Turning the taps on: Is water fluoridation closer to becoming a reality?

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Key points

- White Paper reignited push for water fluoridation
- Why has it taken so long to be back on the agenda?
- What are the obstacles to overcome?

Introduction

There are some things in life so simple and obvious you have to wonder why they're not ingrained pillars of society. Basic common courtesy, equality, vaccinations, cheese and jam sandwiches. OK, maybe not the last thing there, but you get the picture.

A decade ago as a fresh-faced PR and Press Officer and my foray into dentistry, one of those simple and obvious things to me was water fluoridation. You didn't have to be a genius to see its benefits, namely a cost-effective public health intervention that would improve the oral health of the population and save the NHS millions of pounds spent on tooth extractions under anaesthetic.

A long time coming

Alas, the Southampton experience left a feeling that you *did* need to be a genius to see it, and for a number of years that was that – fluoridation was off the table. Cut to 2019, and *'Advancing our health: prevention in the 2020s'* put it right back on the agenda. But why did it take so long for it to come back to the table?

Dr Nigel Carter OBE, Chief Executive of the Oral Health Foundation, points to the 2012 Health and Social Care Act as a large reason.

'Much of the challenge after the change from Strategic Health Authorities to local authorities was the system for approving any local health measures', he said. 'You moved from an organisation making sure that national priorities were integrated into local plans to local councillors who didn't have the same grasp of wider public health measures and were more susceptible to maverick scientific opinion on fluoridation that was vocal, loud and organised.

'We know from surveys that anywhere between 60-75% of the population is in

favour of water fluoridation, and that number will be higher if you asked the profession. It was incredibly disappointing, but by the time the decision was handed down in 2014 it perhaps wasn't surprising.'

British Society of Paediatric Dentistry spokesperson, Dr Claire Stevens CBE, thought part of the issue may be a little closer to home.

'We as a profession perhaps need some introspection – have all the key stakeholders been as co-ordinated, serious and organised as the anti-fluoride lobbyists? Have we all been working together, united in one voice? I would suspect the answer to that is no, and so the anti voice has filled the void, leaving councillors little choice but to shelve any talk of fluoridating water supplies.

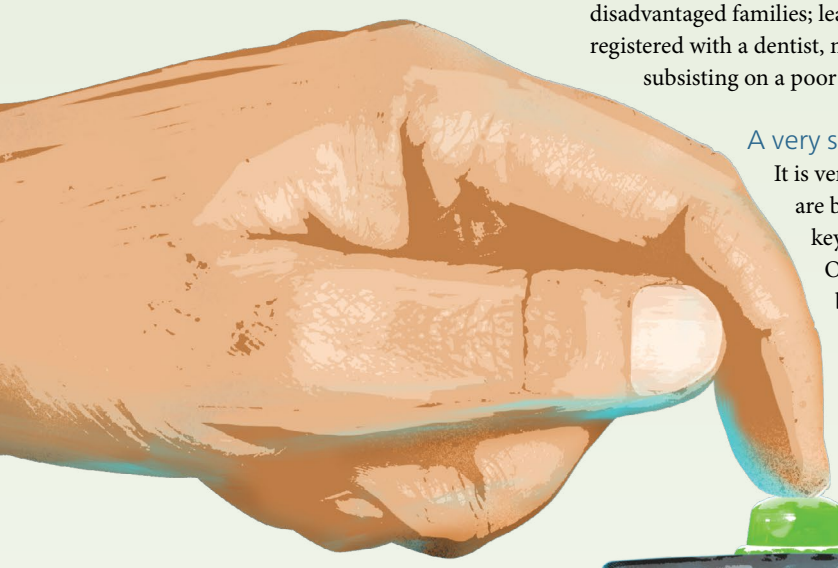
> 'The dental community may be firmly in support of it, but if you're being given misinformation about the effects of fluoride it doesn't matter whether they're fantasy or non-fiction'

'I can sympathise with their reaction, although it flies in the face of scientific evidence. As a graduate I was once warned never to stick my head above the parapet when it came to supporting water fluoridation. I remember some years later heading into a Westminster Forum to do a presentation, only to leave and find a barrage of abuse in my direction on social media. It was incredible. Reports of emotional, physical and verbal bullying are all too common, particularly now social media is a tool for them to exploit.

'It's clearly not a lack of evidence – the benefits are black and white. What has had an impact is the way the anti-fluoride voices have mobilised, united and been vocal – in all honesty more vocal than the profession in its support of water fluoridation. Emotive reasoning – regardless of whether it's rational or not – cuts through to those who don't know how effective water fluoridation is, and why would the general public know?'

