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Drink to Reduce INfection risK-up: A dignified approach to preventing urinary tract infection in older people resident in care homes.

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Summary & keywords

Background

The most prevalent healthcare associated infection in care homes is urinary tract infection (UTI) which accounts for 53% of all infections. It is associated with severe consequences including increased morbidity, falls, emergency admission to hospital and distress and it has a negative impact on quality of life. Increased susceptibility to UTI occurs as a result of ageing processes and a number of urological risk factors however low fluid intake is a frequently overlooked risk factor that has not been subject to investigation. This study hypothesised that an increased fluid intake will dilute the urine, reducing the concentrated urine that supports bacterial multiplication and also enable greater 'flushing' of the older person's urinary tract to reduce the bacterial load. The Drink-Up project was a pilot study which aimed to establish the potential effects of increasing fluid intake on the prevalence of urinary tract infection in older adults resident in care homes. A theory-driven behavioural intervention was developed comprising:

 An individually targeted daily fluid intake goal, set at 300-500mls above the older person's baseline mean daily intake.

 Training to use and subsequent daily use of the Hydrant™ fluid delivery system;

 An agreed minimum daily total fluid intake for each individual;

 resident and family/carer education on hydration and fluid intake;

 care home staff support for positive fluid management

Method

A single group pre-test-post-test evaluation design was undertaken over a 12 month period commencing June 2013. The Drink-Up intervention was delivered to 24 consenting eligible care home residents over a period of 24 weeks and number of UTIs, falls and emergency hospital admissions were recorded at 8, 16 and 24 weeks. An embedded process evaluation was undertaken to identify and clarify issues that may impact on the wider implementation of the intervention into practice. This included delivery implications such as those associated with the ongoing resident education and sustained use of the equipment as well as outcome measure completion issues. In addition a qualitative investigation of the staff experiences of the DRINK-up intervention was undertaken using focus group interviews to

determine acceptability of the DRINK-up intervention and its potential to support ongoing self-management of fluid intake by care home residents in the future.

Results

The results showed that increases in fluid intake were inconsistent: 50% residents increased fluid intake by a mean of 164ml, just over half of the minimum planned fluid increase of 300-500mls. The overall fluid intake was decreased in 34% residents by an average of 180ml. No consistent relationship between resident increases in fluid intake and reduction in frequency of UTI was found and the volume of fluid intake recorded was not correlated with the number of UTIs the older person experienced ($r= 0.103$, $p=.676$) suggesting they were independent of each other. There was a clinically meaningful, non-statistically significant reduction in number of treated UTIs during the intervention period ($t = .498$, $18df$, $p = .625$). The number of recorded falls also reduced during this period from the pre-study frequency of 52 to 28 over the 24 week intervention. This was a clinically meaningful reduction which was statistically significant ($t=3.148$, $df\ 19$, $p=0.005$). The number of admissions to hospital did not change during the drink-up intervention.
Focus group interviews sought evidence of self-efficacy development in practice. Support for residents performance accomplishment through information provision and education was provided however goal setting was not common and took the form of externally generated targets for fluid intake rather than negotiated goals. A number of barriers to increasing fluid intake were identified which were resident-related or arose from the care home context. A range of facilitators and specific ways to overcome these barriers were discussed by participants including praise and reward, which were in evidence through the study. Acceptability of the Drink-Up intervention was variable overall as there was a sense among some staff that increased fluid intake was challenging for many residents to achieve and sustain. The Hydrant system was not shown to be a useful tool for frail older adults in this particular care home context however it was considered very useful to enable staff hydration and was popular with staff.

Conclusion

The Drink-up study provides preliminary evidence suggesting that increasing daily fluid intake by 200ml -400ml may have a potentially positive effect on number of urinary tract

infections experienced and number of falls in frail older adults resident in care homes. This is the first study to formally test these relationships and the results are promising. The potential benefits, in addition to the requirement for dignified care and support for self-management, endorse the need to develop and test methods to enable frail older people to drink independently in the future.

Keywords; *Hydration, drinking, urinary tract infection, UTI, falls, older adults, care homes*

Background

The most prevalent healthcare associated infection (HCAI) globally is urinary tract infection (UTI), which accounts for more than 40% of all bacterial nosocomial infections [1]. Urinary infection, in particular recurrent and complicated UTI, is more common in frail older adults of both genders [2], whether they are community living, living in long term care situations or in hospital. UTIs in older adults are often associated with more severe consequences compared to younger adults, such as bacteraemia, the need for systemic antimicrobial therapy and death [3]. UTI is the most common HCAI in care homes for older adults. In a prevalence survey of 83 care homes across Scotland 52.7% of all HCAIs were UTIs, compared to 19.4% respiratory tract infections and 15.5% skin infections [2]. In a similar prevalence study of care homes in Ireland, UTIs accounted for 40% of HCAIs again the most prevalent infection compared with respiratory tract infections (28%) and skin infections (20%) [4].

Not only is there a higher prevalence of UTI with age but the clinical significance is higher. UTI causes increased morbidity in the older population and is a major source of distress, discomfort and negative impact on quality of life [5,6]. Symptoms associated with UTI include frequency, urgency, nocturia, pain, dysuria and urinary leakage. Managing these symptoms in care homes often involves undignified equipment and product use, which many older people find repellent and distressing. Furthermore, for care home residents, UTI is associated with a number of serious consequences. These include an increased rate of falls, delirium, emergency admissions to hospital and an associated increased risk of death [7,8].

There is a long term trend in rates of emergency admission to hospital related to urinary problems. In one study, total number of admissions with UTI increased fourfold over an eight year period, which was the fastest growing diagnosis in terms of additional admissions per year [8]. Thus UTI represents a significant issue for older adults in care homes and for health and care services.

Increased susceptibility to UTI may be a direct result of increasing age, menopause, immobility and increasing levels of physical and mental impairment requiring higher levels of care by others [9]. There are also a number of identified urological risk factors including urinary retention and incomplete bladder emptying, atrophic urethritis/vaginitis, use of absorbent pads, indwelling urinary catheters, pelvic organ prolapse, urolithiasis and genitourinary tract malignancy [7,10]. However a risk factor for UTIs that is often overlooked is low fluid intake. This can result in concentrated urine and infrequent voiding, both of which are believed to encourage bacterial growth. Directly addressing this common risk factor as a method to prevent recurrent UTI in care home residents is a potentially simple and dignified intervention, which has not been previously investigated.

