



NHS Forth Valley

‘Drink more Water’ pilot’ project in Early Years education settings

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Pilot Aim

This was an innovative public health approach to improve and encourage healthy drink choices in nursery and primary one children, in areas of high social and economic deprivation, where children are more likely to have higher levels of dental caries. The aim of the pilot was to increase children and families knowledge and understanding of the benefits of drinking water and milk instead of fizzy and fruit juices, which contain high sugar, and lead to dental decay. This would be achieved by providing children with water bottles that were printed with the sugar content of popular drinks and key oral health messages to promote drinking water for oral health and overall wellbeing.

Context

Preventative oral health education focuses on delivering key messages for diet, regular toothbrushing and dental visits, to maintain good oral health. This is crucial, as dental decay is almost always entirely preventable. Through ensuring good oral health habits are developed in children, we are helping safeguard the oral health of the future adult population (Scotland's Oral health Plan, 2017).

The National Dental Inspection Programme (NDIP) results in recent years have consistently shown that progress is being made in reducing dental decay and disease in young children, across all Scottish health board areas. For example, the percentage of primary 1 (P1) children with no 'obvious decay experience'* in their primary teeth has increased from 45% in 2003 when the National Dental Inspection Programme commenced, to 73.1% in 2022 and in NHS Forth Valley specifically to 73.8% (Scottish Public Health Observatory, 2023).

*Obvious decay experience in children includes decayed and missing or filled teeth.

It is also well documented that 'the development and implementation of Childsmile has been associated with major improvements in child oral health' (Dental Update, 2019).

However, despite the progress in child oral health, dental health inequalities remain in Scotland, with children from the most socio-economically deprived backgrounds having the highest levels of decay experience, as seen in Image 1. In 2020, the percentage of primary one children with no obvious decay ranged from 58.1%, in the most deprived areas to 86.9% in the least deprived areas (Scottish Public Health Observatory, 2023).

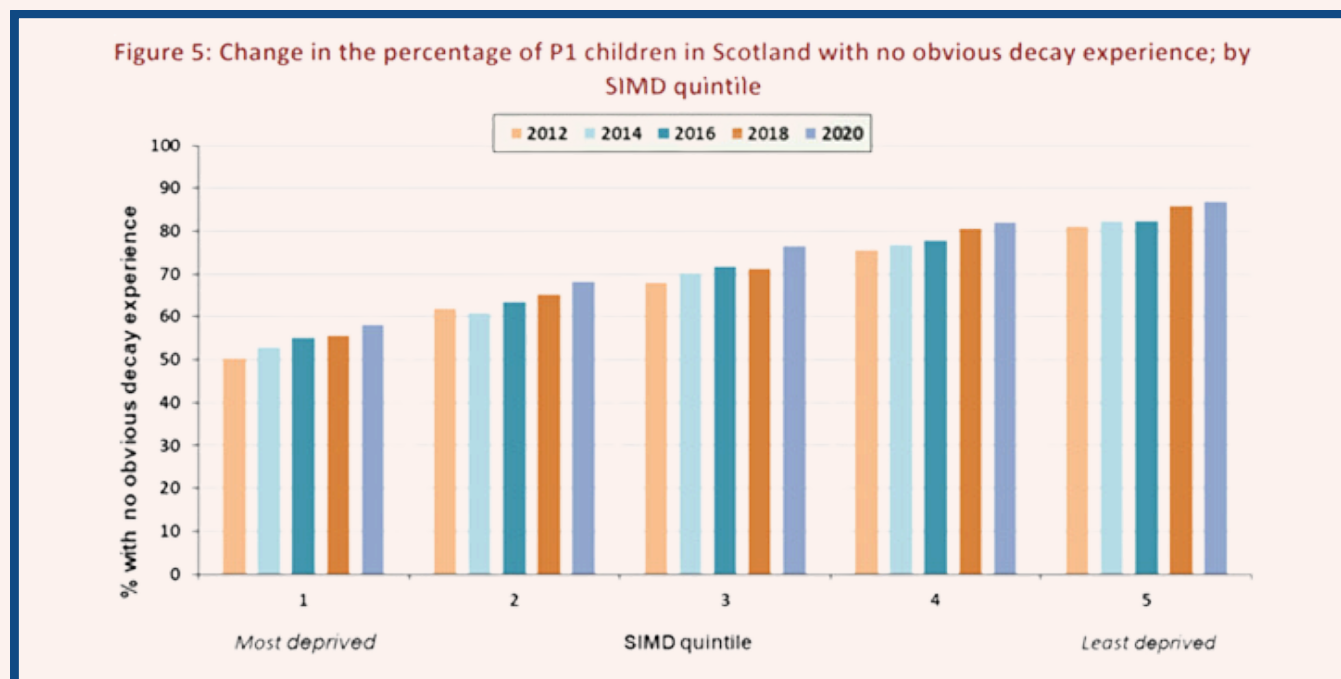


Image 1: National Dental Inspection Report, 2023

In Forth Valley it is a similar picture in relation to dental health inequalities between Scottish Index of Multiple Deprivation (SIMD) groups. For example in the 2021 / 22 school year, 59.2% of children had no obvious decay experience in the most deprived groups whereas as many as 86.2% of children had no obvious decay experience in the least deprived SIMD 5 groups (NDIP, 2022).

Based on the level of dental decay experience in the most deprived areas and following a scoping exercise carried out with the NHS Forth Valley (FV) Childsmile team and Forth Valley Early Years settings, NHS Forth Valley Health Improvement Service, introduced the ‘Drink more Water’ pilot in March 2023. The pilot project would explore whether the introduction of free water bottles and a related ‘Drink more Water’ campaign increased awareness of drinking water for oral health and encouraged healthier drink choices within the target group.

Methodology

A project scoping exercise was carried out by the Health Improvement Service with colleagues from NHS FV Childsmile. They helped identify 20 Forth Valley Early Years settings participating in the fluoride varnish programme to target. During the development of the 'Drink more Water' pilot, Childsmile used the Scottish Index of Multiple Deprivation (SIMD) data. Now Childsmile teams alongside using SIMD data, also use NDIP and free schools information to target the fluoride varnish programme to children who live in areas experiencing high social and economic disadvantage. Ten out of the 20 Early Years settings were contacted initially as part of a scoping exercise. The scoping exercise consulted with Headteachers, teachers / teaching assistants and early year coordinators using a semi-structured telephone discussion (Appendix 1) to find out more about their observations of children's nutritional and oral health habits. They were also asked if they had any concerns, particularly in relation to drinking water and what their views on introducing a project to promote the benefits of drinking more water would be.