Dr Rebecca Linney, an associate dentist based in Liverpool who recently produced a paper looking at the relationship between water fluoridation and social media, echoed Claire's thoughts on the negativity surrounding the move.

'I think a lot of it surrounds the sheer weight of negativity voiced by a fairly vociferous minority', she said. 'The dental community may be firmly in support of it, but if you're being given misinformation about the effects of fluoride it doesn't matter whether they're fantasy or non-fiction, they will have an impact. Over time these stories will stay with those on local councils, all the while we seen anti-fluoride lobbyists becoming a powerful force on social media and reaching a completely different audience. It's almost reached a point where it's too difficult to discuss.'



Dr Barry Cockroft CBE, a long term advocate for targeted water fluoridation and Chair of the British Fluoridation Society, agreed.

'The anti-fluoride protestors in Southampton were a very small but very organised bunch, as has been previously mentioned. I was Chief Dental Officer for England at the time, and we saw how effective their methods were, and they proved to be difficult to overcome, especially when you tie rogue science to emotion. It was really galling, having won the consultation and Judicial Review to see the scheme not progress because of system reorganisation.

'What was particularly surprising was in a telephone survey of residents carried out during the consultation, 69% already thought their water supplies were already fluoridated. Winning the Judicial Review and then being denied years later was a real missed opportunity.'

Amanda Allard from the National Children's Bureau suggests the hiatus from the agenda may simply be a reflection of the general public's basic understanding of oral health.

'I don't think we've done enough to ensure that people understand the impact poor oral health can have on their overall health and the possible consequences', she told me. 'I have something of an inside track as my sister is a dentist and she tells me about the number of children hospitalised with tooth decay who require multiple extractions' – the numbers are appalling, and they're backed up with various survey data of children.

'We have definitely not done enough to get good accessible information out to disadvantaged families; least likely to be registered with a dentist, most likely to be subsisting on a poor diet.'

A very social problem

It is very telling that gazes are being cast toward keyboard warriors. On next to no budget and a lack of action from the platforms they distribute their 'opinions' on, they can be a real force. Is it one

dentistry was in a position to – or even willing to tackle? According to Nigel, there's a decision to be made on how the profession and the wider healthcare community decides to counter it – one he's faced many times.

'In my capacity as Chief Executive of the Oral Health Foundation, I have encountered so many anti-fluoride lobbyists and had the opportunity to comment on their position, but it almost fans the flames and they will come back with something else to counter your point, and before you know it you've spent your day arguing with the incomprehensible. This creates a problem – do you continue to challenge and refute their 'evidence' or – particularly in print medium – do you let it burn out? We as a profession need to be as coherent as the anti-fluoride lobbyists when it comes to an approach on countering their misinformation, and we're not there yet.'

'I agree Nigel', Rebecca added. 'My biggest takeaway from the research was that anything you say on fluoridation has to be evidence-based. If anti-fluoride lobbyists respond, don't engage – you will only find yourself going around in circles. The more we put the evidence out there, the better traction we will get with those on social media. No matter how coherent or logically sound your argument, if you become embroiled in a discussion there will always be a retort, which is unhelpful.'

Amanda believes a more targeted approach may be necessary to bring about the change needed.

'The Community Water Fluoridation (CWF) Network counters online misinformation very well. Part of the approach is understanding that you won't win over everyone – there are different approaches that can yield the same results. Some require engagement, some – as Nigel suggests – require you to take a step back and let the thing burn out because it's so toxic.

'As the only non-dental organisation in the campaign, we saw the figures and the simplicity in water fluoridation. It's not something that can or indeed should be done in isolation, but at a time where recourse to public funds is more difficult than ever, it's a cost-effective win for public health.'

That reliance on a coherent approach is something Claire feels is necessary.

'We need to trust in education to counter their approach, but it cannot just be the dental team. We need politicians, paediatricians, dental public health – to name a few – to be a co-ordinated, unified

voice countering misinformation which, given the current environment, we should be able to do.

'There also needs to be recognition of how much groundwork it takes to bring water fluoridation to the consultation stage and engage public support. Anti-fluoride voices are starting to be diluted in favour of taxpayers wanting sound investments locally. This gives us a foot in the door, so to speak. The evidence is clear-cut, and if we can increase levels of public support then we will be in a very strong position to see water fluoridation become a reality.'

The purse strings

Maybe it's just me, but it seems odd for a profession of 115,000 – according the latest GDC registration report – to be fearful and drowned out by a small band of keyboard warriors. The collective experience, nous and support should be enough to convince policymakers of how effective – for oral health and the Treasury's purse strings – water fluoridation is. So why has it not been implemented, and what difference could the wait have made to children's oral health?

