Committee: Cabinet
Date of meeting: 24 November 2016

Title of Report: Response to referral from Allerdale Local Committee regarding fluoridation of water supplies

Report by: Colin Cox - Director of Public Health
Cabinet Member: Ian Stewart – Cabinet Member for Public Health and Community Services

What is the Report About? (Executive Summary)

1. The report sets out a proposed response to the referral from Allerdale Local Committee of a public petition regarding the fluoridation of water supplies in West Cumbria.

Recommendation of the Director of Public Health

2. Cabinet is asked to agree defer any further consideration of fluoridation in West Cumbria until the Catfish study (described in paragraphs 19 and 20 of the report) has provided sufficient robust local evidence on which to base this decision.

Background to the Proposals

3. A member of the public (Mr P Carr) attended the Allerdale Local Committee meeting on 8th September to present a petition under the Public Participation agenda item.

‘Our petition requests the Council to debate at a full Council meeting, with the available information, the removal of artificial fluoride from Cumbrian water’.

4. The Minutes from that meeting record:

*The Chair of the Committee thanked Mr Carr and stated that he understood that fluoride was added to Allerdale and Copeland only, in Cumbria and with a new pipeline being built from Thirlmere and a wastewater treatment plant development at Bridekirk, he felt it was timely that a wider debate was held.*

*It was MOVED by Eric Nicholson and SECONDED by Alan Bowness that Allerdale Local Committee refer to Cabinet that the fluoridation process in West Cumbria be investigated. By consensus of the Committee, it was

*RESOLVED that Allerdale Local Committee refer to Cabinet that the fluoridation process in West Cumbria be investigated.*
5. Fluoride is a naturally occurring mineral found in water in varying amounts. It is also present in certain foods. In the early 20th century, lower levels of tooth decay were found to be associated with certain fluoride levels in drinking water. This observation ultimately led to the introduction of water fluoridation schemes to adjust fluoride levels in community water supplies, in an effort to reduce levels of decay in the populations they serve. Around six million people across England in the Midlands, North East, Eastern England, the North West, and Yorkshire and Humber receive water where the fluoride level has been adjusted. Some water supplies in England, serving around a third of a million people, naturally contain levels of fluoride close to those which fluoridation schemes seek to achieve.

**Water fluoridation in Cumbria**

6. Water fluoridation schemes were established under agreements made between what was Cumberland County Council and the West Cumberland Water Board to fluoridate the water supplied from the Cornhow plant of Crummock water in 1968 and with South Cumberland Water Board to fluoridate the water supply from Ennerdale water in 1971. Those agreements have been consolidated into the current legal framework and are now between the Secretary of State for Health and United Utilities.

7. The Cornhow treatment works supply water to most of Workington, Seaton, High Harrington and Great Clifton, the coastal areas from Silloth, through Maryport, to Flimby, and inland to Cockermouth.

8. Ennerdale water treatment works supplies water to residents living in Whitehaven, Arlecgon, St Bees, Frizington, Salterbeck, Egremont, Cleator Moor, Beckermet down the coast to Ravenglass and Bootle.

9. Fluoridation at Cornhow was stopped in 2006 and Ennerdale was stopped in 2011 to allow substantial maintenance work to be carried out. These works have totally replaced the fluoride plant and equipment at both Cornhow and Ennerdale water treatment plants. Fluoridation was re-introduced in a controlled and phased way at the beginning of September 2013 at both sites and was completed by mid-November 2013.

10. There are two major issues to be considered around water fluoridation: whether it is effective in reducing dental cares, and whether it is safe – the latter being the main focus of the petition received by Allerdale Local Committee.

**Safety**

11. Fluoride has been added to water in west Cumbria for more than 45 years. Since this time, no robust and reliable research has suggested that adding fluoride to the water at the level it is added in west Cumbria has any significant negative impact on people’s physical or mental health.