The hypothesis for the mechanism of prophylaxis associated with a higher fluid intake is that 'flushing' of the urinary tract will reduce the bacterial load and regular and frequent voiding will prevent multiplication of bacteria in the bladder [11]. Dilution of the urine and a reduced urinary bacterial count is a beneficial consequence of good hydration, allowing the host natural defence mechanisms to function effectively and avoid being overwhelmed by a massive bacterial load [11]. However, no studies have yet been undertaken to test this hypothesis and the effects of an increased fluid intake on care home residents at risk of UTI have yet to be determined. Therefore the purpose of this study was to evaluate the potential effects of a dignified intervention to increase fluid intake as a method to prevent UTI in the care home population and to establish the feasibility of conducting a large, full scale trial of its effectiveness in this population.

Aim & Objectives

Aim:

To establish the potential effects of increasing fluid intake on prevalence of urinary tract infection in older people resident in care homes.

Objectives:

1. To determine the potential effects of the DRINK-up intervention delivered to older care home residents at risk of urinary tract infection, on prevalence of urinary tract infection, prevalence of falls, cognitive status, bowel status, lower urinary tract symptoms and emergency admissions to hospital.

2. To determine acceptability of the fluid increase intervention to care home residents, their family carers and staff.

Design and Methods

This feasibility study used a single group pre-test-post-test evaluation design and was undertaken over a 12 month period commencing June 2013. The intervention was delivered to consenting eligible care home residents over a period of 24 weeks and project-specific outcomes were recorded at 8 weeks, 16 weeks and 24 weeks. An embedded process evaluation was also undertaken to identify, understand and clarify issues that may impact on the wider implementation of the intervention into practice in a future full-scale trial. This included delivery implications such as those associated with the ongoing resident education and sustained use of the equipment as well as outcome measure completion issues. In addition a qualitative investigation of the stakeholders' experiences of the DRINK-up intervention was undertaken using focus group interviews with care home staff. The purpose was to determine acceptability of the DRINK-up intervention and its potential to support ongoing self-management of fluid intake by care home residents in the future.

Sample

Residents were invited to take part in the feasibility study if they met the following eligibility criteria:

Inclusion criteria:

 Older adults (aged 65 and over), resident in a care home, who:

 had received antimicrobial treatment for a UTI in the previous six months.

 were assessed as able to use the Hydrant fluid delivery system.

 were able and willing to consent to participate, or for whom proxy consent was obtained.

Exclusion criteria:

 Older adults (aged 65 and over), resident in a care home, who:

 Had a medically prescribed restricted fluid intake

 Had heart failure or renal impairment where increased fluid intake is contraindicated

 Were assessed to be unable to use the Hydrant fluid delivery system

 Were Nil By Mouth or their fluids provided via enteral feeding tubes

Methods

Recruitment

Resident eligibility was determined by the care home staff. Written and verbal information about the study was provided to all residents and their family/carers by staff. Interest in potential participation was expressed to any member of care home staff who passed this on to the Clinical Manager who gained the written and verbal consent. Signed consent forms were given to the study Project Nurse for secure storage.

Fluid intake intervention (DRINK-up)

The DRINK-up intervention was devised from Social Cognitive Theory; in particular Self-Efficacy Theory [15] which states that the stronger a person's expectations of efficacy in relation to a specific activity, the more motivated the person is to perform that activity. Self-efficacy is the perception of an ability to perform activities, which in this study translated as

the older adult's perceived ability to maintain their own hydration status. It served as both an antecedent and mediator of self-management.

The DRINK-up intervention consisted of:

- An individually targeted daily fluid intake goal, set at 300-500mls above their baseline mean daily intake.
- Training to use and subsequent daily use of the Hydrant fluid delivery system;
- An agreed minimum daily total fluid intake for each individual;
- resident and family/carer education on hydration and fluid intake;
- care home staff support for positive fluid management.

Self-efficacy was anticipated to be positively influenced through four different mechanisms::

Mastery experience, through graded efforts to attain successful use of the Hydrant equipment.

Verbal persuasion, where care home staff, family/carers and other residents encouraged the resident in their efforts to increase their fluid intake and positively reinforced successes and attainment of agreed goals.

Vicarious experience, where residents observed others increasing their fluid intake and thus learned to emulate this behaviour.

Physiological and psychological responses which are somatic indicators the resident could use to indicate their capability to increase their fluid intake. In this case the colour of their urine was used to indicate their hydration status and the results of the urine specific gravity measurements.

The combined influence of these mechanisms is to improve the residents' skills and self-efficacy for increasing their fluid intake, with the purpose of empowering the resident to improve their self-management capability in relation to their hydration status and impact on their health outcomes. In this project the residents' health outcomes included successful prevention of UTI, prevention of falls and avoidance of emergency hospital admissions.

Procedure

Prevalence rates for UTI (including separately identified catheter associated UTI), falls and emergency admission to acute hospital in the previous six months were identified for each participating resident from the care home records. A baseline 72 hour fluid balance chart was recorded for each resident. Thereafter daily fluid balance charts were recorded. Fluid balance recordings detailed the amount, type and number of drinks taken and any other form of fluid intake, such as fluid foods (soup, jelly etc) in each of three consecutive 24 hour periods. A urine sample was obtained and tested for specific gravity on each of the three days of baseline and outcome monitoring. Urinary incontinence experienced by the resident was recorded using the International Consultation on Incontinence Questionnaire on Urinary Incontinence Short form (ICIQ-UI SF) and use of laxative medication for treatment of constipation was recorded from the individual medication record.

The residents commenced the DRINK-up intervention once all baseline measures were completed. Outcomes were measured at 8, 16 and 24 weeks after recruitment and comprised repeating all baselines measures at each time point. Care home monitoring data and individual resident records, including prescribing records were the source of all other data collected.

Acceptability study

Between 16 and 24 weeks after commencing the DRINK-up intervention participating care home staff were invited to participate in a focus group interview to explore their experiences with DRINK-up, their suggestions for improvements or alternatives methods to increase fluid intake and their willingness to continue with DRINK-up.

Process evaluation

Throughout the intervention period the Project Nurse worked with care home staff to deliver the intervention and identify the factors that influenced its implementation, either as facilitators or barriers. In particular the daily fluid intake targets were monitored for rates of achievement and success of recording. Issues related to the completion of outcome measures with residents were identified during this process evaluation.