Feedback and observations from early years education staff during the scoping exercise highlighted that some children had evident dental decay, including missing teeth. Many children were bringing in diluting juices and fizzy juice from home containing high amounts of sugar, that are damaging to teeth. This was despite most of the establishments encouraging drinking water via school policies and the introduction of water dispensers. The NHS FV Childsmile team also observed when they deliver Toothbrushing workshops in settings that they often see many cups / bottles, belonging to the children, positioned next to the toothbrushing racks with fizzy and diluting juice. This was thought to take away from the messages of having a low sugar diet and the importance of regular toothbrushing for a healthy mouth and teeth.

As a result, a pilot project using a quality improvement approach (Appendix 2) was developed to provide children with water bottles displaying positive oral health behaviour messages. This was a test for change pilot to see if the intervention encouraged the children to make more healthy drink choices during the school day.

Nine out of the 10 settings contacted agreed to participate in the pilot: three from Falkirk, two from Clackmannanshire and four from Stirling. Early years staff felt it was a positive way to engage children and their families to make more nutritional drink and food choices. In addition, they also felt that it would be beneficial to regularly deliver oral health messages to the children and their parents during the pilot. The messages included the importance of regular toothbrushing and visiting the dentist regularly, to encourage more positive oral health behaviours and improve dental health amongst the children and their families.

Thus the 'Drink more Water' pilot, seemed like an innovative behavioural change approach to encourage more children to gain from the benefit of drinking water and milk, the natural sugar free drinks, to improve the overall health of their teeth, mind and body. It was hoped that the incentive of having their own new water bottle, would help reinforce the benefits of drinking water and milk more often.

The bottles and information resources would also help to remind them of other key dental advice around diet, regular toothbrushing and visiting the dentist. The scoping exercise also highlighted that many of the children's families couldn't afford a water bottle or prioritise purchasing it with other financial responsibilities and the impact of the cost of living crisis. Therefore, receiving a free bottle at nursery / school would be a welcome incentive for many to start drinking water without having to buy their own bottle. For those who did already have a bottle at school they would have a spare one to use at home too. The fact that water is free would bring added financial savings for families.

Early Years establishments that participated in the 'Drink more Water' pilot:



Falkirk area:

- Langlees Nursery and Primary School
- Sacred Heart Nursery

Clackmannanshire area:

- Banchory ELC and Primary School
- St Serfs Nursery and Primary School

Stirling area:

- Fallin Nursery and Primary School
- Raploch Nursery and Primary School

Design and implementation stage

The next stage of the pilot was to develop content including messages around the benefits of drinking water for improved oral health and produce a prototype for the water bottle and promotional posters. The graphics on the bottle visually highlighted the amount of sugar contained in popular children's drinks, such as fruit drinks and Cola etc (Image 2). The sugar content was included to encourage parents and families to consider making more healthier sugar-free drink choices on behalf of their children. Several school staff confirmed that having the sugar content displayed clearly on the bottles would be beneficial to emphasise the importance of drinking water for oral health and reducing sugary drink consumption. The bottle also included other key oral health advice for a healthy teeth and mouth, including toothbrushing, having a low sugar diet and visiting the dentist regularly. This aligns with the messages already being delivered by Childsmile in early years settings. NHS Forth Valley Childsmile and Public Health Nutrition Team and other Oral health professionals were consulted on the final content and graphics.



Image 2: Visual graphic for bottle design, Health Improvement Service, 2023

Promotional posters were designed for the pilot (image 3) utilising the agreed water bottle graphics. Participating nurseries and schools were asked to display them in prominent places to promote awareness of healthy drink choices for good oral health to children, parents, families, carers and visitors.

It was agreed that Childsmile leaflets promoting healthy drink and snack choices would be included in the materials sent to settings to distribute alongside the water bottles as further information for families, parents and carers.



Image 3: 'Drink more Water' campaign poster, Health Improvement Service, 2023

Seven hundred children aged between one - five years old received a water bottle. A letter (Appendix 3) followed by an email (Appendix 4) detailing the pilot aims and additional campaign guidance was sent to each setting to support distribution, awareness and promotion.

The majority of bottles were distributed by staff during class time (Image 4), alongside Childsmile healthy snacks and drinks leaflets. Some Early Years settings launched the pilot and distributed the bottles during school and community health and well-being events (image 5), open days and parent and children coffee mornings. This supported a family approach to sharing oral health messages and encouraging open discussion of positive oral health behaviours.



Image 4: Children receiving their water bottles, Fallin Nursery, Stirling Council 2023



Image 5: Display at school and community well-being event, Fallin Nursery, Stirling Council 2023

Childsmile leaflets about healthy drink and snack choices were also sent out to each establishment, to be displayed and handed out alongside the bottles to the children. These could then be taken home to their families, for further information and tips on healthy drink and snack choices for a healthy teeth and mouth.

Early years staff were encouraged to take a pro-active approach to delivering information to children and their parents / families about making healthier drink and food choices, that would impact positively on their oral health, alongside sharing other dental health tips.

Messages around drinking water for improved oral health were delivered in the following ways:

- when distributing bottles staff were asked to communicate messages to children around the benefits of drinking water / milk for good oral health. This was already part of the health and well-being curriculum and school policies in many establishments, but often not adhered to. Children were often observed still bringing sugary diluting juices from home or asking for sugary drinks in the classroom. Children were reminded where to access water in the nursery / school and made aware that they could only bring water in their new bottles to school
- when children asked for juice at nursery / school, staff spoke to them about water and milk being a healthier option for teeth and general health and well-being
- promotional posters were created by the Health Improvement Service and displayed in the corridors, cloakrooms and on windows, for the children, parents, families / carers and visitors to regularly see
- 'Drink more Water' displays were set up in some establishments. Water bottles, dental packs, posters and Childsmile leaflets were available for children and families to see and also take home
- staff helped the children to fill and refill bottles throughout the day, encouraging the children to drink water and keep hydrated. By strategically placing toothbrushing racks near the water bottles, establishments attempted to remind children visually about drinking water as well as brushing their teeth regularly
- email updates for staff and social media post templates (Appendix 5) were shared with the settings. These highlighted the pilot aims and promoted drinking water and non-sugary drinks. Image 6 highlights examples of how settings shared information via school See Saw accounts and their other social media platforms such as X and GLOW.