12. As the petition says, there is a requirement on Public Health England to carry out a four-yearly report monitoring the health effects of fluoridation schemes. The 2014 report (published after the petition was initially written) considers eight indicators where there is a plausible biological mechanism for fluoride affecting non-dental health and concluded:
• **Hip fractures:** There was no evidence of a difference in the rate of hip fractures between fluoridated and non-fluoridated areas.

• **Kidney stones:** There was evidence that the rate of kidney stones was lower in fluoridated areas than non-fluoridated areas.

• **All-cause mortality:** While there was some evidence that the rate of deaths from all recorded causes was lower in fluoridated areas than non-fluoridated areas, the size of the effect was small.

• **Down’s syndrome:** There was no evidence of a difference in the rate of Down’s syndrome in fluoridated and non-fluoridated areas.

• **Bladder cancer:** There was evidence that the rate of bladder cancer was lower in fluoridated areas than non-fluoridated areas.

• **Osteosarcoma (a form of bone cancer) among under 25-year olds:** There was no evidence of a difference in the rate of osteosarcoma between fluoridated and non-fluoridated areas.

• **Osteosarcoma (a form of bone cancer) among people aged 50 and over:** There was no evidence of a difference in the rate of osteosarcoma between fluoridated and non-fluoridated areas.

• **All cancer:** There was no evidence of a difference in the rate for all types of cancer between fluoridated and non-fluoridated areas.

13. The one area in which there is a clear negative impact from fluoridation is dental fluorosis (an aesthetic mottling of the surface of the teeth). The 2014 health monitoring report highlighted a study of fluoridated Newcastle upon Tyne and non-fluoridated Manchester which found that the number of 12-year old children with moderate dental fluorosis or more is very low, at around 1% in Newcastle and 0.2% in Manchester.

14. Improved dental health in childhood has one other significant safety benefit. Surgical dental extractions are the single biggest cause of children being placed under general anaesthesia, a procedure which in itself is not without risk. The 2014 health monitoring report found that in fluoridated areas there are 45% fewer hospital admissions of children aged one to four for dental caries (mostly for extraction of decayed teeth under a general anaesthetic) than in non-fluoridated areas.

### Effectiveness

15. When fluoridation was introduced, it was based on the best evidence that was then available. What has changed over the last 45 years is the range of other factors that impact on dental health. Fluoride toothpaste is now very widely used and this will have a positive effect. On the other hand, consumption of sugary snacks and drinks is also much higher. Because of these changes, there is a real need to understand how effective fluoridation is as a dental health improvement measure so that decisions can continue to be based on the best available evidence.

16. The most recent (2001) UK systematic review of Water Fluoridation carried out by the University of York reports that the best available evidence suggests that fluoridation of drinking water supplies does reduce caries (tooth decay) prevalence and severity. The review stresses that the degree to which caries is reduced is not definitive and reports a wide range of effectiveness both in terms of prevalence and severity.
17. The 2014 health impact report found that on average, there are 15% fewer five-year olds with tooth decay in fluoridated areas than non-fluoridated area and when deprivation and ethnicity (both important factors for dental health) are taken into account, this figure rises to 28%.

18. Such reports do give some degree of support to fluoridation as an effective dental public health measure. However there is no doubt that many studies – both those whose findings support fluoridation and those that do not – are of poor quality or questionable relevance to the Cumbrian situation.

19. Recognising some of the historic shortcomings of previous research, Cumbria is currently participating in a major study into effect of water fluoridation on dental decay rates and on the economic costs and benefits of the schemes. This research is being led by the University of Manchester with partners from Public Health England and the Council through the Director of Public Health. The Programme is called “CATFISH” (Cumbrian Assessment of Teeth, a Fluoride Intervention Study for Health).

20. This research takes advantage of the recent break in fluoridation of West Cumbrian water supplies described in paragraph 9 above to analyse the impact this has had on the dental health of children. It will examine whether there are any differences in dental health outcomes between the children born during the period when there was no fluoridation and those born after the fluoridation scheme was reinstated. This study, which should give extremely robust and valid data on the benefits or otherwise of fluoridation in Cumbria, is due to report in 2021.