Data processing and analysis

Quantitative data on resident outcomes was entered and managed in a project database generated in SPSS (Statistical Package for Social Scientists) version 18. Databases were

password protected and records identified only by the resident's unique study identification number. Only the project team had access to study data. Findings are reported anonymously, so that no individual participant's data is identifiable.
Focus group interview data was transcribed verbatim and analysed using the Framework method of content analysis to identify key themes in relation to a pre-set analytic grid derived from the theoretical constructs in the study. This framework was used to explain the residents and staff experiences of DRINK-up, its acceptability and factors that may influence its implementation in a larger study.

Ethical Considerations

Research Ethics approval to undertake the study was obtained from Glasgow Caledonian University School of Health & Life Sciences Research Ethics Committee (HLS12/91) prior to commencement. The approval correspondence is shown in appendix 1, the Information Lealfets appendix 2 and the consent form is appendix 3.

Results and interpretation of findings

Resident outcomes.

A total of 24 residents were recruited to the study. There were 20 females and 4 males and the mean age overall was 85.6 years (SD 8.4). The primary medical diagnosis in two thirds of the sample (16 residents) was dementia with the primary diagnosis in the other third being a mixture of cardiac conditions, diabetes, stroke, prostate cancer, epilepsy and Parkinson's disease. However as would be expected in a care home population multimorbidity was a feature of each participant's health status.

Table 1: shows the average fluid intake at baseline and across the three study outcome time points and indicates the average change in fluid intake for each resident. The number of urinary tract infections is also shown for the pre-study 24 week period and at each of the outcome measurement points. Shaded cells indicate an increased fluid intake and the mean

volume of increase. They also indicate residents who experienced a reduced frequency of UTI during the study period. The results show that increases in fluid intake were inconsistent: the recorded fluid intake was increased in 12 residents by an average of 164ml. This was just over half of the minimum planned fluid increase of 300-500mls. The overall fluid intake was decreased in 8 residents by an average of 180ml.

Table 1 visually demonstrates that there is no consistent relationship between resident increases in fluid intake and reduction in frequency of UTI. Pearson correlation analysis showed that fluid intake was strongly correlated at each measurement time point ($r = 0.695$, $p=.015$) indicating that residents with a low intake at baseline had a low intake at each outcome measurement point and those with a high intake consistently had a high intake across the time points. However the volume of fluid intake was not correlated with the number of UTIs the older person experienced ($r= 0.103$, $p=.676$) suggesting they were independent of each other. Volume of fluid intake was also shown not to be associated with the age of the resident ($r= -0.17$, $p=0.5105$).

Resident ID	Baseline Mean fluid intake	Mean fluid intake across outcome times	Mean volume change in fluid intake	Number UTIs in previous 26 weeks T0	Number UTIs at T1	Number UTIs at T2	Number UTIs at T3	Total number UTIs in study 26 weeks
1	2117	1790	- 327	3	0	0	0	0
2	1455			3	2	-	-	2
3	2333	2405	72	1	0	2	1	3
4	1917	1940	23	1	0	0	0	0
5	2117	1934	-183	2	1	0	0	1
6	1852	1717	-135	0	1	1	0	2
7	1682	1548	-134	2	0	0	0	0
8	2033			3	0	-	-	0
9	1217	1447	230	2	0	0	1	1
10	1173	1251	78	2	0	1	0	1
11	1662	1757	95	4	2	1	2	5
12	1640			6	3	-	-	3
13	1225	1288	53	0	0	0	0	0
14	1800	1898	98	1	1	1	1	1
15	1632	1400	-232	0	1	0	1	2
16	1245	1744	499	0	1	0	1	2
17	1600	1637	37	1	1	0	1	2
18	1400	1540	140	3	1	2	2	5
19	2223	2112	-111	2	0	0	0	0
20	2233	2112	-121	2	1	0	0	1
21	1348			8	1	-	-	1
22	1320	1687	367	2	1	0	0	1
23	1830	1511	-319	1	0	0	0	0
24	1370	1642	272	2	1	1	0	2
Total				51	18	9	10	37

Table 1: Changes in residents average fluid intake and number of urinary tract infections

Table 2 shows the total number of UTIs, the total number of falls and the total number of hospital admissions at each of the measurement time points, and indicates the total number for the 24 week pre-study period and the 24 week study period. The trends show a reduction in the number of UTIs from 51 in the pre-study period to 37 during the drink-up intervention period. This was a meaningful reduction in number of treated UTIs but was not statistically significant on paired t-testing (t = .498, 18df, p = .625). The number of recorded falls also reduced during the drink-up intervention period from the pre-study frequency of 52 to 28 over the 24 week intervention period. Again this was a meaningful reduction in recorded falls frequency, which was statistically significant on paired t-testing (t=3.148, df

19, p=0.005). The number of admissions to hospital did not change during the drink-up intervention and was consistently low, with a total of 7 for the entire group of residents over the year long study period, 4 in the pre-intervention period and 3 during the study.

	T0 (baseline 26 weeks)	T1 (8 weeks)	T2 (8 weeks)	T3 (8 weeks)	Total (study period 26 weeks)
Total number of UTIs (Number of residents)	51 (20)	18 (14)	9 (7)	10 (8)	37
Total number of falls (Number of residents)	52 (18)	12 (8)	7 (4)	9 (5)	28
Total number of admissions to hospital (Number of residents)	4 (3)	2 (2)	0	1 (1)	3

Table 2: Outcome data at 3 time points

The specific gravity of residents' urine was measured at each of the time points. The results are shown in table 3 and indicate that the increase in fluid had no effect on specific gravity, suggesting that there was no real change in urine concentration with the drink-up intervention.

Specific gravity	T0	T1	T2	T3
1.000	1	0	2	0
1.005	5	2	3	1
1.010	3	5	1	5
1.015	3	6	4	4
1.020	2	7	6	3
1.025	4	0	1	2
1.030	6	3	4	5
Total	24	23	20	20

Table 3: Urine specific gravity results at each measurement point.

