UK NATIONAL SCREENING COMMITTEE

Screening for dental disease in children aged 6 – 9 years

12th March 2014

Purpose

1. This paper provides background on the agenda item screening for dental disease in children aged 6 – 9 years.

Background

2. The National Screening Committee recommended in 2006 that population screening for dental disease in children aged 6 to 9 years should be discontinued. Prior to that recommendation from the UK NSC NHS dental services had been undertaking statutory dental inspections of school children since 1918.

3. The current policy recommendation of the UK NSC, from the review of 2006, is that 'there is no evidence to support population screening for dental disease among children aged 6 to 9 years'. The UK NSC also recommended to Chief Dental Officers that the resources freed from discontinuing screening would be best used to tackle health inequalities in dental health outcomes.

4. A review of screening for dental disease (dental caries) in children aged 6 – 9 years was carried out by Dr J. Spiby in January 2013. This review considers literature published since 2005 and is attached for consideration.

5. The review has concluded that the UK NSC's current recommendation not to screen for dental disease in children aged 6 -9 years should be upheld because:

    - there is no new evidence that screening children for dental disease between the ages of 6 and 9 by the school dental service in England is effective
    - there is good evidence that preventive measures work,
    - the level of dental disease in children continues to fall,
    - the screening test has a low specificity,
    - new systems for delivering general dental services, to which a high proportion of children attend, are being introduced. These services promote prevention, undertake case finding and provide clear pathways for treatment.

6. However, there remain a small proportion of children who are at high risk of dental disease and less likely to attend a general dental practitioner. This population require special consideration.

Consultation

7. A public consultation on the review was held between 5th June and 5th September 2013.

8. Seven responses were received mainly from a range of professional organisations including: Royal College of Paediatrics and Child Health, British Dental Health

Foundation, British Association for the British Association for the study of Community Dentistry, British Dental Association and the Faculty of General Dental Practice. The other responses were from Yorkshire and Humber's Public Health England Centre Dental Public Health Team, and an individual.

9. There were concerns expressed about prevention of dental disease specifically in high risk groups. There was a particular concern that children with juvenile idiopathic arthritis were excluded from the review. There was concern that there was not good evidence regarding prevention, and the fact that GP contracts do not cover preventative work means there is variation in this provision. There are still concerns about access issues for entering primary dental care and concern that without screening social inequality is still prevalent.

Recommendation

10. The UK NSC is asked to confirm the following policy recommendation

Screening for dental disease in children aged 6 -9 is not recommended.

11. The UK NSC is also asked to discuss management of high risk groups and social inequality and whether a statement should be made and/or actions taken to encourage this to be addressed.

UK National Screening Committee
Dental screening in children aged 6-9 years - an evidence review

Consultation comments

Organisation:	Royal College of Paediatrics and Child Health		
Name:	Comments provided on behalf of the following: • Dr Mark Wood (Consultant Paediatric Rheuamtologist, comments on behalf of the British Society of Paediatric and Adolescent Rheumatology)	**Email address:**	xxxxxxxxxxxxxxx

Section and / or page number	**Text or issue to which comments relate**	**Comment** *Please use a new row for each comment and add extra rows as required.*
General	General	This seems reasonable for general population to us; however as well as those in deprived areas, there are other high risk groups, e.g. children with juvenile idiopathic arthritis. Our perception is that they have a higher rate of dental caries (as quite a few need dental extractions) and papers supporting this: • Rheumatology (Oxford). 2003 Dec;42(12):1445-51.

		Epub 2003 Jun 16. • Increased prevalence of dental caries and poor oral hygiene in juvenile idiopathic arthritis. Welbury RR, Thomason JM, Fitzgerald JL, Steen IN, Marshall NJ, Foster HE. We think it should be considered whether this group needs screening or clearer guidance on advice on avoidance.
General	General	We are concerned that high risk children, such as those with juvenile idiopathic arthritis, are excluded from the original scope. There may be other high risk groups too.