Amanda said: 'My understanding is topical application of fluoride is the most effective form for preventing decay. We can improve oral health via this route – some local authorities where there are large areas of deprivation have very good oral health figures, in large due to the topical application. So behaviour change is possible, but it is difficult and there is an effective, alternative direct intervention.

'There is also the question of the role dentists play. Dentistry is clearly well-aware of the benefits water fluoridation can bring, but is the dental team trained to a high enough standard to have difficult conversations with parents and start the wheels of behaviour change turning? Parents get very defensive when there's even a slight suggestion they've put their child in harm's way – it's a natural response. I have had conversations with parents of children who say there's nothing more they could have done to stop their child from having an extraction, but when you dig a little under the surface there's usually a reason. I would argue that parent needs more help to understand milkshakes, fruit drinks and bars aren't good for oral health and that the drinks container makes a difference. Health visitors are in a great position to give parents that early education. It's the only opportunity to get in and give them advice when you're not telling them they've done anything wrong. That's an overlooked motivator.'

Interestingly, *Advancing our health: prevention in the 2020s* highlighted 'two areas where government is interested in going further and faster', neither of which focused on behaviour change. In the White Paper, it stated:

> 'The collective experience, nous and support should be enough to convince policymakers of how effective – for oral health and the Treasury's purse strings – water fluoridation is'

'We will consult on rolling out a school toothbrushing scheme in more pre-school settings and primary schools in England.

'Evidence suggests that these programmes have the ability to reduce tooth decay, mitigate inequalities and establish lifelong behaviour to improve oral health. Half of all local authorities already have a version of the scheme in place, but they are not always focused on the children that would benefit the most. Next year, we'll consult on proposals that will allow us to reach the most deprived 3 to 5 year olds in all areas of the country. The aim would be to reach 30% by 2022.

'We will explore ways of removing the funding barriers to fluoridating water to encourage more local areas that are interested to come forward with proposals. NHS England will actively seek partnerships between local authorities and the NHS, with councils rewarded for their fluoridation efforts by receiving a share of the savings from fewer child tooth fillings and extractions. This also includes examining the role that water companies can play in supporting fluoridation efforts.'[1]

The paper went on to add that in 2018, Public Health England (PHE) concluded that 'water fluoridation is an effective and safe public health measure to reduce the frequency and severity of dental decay, and narrow differences in dental health between more and less deprived children and young people.'[2]

While the pandemic provides some mitigation for the lack of progress on the former of these points, Claire suggested water fluoridation is one of many elements dentistry needs to implement to bring about change.

'It would be wise to say that water fluoridation is not a silver bullet and the solution to all of our problems', she added. 'It's one of the items on the *Local Health and Care Planning: Menu of preventative interventions* but cannot be done in isolation. In this instance we would have seen some improvement, but it would have taken up to five years for them to trickle through the system.

'Where you do see the difference is when you move to a different area of the country. In fluoridated Newcastle I saw lots of children with decayed teeth, yet most were restorable. Working in the community in non-fluoridated Middlesbrough it was a different story – almost nothing was restorable. The British Society of Paediatric Dentistry supports community water fluoridation for areas of high need. It doesn't make sound economic sense to fluoridate Oxford's waters, for example, where they have excellent children's oral health. There is a clear link with areas of deprivation, and that needs to be the foundation – such areas would need a range of measures to tackle high dental need in their community.'

Barry pointed to the options on the menu open to the profession to bring about change in other ways.

'You have to consider the effectiveness of topical application and the increase in the amount of fluoride added to toothpaste for very young children', he said. 'Those are two very effective methods with instant effects not in the hands of politicians. Children's oral health has overall been trending in the right direction for a number of years. It will be interesting to see whether that trajectory remains post-pandemic, where reports of increased snacking, long waiting lists and access problems created a perfect storm.

'We've all got experience of treating children in fluoridated and non-fluoridated areas, and I would have expected to see greater progress had the decision in Southampton not been reversed in the intervening years.

'With any public health intervention, you will always have detractors and people will always find holes. When seatbelts were made mandatory, people said they'd kill more than they'd save because people would be trapped. This may have happened in a small number of cases, but there is ample evidence that clearly shows that argument has no substance

to it – seatbelts save far more lives and significantly reduce injuries.

'It is the same with water fluoridation. People will always find 'new research' that hasn't been published and bears no resemblance to a solid evidence base. Quite often you find these papers haven't been published, but that doesn't stop people from using them. In England, we fluoridate one part per million – in distance speak, which isn't directly comparable but gives you a visual idea, that's one inch per 23 miles. In money speak, it's £1 a year per person to do, and the potential savings are considerably higher.