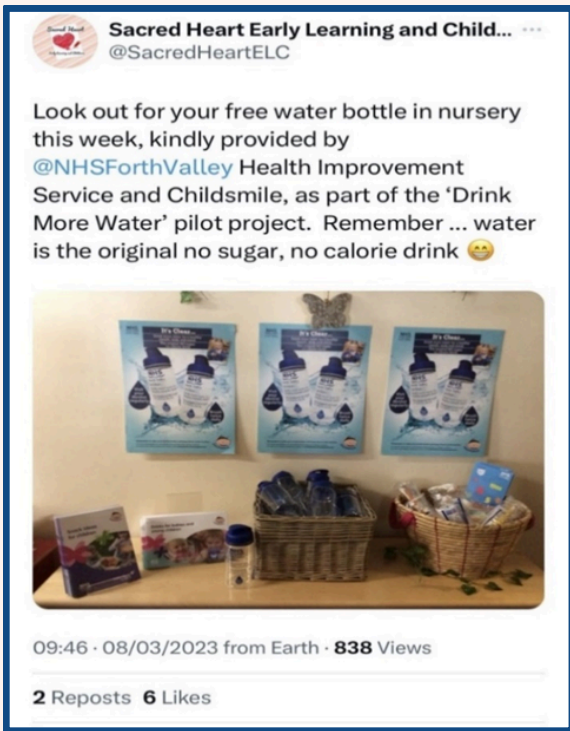


Image 6: Image of water bottle display, Sacred Heart Early Learning Centre, Falkirk Council 2023.



Image shows children receiving water bottles, St Serfs Nursery, Clackmannanshire Council 2023

NHS Forth Valley social media channels were used to share information about the benefits of drinking water through the pilot as displayed below in Image 7.




Image 7: NHS Forth Valley X social media image, 2023

- in some settings staff recorded children's drinking choices in their e-journals to share information with parents and carers. This helped highlight to families that children were drinking water as part of a 'Drink more Water' pilot
- one school aligned drinking water with their 'Healthy Harry' snack choices reward scheme. Children were encouraged to drink water in order to receive a sticker and praise for adopting healthier drink choices

Evaluation and feedback

Three to four months after the pilot launched staff in the nine participating Early Years settings were asked to complete evaluation questionnaires (Appendix 6). The focus was reporting on their classroom observations and discussions with the children/parents and families. The evaluation aimed to assess the impact of the pilot on increasing children's awareness of the benefits of drinking water for their oral health and any observed changes in drinking habits. Eight out of nine establishments provided feedback via face to face, online or telephone consultations. The results are summarised below.

- 78% of staff reported observing an increase in the number of children drinking water during the pilot; including former non-water drinkers. Staff reported that this trend continued after the pilot with children continuing to drink water instead of diluting juice / fizzy drinks. This is a positive observation and infers the pilot achieved the aim of increasing awareness and consumption of water for improving oral health behaviours.

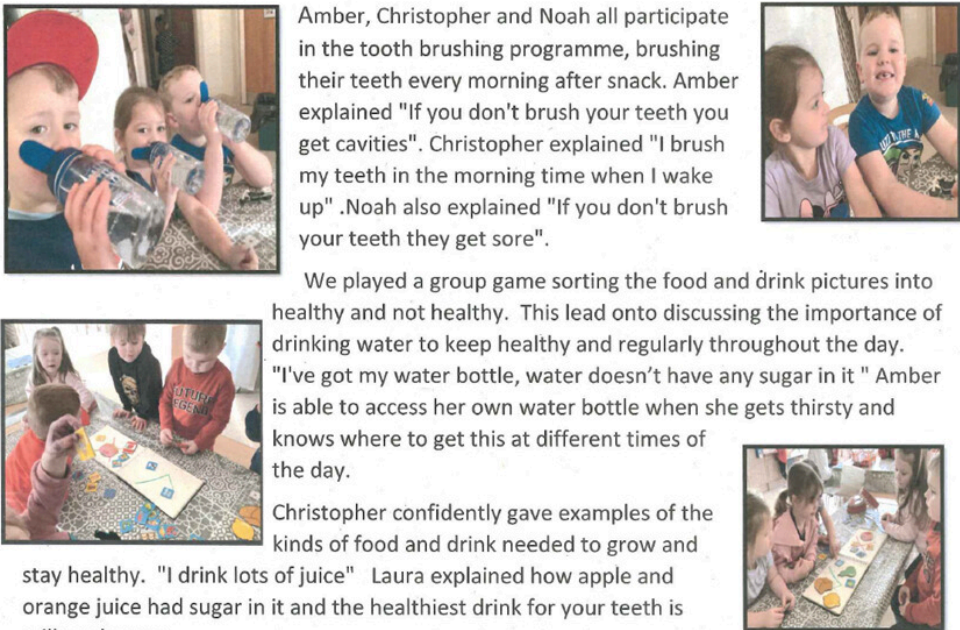


'Our children have been loving using the new water bottles and these are definitely upping the amount of water each child drinks in a day at nursery' (Fallin Nursery Staff)

- two of the eight early years staff observed that many of the children took the bottles home and then brought them back each day, filled with water instead of sugary drinks. This illustrates that a positive behavioural change around drinking water was being made at home by the children and their parents. Staff reported that parents were actively helping their children fill their bottles with water to drink. These changes could be attributed to the fact that staff, children and families were having conversations around the benefits of drinking water supported by the promotional materials and information resources shared

- 70% of staff reported an increase in confidence speaking to the children about the benefits of drinking water for improved oral health

Staff opinion during the evaluation indicated that as a result of the pilot the children's knowledge around oral health and wellbeing has increased and their consumption of water. Some learning moments from an Early Years setting are shared below in images 8 and 9 followed by quotes from children.



Amber, Christopher and Noah all participate in the tooth brushing programme, brushing their teeth every morning after snack. Amber explained "If you don't brush your teeth you get cavities". Christopher explained "I brush my teeth in the morning time when I wake up". Noah also explained "If you don't brush your teeth they get sore".