Focus group analysis

We constructed the predefined analytic framework for the focus group interviews using the theoretical features of self-efficacy that underpin the intervention (Bandura, 1997): evidence of resident performance accomplishment, vicarious experience, verbal persuasion and physiological states .To do this we used the constructs of social cognitive theory and focused on identifying resident (personal) factors, aspects of drinking (the behaviour) and contextual (environmental) factors that might influence the residents self-efficacy and determine their engagement with the drink-up project. In particular evidence was sought on: information provision about the purpose and benefits of an increased fluid intake; goal setting or intentional behaviour; barriers to increasing fluid intake; facilitators of an increased fluid intake and ways to overcome barriers; praise and rewards to increase intake. The analysis was viewed from the perspective of the staff as this was the group who took part in the three focus groups. This part of the analysis involved line by line analysis seeking evidence for each cell in the framework from the focus group interview transcripts.

Information provision about purpose and benefits of increased fluid intake

Information was provided verbally to all residents on the benefits of increasing their fluid intake and the availability of staff support for this to happen. Providing information was seen as an important part of routine daily hydration care and was reinforced on a regular basis to encourage residents to drink, however there was a view that for some residents the information was not retained.

FG1 A: Well obviously, I mean the unit I am in it is a residential unit so I would obviously sit with them and explain to them you have a wee infection it would be best if you make sure and drink plenty, but in the dementia unit it is not always as easy

FG1 B: Well I think you know, my residents at this stage don't really know, Its ok but they are not really bothered about it, don't really think, we have told them about the project but…….

Despite recognising that for some, particularly those with severe memory impairment, retention was so limited that it was unlikely to go beyond the immediate, motivation to explain the need for fluids and the potential benefits remianed high.

FG1 C: In the dementia unit we are always trying to give fluids and we try to explain no matter whether dementia or not you are explaining, this is when you have to start taking more, this is the reason why. You do still explain but whereas in ….. ward you would get

somebody who would go 'right that's fine then' and they might start taking more because they kind of realise 'I need to' whereas in the Dementia unit although you are explaining they might understand it when you are saying it but later on ….. or you know they're just not interested. But you are still following them about and you are still trying to get whoever it is to take drinks.

A pre-requisite for successful information provision was highlighted as 'knowing the resident'. The focus group interviews all discussed the dynamic nature of information and the two-way exchanges of knowledge that were essential to enabling person-centred care to be the norm.

FG 2 B: Yeh so the other thing is you really have to get to know your residents inside out to know whether or not they want a drink and what they will drink

FG 2 A: They've no got the family who can tell you when they first come in em what the preferred things is – which a lot of them are very good at telling you - and it is just trial and error basically

The very specific knowledge of the person was key to identifying the residents' hydration status as the following discussion illustrates, regarding how staff recognise that a resident needs a drink:

FG 2 B: Are their mouths dry

C: Or their skin
B: Their lips, they lick their lips as well when they are thirsty as well or they just bow their heads you know if no one is paying any attention. We have a wee lady and she just puts her head down it is quite strange.
A: Or they will try and catch your eye
B: Uh huh or try to say something
A: And try to make eye contact or something as if ' need something', do you know what I mean?
B: Some of them just make noises, some of them rock back and forwards, that can mean two things….. Do they want the toilet or do they want a drink.
A: That's where knowing your residents comes into it basically to spot the signs like that.
B: You really need to get to know your residents really well and that is the good thing about the key worker system when you've got six, you know them all, but if you've got six and someone sneezes the wrong way there is something not right, or they are quiet or they are more confused then there is something.

There was generally a good understanding of the need for residents to have a high fluid intake across the staff. One focus group reported an increased awareness of the importance

of fluid intake as a direct result of the Drink-Up project and an increase in fluid intake for all residents attributed to the effects of the project.

FG 2 B: Well they have now because of the way they are doing the drink up project and they are getting an extra 400mls, they are drinking more. Definitely. Because everyone is made…. there is an awareness now. I'm not saying, maybe it wasn't there before, but there is definitely an awareness now with the drink up project these 4 people are on and it makes you go round and do it with everybody and not just the 4 people that are on the drink up project.

However there was some debate about the actual volume of fluid intake that was needed or optimal

FG 1 C: No I am not saying that they are having too much, its, I think there is an awful obsession about the amount of fluids someone has to take.

FG2 C Some of the targets and 1,500mls, they are not going to meet that target unless they drink about 500mls at breakfast time.
A: they are never going to make it unless they drink that.
B: So it is a push, and then you've really got to go and make sure that every hour that basically they have a drink even if it's only, what we say to people even if they are not going to drink even if you can get them to drink 30mls every half hour at least they'll make, there will be a thousand in a day.

And also debate about whether targets could and should be achieved and some tension between feeling responsible for ensuring the targets for fluid intake were met and not forcing residents to drink.

FG1 B: Aye, I am not saying that I could, if someone said to me, if a nurse said you make sure I want them to have drank that amount by the end of the shift then I would say that I can't guarantee that I can only offer them.

FG 2 B: Sometimes when you are doing breakfast you expect an awful lot from people because, one when they come down you ask them if they want fruit juice and you put about 150ml of fruit juice down and if its fresh orange juice it is pretty heavy if they drink it…… and then because they are of a certain weight you are fortifying the milk so it is a heavy milk and they are having that along with their breakfast and when it comes to their tea they are " phrr", so. And then you are expecting them to take an extra cup of tea, so it is a lot sometimes to expect but if you don't really get that amount into them each time then they are not going to meet that target.

FG3 E: They don't realise that sometimes they don't want to drink but we have got to reach our targets so we are all, you are all stressed out yourself trying to reach this target.

Goal Setting

Despite the efforts of staff and the project assistant to develop fluid intake goals with residents the majority of actual goals were the individual targets calculated for each resident based on a standardised formula. The residents and staff were told what the residents' targets were however as reported earlier, for many residents this information was not retained due to memory or cognitive impairment. Members of staff were observed to encourage residents to drink and provide information on the need to increase their intake and why this would be beneficial.

The need to 'push fluids' was generally associated with having a UTI or chest infection, rather than being viewed as a preventative intervention. There was a clearly articulated process between recognising a potential UTI/chest infection and robust efforts to ensure an increased fluid intake beyond the resident's norm.

FG1 C: and that's the first thing you say she is heading for a UTI or …… and then we need to get more fluids into them although we are getting high levels of fluid in. When that starts you are giving even more to flush that as well.

FG1 A: And I mean obviously if someone is going onto an antibiotic they automatically go on to food and charts things like that and em you can tell visually you know if someone is needing more fluids you know they are more lethargic you know dry mouth you can tell just by looking, you know
B: You notice
A: And as I say you are working with people everyday we know so you kind of, you spot the signs straight away

One outcome of the project was an increased understanding and awareness of the challenges for people in a care home context trying to access drinks and the potential consequences.