> 'The Southampton debacle highlighted how much of a contentious issue it was, and many simply saw it as too difficult to press ahead with.'

'There's also the system in which all of this is taking place. I inherited a disease treating system, and that is still echoed in today's model of dentistry though the application of fluoride varnish has increased hugely since the publication of *Delivering Better Oral Health*. Patients don't see us for prevention as often as they should. If we're faced with restoring a tooth, ultimately that restoration will need to be monitored and replaced further down the line. Without prevention at the heart of everything dentistry does, that will persist.'

In the 2015 National Dental Epidemiology Programme for England: oral health survey of five-year-old children, among the 24.7% of children with some experience of obvious decay, the average number of teeth with experience of dental decay was 3.4.[3] In the subsequent 2019 survey,[4] among the 23.4% of children with experience of dental decay, the average number of teeth with experience of dental decay was 3.4 – no change whatsoever. I asked Nigel why there had been so little progress.

'The move from Strategic Health Authorities to local councils on the back of the Health and Social Care Act 2012 meant water fluoridation almost fell through the cracks in the intervening years', he suggested. 'The Southampton debacle highlighted how much of a contentious issue it was, and many simply saw it as too difficult to press ahead with.

'It isn't as simple as getting one local authority to agree to water fluoridation and that's it, job done. The way water is distributed means you have to sign up a minimum of two or three local authorities, all in agreement after public meetings and consultations, and we know that is difficult. I recall some of the public objections were so off-the-wall that it beggared belief their views were being taken seriously, and with many anti-fluoride lobbyists forming a powerful and coherent strategy of online/social media manipulation, you can start to see why it was such an issue.

'In the days pre-social media, there was more tangible progress. I was a student in Birmingham in the mid-60s and had a relatively low experience of children coming in with rampant decay. The reason? Birmingham had fluoridated water.

'When I bought a practice on the border of Birmingham and Sandwell and Dudley, it was a different story. You didn't even need to ask where the child was from or read their chart – you could tell from their mouth. If you did have anyone with dental decay from Birmingham they'd recently moved to the area, the difference was that stark. Out of the 94 local authorities at the time Sandwell and Dudley was in the bottom 10 for oral health. Within five years of fluoridating their water supply they were in the top five. Those things should speak for themselves.

'You have pockets of deprivation across the country, and so oral health inequalities will be most stark where you find these and fluoridated/non-fluoridated water boundaries. The Oral Health Foundation firmly support the initial targeting of areas of high need, followed by the recognition that water fluoridation is a universal measure that will improve the oral health of children wherever it is done.'

Rebecca also trained in Birmingham, but pointed to other factors that may have played a role in the lack of progress.

'I'd point to the oral health messages we give to patients. The basics haven't changed since 2014, but could there be some change in what we say to patients and how we say it to them. Because we're giving basic oral health advice, it's not been on the radar to discuss with patients how impactful water fluoridation could be. It's in toothpaste and you don't get many complaints. I personally wouldn't think to mention water fluoridation to a patient in general practice – especially if they are anti water fluoridation.

'Nigel and Claire have both highlighted the stark differences in children's oral health when you practise in areas of fluoridated and non-fluoridated water. I can't emphasise enough just how stark these differences are. It's incredible. I also studied in Birmingham and patients seemed to be far more educated on why their oral health was better than in my hometown. There's a link there that many practitioners need to explore – if there are signs of cut-through on oral health messages and an understanding of the evidence, we need to use it as a blueprint across the country.'

Cinderella of the ball

The British Dental Association has previously referred to dentistry as healthcare's 'Cinderella service'. The feeling that politicians simply have other priorities and see oral health as a cash piñata they can whack every now and again remains and will take concerted effort to change. Yet I wonder how often dentistry as a collective looks in the mirror and considers its standing with the general public? As Rebecca pointed out, in her experience even some of the basic messages aren't being listened to – brushing twice a day, cutting down on sugary foods and drinks and visiting the dentist. Could years of inaction reflect dentistry's overall standing when people are considering their health?

'Politically, yes it's possibly one of the reasons there isn't a huge clamour and campaign for it, but that is slowly changing', Nigel pointed out. 'The social media abuse many fluoride supporters receive is off-putting too. We have reams of survey data showing how the general public would rather spend money on just about anything other than their oral health, so we know it needs to be a greater priority right across the board.'