We played a group game sorting the food and drink pictures into healthy and not healthy. This led onto discussing the importance of drinking water to keep healthy and regularly throughout the day. "I've got my water bottle, water doesn't have any sugar in it" Amber is able to access her own water bottle when she gets thirsty and knows where to get this at different times of the day.

Christopher confidently gave examples of the kinds of food and drink needed to grow and stay healthy. "I drink lots of juice" Laura explained how apple and orange juice had sugar in it and the healthiest drink for your teeth is milk and water.

Image 8: Class consultation with children, Fallin Nursery, Stirling Council, 2023



Why is it important to drink water?

"my favourite bottle, has my face on it, its my bottle in the blue bag" - Charlotte
 "it stays in nursery, the ladies fill the bottles with us in the morning" - Logan

"you maybe to hot... it cools you down... it gets you healthy" - Lily

"you get to drink lots of water for drinking, easy peasy I get my bottle with my face on it... drink our bottle... other people have our faces on bottles... I get my bottle in my purple tray" - Noah

"you get water when you feel thirsty" - Charlotte

"thats mine with my face on it - drink you can so you dont get germs" - Charlotte

"you drink water to keep your teeth healthy, no sugar to make your teeth go bad or brown" - Ania

"a toothbrush to clean our teeth with water" - Johnny

"get water because you get thirsty... gives you energy" - Mylen

"you get water when your thirsty and hot" - Anil

"I drink lots of water at nursery with my bottle" - Jessica

"my bottle, get my water for thirsty and strong" - Kayla

"water is good for your teeth cos no sugar" - Logan

"Cos water is healthy... makes you strong... Good for your teeth... need water to clean our teeth" - Christopher

"at's my bottle... thats me" - Kelly

The children have been accessing their own water bottles throughout the session. They have access to their own bottles and can find them independently by using the colour coded trays and they are all labelled. This has encouraged children to drink a large amount of water and has encouraged children to drink water instead of juice.

Image 9: Discussion group notes from children, Fallin Nursery Stirling Council, 2023

Quotes from children showing increased knowledge of the importance of drinking water for improved oral health

'Water is good for you and I am happy because everyone has the same water bottles. I have told my mum that drinking water is good for you and she now gets me water in my pack lunch'
(P1 class, Raploch Primary)

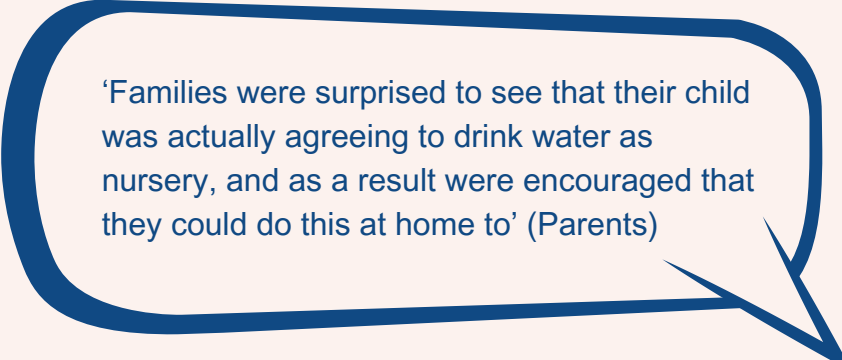
'I drink a lot of water at nursery with my bottle. You drink water to keep your teeth healthy, no sugar to make your teeth bad or brown'
(Fallin Nursery pupil)

'It stays in nursery, the ladies fill the bottles with water with us in the morning'
(Nursery child)

'Water is great for your teeth, as no sugar'
(Raploch Nursery pupil)

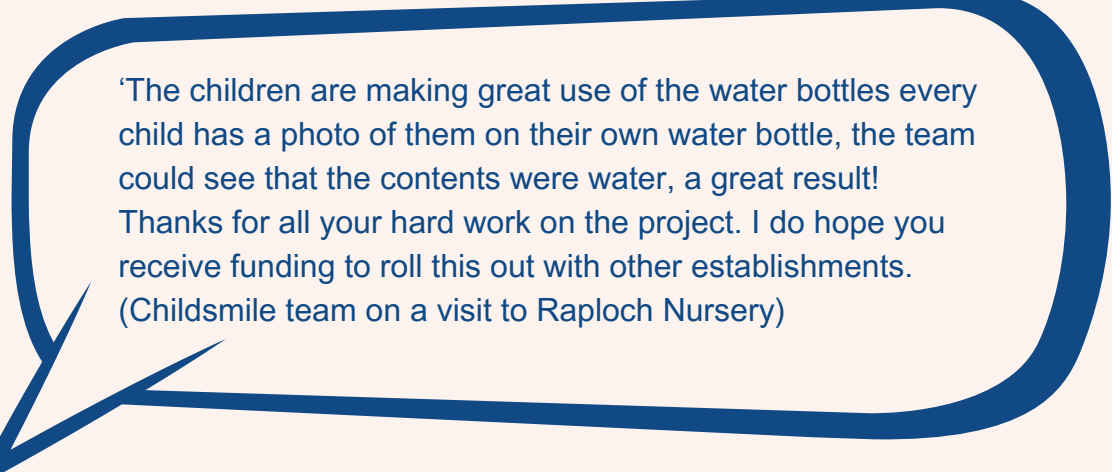
'Cos water is healthy and makes you strong. Good for your teeth, need water to clean our teeth' (Fallin Nursery pupil)

- staff reported that parents had shared that they couldn't get their children to drink water previously. Parents were now reporting to staff that they feel more motivated to provide their children with water in the bottles. As illustrated by the quote on the following page. Parents explained that this is because it is part of an overall local NHS driven healthy school water pilot scheme, and they want to contribute in helping to improve their child's oral and general well-being
- staff reported that several parents and families commented that because children were given their own water bottle in the pilot, this helped to address their reluctance to drink water and their consumption increased. The children mentioned that it is a special treat and that they are excited to drink water from their new bottle



'Families were surprised to see that their child was actually agreeing to drink water as nursery, and as a result were encouraged that they could do this at home to' (Parents)

- it was observed from parent feedback in one setting that recording children's new drinking choices in their e-Learning journals, had a positive effect of making parents feel more equipped to help their children to continue this habit at home too
- three establishments reported that 'Drink more Water' posters are still displayed in their settings, reinforcing the oral health benefits of drinking water
- all nine of the settings distributed the Childsmile healthy drinks and snacks leaflets to children and families. It was the opinion of staff that this has helped to create an increased awareness of drinking water and reducing consumption of sugary drinks to maintain good oral health. Feedback received from parents/children, observations of staff at school and at home by parents, as well as the positive engagement during the school health and well-being events further evidences the above
- Childsmile staff observed that staff were actively encouraging children in their settings to fill their bottles with water. During visits they could see that the bottles were being used for drinking water instead of other sugary drinks.