Organisation:	British Dental Health Foundation		
Name:	David Arnold	**Email address:**	xxxxxxxxxxxxx

Section and / or page number	**Text or issue to which comments relate**	**Comment** *Please use a new row for each comment and add extra rows as required.*
All	All	The British Dental Health Foundation agrees with the principles, key recommendations and conclusions presented throughout the UK National Screening Committee's dental screening review for children aged 6-9 years.

Organisation:			
Name:	Dr Jeyanthi John	**Email address:**	xxxxxxxxxxxx

Section and / or page number	**Text or issue to which comments relate**	**Comment** *Please use a new row for each comment and add extra rows as required.*
Summary	There is good evidence that preventive measures work	No, there isn't. To date, there is no evidence that any community intervention in England, besides water fluoridation, has produced measureable population-level improvements in dental health
Summary	The level of dental disease in children continues to fall	Generally, there has been a reduction, but dental health inequalities have persisted
Summary	The screening test has a low specificity	This contradicts 3.3 which states that screening has a high specificity, but low sensitivity.
Summary	New systems for delivering general dental services to which a high proportion of children attend….These services promote prevention……	Regular attendance amongst children in high-risk groups is very poor. Dental contracts do not pay for prevention, unlike GP contracts which include LESs, so preventive work in dental practice is patchy. Also, the children who most need preventive care do not attend and so lose out.
Summary	…there remain a small proportion of children who are at high risk of dental disease….."	In some parts of the country, this is over 30% which is not small. Once a child has dental decay in their primary teeth, it is almost certain that other teeth will eventually be affected. Decay in primary teeth is also a good predictor of decay in permanent teeth. So, prevention to keep children disease-free is critical.
2. The Condition, Prevalence	This decline is usually attributed to better oral hygiene and preventive measures such as fluoride treatment	The decline is due to the widespread use of fluoride toothpaste, and not better oral hygiene per se. Water fluoridation schemes which serve about 10% of the UK population have also contributed to caries reduction in these areas. I am unclear what is meant by "fluoride treatment".
2. The Condition, Prevalence	Table showing survey data	Error in the row with percentage dental decay – Should it be highest in the South-East and lowest in the North-East. 2012 data is not robust due to change in consent process. Most robust data is from 2206. These surveys are better for trends, anyway, it is less robust for picking out individual years.

2. The Condition, Prevalence	Table showing survey data	Error in last row, second column – 00.7 is incorrect. Same point about trends applied to all.
2.3 Prevention	…..there had been a radical change in the way dentistry is delivered in England moving away from a treatment-focused service to a more preventive level of care.	This is incorrect. *Choosing better oral health"* was designed to try and make the change from treatment to preventive focused care with the change in dental contracts at that time. That did not happen. There is a new contract imminent which, hopefully, will achieve it. Part of the problem is that those who need care most do not attend until they have a problem and preventive care in dental practice requires regular attendance.
2.3 Prevention	Paragraph starting "Sealants are applied…." Last sentence: "After exposure……serves as a reservoir for **demineralisation**….	I think this is meant to be **remineralisation.**
2.3 Fluoride in the water	"The effect is largely due to the topical effect of fluoride ions in the mouth rather than the systemic effect of ingestion."	This is incorrect. It is the ingestion of fluoridated water that results in the increased fluoride ions in the saliva and plaque in the mouth. The teeth are constantly in contact with the saliva/plaque with added ions, which then provides a topical protective effect on teeth. Without drinking the water, the increase in fluoride ions in the mouth will not be achieved. This is the post-eruptive effect. The pre-eruptive effective is the absorption of fluoride ions into the developing enamel and this is thought to have a lesser effect. The The topical vs systemic effect refers to the chemical interaction at ionic level. May be clearer to refer as pre-eruptive and post-eruptive.
2.3 Fluoride in the water	"In 2003, the law was changed enabling SHAs to require……..	The law has changed again and it is Local Authorities who now have the responsibility for this.
Conclusion	"Regular tooth brushing with fluoride toothpaste is the most commonly used and thus most effective	Compared to what? Toothbrushing with fluoride toothpaste is only effective at population level if everyone does it. Water fluoridation is more effective as it reaches everyone, without any need for change in behaviour.
Conclusion	It is also the most cost-effective	Compared to what? For e.g. There is no comparison published between cost-effectiveness of encouraging toothbrushing and water fluoridation.
3.3 The test should be acceptable	When examining for caries, the dmft score is used.	Dental screening is normally just to identify the presence or absence of caries or sepsis, so dmft is generally not used in practice.