FG1 C But it does kinda bring back to home that a lot of the residents in here don't think to go and get a drink ……..or are able to go and get a drink ……. especially with dementia ……..they are going without and are maybe getting agitated and this is maybe what it is.

There was a level of certainty with regard to what residents might and might not be able to achieve:

FG1 Q: The idea of water coolers or…
C: The residents do not know how to use these, this is down to the staff.

Identifying barriers to increased fluid intake

A number of specific reasons for why residents, in particular those with dementia, do not help themselves to drinks and why their fluid intake can be low, were spontaneously offered by the staff.

These were largely resident-related (the 'person' element of social cognitive theory):

They don't realise they are thirsty

They have forgotten they are thirsty

They do not realise that staff are there to help them

They have sore legs which affects their ability to get up and get a drink

They do not want to annoy people

They do not ask

They cannot communicate their wishes

They are too shy to ask

They may be unwell and 'can't be bothered'

They may feel bloated as they are lying down

Some refuse fluids to avoid the need to go to use the toilet.

FG2 E: A lot of them are scared to drink too much in case they need to go to the toilet.

Fluctuations and variability in daily fluid intake were discussed and largely considered to be a reflection of the residents' mood

FG3 E: It all depends on their mood as well, some days they will drink and some days they will just not drink.

And there were some highly individual personal reasons cited as barriers to drinking

FG3 E: There is a woman in our unit just now who is not drinking very well, but she thinks we are all poisoning her, and she is not drinking now

The care home context was seen to create barriers to increasing individual drinking at times as there were routines and the need to ensure saftey among residents with high levels of disability and care needs, which meant that few residents could be independent with drinks.

FG 1 B I mean I wouldn't say, there is not probably a lot of residents in the unit I am working in at the moment who could get themselves a drink without us keeping a wee eye on them……..they might not be able to operate the urn or something, do you know what I mean. C But em, the other residents you had to encourage and help….. It is quite rare to get someone who will get up and get….
B: And actually help themselves.

Choice of drink was seen to be of great importance and is linked back to knowing the residents likes and dislikes. Where the choice was limited this was considered a barrier to increasing intake.

FG3 D: I think it depends on the drinks that they are given because when you look back what did the elderly drink most of the time and it was always hot drinks. Most of the time when we are pushing fluids it is diluting drinks and stuff like that.

FG3 A: She drinks juice and sometimes I think she is thirsty like the way she drinks but I think I am the only one that gives her juice or milk or water because it is always tea when we are assisting her and she doesn't drink her tea, no. She drinks tea but I found out that I can give her two cups of juice for just one tea.

Physically enabling the resident to drink and encouraging fluid intake was considered to be very time consuming:

FG 1 C: If staff get tied up with encouraging fluid intakes

FG2 B: If you are really really busy and the staff are under pressure for whatever reason in the unit it is not easy to go round and give that extra drink and offer it…. especially if Mary is sitting in the corner and she is really quiet so…..

FG3 E : If you can sit and give them the time that they should have to let them have a drink they probably would benefit from it but you only have a short time. You can't it's impossible.

There are also competing demands to be dealt with which are frustrating for staff:

FG3 B: At breakfast you have to do everything and we have many residents to feed. So someone may say "sorry mam" so you need to put her into the toilet so the one who you are giving food to you have to leave it so that you can take her to the toilet.

Facilitators and ways to overcome barriers

When asked if given infinite resources what they would do to increase fluid intake in the residents all three focus group participants stated they would provide more staff. However there were a number of practical points made which would facilitate a fluid intake. Examples include asking all residents on a regular basis if they would like a drink.

FG1 C: But there are more than that, that if you say would you like a drink. They will say yes I would like a drink so they would like a drink ***but you have to ask them***

Staff described methods of incorporating drinking into the residents normal daily activities

FG2 D: We will usually just give them drinks, some of our residents walk about and we just give them a drink on passing, we just lift it, we have a jug and a couple of glasses… "here you are"

Or increasing the length of the drinking day, as enabling residents to drink upwards of 1500ml in less than 12 hours was recognised as particularly challenging.

FG3 E: But I do think that the ones that really don't get a lot to drink should be up earlier in the morning. If they are not getting a drink through the night then they should be up they should be the priority ones to get up and give a drink. Because you can tell, you can just tell because you are getting them up in the morning and their mouth is just so dry and you just know they should be up to get a drink.

The consistency of the fluid was important for some residents

FG3 D: A lot of the problems is as well em, for a lot of dementia patients is if they are being assisted with the beaker they have a habit of sticking their tongue on the top as well because they don't like it. Sometimes you know if some people have thickener in it obviously the ones that have, if they have been prescribed thickener you know and you can assist them with a spoon and they seem to take it better that way, so obviously if they are not taking it you don't want them to dehydrate so obviously you will assist them and they will take it with a spoon.

FG3 E: But it is amazing how they can take it better from a spoon rather than you try to assist them with a beaker or a cup. So if you sit them up and give it to them with a wee spoon they will take it no problem.

In terms of vicarious experience evidence for this was commonly reported in all units in relation to tea. Participants stated that they commonly did a 'tea round' once a single cup of tea had been requested, which was a positive method of increasing intake.

FG1 A: Yeh yep. Somebody just needs to hear the word tea and that's it.
B: And you actually get like in my unit someone coming up and saying 'excuse me they want a cup of tea' and you go "do you want a cup of tea?" and they will say 'no but I will just have one'. And I never go to make just a couple of cups because you might as well set up the trolley and do a tea round. Do you know what I mean?

Praise and reward to increase intake

All staff were acutely aware of the need to encourage and praise residents in order to increase or maintain their fluid intake and this was common practice throughout.

FG1 A: Because they will just sit the glass in front of them they won't do anything unless you give them that bit of encouragement.

FG3 C: I think there is about five people in our unit who can drink themselves the others it's like "come on" and you have to push them.

There was general consensus that encouraging was important but that forcing a person to drink was unacceptable.

FG1 B: …. say I have sat with one resident and have encouraged them and prompted them to drink and they have not drank well I have done my job do you know what I mean? that is their choice, do you know what I mean?, and I won't let a nurse or the care commission or anyone else make me feel guilty because that person has not wanted to drink that, so…… As long as I can walk away with a clear conscience that I have done everything

Evaluation of the Hydrant fluid delivery system.