'The children are making great use of the water bottles every child has a photo of them on their own water bottle, the team could see that the contents were water, a great result!
Thanks for all your hard work on the project. I do hope you receive funding to roll this out with other establishments.
(Childsmile team on a visit to Raploch Nursery)

- three of the pilot settings requested additional bottles, for newly joined children after the pilot started and there was also support from one new nursery and Childsmile to continue the pilot. In the opinion of staff and Childsmile colleagues the bottles were considered to be an effective and simple way to share oral health messages and encourage children to develop healthy drink choices

- Health Improvement observed that positive working partnerships were created as a result of the pilot between the Early Years settings, Childsmile and the NHS Forth Valley Public Health Nutrition team. Positive health outcomes resulting from this are that some children particularly from socially and economically deprived backgrounds are now receiving additional oral health and nutrition advice and support and Vitamin D supplements in their nursery / school
- further input has also been provided to some of the nurseries/schools by NHS Forth Valley Public Health Nutrition team with setting up nutritional cooking workshops for children and parents to learn about healthy eating habits for improved oral and general health. There is also interest in future training sessions from one school in relation to training around 'Setting the Table' guidance, which covers the link between a nutritious diet and positive oral health. As a result the pilot has helped to sow the seeds for improving oral health knowledge and behaviours amongst early years communities, and we hope it will continue to do so in the longer term
- two nurseries enquired about the provision of story books with oral health messages that children could read at school and take home to their families, to help reinforce positive oral health behaviours
- one Early Years setting stated that they ask families on induction about whether children are registered with a dentist. They reported after the pilot the sign-posting information they received on local dental services made them more aware about how to refer children and families to services
- one Early Years establishment applied for funding from the Health Improvement Service, to purchase additional oral health resources. These will be used to deliver on-going oral health education to children and their families around accessing dental services and reducing any fear / barriers that they have related to this. This example shows that the pilot has also been successful in educating school staff about other key oral health messages, like visiting the dentist regularly. There is an increased interest and on-going commitment and confidence to communicate this to children and families, who perhaps don't always see the importance of doing so for their oral health
- however it must be noted that after the initial pilot launch, two out of the nine (22.2%) nurseries and schools said the numbers of children drinking water dropped again. In addition, some children went back to either using their old bottles for juice and/ or bringing in their new bottles with flavoured juices in them again. This was especially the case for those children from the highest areas of deprivation

Early Years settings staff feedback on how the pilot could be improved:

- roll out to Early Years settings across Forth Valley, to ensure that more children from socially and economically deprived communities, have access to their own water bottle and can receive ongoing messages about the benefits of drinking water for improved oral health
- NHS FV Childsmile team continue to deliver active demonstrations via early years dental health talks and Toothbrushing workshops about the importance of healthy snacks and drinks, the importance of milk and water between meals for a healthy teeth and mouth, and regularly give out water bottles then
- consistently providing nurseries / schools with resources on healthy snacks and drinks and other positive oral health messages, so that these can be delivered regularly to children and parents, enabling a collective culture shift in positive oral health behaviours
- setting up a specific 'Drink more Water' rewards scheme, to motivate children to drink more water from their new bottles. This could be done through displaying a water chart in each classroom, so that staff / children can record how many times in a day they are drinking water and by providing children with stickers and rewards for doing so
- personalised water bottles for each child, with their picture or name on it, to encourage the child to take more ownership, and use regularly to drink water from them
- more child and parent / community health and well-being events and continue with Childsmile Visits as normal, where healthy food and drink choices, as well as other positive oral health messages can be shared
- provision of oral health resources, such as story books, games, models of teeth etc to make learning around oral health more fun and interactive and part of the regular curriculum
- based on feedback from 3 establishments the quality of the bottles could be slightly improved, as some of the younger children found them difficult to open, and with regular use some bottles began to leak

Limitations of the pilot:

- it is difficult to determine whether children are still continuing to drink water at nursery / school one year post pilot. This is due to the fact that there is no formal way to monitor and evaluate this, unless there is ongoing general staff / parent observations and monitoring and reporting carried out
- two establishments mentioned it was difficult to differentiate between the bottles, in the classrooms, as they were not personalised. In one nursery they did not have storage space to keep all the children's bottles there and they had to be taken home for use instead. Thus observing behaviour change in children's drinking habits at school was difficult
- 22% of children reverting back to drinking sugary drinks from their bottles, shows that on-going oral health education and interventions are still required, to create long term shifts in people's oral and nutritional behaviours

Conclusion

The 'Drink more Water' pilot was successful in raising overall awareness of good oral health within Early Years staff, children and their families. Staff reported an increase in confidence to discuss information on diet and oral health with the children. There was a 78% increase in children drinking more water during the pilot using the bottles, with many continuing to do so post-pilot. It is hoped that by promoting positive oral health behaviours from an early age in areas experiencing disadvantage and inequalities that this will help in reducing dental decay and other major oral health concerns in adulthood over time. Despite the positive impact of the 'Drink more Water' pilot it is not considered financially sustainable for further roll out due to the bottle production costs.

However, the evaluation has positively highlighted that on-going preventative oral health education around nutritional drink choices can be beneficial for improving dental health. Therefore we would encourage Early Years staff to ensure that only water is drunk from bottles / cups in their settings and nutritional benefits of drinking water is regularly communicated to children and families.

In order to support Early Years settings, NHS FV Childsmile and Health Improvement should continue to deliver oral health improvement via the provision of resources and targeted programmes, as these can empower children and families to invest in their oral health from an early stage.