3.5	“Any child identified……as required by the level of dental damage”	This terminology is not generally used in dentistry. Sentence can just stop at treatment. There are only 2 options: restoration or extraction.
4. The Treatment, Conclusion	Not all of this is evidence-based and variation in practice according to clinical presentation is common.	Variation in practice is due to a number of factors and not just clinical presentation, including patient choice, whether patient attends regularly, state of oral health and oral hygiene, cost of alternative options….etc…

Organisation:	Yorkshire and Humber Public Health England Centre Dental Public Health Team		
Name:	Sally Eapen Simon	**Email address:**	xxxxxxxxxxxxxxx

Section and / or page number	**Text or issue to which comments relate**	**Comment** *Please use a new row for each comment and add extra rows as required.*
Summary (Page 2)	There is good evidence that preventive measures work.	Prevention includes the provision of evidence based advice and professional interventions. Professional interventions and reinforcement of advice requires children to access primary dental care. Not all children access dental services so the ability to receive prevention measures is dependent on attendance. Just because a range of preventive measures can be effective does not mean that school dental screening is no longer required to identify children that would benefit from prevention interventions.
Summary (Page 2)	The test has low specificity	The specificity is considered good but sensitivity was low as some lesions could not be visualised in a school setting. The purpose of school dental screening was not to diagnose every carious lesion but to identify children who would benefit from a closer examination in a primary care setting and those who were neglected and in urgent need of care.
1.Introduction (Page 2)	"Research in the 1980……"	Dental screening was generally seen to encourage dental attendance and not seen as a method of improving population levels of oral health. It was undertaken to improve individual's outcomes by promoting early intervention when untreated decay was found. This is of particular importance for children attending special schools, where the impact on untreated dental disease on an individual level may be significant.
1. Introduction (Page 2)	Ineffective at a population level	If a measure of population benefit was the only measure of success then many interventions that can benefit participating individuals would be stopped and the benefits would be lost.
1.Introduction (Page 3)	"Most PCTs decided to discontinue population based school dental screening although some did continue	BASCD would support the continuation of school dental screening in special support schools. It would be helpful if this

	a service in schools for children with special needs"	policy was reinforced and given more prominence within this document. Examples of good practice suggest that partnership working across the special school setting can support the gaining of parental consent. This should include the recommendation of holding a comprehensive database to ensure that problems in a local screening programme can be identified with a view to improving the effectiveness of the programme in special schools.
1.The Condition – Prevalence (Page 5)	The results for the survey undertaken in 2012 are awaited.	The 2011/12 5 year old survey results have now been published. http://www.nwph.net/dentalhealth/survey-results5.aspx?id=1
2.3 All the cost effective primary prevention interventions should be implemented as far as practicable	It is anticipated that a new national primary dental care contract will be in place by 2014.	It is unlikely that the new national primary dental care contract will be in place before 2015/16.
4. The Treatment (page 12)		NSC should be made aware of current relevant RCTs that have started: An RCT in Wales is measuring the relative cost and effectiveness of sealants and varnish in the prevention of dental decay. This trial started in April 2011 and it is expected that the results will be published in 2017. The FICTION trial in the UK is currently exploring cost effectiveness of filling decayed primary teeth. The trial started in April 2010 and it is anticipated that the results will be published in early 2018.
VARIOUS Section 2.3	1."After exposure, fluoride becomes available in plaque, saliva and the tooth's outer layer…….serves	There are a few inaccuracies describing the scientific process 1. This should read remineralisation not demineralisation