With regard to the Hydrant equipment which was trialled as a method of increasing fluid intake in this project, the overall view was negative for this elderly care home population. The majority of residents who tried to use either the Hydrant or the sports bottle were unable to independently drink with it. A number of reasons were put forward to explain this:

i) Residents did not have the power to suck the fluid up the Hydrant tube, which was needed because it was not possible to hang the Hydrant above the residents head level to enable the vacuum function to work effectively.

FG2 A: Well one of them is em the wee wifie that is having her party as we speak, god love her, we did try but there is just no way she could have managed it. She gave it a good bash but she could not get water to come up the spout
Q: And was it because she couldn't get it into the tube, she couldn't suck hard enough?
A: She could at some points but at other points no she couldn't and she was getting herself frustrated and everybody was hearing about it.

FG3 E: It was just because they couldn't put it, when you put it in their mouth they just didn't do anything it just sat in their mouth, they couldn't….
A: It was just very long……
E: They couldn't grasp it.
Q: What about the one with the sports bottle with the nozzle top?

E: Nope. I don't know if it is just because they are used to their wee cups and the colours and it is like……. They go to drink and then there like, nah.
A: And you see them pouring it all over the floor.
Q: Pouring it on the floor?
A: Some of them don't even understand how to use a straw so how can they use that.

ii) Aesthetically the Hydrant was not thought to be suited to a care home environment

FG2 B: But they are not of an era that would drink, I think, if you hand them that. What is that? It is not recognised. They recognise a cup or a glass but this big thing with a handle on it, it didn't go down well anyway.
A: It did confuse a couple of them working out how you were meant to drink it.
B: The great big one I don't think it will ever be used in a home. That was great you saw that in a hospital bed…….
D: But that wasn't people with dementia or elderly people.

FG1 B: I think they might have been too heavy yeh.
C: I think maybe the height as well. The smaller ones we were giving to a wee lady in Uladh. But she was a wee lady and she could sit in the big chairs with the wee tables in front and she had this in front of her and I don't think she was too sure what to do with it. And again see if you gave her the wee two handled cup in front of her she was using that and so we were giving her that. I don't know if it seemed more complicated to her because even if you put the lid on the two handled cup with just a wee spout they drank it that way. So if they were lifting that the handle was different, if they were lifting it they were used to drinking out the edge rather than the middle so … .. They were maybe getting it on their lips to drink rather than the middle. Cause the middle is fine to us. The sports ones are kind of relatively new for our generations but older ones that's you know …….
A: They are used to just….
B: A glass
A: Yeh
C: They would take the lid off a bottle and drink out the bottle and out a glass they are just not used to that…. And they are used to drinking from the edge rather than the middle or something. If you are lifting that and it's a wide cup, so if you are lifting that and that has got the bit in the middle and you go like that to drink it, you think you are holding a cup it's going to pour down you…

iii) Modified consistency fluids were problematic for some

FG2 D: Once you put anything creamy in it, it just cakes and it is horrible, it is disgusting.
B: And it depended on how thick someone needed it for swallowing whether or not it would actually come out that spout.

However it was very useful for those who could use it. One resident was able to use the sports bottle and enjoyed attaching it to her zimmer frame.

FG2 B: We had one lady, we had one lady she used to have it hooked on. She did everything, she had a zimmer and she had it hooked on, she was quite good with it she was the only one in our unit that would use it.
A: Ours wouldn't even try it they would walk away and leave it.

Discussion

The drink-up study reported here was a feasibility study designed to establish the potential effects of an increased fluid intake on care home residents' urinary tract infection rates, falls rates, cognitive status, bowel status , lower urinary tract symptoms and admission to hospital as well as assessing the overall acceptability of the intervention to residents, families and staff. The findings indicate overall that it may be feasible to increase fluid intake by 200-400 ml in frail older care home residents but that measuring the increase accurately and determining its effects on individual residents is challenging and open to a range of threats and potential biases. The process and outcome measures used in this pilot study were reliant on staff recording the data accurately in the resident records: for example the occurrence of UTIs, falls and urinary incontinence. Evidence of laxative use was dependent on drug charts or resident care records being accurate and up to date. All of these are dependent on human observation, action, interpretation and recording and therefore involve a level of subjectivity which cannot be avoided unless more objective measurement methods are found. Using the Montreal Cognitive Assessment tool (MoCA) proved too challenging for these residents and staff, as the residents did not have the capacity to take part. This would not be a recommended tool for any future study of this type unless specialised training to use it in people with moderate to severe dementia is first completed. The major challenge for this study was the accurate recording of actual fluid intake. Fluid balance charts and bladder diaries are known to be fraught with difficulties, especially if being completed by another and it is very difficult to obtain accurate 24 hour intake figures on a consistent basis when in a care situation which is provided by a number of staff working shifts. Furthermore, assessing the actual fluid intake of an elderly person when offered set amounts of fluid is hard as volume drunk may be very different to volume offered. This is perhaps one reason why frail older people are at higher risk of hydration imbalances. Fidelity to the research protocol was reasonable in this study with regard to use of the standardised instruments however there were large amounts of data missing or

recorded at times outwith the protocol parameters. This was particularly true for collecting urine samples for dipstick testing in a given time frame, which proved not to be achievable in this population and therefore not a recommended method to be used in any future follow-up study. Difficulties arose as staff were tied up with other activities and residents were frequently unable to provide samples when asked. Completing the standardised international consultation on incontinence questionnaire on urinary incontinence short form (ICIQ UI-SF) was staff-dependent and thus, given the aforementioned challenges, its reliability is questionable in this study and context.

Despite the methodological difficulties encountered the results showed a trend towards increased fluid intake among the participating residents with indications of beneficial effect on prevalence of UTI and a statistically significant reduction in falls. This aligns with the findings of a small scale audit in a Canadian care home which showed a similar decrease in falls rates and UTI (Mitchell, 2011) and suggests that the hypothesis of increasing fluids to prevent infection and falls is worthy of further consideration for future, larger scale studies. This feasibility study was not powered to determine effectiveness but has indicated a potential impact on falls and rates of UTI.