Recommendations:

- To work with establishments, NHS Forth Valley Childsmile and parents to promote use of bottles for drinking water only
- On-going commitment to providing nurseries / schools with resources on healthy drinks and snacks and other positive oral health messages that can be used during health and wellbeing events, to support staff to deliver these to children and parents
- NHS Forth Valley Childsmile Team will continue to visit establishments, delivering dental health talks covering toothbrushing demonstrations, dietary information about the importance of healthy snacks and drinks, helping to encourage water between meals and regular dental attendance. They will also continue to provide other resources and materials to support oral health improvement

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Appendix 1

Scoping Exercise with NHS Forth Valley Childsmile and Early Years settings:

Questions to assess type of activity to be planned and priority areas / groups

- 1 What age groups mostly participated in the FV programme and could be considered as a priority group to target with a potential oral health and 'Drink more Water' pilot intervention?
- 2 What do you believe to be the main oral health concerns / needs of children in your establishment?
- 3 Do you currently promote messages around drinking water in the school / nursery for general and oral health benefits?
- 4 Do you think free water bottles, would help you promote these messages, if given out during FV Programmes / Toothbrushing schemes etc?
- 5 How do you think you could support Oral Health Improvement within your school/nursery, in addition to participating in the Childsmile programme?
- 6 What kind of intervention would you like to see introduced in your establishment? For example the provision of water bottles to encourage children to drink less sugary drinks, or nutrition workshops for improved oral health for children and their families?

Appendix 2

Aim (overall goal for this project) and Problem Statement

Despite the progress in child oral health, dental health disease inequalities remain, with children from the most socio-economically deprived backgrounds having the highest levels of decay experience. In Forth Valley in the 2021 - 22 school year, 59.2% of children had no obvious decay experience in the most deprived groups compared to 86.2% in the least deprived SIMD 5 groups (National Dental Inspection Programme (NDIP) 2022). Based on dental health inequalities and a scoping exercise and observations around children's dental health and drinking habits carried out with the Childsmile team and Forth Valley early years settings, in areas of the highest social and economic deprivation, NHS Forth Valley Health Improvement Service (HIS), introduced a 'Drink more water' pilot in March 2023.

Aim: To encourage healthy drink choices and increase water consumption in nursery and Primary 1 children, in areas of high social and economic deprivation, where children are more likely to have higher levels of dental caries, by providing them with free water bottles with positive oral health messages on them. We would also seek to increase early years staff, children and families knowledge and understanding of the benefits of drinking water and milk instead of fizzy and fruit juices, which are high in sugar, and can lead to dental decay and other key oral health messages, to encourage positive oral health behaviours.

By July 2023, HIS will aim to increase the number of children drinking water in 10 out of 20 FV early years settings and increase knowledge amongst early years staff, children and families of the benefits of drinking water by up to 70%.

Change idea

The Scottish Governments Oral Health Improvement Plan (2018) focuses on encouraging a more prevention-based provision recognising the benefits of anticipatory care, to continue to improve the oral health of the population. As part of this overarching oral health improvement agenda they want to supplement the Childsmile programme with community-led initiatives aimed at supporting communities to improve their oral health, addressing oral health inequalities and improving access to services. GIRFEC also states that all service practitioners should work collaboratively to address the overall health needs of all children, as they have a right to the best possible health.

Therefore all these strategies align with the following change idea to address oral health inequalities and improve the oral and general health and well-being of children in EY settings.

NHS FV HIS will introduce a 'Drink more Water' Pilot in Dec 2023 in collaboration with nine FV early year settings and the NHS FV Childsmile team. This will involve producing and distributing free water bottles with oral health messages on them. In addition to promoting a 'Drink more Water' campaign alongside this to highlight and increase knowledge amongst early year settings of healthy drinks and snacks for improved oral health and other key oral health messages. This change will be run from March 2023 until July 2024 and be evaluated afterwards.

PDSA objective: Describe the objective for this PDSA cycle

Cycle No:
1

What questions do you want answered for this test of change?

1. To create a successful partnership with early year settings in FV, through the provision of free water bottles, for nursery and P1 aged children, in order to increase their water consumption, to improve oral health and well-being
2. To increase engagement of early years staff, children and their families with the pilot and improve knowledge and understanding of the benefits of drinking water and milk instead of fizzy and fruit juices for improved oral health

1. Does providing the water bottles and creating awareness through the pilot around drinking water for positive oral health, lead to an increase in children drinking water at nursery / school and in the home
2. Was there an increase in engagement and knowledge and understanding around the benefits of drinking water for oral health amongst the early year settings, children and their families

Plan	
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<p>I predict that this pilot will increase no of nursery and primary 1 children drinking water using their free water bottles</p>	<ul style="list-style-type: none"> • EY staff and families observations on whether there is a trend in more children drinking less sugary drinks and bringing water in to school instead, since been given the bottles • Staff feedback questionnaires received on impact of pilot
<p>Predict what will happen when the test is carried out.</p>	<p>Measures to determine if prediction succeeds</p>
<ul style="list-style-type: none"> • I predict increased knowledge and understanding amongst early years staff, children and their families of making healthier drink/snack choices for positive oral health supported by the campaign promotion activities and literature distribution • predict the oral health HIS service will work well with the early year settings, NHSFV Childsmile and public health nutrition team promoting oral health and nutrition messages, disseminating oral health information resources and increasing further EY / family engagement with the Childsmile programme and Public Health Nutrition Team 	<ul style="list-style-type: none"> • Verbal feedback from NHS FV Childsmile team going out to EY settings • Child classroom consultation feedback on pilot • Number of engagements, reach, clicks of social media posts • Number of promoted resources downloaded or distributed to early year settings and families during the campaign • Other early year settings expressing interest in participating in the pilot • Compile pilot evaluation report • Number of further links created between EY settings and Public Health Nutrition team

List the tasks needed to set this test of change	Person Responsible	When to be done	Where to be done
Liaise with NHS Forth Valley Childsmile team to identify whether a 'Drink more Water pilot' would be viable and to find out what EY settings in FV are already involved in the Fluoride Varnishing programme.	Health Improvement Officer(HIO)	5/12/23	MS teams
Research and analyse NDIP scores in Forth Valley and SMID data and rank alongside the EY settings involved in the Fluoride Varnishing programme, in the lowest SIMD groups.	HIO	6/12/22	Desk based online research
Select 10 out of the 20 EY settings on FV Programme list in areas of highest deprivation to recruit to pilot	HIO	8/12/22	Desk based
Conduct telephone consultations via a scoping exercise with EY staff to find out more about their observations of children's nutritional and oral health habits, particularly in relation to drinking water and ideas for potential oral health interventions.	HIO	9/12/22	Telephone
Based on feedback received 'The Drink more Water' pilot was established. Contact the 10 EY settings selected to discuss what age groups / classes would mostly benefit and number of bottles/literature required.	HIO	12/12/22	Telephone / email
HIO to produce and decide on final design after consultation with stakeholders, on key messages on bottle and send to design team and printers to receive quote and agree final art work.	HIO / NHS FV Childsmile, Public Health Nutrition	13/12/22	Telephone / email and MS teams

