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Dental Public Health in Action

Review and action plan for oral health improvement in Sheffield special schools

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Abstract: A description of the process of a review of oral health improvement in special schools in Sheffield and the implementation of an action plan for these activities.
Public health competencies encompassed: assessing the evidence on oral health and dental interventions, programmes and services; strategic leadership and collaborative working for health; oral health improvement.

Key Words: *oral health improvement, special schools, England*

Initial impetus for action

It is recognised that people with disabilities are at greater risk of oral disease (Department of Health, 2005). They may have poorer oral hygiene (Desai *et al.,* 2001; Gizani *et al.,* 1997; Jokic *et al.,* 2007), higher experience of dental caries, lower levels of restorative care (Gizani *et al.,* 1997; Desai *et al.,* 2001), more periodontal disease and fewer teeth than the general population (Department of Health, 2007).

For people with disabilities, access to routine dental care can be difficult (Gerreth and Borysewicz-Lewicka, 2016). Specialist facilities such as wheelchair tippers or hoists to transfer wheelchair users into the dental chair may be required. Patient co-operation may be limited. In the first national oral health survey of children in special schools, only a partial oral examination was possible in 23% participants and in 4% no examination was possible (PHE, 2015). The provision of dental treatment may be complicated, requiring longer treatment time or specialist care for people with moderate, severe or profound disabilities (Daly *et al.,* 2013). General anaesthesia may be required for some patients with disabilities, even for routine dental care (Desai *et al.,* 2001).

The social gradient in oral health found in children (Watt, 2007) attending mainstream schools is also found in children attending special schools (PHE, 2015). *Valuing People's Oral Health* (Department of Health, 2007) reported on how oral health could be improved for this group with a focus on prevention and this was reiterated in recent guidance on people with a learning disability (The Royal College of Surgeons of England, 2012).

In 2013 local authorities in England became responsible for improving the oral health of their communities and for commissioning oral health improvement services (Department of Health, 2013). In the Sheffield *Joint Health and Wellbeing Strategy 2013-18* there was recognition that children with disabilities generally have below average health (SCC, 2013). Outcomes of the strategy included improving children's oral health and appropriate services for those groups affected by health inequalities. A commitment was made in the Sheffield *Oral Health Improvement Strategy 2014-17* to a review of the oral health improvement (OHI) activities in special schools and to implement a new action plan (SCC, 2014b).

Ten special schools in Sheffield provide education and care to approximately 1,000 children aged 3 to 19 years. The children have a wide range of different needs including severe and complex learning disabilities, autism, severe physical and/or medical needs, complex speech, language and social communication disabilities and exclusion from mainstream schools.

The oral health of children is usually established through local and national dental surveys of schoolchildren, but up until 2012 no national surveys had been carried out in special schools. Information about the oral health of children in Sheffield special schools was ascertained from an oral health needs assessment (OHNA) undertaken in 2010 (Yesudian, 2011), the 2013 annual special schools oral screening programme and other data available from the Sheffield Community and Special Care Dentistry service. This revealed that the prevalence of dental caries in five year-olds was lower than in children attending mainstream schools but the prevalence of poor oral hygiene was higher (Table 1). The findings were consistent with the 2014 national oral health survey of five and twelve-year-old children attending special support schools (PHE, 2015). At age twelve the severity of dental caries was worse than among children attending mainstream schools. Despite lower prevalence, children surveyed in special support schools at age five were twice as likely to have had teeth removed due to caries than children attending mainstream schools.

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Table 1. Mean prevalence and severity of dental caries among five and twelve-year-old children attending special schools compared to children in mainstream schools

Survey group *Type of school, Age group*	*With experience of dental caries England %*	*With experience of dental caries Yorkshire and The Humber %*	*With substantial amounts of plaque England %*	*With substantial amounts of plaque Yorkshire and The Humber %*
Special support schools, 5-year-olds[1]	22.5	27.9	4.3	7.9
Mainstream schools, 5-year-olds 2012[2]	27.9	33.6	2.0	-
Special support schools, 12-year-olds[1]	29.2	31.2 [50.0 in Sheffield]	19.5	23.5 [52.1 in Sheffield]
Mainstream schools, 12-year-olds[3]	33.4	44.7	10.5	11.9

[1]Oral health survey of 5- and 12-year-olds attending special support schools 2014 (PHE, 2015); [2]Oral Health Survey of 5-year-olds 2012 (PHE, 2013); [3]Oral Health Survey of 12-year-olds 2008/9 (NHS, 2010)

A range of OHI activities were being undertaken in some of Sheffield's special schools. The objectives of this project were to review these OHI activities against evidence-based guidelines and to develop and implement an evidence-based action plan based on the findings.