	as a reservoir for demineralisation of the initial caries lesions”	
Section 2,3	2. “Unhealthy sugar consumption habits are known to be associated with high rates of decay. Fizzy drink consumption is associated with tooth enamel being dissolved (dental erosion).”	2. There is some confusion between caries and erosion here - drinks that contain sugar cause dental decay, erosion is sometimes associated with acidic drinks. Carbonation is not the key factor in dental caries.
Section 4.3	Fluoride in the water	3. SHAs have been abolished and the Health and Social Care Act 2012 describes the new responsibilities of Local Authorities regarding water fluoridation.
Section 5.1	3. “As well as the materials used for fillings the question of how much of the tooth should be extracted before filling needs to be considered” 4. “There were no significant differences in caries increment in the primary and secondary dentitions…..”	4. The word “extracted” should be replaced by the word “removed”. Extraction usually refers to ‘surgical’ removal of the whole tooth 5. One would not expect to see differences in caries increment between the control and intervention groups during the short time of the study period. This is an inaccurate use of terminology
Conclusions		The Yorkshire and Humber Public Health England Centre Dental Public Health (Y & H PHEC DPH) team agrees that the role of traditional school screening has changed over time. It is expected that resources have already been deployed to better effect in the majority of areas of England, following the NSC guidance in 1996. The Y & H PHEC DPH team is concerned that the NSC have had to rely upon one RCT to determine policy, but recognise the limited amount of high quality evidence in this area.

		The Y & H PHE DPH team support the continuation of screening in special schools because of the high risk status of these children and the impact of untreated dental disease. The Y & H PHEC DPH team would support a statement in the conclusion that more pro-active methods of reaching non-attending children in areas with high levels of dental decay should be investigated. It is important to consider the safeguarding issues that apply in such schemes.

Organisation:	British Association for the study of Community Dentistry (BASCD)		
Name:	Kamini Shah	**Email address:**	xxxxxxxxxxxx

Section and / or page number	**Text or issue to which comments relate**	**Comment** *Please use a new row for each comment and add extra rows as required.*
Page 2	There is good evidence that preventive measures work.	Not all children access primary dental care so the ability to receive prevention measures is dependent on attendance. Just because a range of preventive measures can be effective does not mean that school dental screening is no longer required to identify children that would benefit from prevention interventions.
Page 2	The test has low specificity	The specificity is considered good but sensitivity was low as some lesions could not be visualised in a school setting. The purpose of school dental screening was not to diagnose every carious lesion but to identify children who would benefit from a closer examination in a primary care setting and those who were neglected and in urgent need of care.
Page 2	Ineffective at a population level	If a measure of population benefit was the only measure of success then many interventions that can benefit participating individuals would be stopped and the benefits would be lost.
Page 2	“Most PCTs decided to discontinue population based school dental screening although some did continue a service in schools for children with special needs”	BASCD would support the continuation of school dental screening in special support schools. It would be helpful if this policy was reinforced and given more prominence within this document
Page 2	“Research in the 1980…….”	Dental screening was mainly concerned with increasing attendance rather than seen as a method of improving population levels of oral health. It was undertaken to improve individual’s outcomes by promoting early intervention when untreated decay was found. This is of particular importance for children in special schools where the impact of dental disease can be more significant.