List the tasks needed to set this test of change	Person Responsible	When to be done	Where to be done
Decide on accompanying information resources to promote the 'Drink more Water' pilot.	HIO / NHS FV Childsmile, HIRS	14/12/22	Email / MS teams / face to face meetings
Design accompanying poster to promote the water bottle pilot and agree with design team.	HIO / Childsmile and Inglewood Press	14/12/22	Desk based / email / MS teams meetings
Compile pilot launch letter/email with key messages to go out to EY settings with bottle distribution.	HIO	14/12/22	Email
Compile promotional messages for EY settings website and publications to promote the launch of the campaign, with links to Childsmile / HIRS and invite them to share social media posts.	HIO	5/1/23	Email
Write five / six social media messages and contact EY settings, HIRS, FV Comms to promote via social media and staff intranet page throughout the pilot.	HIO / NHS FV Comms	17/1/23	Email
Create feedback questionnaires on staff observations of the pilot.	HIO	18/1/23	Desk based
Arrange physical pick up of Childsmile resources.	HIO	13/2/23	PDS / Falkirk Community Hospital
Bundling of water bottles, pilot launch letter, Childsmile leaflets and delivery to nurseries/schools involved in pilot.	HIO / Admin	15/2/23	HIRS / CSD
Promotional emails to EY settings along with social media messages to share.	HIO	16/2/23	Emails

List the tasks needed to set this test of change	Person Responsible	When to be done	Where to be done
Analyse pilot by carrying out telephone feedback questionnaires with EY settings and one to one feedback from NHS FV Childsmile and produce evaluation report to highlight impact of change and present to HIS, Oral Health Strategy group, Childsmile and other partners.	HIO	July 2023, complete report on October 2024	Face to face meetings, Telephone consultations Teams and FTF meetings
Debrief with Line Manager / HIS Service Lead / Childsmile to discuss feedback of pilot.	HIO	July 2023	Face to face / MS teams meetings

Do	Describe what happened when you ran the test
	<ul style="list-style-type: none"> • 10 EY settings were originally selected, but nine were recruited to pilot and one school was supported to introduce a healthy snack intervention for oral health instead • All 700 bottles were distributed to children in the nine EY settings along with the Childsmile leaflets on healthy drinks and snacks for oral health, for them to take home to their families • HIS staff, NHS FV Childsmile, PDS, Public Health Nutrition received a pilot promotional email - 7th March 2024 • NHS FV Comms teams promoted 'Drink more Water' Pilot on staff intranet page and X week beginning on the 8th March throughout the month • EY settings promoted pilot on their GLOW accounts and X week beginning on the 8th March throughout the month • seven of the EY settings circulated promotional pilot article to EY staff via staff emails week beginning on 8th March • three EY settings published in school / parent online newsletters on 9th March • all nine of the EY settings displayed the 'Drink more Water' Pilot posters to create awareness of the pilot amongst children, families and visitors • two EY settings held school Health and Well-being events for parents/carers and general public and displayed bottles/literature and promoted key OH campaign messages and disseminated leaflets and bottles during this • campaign and HIRS resources promoted via retweet on NHS Forth Valley twitter page on 16th November • multiple NHS social media posts throughout week promoting pilot and providing links to Childsmile and Smile4Life programme • HPO, design company and Childsmile managed to collaborate and create pilot in a timely fashion and agree upon messages and resources

Act	Describe what modifications in the plan will be made for the next cycle from what you learned
<ul style="list-style-type: none"> • would start with a baseline figure from the early year settings on how many children already drank water and the amount that drank sugary drinks so that we can measure impact post pilot more effectively • the design part took quite long, so I would engage in better time management and would have started the scoping exercise earlier and the design process • I would request a Google Analytics report from NHS FV Comms team for the first three months of the pilot • find other methods of promoting pilot as these were not promoted on Forth Valley social media pages as often as we would have predicted • would send out reminder emails to EY settings that didn't promote the pilot on social media platforms and school parent newsletters to promote pilot information more regularly and widely throughout the pilot • twitter post promoting 'Drink more Water' didn't result in an increase in downloads of oral health resources or pack requests. New methods to promote resources need to be discussed and closer monitoring of resource downloads during pilot period and post • although there was a positive impact from the pilot, it won't be repeated due to funding constraints. However we will support EY staff via Childsmile workshops to continue promoting drinking water for positive oral health and provide the information resources/platforms for this to be facilitated • better quality bottles, as some leaked after regular use 	

Appendix 3

Pilot Promotion Letter



Drink more water' Pilot Project- Nursery and P1 School aged children

I am delighted to launch the 'Drink more water' pilot project for nursery and primary aged children in Forth Valley to improve oral health well-being outcomes. It is well evidenced that in many nurseries and schools some children are still bringing in fizzy and sweet juices from home, leading to preventable oral health problems such as tooth decay and in severe cases missing teeth. Through this pilot we are providing an agreed number of water bottles for your establishment for children to use at school and take home with them, to encourage them to drink more water for good oral health. We hope the water bottle will help to create more awareness and understanding amongst the children and their families around the sugar content, of the common drinks consumed. The water bottles also promote positive key messages including tooth brushing twice a day and visiting the dentist regularly.

Please find the requested number of water bottles for your class group and Childsmile leaflets on healthy snacks and healthy drinks for good oral health, which we kindly ask you to give to the children along with their new water bottles.

Please refer to the Childsmile website www.child-smile.org.uk and leaflets for more information.