Solution

An oral health promotion team was employed to deliver OHI activities in the special schools. Under a separate arrangement, the team also provided OHI within the salaried dental service. Engagement with the oral health promotion team manager, the team and the consultant in paediatric dentistry, who worked in the salaried dental services and led provision of dental care to children attending three of the schools, was undertaken to find out about the relevant activities carried out. With agreement from the oral health promotion team manager, the author observed the team implementing OHI activities in a special school. The school staff were supportive of the work and welcomed them into classrooms. Children participating in a tooth brushing club were responsive and clearly enjoyed the session. Engaging with the team helped ascertain their openness to modify practice in line with national evidence-based guidelines and to expand the programme more widely.

The OHI activities in the schools were reviewed against the following national evidence-based guidance:

- *Local authorities improving oral health: commissioning better oral health for children and young people* (PHE, 2014)
- *Delivering Better Oral Health: an evidence-based toolkit for prevention* (PHE, 2014a)
- *Oral health: approaches for local authorities and their partners to improve the oral health of their communities* (NICE, 2014).

Overall a range of OHI activities were carried out to differing degrees in seven of the ten special schools. The activities included daily or weekly tooth brushing clubs in some classrooms and individual prescribed tooth brushing on a weekly basis for some children. There is strong/sufficient evidence of the effectiveness of supervised daily tooth brushing in targeted childhood settings (PHE, 2014, NICE, 2014) but no evidence to support weekly tooth brushing programmes in schools.

Training for some of the school staff on oral health was provided and oral health resource boxes loaned to facilitate teaching. The information and resources in the boxes were designed to follow the national curriculum and support school staff to deliver classroom lessons on oral health with key messages on diet, tooth brushing and visiting the dentist consistent with national guidance (PHE, 2014a). Contents included models of teeth, books, posters, activity sheets, puppets and dressing up clothes. Oral health training for the wider professional workforce such as school staff helps support consistent evidence informed oral health information and there is some evidence of effectiveness (PHE, 2014). NICE (2014) recommends ensuring opportunities are found in the curriculum to teach the importance of maintaining good oral health.

Under historic arrangements dental nurses with additional training in the oral health promotion team worked closely with dentists in the three schools and dental clinics, where most children received care from the Community and Special Care Dentistry service. For children who were prescribed application of fluoride varnish, subsequent applications in school were supported by the oral health promotion team. For children with special needs the application of fluoride varnish two or more times a year is recommended (PHE, 2014a).

The findings of the review were reported and recommendations made for evidence-based OHI interventions for improving the oral health of the schoolchildren.

A consultation on the report, recommendations and action plan was undertaken with the consultant in dental public health, the consultant in paediatric dentistry, the health improvement principal and a member of the Healthy Settings Team. The report and recommendations were presented to all head teachers at their Special Heads' Partnership Group Meeting. They accepted all the recommendations. Following this, the report was presented to Sheffield City Council, which also accepted all the recommendations.

Outcome measures for each recommendation were established and targets set. These measures included an annual report on activities undertaken. The final action plan was accepted by Sheffield City Council (Table 2) and its delivery was built into the performance indicators for the OHI services commissioned by the Council. On the publication of the oral health survey in special support schools, Sheffield City Council issued a media statement on the measures they were taking.

Table 2. Sheffield Special Schools Oral Health Improvement Action Plan 2015 to 2017

Activity	*Action*
Creating Supportive Environments	
Annual report of OHI activities	Develop annual report for head teachers of special schools
Sheffield Healthy Schools Status	Support special schools to retain their Sheffield Healthy School Status
Healthy eating and drinking policies in special schools	Oral health promotion provider to work with public health and special schools on healthy eating and drinking policies
New school starters programme	Tooth brushing packs to be given to all children starting at special schools
Tooth brushing clubs	Establish daily tooth brushing clubs in all classes where appropriate as per screening/survey data
Developing personal skills	
Training school staff	Train staff to deliver tooth brushing clubs Provide oral health training for relevant staff in special schools
Work with schools supporting resource box use	Maintain and update resource boxes Evaluate use in the first year Audit use in the second year
Provide leaflet to schools on accessing dental care in Sheffield	Develop and provide generic leaflet on access to dental care for all special schools
Strengthening community action	
Special schools to include information on school's oral health activities in school induction packs - to include screening, tooth brushing clubs, etc. Schools to include information about oral health activities on their school website	Oral health promotion provider to liaise with Sheffield City Council and Public Health England to ensure information on a school's oral health activities is included in induction packs and on school websites
Reorienting health services to prevention	
Fluoride varnish programme	To explore feasibility of extending fluoride varnish programme
School screening	Evaluate the school screening programme