Page 2	"There is no new evidence that screening children for dental disease …….is effective"	The information on the NSC says it is for all 4 UK Countries and CDOs and claims that there is no new evidence since the last review – BASCD would suggest that the NSC look at Childsmile see website (which incorporates both basic and detailed Dental Inspections of primary 1 children in Scotland) and the NDIP reports (on the web) showing dramatic and sustained improvements in population oral health with an integrated approach including school inspections.
Page 2		The terms school dental service and salaried dental services are both used. The correct current term is salaried dental services
Page 10	One effectiveness review	Only one effectiveness review is cited in relation to water fluoridation there are 4 recent reviews. Four systematic reviews of the worldwide evidence on fluoridation have been carried out in the past 10 years by teams of independent researchers. Three of these reviews – by the University of York, a US Community Task Force and the Australian National Health and Medical Research Council – concluded that fluoridation reduces tooth decay in children. A fourth review – by a team led by Dr Susan Griffin in the United States – concluded that fluoridation reduces tooth decay in adults
Page 10	"There are a range of primary preventive measures that have been shown to be very effective in preventing caries. Regular tooth brushing with fluoride toothpaste is the most commonly used and thus most effective. It is also the most cost effective."	How is effectiveness being measured? Because it is most commonly used doesn't make it most effective. With regard to cost effectiveness this is not discussed in the previous section however a concluding statement is made without any discussion of the evidence upon which the cost effectiveness statement has been made.
VARIOUS Section 2.3	1."After exposure, fluoride becomes available in plaque, saliva and the tooth's outer layer…….serves as a reservoir for demineralisation of the initial caries lesions"	There are a few inaccuracies describing the scientific process 6. Demineralisation is confused with remineralisation

Section 2.3	2. “Unhealthy sugar consumption habits are known to be associated with high rates of decay. Fizzy drink consumption is associated with tooth enamel being dissolved (dental erosion).”	7. There is some confusion between caries and erosion here - drinks that contain sugar cause dental decay, erosion is sometimes associated with acidic drinks. Carbonation is not the key factor in dental caries.
Section 2.3	3. “They end with a last statement about a conclusion in relation to a fluoride component ‘They considered that oral health promotion per se has not been shown to be effective unless fluoride is included in the intervention’	8. Whilst this might be true, it was not a conclusion of the review which specifically excluded multi-interventions which involved a fluoride component (beyond tooth brushing).
Section 4.3	4. “As well as the materials used for fillings the question of how much of the tooth should be extracted before filling needs to be considered”	9. This paragraph needs to be reworded the word “extracted” should be replaced by the word “removed”
Section 5.1	5. “There were no significant differences in caries increment in the primary and secondary dentitions…..”	10. One would not expect to see differences in caries increment between the control and intervention groups during the short time of the study period. This is an inaccurate use of terminology
Section 2.5 Page 10	6. “In 2003 the law changes enabling Strategic Health Authorities……”	11. SHAs have been abolished and the 2003 act is updated by the Health and Social Care Act
Section 2.2 The Condition – Prevalence (Page 5)	7. “The results for the survey undertaken in 2012 are awaited.”	12. The 2011/12 5 year old survey results have now been published. http://www.nwph.net/dentalhealth/survey-results5.aspx?id=1
2.3 All the cost effective primary prevention interventions should be implemented as far as practicable	8. It is anticipated that a new national primary dental care contract will be in place by 2014.	13. It is unlikely that the new national primary dental care contract will be in place before 2015/16.
General Comments relating to the document and	Two key references that reviewers would need to consider to get a more balanced and up to date view of cariology evidence and the ways in which	1. Paper 1 is a review of caries for Physicians from the Lancet a couple of years ago – it provides a balanced overview