The key messages are:

- use tap water - most flavoured waters contain artificial sweeteners and therefore should not be given to children. Many of these drinks also contain sugar, which can cause tooth decay. These drinks are also acidic and can erode your child's teeth
- flavoured milk, smoothies, diluting juices and fizzy drinks contain sugars and sweeteners that can cause tooth decay. Keep to mealtimes when these drinks are less damaging to teeth and do not give last thing at night
- plain milk and tap water are the safest drinks for teeth
- toothbrushing and toothpaste - brush twice a day using a smear of toothpaste containing around 1000 - 1500 ppm Fluoride for babies and children under three years of age, children over three should use a pea-sized amount. Encourage older children to spit out excess toothpaste, and not to rinse after brushing
- visit the dentist - provide guidance around free dental registration, signpost to Dental Helpline if an individual needs (01324 614 670) or refer to the local Childsmile team

Please also find enclosed a poster, which we would kindly ask you to display in your setting to promote the 'Drink more water' pilot amongst the children and their families. If you would like to promote the activity on social media, please tag us in your posts, by using the handle @NHSForthValley and mentioning the Health Improvement Service.

For further information on oral health programmes for children or to request oral health packs please contact the NHS Forth Valley Childsmile Team on fv.childsmileforthvalley@nhs.scot.

To download free oral health resources visit the Childsmile website on www.child-smile.org.uk.

We thank you for taking part in this pilot project and promoting positive oral health behaviours, through encouraging more children to drink water. We will contact you in August 2023 to gather your valuable feedback and measure the impact of change.

Yours Sincerely,

Health Improvement Officer

Appendix 4

Pilot promotion email / article for publications.



‘Drink more water’ Pilot Project for Nursery and P1 aged children

NHS Forth Valley Health Improvement Service are delighted to launch the ‘Drink more water’ pilot project for nursery and primary aged children in Forth Valley to improve oral health and well-being outcomes. It is well evidenced that in many nurseries and schools some children are still bringing in and drinking a lot of fizzy and sweet juices from home, leading to preventable oral health problems, such as tooth decay and in severe cases missing teeth. Through this pilot we are providing an agreed number of water bottles for children to use at school and take home with them, to encourage them to drink more water for healthier and stronger teeth. We hope the water bottle will help to create more awareness and understanding amongst the children and their families around the sugar content of the common drinks consumed, and making healthier choices as a result. The bottles also promote positive key oral health messages including tooth brushing twice a day and visiting the dentist regularly.

The key messages for positive oral health that we ask you to communicate through your newsletters / publications to staff, children, parents, community members and other partners are as follows:

- use tap water- most flavoured waters contain artificial sweeteners and therefore should not be given to children. Many of these drinks also contain sugar, which can cause tooth decay. These drinks are also acidic and erode your child’s teeth.
- flavoured milk, smoothies, diluting juices and fizzy drinks contain sugars and sweeteners that can cause tooth decay. Keep to mealtimes when these drinks are less damaging to teeth and do not give last thing at night.
- plain milk and tap water are the safest drinks for teeth.
- toothbrushing and toothpaste - Brush twice a day using a smear of toothpaste containing around 1000 - 1500 ppm Fluoride for babies and children under three years of age, children over three should use a pea-sized amount. Encourage older children to spit out excess toothpaste, and not to rinse after brushing.
- visit the dentist - provide guidance around free dental registration, signpost to Dental Helpline if an individual needs (01324 614 670) or refer to the local Childsmile team.

Referrals to Dental Services

For those registered with a dentist - they should contact their dentist (GDP) for routine appointments and check-ups.

For those that are unregistered - For emergency treatment, please call the Dental Helpline on 01324 614670 - during working hours.

Registered and unregistered patients requiring emergency dental treatment- Out of hours - call NHS 24 on 111 in the evenings, at weekends or on public holidays. For anyone requiring general information on oral health issues and how to register with a dental service, you can also contact the NHS FV Public Dental Service on 01324 624000 ext 3935 or email fv.enquiriesoralhealth@nhs.scot.

If you would like to promote the activity on social media, please use the twitter handle @NHSForthValley and image below in your posts, and remember to mention the Health Improvement Service.



For further information on oral health programmes for children, including Toothbrushing schemes or to request oral health toothbrush and toothpaste packs please contact the NHS Forth Valley Childsmile Team on fv.childsmileforthvalley@nhs.scot.

To download free oral health resources visit the Childsmile website on www.child-smile.org.uk.

Appendix 5

Social Media campaign templates



'Drink more Water' Nursery and P1 Children Pilot

We would really appreciate your support in promoting our new Drink more Water Pilot on social media.

We have provided some suggested text for your social media posts, just add your own nursery / class name and tag us @NHSForthValley in your posts, mentioning the Health Improvement Service so we can retweet them. You can use the attached graphic or share a photo of the children with their new water bottles.

We really appreciate your support in helping to promote this new campaign and key oral health messages.

Twitter text - using attached image

{insert class} are participating in @NHSForthValley Health Improvement Service's new Drink more Water pilot. Encouraging nursery and P1 children across Forth Valley to drink more water to help keep their teeth healthy and strong #DrinkMoreWaterNHSFV #OralHealth



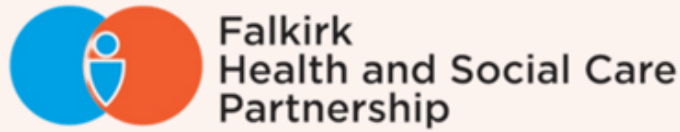
Twitter text - using own picture

{Insert class/nursery} are using their new water bottles provided by @NHSForthvalley Health Improvement Service.

Drinking more water throughout the day helps keep our teeth healthy and strong #DrinkMoreWaterNHSFV #OralHealth

Appendix 6

Feedback evaluation questionnaire



Early Years 'Drink more Water' staff pilot evaluation questionnaire: August 2023

We would like to gather your feedback on the 'Drink more Water' pilot, that we launched in March 2023 in your Early Years education setting. Please help us to understand the impact of the pilot on oral health knowledge and behaviours within Early Years settings.

Name of Early Years setting:

Staff members name and role:

1.	Where were the bottles distributed, ie during the Parent and Toddler groups or well-being events?

2.	Since the introduction of the 'Drink more Water' pilot did you observe more children starting to drink water in the nursery/school and are they continuing to use their bottles to do so?
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Yes	
No	
Any further comments	

3.	Did you speak to the children about drinking water and the benefits to oral health?
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Yes	
No	
Any further comments	

4.	Did you receive any feedback about the pilot from the children
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Yes	
No	
Any further comments	

5.	Do you have any further feedback / comments or suggestions for improvements to the 'Drink more Water' Pilot in the future? Please provide details below.

6.	Other evaluation techniques (Please provide any quotes, photos and observations etc below).

Thank you for providing feedback.