Twelve months after implementing the action plan, the non-evidence-based OHI interventions of weekly tooth brushing clubs, individual tooth brushing and one off OHI classroom sessions have ceased and been replaced by implementation and expansion of evidence-based interventions in seven of the ten schools. Tooth brushing clubs have been established for all the primary school aged children in one of the three schools previously not included in any OHI activities. If implementation is successful, tooth brushing clubs will begin in the second school. Thirty-seven school staff have received oral health training, which included information on tooth brushing, healthy eating and visiting the dentist. The number of daily tooth brushing clubs in school classes has increased from 28 to 57, which has doubled the number of children participating to over 504 (Table 3). All children starting the foundation year in special schools now receive a dental pack. The oral health promotion team continue to support fluoride varnish applications for children attending three of the special schools. Good relationships and collaborative work between the different stakeholders greatly facilitated the review and implementation of the action plan.

Challenges

Capacity for the oral health promotion team to undertake a greater breadth of activities within existing financial resources was created by a refocusing of activities. The costs for the additional toothbrushes and toothpaste for the expanded daily brushing schemes and school starter packs were met through existing budgets. The one-off costs for toothbrush storage racks were met through non-recurrent funding. Changes in the working practices of the oral health promotion team in special schools required careful management and staff support during the transition, but ultimately implementation of the evidence-based action plan had a positive impact on job satisfaction.

The oral health promotion team is engaging with special schools on how it can include oral health activity in induction packs and on school websites. The update of resource boxes and an audit of their use is still to be undertaken.

A recommendation for Sheffield City Council to review the feasibility of extending the fluoride varnish programme as a community based programme to the other schools needs to be followed up.

The commitment of Sheffield City Council to implement an OHI action plan in special schools and the subsequent delivery of school-based OHI activities including healthy foods and drinks, daily tooth brushing with a fluoride toothpaste and incorporation of oral health in the school curriculum, provides a multi-component programme whole school approach, which is more likely to be successful than single interventions (Rogers, 2011).

Future development

There is a need for the oral health promotion team to continue to implement all aspects of the action plan and for the local authority to continue to evaluate the outcomes. Feedback from the head teachers, staff, pupils and the oral health promotion team will be sought on actions taken to inform future provision of interventions in the schools.

Table 3. Numbers of school classes with daily tooth brushing clubs at annual review, 2016

Special school status	*Children 2015/16 (n)*	*Classes with daily brushing clubs 2014/15 (n)*	*Classes with daily brushing clubs 2015/16 (n)*	*Children brushing daily (n)*
Primary [+] [*]	92	8/9	9/9	92
Primary [+] [*]	82	2/9	8/9	75
Primary [+]	84	3/9	9/9	83
Primary [+]	81	3/11	11/11	81
Secondary [+] [*]	168	9/19	8/19	64
Secondary [+]	163	1/17	5/17	42
Secondary [+]	155	2/16	7/16	67
Primary/secondary	95	0/10	0/10	-
Primary/secondary	98	0/10	0/10	-
Primary/secondary	41	0/10	0/10	-
Total	1,059	28/120	57/120	504

[+] Annual dental screening offered; [*] School-based dental treatment offered

It would be helpful to engage with parents to strengthen oral health activities at home in relation to their child's oral hygiene, diet and visits to the dentist. There will be a need to keep abreast of research and modify the action plan in light of any new evidence-based guidelines.

Learning points

- Monitoring the OHI activities in schools against evidence-based guidelines can maximise the oral health benefits to children and ensure equity of provision
- Inclusion of a range of OHI activities addressing the five principles of health promotion can incorporate resilience into an OHI programme
- Effective partnership working is of paramount importance
- Change management is a challenging aspect of dental public health activities.

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