'Perhaps it is, yes', Amanda added. 'There is no competition when it comes to competing for funds that could go to clearing the backlog of surgery, cancer, heart disease and diabetes – the killers. If we're talking about a Cinderella service, then you need look no further than children's mental health – we have been left behind. If dentistry feels hard done by, there's plenty of competition!

'It's perhaps also reflective of dentistry's assumption that because it knows water fluoridation works, everyone else will too. I would question whether there is enough cohesion within the profession itself – are there too many voices who simply assume that because they think water fluoridation is

such common sense, they don't need to be vocal about it? There doesn't appear to be cohesion within the wider healthcare sphere and integration of messages and services. Is there too much linear and not enough lateral thinking? I would say there is.

'There are lots of reasons a child living with a disability would have poor oral health not through a lack of knowledge, and I'm not sure the system is adequately set up to help those who this applies to.'

Claire suggested: 'As much as it pains me to say, I think that's a reasonable assumption. If a local authority has a choice between suspending a supervised toothbrushing programme or closing a local library for financial reasons, you know which one will fall by the wayside. A library closing would elicit a strong communal response and outrage, and we're not putting oral health high enough up on the agenda to generate the same kind of feeling.

> 'If we're talking about a Cinderella service, then you need look no further than children's mental health – we have been left behind.'

'It's not until recently with the work of Simon Hearnshaw and the CWF that we have started to advocate stronger. Unless we put it on the agenda, it's not going to magically appear there. If two or three local areas unite and come to a consensus that fluoridation is a positive thing, then we can start to change perceptions.'

Barry also agreed, but pointed to a lack of fundamentals fuelling a bigger issue.

'Caries in essence only exists because people aren't complying with basic oral health messages. Fluoridation needs no compliance – it's in tea, the food we eat, the beer we drink – depending on your location. While I think dentistry doesn't get the credit it deserves for advancing levels of children's oral health, there is obviously still a way to go. Silent support is no longer enough – we need to stand up and be far more vocal about fluoridation and dentistry in general to raise its profile. The British Fluoridation Society has developed a suite of information to give to members to arm them with knowledge on how to approach water fluoridation. You can find these on the BFS website, and membership of the BFS is now free. We do have a fixation with countering what negativity there is rather than promoting the 75 years of published evidence on the benefits of fluoridation.'

Remaining obstacles

As the White Paper itself states, removing the funding barriers is one of the many remaining obstacles in the way of water fluoridation becoming a reality. As with most political decisions these days, it appears to come down to money, none more so than throughout the pandemic. Aside from the obvious financial barrier, what are the remaining obstacles?

'The government needs to see oral health as a priority – that's a basic', Rebecca said. 'The amount of money that can be saved fluoridating water compared to the spend on extracting teeth is enormous. It seems every time there's an opportunity for change politicians think 'it's only oral health' and something else takes priority. That absolutely has to change, and while it was welcome to see the government put forward water fluoridation in the paper, it has to go further – we need to see action.'

Claire suggests the same barriers could be flipped into opportunities, with the right timing.

'The biggest challenge is keeping the momentum going through the transition period from announcement through to delivery. That is a tough ask – water fluoridation takes a long time. I don't think there are any insurmountable barriers, but it will remain a delicate situation until we can finally say we've completed this objective.

'I also wonder whether COVID-19 has reset the general public's thoughts – and indeed the government's – on preventive measures. We heard some pretty dreadful reports of DIY dentistry during the first lockdown, so perversely it could highlight how important it is to have good oral health. The pandemic really shone a light on the huge holes in the system.

'In Greater Manchester we put forward a paper on child-friendly dental practices in 2017. It went nowhere, COVID-19 happened and all of a sudden MCN meetings were crying out for solutions to ease the backlog. As frustrating as that was for us, it shows the opportunities for healthcare recovery post-pandemic. Roughly 10% of the population have access to fluoridated water – this has to change. We've been able to get oral health higher up on the priority of non-dental minds. It's vital to remember children's oral health is everyone's business, and the more we can engage stakeholders outside of dentistry on this, the better.'

Nigel cast a more cautious tone.

'It's going to be difficult. There needs to be a push to improve political support which will put pressure on local councils to do the right thing. Even if there is a step-change in the right direction, it won't happen overnight. Some areas of the country are further along in their consultations, so there's a disjointed element the profession needs to overcome.

'In the meantime, it falls on dental professionals to continue to educate local residents about practices of good oral health. Fluoride varnish treatments in practices, schools and socially deprived areas are the best chance we have to implement preventive measures at a time where social distancing measures make this challenging.

'We will continue to lobby for nation-wide fluoridation as we believe it is the biggest single action the Government can take to reduce and tackle tooth decay.' ◆

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