Review	epidemiological caries data should be interpreted. The use of the term “caries free” is inappropriate (as surveys cannot normally establish this) – secondary prevention should be considered as well as primary prevention.	2. Paper 2 is by McGrady et al and although it primarily addresses in a very comprehensive way the issues of caries and fluorosis and deprivation (very usefully) BASCD would highlight the dramatic differences in caries levels found in BOTH Newcastle and Manchester when early stage caries is included in epidemiological assessments (ICDAS 1-6) as compared to when these lesions (which the NHS is spending a lot of money on trying to control with Fluoride paste and varnish) - are excluded – (ICDAS 4-6). The Abstract and Table 3 highlight the dramatic underestimation of caries which epidemiologists understand - but when reports like this giving estimates labelled "Caries free" it is misleading - as this is NOT what is recorded. *(Document Redacted)* 3. Consequences of Caries. - we would like to highlight the problem of GAs and repeat GAs in children - there have been improvements in mean caries levels of caries, BUT there is still a problem of end stage disease, pain and sepsis which is at unacceptable levels. 4. On the website page for this consultation it says that caries "results from a bacterial ***infection*** on your teeth" Caries IS NOT an infection and this is a gross over-simplification of a complex disease with a multi-factorial aetiology which is not correct (see Lancet review paper we submit as a background resource) *(Document Redacted)*
Conclusions		BASCD agrees that the role of traditional school screening has changed over time and that the resources have already been redeployed elsewhere in the majority of areas.

		BASCD is concerned that the NSC has had to rely upon one RCT to determine policy but recognises the limited amount of high quality evidence in this area. BASCD would support a statement in the conclusion that more pro-active methods of reaching non-attending children in areas with high levels dental decay should be investigated. BASCD also recommends that screening in special support schools should be continued because of the high risk status of these children. It would be important to consider the safeguarding issues that apply in such schemes.

Organisation:	British Dental Association		
Name:	Ian McKay	**Email address:**	xxxxxxxxxxxxxx

Section and / or page number	**Text or issue to which comments relate**	**Comment** *Please use a new row for each comment and add extra rows as required.*
General		The BDA supports the conclusions of this clear and well-written report. The available evidence shows that that screening for dental caries in children should not be recommended. The promotion of caries prevention should be supported and targeted to high-risk groups.
General		Advances in diagnostic technology offer the potential of developing sensitive non-invasive methods to screen for caries in children. The issue of caries screening should be reviewed regularly to take account of these developments..

The Faculty of General Dental Practice (UK)
Dean: Dr Trevor Ferguson BDS DGDP MGDS RCS (Eng)
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FGDP(UK) view on the UK National Screening Committee's proposals on screening for dental caries in children aged 6-9 years

18 November 2013

Dear Mr Marshall,

Many thanks for providing the FGDP(UK) with an opportunity to contribute our views to this review, and on the conclusion that 'there is no evidence to support the continued population screening for dental disease among children aged 6 to 9 years'.

The recommendations in the UK NSC's report are based on a comprehensive literature search and the FGDP(UK) would broadly agree with the concluding statement. However, we would urge the necessity to quantify the resources that are currently invested in the screening programme so as to ensure there is an equivalent investment in promoting child dental health. Further detail would also be welcome on how funds will be used to address the issue of health inequalities described in the report.

The screening program in this group aged 6 to 9 was also useful as a monitoring tool; it is important that there remains a method through which data continue to be collected across this and other age groups in children. This will enable appropriate evaluation of preventative measures, and likely will involve a multi-agency approach.

We strongly support the policy of prevention-related initiatives across the whole population and especially in children. However, social inequality has a major impact on oral care and it is of fundamental importance that children in socially deprived areas benefit from additional initiatives through, but not limited to, the school dental service. One general dental practitioner who provided comment on the report for the FGDP(UK) highlighted his experience of taking part in school screening programs in

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deprived areas. As one might expect, he finds many of the children with the greatest need have never seen a dentist, and their situation was such that the school screening program was necessary to expose the often serious concerns related to their oral health.

Education in oral health and caries prevention is key for both children and parents. The Childsmile (http://www.child-smile.org.uk/) program, for example, has yielded encouraging results in improving the permanent dentition of 11 years olds in Scotland. The FGDP(UK) would urge that central to improving outcomes with regard to incidence of dental caries in this and other age groups of children is increasing appropriate attendance patterns within the primary care dental practice, particularly in areas of social deprivation.

With regards,

Charlotte Worker

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