The original intervention in drink-up using the Hydrant fluid delivery system was unsuccessful in this care home setting and the reasons for this became clear during the focus group interviews with staff. The new information will be of use in adapting the drink-up intervention to better meet the needs of this specific population in the future. However the theoretically driven intervention has merit with regard to its structure and some of the components eg the education package for staff, the focus on goal setting and praise for success. Staff seemed to be able to relate to the idea of increasing fluid intake although not all agreed this was a helpful intervention for frail older people. There was a good understanding of the need for older adults to have a high fluid intake however there was also some debate about the actual level of intake required and whether it was necessary for such high targets to be set, particularly for small, frail women. Staff felt there was a big emphasis on fluid intake/hydration and that they were blamed if a resident was deemed to be dehydrated, even though they recognised it to be very challenging to encourage some residents to drink. Any future study should focus on educating staff to enable them to

understand not only dehydration, its antecedents and consequences (which was a feature of the drink-up intervention), but also to explore their role and responsibilities clarifying what is within their remit and capability and what is not. The purpose would be to enable staff to feel more comfortable with their role in hydration care and to enable full and frank discussion of all the associated challenges, including the ethical issues.

Conclusion

The drink-up study provides indicative evidence suggesting that increasing daily fluid intake by 200ml -400ml may have a positive effect on number of urinary tract infections experienced and number of falls. This is the first study to formally test these relationships and the results are promising. The potential benefits in addition to the requirement for dignified care and support for self-management endorse the need to develop and test methods to enable frail older people to drink independently in the future.

Recommendations

- When working with care homes community nurses should consider recommending a daily increased fluid intake of 200-400ml, unless this is contra-indicated, as part of the strategy to reduce healthcare associated infections, in particular urinary tract infections.

- A larger appropriately powered study to determine the effect of an increased fluid intake on older adults resident in care homes should be undertaken.

- An alternative non-invasive measure for hydration status in older adults, other than urine specific gravity, should be found or developed.

- A further study is recommended to explore older adults drinking habits, practices and capabilities in care homes and compare these with community living older adults ie dependent and independent.

Impacts of the Project

The Drink-Up project has resulted in a number of impacts for the residents and staff of the care home in which it was undertaken and the nurses in the community continence team and the community nursing team who seconded into the backfill for the project nurse.

Care home practice:

Overall the project has been successful in raising awareness throughout the care home of the importance of maintaining hydration in older adults with high dependency and of the many and varied challenges that are encountered in achieving this. The potential role of hydration status in the evolution of UTI in frail older adults has been highlighted which has been reflected in the publicity about the project, especially the Hydrant™ equipment, which was given a prominent position in the reception area of the care home. The findings have indicated a direct impact on practice through the raised awareness, resulting in a reported greater frequency of offering drinks and greater consideration of the factors that might affect the person's ability and capacity to drink as well as the routine practices in the care home that also have an influence on fluid intake such as processes surrounding morning care and mealtimes.

Development of individuals and teams:

The project nurse for the Drink-up feasibility study was a band 5 community nurse seconded from the SPHERE bladder and bowel rehabilitation service in Greater Glasgow & Clyde. Her 0.4WTE secondment enabled her to become familiar with all aspects of the research process and gain a new skill set for engaging with care home staff and residents, collecting, handling and managing data according to an agreed research protocol. She has presented to other peers involved in the QNIS Delivering Dignity programme projects and is due to jointly present the project findings in an invited keynote to the Royal College of Nursing Continence Forum in November 2014.

A band 5 community district nurse was seconded in to the Sphere continence service to fill the vacant hours the project nurse was using servicing the project. This provided an

opportunity for a district nurse with a long standing interest in continence to gain exposure to and experience of the specialist continence. This had impact on two accounts – i) it enabled her to share her learning with the other members of the community nursing team and enhance knowledge transfer in the area of continence care ii) for personal experience to make an informed decision about whether specialist continence services were a choice for her future career.

Dissemination Plan

A dissemination plan involving oral and poster presentations and publication of the study findings is planned.

The Drink-Up project will be presented as a keynote session at the Royal College of Nursing Continence Care Conference 12/13th November 2014 (invited presentation).

An abstract will be submitted to the Association for Continence Advice Annual conference in May 2015.

A paper will be prepared for submission to a peer reviewed journal together with a companion practice-focused paper.

Future developments/ next steps

Future development for the Drink-Up project centres around taking the research agenda forward. Overall Drink-up was a small feasibility study and the results indicate that there are potentially positive results associated with an increase in fluid intake, thus there is support to further explore the underpinning hypothesis. However the intervention as delivered is not a feasible option for future implementation as self-management of fluid intake by frail older people was not supported and the majority were not able to drink independently. A number of questions about why this was the case have been raised and challenges encountered throughout this process are being considered in more detail for possible alternatives which will be considered in planning future work. The Drink-up intervention was designed to support self-management of fluid intake by older adults resident in care homes

and a key feature was its potential to support dignity in care processes. These core values of support for self-management and dignity in care will drive any future developments.

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Financial Report

Project (Multi Period) Report - Summary
Period From : 'DEC-12' , Period To : 'OCT-14'

Project: R4338 - DRINK TO REDUCE INFECTION

Inc/Exp Type	Inc/Exp Account	<Inc> / Exp
INCOME	3102 - EXTERNAL RESEARCH GRANT & CONTRACT INCOME	<9,770>
		<9,770>
PAYROLL	ACADEMIC	8,320
		8,320
		<1,450>

Appendix 1 – Ethics approval

From: *Roberts, Nicola*
Sent: *10 July 2013 13:17*
To: *Booth, Jo*
Cc: *McDonald, Clare*
Subject: *Approval of Research Ethics application (mod) HLS12/91*
Attachments: *RE: Approval of Research Ethics application (mod) HLS12/91*

Importance: *High*

Dear Jo

HLS id: HLS12/91

Project Title: "Drink to Reduce INfection risK-up: A dignified approach to preventing urinary tract infection in older people resident in care homes (DRINK-up)".

The Research Ethics Committee has completed its scrutiny of your application and I can confirm that ethical approval has been granted. I wish you well in your study.

Appendix 2

Participant Information Sheet

Drink to **R**educe **IN**fection ris**K – the DRINK-up project**

You are being invited to take part in a research study. Before deciding if you want to take part or not, please read this information carefully. Talk to others if you wish, before deciding. If anything is unclear, or you would like more information please contact a member of the research team whose contact details are below.

What is the purpose of the study?

The purpose of the study is to find out whether drinking more fluids helps to prevent urinary infection. People who live in care homes are more at risk of urinary infection. This project is designed to help us to find simple ways to reduce the risk.

Why have I been chosen?