Options Considered and Risks Identified

**Option (a):** Agree to carry out a full review of fluoridation, with a further debate and resolution of this issue within the coming months.

21. The major risk associated with this option is that a debate at this point will not be fully informed due to an inadequate evidence base, and that in the event of a decision to end fluoridation harm would be caused to dental health in west Cumbria.

22. In addition this option would put the Catfish study at risk, as it would have to end should the decision be to cease fluoridation. This would reduce the evidence base on which future decisions could be based.

**Option (b):** Agree to defer any further consideration of fluoridation in West Cumbria until the Catfish study has provided sufficient robust local evidence on which to base this decision.

23. Given the lack of evidence to suggest any health damage from fluoridation, the main risk from taking option (b) is that the Council continues to fund an intervention that turns out to offer insufficient value for money.

Reasons for the recommendation/Key benefits

24. The recommended option is option (b).
25. Cumbria is currently in a unique position due to the Catfish study. This robust study will tell us about the impact of water fluoridation on our own community. The Catfish study is due to report in 2021 and it would be premature to debate this subject prior to that report as it will provide robust evidence to allow Cabinet to make an informed decision.

Financial – What resources will be needed and how will it be funded?

26. United Utilities invoices the County Council annually for the cost of the fluoride that is added to the water supply. While this cost varies annually depending on the cost of the fluoride to United Utilities, the amount that needs to be added to reach target concentrations, and any non-operational time of the fluoridation plant, the budget set aside for this is £100k per year.

27. This resource is transferred to the County Council as part of the public health ring-fenced grant allocation.

Legal Aspects – What needs to be considered?

28. The Council has a statutory duty under section 77 of the Water Industry Act 1991 to inform itself as to the wholesomeness and sufficiency of water supplies in its area.

29. Part III of the Water Industry Act 1991 permits the Secretary of State to enter into, vary and terminate arrangements for the fluoridation of water on application from the relevant local authority.

30. Prior to making any such application the Council would be required to undertake a consultation with the Secretary of State, Water Providers and the general public as well as have due regard to the Council’s Joint Strategic Needs Assessment and available scientific evidence on the proposal in accordance with the Water Fluoridation (Proposals and Consultation) (England) Regulations 2013. The Council must also consider capital, operating and (if relevant) decommissioning costs when determining a proposal.

31. Should, following the proposed investigation, the Council propose to terminate the current fluoridation arrangements, but not implement the proposal the Council will be prohibited from making another termination proposal for a period of 20 years in accordance with Regulation 17 of the above regulations.

Council Plan Priority – How do the Proposals Contribute to the Delivery of the Council’s Stated Objectives?

32. Fluoridation is not explicitly mentioned in the Council Plan. However as any impact that it has is mainly on the dental health of children, reaching the best possible decision on the future of fluoridation would contribute to the Council Plan Priority To safeguard children and support families and schools so that all children in Cumbria can grow up in a safe environment, and can fulfil their potential.
What is the Impact of the Decision on Health Inequalities and Equality and Diversity Issues?

33. Tooth decay is largely preventable, yet it remains a serious health problem affecting 29.6% of all five year olds in Cumbria and is the most common cause of hospital admissions among children aged between five and nine.

34. While there have been improvements in children’s oral health over the past 40 years, the rate of reduction in tooth decay levels has slowed in the past decade. Major dental health inequalities remain. Children from the most deprived areas experience the highest levels of decay. The consequences of decay are lifelong; extracted teeth are lost for ever; fillings need to be replaced.

35. Currently access to fluoridated water supply is inequitable across Cumbria. The agreements were made at a time when the local government administration and structure were very different. Over time the reconfiguration of these boundaries means that other areas of the current Council area do not have access to fluoridated water. However data on deprivation would suggest that the fluoridated area is the area that is most likely to need effective dental public health measures.

Appendices

None

Key Facts

Electoral Division(s): Those in Allerdale and Copeland

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Approved by Cabinet Member/s on 14 October 2016

Previous relevant Council or Executive decisions

None

Consideration by Overview & Scrutiny

None

Background Papers

None

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