</td>
<td>119 x 1655 =</td>
<td>8 x 5414 =</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>£238,320.00</td>
<td>£43,312.00</td>
<td>£68,112.00</td>
</tr>
<tr>
<td></td>
<td>£196,945.00</td>
<td>£43,312.00</td>
<td>£78,432.00</td>
</tr>
<tr>
<td>Cost Saving</td>
<td>£41,375.00</td>
<td>£0.00</td>
<td>-£10,320.00</td>
</tr>
<tr>
<td></td>
<td>17.4%</td>
<td>0.0%</td>
<td>-15.2%</td>
</tr>
<tr>
<td>Total Savings</td>
<td>£31,055.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non Hydrate</td>
<td>Falls</td>
<td>potential numbers</td>
<td>actual numbers</td>
</tr>
<tr>
<td>------------</td>
<td>-------</td>
<td>------------------</td>
<td>----------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>237 = 237 x 1655 = £392,235.00</td>
<td>182 = 182 x 1655 = £301,210.00</td>
</tr>
<tr>
<td>#NOF</td>
<td>potential numbers</td>
<td>25 = 25 x 5414 = £135,350.00</td>
<td>actual numbers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17 = 17 x 5414 = £92,038.00</td>
</tr>
<tr>
<td>UTI</td>
<td>potential numbers</td>
<td>69 = 69 x 2064 = £179,676.00</td>
<td>actual numbers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>65 = 65 x 2064 = £169,260.00</td>
</tr>
</tbody>
</table>
## Appendix 14

### Impact on bed days saved across all localities

<table>
<thead>
<tr>
<th>Bed Days</th>
<th>Total Savings</th>
<th>563.64 bed days saved by 89 <strong>Hydrate</strong> homes saved across all localities in 6 months (Apr - Oct 16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falls</td>
<td>52 x 5.79 day</td>
<td>301.08</td>
</tr>
<tr>
<td># NOF</td>
<td>19 x 12.40 day</td>
<td>235.60</td>
</tr>
<tr>
<td>UTI</td>
<td>4 x 6.74 days</td>
<td>26.96</td>
</tr>
</tbody>
</table>

A potential of 2059 bed days could have been saved over 6 months (89+236 homes = 564+1495).
## APPENDIX 15

### Project costs – budget outline costs

<table>
<thead>
<tr>
<th>Jan 2016 to Dec 2106</th>
<th>Costs inclusive of VAT</th>
<th>All localities</th>
<th>per locality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Manager 3 days/week</td>
<td>£106,224.00</td>
<td>£26,556.00</td>
<td></td>
</tr>
<tr>
<td>Improvement Practitioners x 4 x 3days/week x 6 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hire of Venues</strong></td>
<td></td>
<td>£2,881.00</td>
<td>£720.25</td>
</tr>
<tr>
<td>2 hour Engagement Session for CCG, County Councils and Community Trusts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2 day Launch each locality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 hour training x 2 day option in each locality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 hours Celebration feedback event in each locality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Postage and Printing</strong></td>
<td></td>
<td>£165.00</td>
<td>£41.25</td>
</tr>
<tr>
<td>Postage for Questionnaire SAEs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printing Posters, Resident Leaflets, Resource Packs, Tally Charts</td>
<td>£2,968.00</td>
<td>£742.00</td>
<td></td>
</tr>
<tr>
<td><strong>Promotional Champion Resources</strong></td>
<td></td>
<td>£1,308.00</td>
<td>£327.00</td>
</tr>
<tr>
<td>Simple Measure Mugs (3 per home)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negotiated Pack of 6 @ £27.20</td>
<td></td>
<td>£400.00</td>
<td>£100.00</td>
</tr>
<tr>
<td>Hydrate Champion Metal Pin Badge x 250</td>
<td></td>
<td>£419.00</td>
<td>£104.75</td>
</tr>
<tr>
<td>Cotton Tote Bag x 250</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrate Staff Sports Bottle x 300</td>
<td></td>
<td>£935.00</td>
<td>£233.75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>£115,300.00</td>
<td>£28,825.00</td>
</tr>
</tbody>
</table>
References

1 Simple Measures CIC – Reliance On a Carer to Drink (SM™ ROC) dehydration risk assessment tool www.simplemeasures.co.uk


9. THIRST4 Life Buckinghamshire Study – link to this in the toolkit referencing te study as no longer available on line. https://www2.rcn.org.uk/__data/assets/pdf_file/0020/70382/5-Did_you_know.pdf

10. NICE 2013 (CG 169) Acute Kidney Injury –prevention, detection and management


Provisional full-year figures for global average near-surface temperatures confirm that last year, 2016, was one of the warmest two years on record, nominally exceeding the record temperature of 2015.

When viewed alongside 2015, the two years are the warmest in an annual series of figures that starts in 1850. Scientists at the Met Office Hadley Centre and the University of East Anglia’s Climatic Research Unit produce the HadCRUT4 dataset, which is used to estimate global temperature. The global temperature series shows that 2016 was 0.77±0.1 °C above the long-term (1961-1990) average, nominally a record since at least 1850. When compared with the 1850 to 1900 baseline – which is indicative of pre-industrial temperatures – the 2016 average global temperature anomaly was around 1.1 °C (see below). For comparison, 2015 was 0.76±0.1 °C above the long-term (1961-1990) average.