You are being asked to take part because you have had a urinary infection in the past six months which was treated with antibiotics.

Do I have to take part?

No. It is up to you to decide whether or not to take part. If you do decide to take part, you will be given this information sheet to keep and will be asked to sign a consent form. You are free to withdraw at any time and don't need to give a reason. If you decide not to take part, this will not affect your care in any way.

What will happen to me if I take part?

If you decide to take part, you will be given a 'Hydrant'. This is a new piece of equipment which will allow you to take a drink whenever you like. You will be taught how to use the Hydrant and learn about the importance of drinking fluids to maintain your health. You will choose whatever drink you like (hot or cold) and be given your own personal Hydrant bottle. The drink you choose is extra to your normal drinks and should be taken whenever you like during the day. It is important that you continue to drink all of your usual drinks as well, because what we are trying to do is increase the amount you drink every day.

You will also be asked to attend a group discussion in one of the sitting rooms, with up to 7 of your fellow residents. You will be asked what you think of the DRINK-up project. What you liked and did not like about it and any suggestions you have to make it better and help other residents to learn about the importance of drinking enough. The discussion will take about one hour. We would like to tape record what members of the group say, with your permission.

What are the possible benefits of taking part?

This study will help to provide better care in the future by helping us to understand what the effects of increasing fluid intake are on urinary infections in care homes. We will also look at numbers of people who fall, or are admitted to hospital and we will look at the amount of laxatives that are used.

Will my taking part in the study be kept confidential?

Yes. All of your information will be kept strictly confidential and will be stored securely on a password protected computer at Glasgow Caledonian University. The procedures for handling, processing, storing and destroying data will comply with the Data Protection Act 1998.

What will happen to the results of the research study?

We will tell you what the study shows when it is completed. The results of the study will also be published in academic journals and a report sent to the Queens Nursing Institute Scotland, who funds the study. You will not be personally identified in any report or publication.

Who is organising and funding the research?

The research is being organised by Glasgow Caledonian University, NHS Greater Glasgow & Clyde Continence Service and is funded by the Queens Nursing Institute for Scotland.

Who has reviewed the study?

Glasgow Caledonian University School of Health & Life Sciences Research Ethics Committee have reviewed the study to ensure that it complies with ethical guidelines for research.

Contact Details

If you would like more information about this research or wish to discuss it further before making a decision, please contact:

Dr Joanne Booth, Reader in Applied Health Research, Tel: **0141 331 8635**
Dr Rona Agnew, Service Manager SPHERE Bladder & Bowel Service Tel: **0141 276 6613**
They can both be contacted at the address below:
Institute for Applied Health Research, Glasgow Caledonian University, Cowcaddens Road, Glasgow G4 0BA

Thank you for taking the time to read this information sheet

Group interview Information Sheet: Staff

Drink to **R**educe **IN**fection ris**K** – the **DRINK-up project**

You are being invited to take part in a research study. Before deciding to take part or not, please take time to read this information carefully. Talk to others if you wish, before deciding. If anything is unclear, or you would like more information please contact members of the research team, whose contact details are below.

What is the purpose of the study?

The purpose of the study is to find out whether drinking more fluids helps to prevent urinary infection in older adults living in care homes. People who live in care homes are more at risk of urinary infection. This project is designed to help us to find simple ways to reduce the risk.

Why have I been chosen?

You are being asked to take part because you are a member of staff in the care home where the DRINK-up project is being implemented.

Do I have to take part?

No. It is up to you to decide whether or not to take part. If you do decide to take part, you will be given this information sheet to keep and will be asked to sign a consent form. You are free to withdraw at any time and don't need to give a reason.

What will happen to me if I take part?

Taking part involves attending a group interview in one of the sitting rooms, with up to 7 other care staff. You will be asked to tell the researcher what you think of the DRINK-up project. What you liked and did not like and any suggestions you have to help us to improve the residents' opportunities to learn about the importance of drinking enough. The group session will take about one hour. We would like to tape record the group, with your permission.

What are the possible benefits of taking part?

This study will help to provide better care in the future by helping us to understand what the effects of increasing fluid intake are for residents in care homes. It is important that we find out from you what you think about the DRINK-up approach and how to make it as acceptable to your residents as we can.

Will my taking part in the study be kept confidential?

Yes. All information you provide will be kept strictly confidential and will be stored securely. Details from your anonymous group interview will be stored on a password protected computer at Glasgow Caledonian University. We will not store any of your contact details. The procedures for handling, processing, storage and destruction of data will comply with the Data Protection Act 1998.

What will happen to the results of the research study?

We will tell you what the study shows when it is completed. The results of the study will also be published in academic journals and a report sent to the Queens Nursing Institute Scotland, who funds the study. You will not be personally identified in any report or publication.

Who is organising and funding the research?

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Contact Details

If you would like more information about this research or wish to discuss it further before making a decision, please contact:

Dr Joanne Booth, Reader in Applied Health Research,
Telephone number: **0141 331 8635** or

Dr Rona Agnew, Service Manager SPHERE Bladder and Bowel Service
Telephone number: **0141 276 6613**

They can both be contacted at the address below:
Institute for Applied Health Research, Glasgow Caledonian University,
Cowcaddens Road, Glasgow G4 0BA

Thank you for taking the time to read this information sheet

Appendix 3

CONSENT FORM
Resident

Title of Project: **Drink to Reduce INfection risK – the DRINK-up project**

Name of Researcher: ……

Please initial box

1. I confirm that I have read and understand the information sheet dated ..... (version ....) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected. ☐

3. I agree to take part in the above study. ☐

4. I agree to the group interview being tape recorded. ☐

5. I agree to the use of anonymous quotes in reports and publications that come from this research. ☐

_____ _____ _____
Name of Participant Date Signature

_____ _____ _____
Researcher Date Signature

When completed, 1 for participant; 1 for researcher

CONSENT FORM
Staff

Title of Project: **Drink to Reduce INfection risK – the DRINK-up project**

Name of Researcher: ……

Please initial box

2. I confirm that I have read and understand the information sheet dated ..... (version ....) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. ☐

3. I agree to take part in the above study. ☐

4. I agree to the group interview being tape recorded. ☐

5. I agree to the use of anonymous quotes in reports and publications that come from this research ☐

_____ _____ _____
Name of Participant Date Signature

_____ _____ _____
Researcher Date Signature

When completed, 1 for participant; 1 for researcher