Community Dental Health (2015) **32,** 68–71
Received 21 May 2014; Accepted 18 November 2014

doi:10.1922/CDH_3445Simons04

Dental Public Health in Action

Improving access to dental care for vulnerable children; further development of the Back2School programme in 2013

D. Simons[1], N. Pearson[1], P. Evans[1], T. Wallace[1], M. Eke[2] and D. Wright[3]

[1]*Barts Health Community Dental Service, London, UK;* [2]*London Borough of Tower Hamlets, UK;* [3]*Public Health England, London, UK*

This paper describes a service evaluation of a dental treatment programme providing care to children not normally taken to the dentist. It explains the extension of the Back2School programme from the pilot phase and assesses if a mobile dental unit (MDU) can provide a high quality service.
The public health competencies it illustrates include oral health improvement, developing and monitoring quality dental services, and collaborative working.

Key words: *access, mobile dental unit, vulnerable children, dental care, United Kingdom*

Initial impetus for action

The 2012 NHS Dental Epidemiology Programme survey examined 5-year-olds (PHE, 2013) and, out of the 32 London Boroughs, showed Tower Hamlets children had the fourth highest number of decayed number of teeth and Hackney the eleventh. Data for 2013 also shows Tower Hamlets children have lower dental attendance (53%) than in the rest of the UK (69%) (HSCIC, 2013). To address the high levels of disease and low levels of attendance a preventive oral health programme was established in schools in these two London boroughs. The programme involves dental screening of 3 to 6 year-olds by either general dental practitioners (GDPs) or the community dental service (CDS) of Barts Health, with fluoride varnish (FV) application twice during the school year, accompanied by engagement with the families to encourage dental attendance (Evans *et al.,* 2013) and more thorough follow-up of children who are screened positive for treatment need. The programme showed that children with an 'urgent' treatment need (UTN) identified at the screening (defined as 'a molar tooth with active caries into dentine, abscess or sinus') were still not being taken for further dental care, despite these interventions. Access to dental care for children in London has a strong correlation with deprivation (Gallagher *et al*., 2009) and barriers to children from low socioeconomic status families accessing dental services include; limited access to transportation, lack of information, language and cultural barriers (Finch *et al*., 1988). Proposals for reducing these barriers include a need to extend services through outreach activity, development of communication skills within dental care and partnership working with other health services (Croucher and Sohanpal, 2006). A review investigating the effectiveness of different approaches for increasing dental attendance by families from UK deprived areas (Fox, 2010) concluded that the best two approaches were MDUs on school premises and dental access centres.

The CDS felt that the children with UTN were vulnerable, so in 2012 a 'Back2School' pilot programme evaluated utilising a MDU in the provision of oral care to this group of children as an adjunct to the FV programme (Simons *et al.,* 2013). Although not all parents could be contacted, 43% of children with UTN in the 2012 MDU pilot obtained care (Table 1), only 14% children had attended a dentist before and all were rated 'high risk' for dental disease. Although parental feedback on the MDU pilot was very positive, 13 parents still refused appointments and 16 children were not brought to booked appointments. This suggested that more work was needed to overcome the barriers for these children if they were to obtain dental care.

Solutions Suggested

Changes to the wider NHS in England are driving a redesign of how oral healthcare will be delivered in the future. The NHS dental reforms (DH, 2013) emphasised the need to focus on improved oral health as the outcome for NHS dental services. Management of quality forms a central feature, with patient feedback playing an increasingly important role in measuring the level of service delivered. The Dental Quality Outcomes Framework (DH, 2011) is based around three dimensions of quality: clinical effectiveness, patient experience (centeredness) and safety. The aim in 2013 was to develop and extend the 2012 pilot, to improve access and outcomes for vulnerable children, to assess if cost effectiveness could be increased and if a dental service provided by an MDU was a high quality service.

Correspondence to: Dr Debra Simons, Assistant Clinical Director, Dental Administration, 3rd Floor, B Block, St Leonards Hospital, Nuttal street, London N1 5LZ. UK. Email: debra.simons@bartshealth.nhs.uk

In the 2013 FV programme, 31 primary schools of a total of 123 (25%) were allocated to the CDS and the remainder allocated to GDPs. From the 3,583 target children attending the CDS schools, 2,821 (79%) were screened, of whom 700 (25%) needed some treatment and 496 (18%) had an UTN. All the children and their parents were notified about their dental treatment needs following screening. It was apparent, as in 2012, at the second FV applications, 6 months later, many children had still not obtained dental care. To address this, in July 2013, parents of the children in the CDS schools were telephoned by a locally-recruited CDS team member using a standard script format. The objective was to encourage parents to obtain dental care for their child, offer oral health advice, link the families to local GDPs or alternatively, if barriers were identified, offer an appointment to provide care from a conveniently sited MDU during the school holidays. As a result of these conversations, and to encourage attendance, dental care was also offered to siblings.

The MDU offered 48 sessions over 24 days, including 6 Saturdays, in 12 locations chosen near or in the 31 CDS schools. All sites were risk assessed for ease of access, safety and high visibility and planned in cooperation with local stakeholders, childrens' centres and community centres. All parents were reminded both the day before and on the day of the appointment. Parents were told about the treatment their child required and were given the opportunity to discuss this fully with the dentist. If the treatment could not be completed at that time further appointments were made. All treatment was carried out after completion of a full medical history. The MDUs were staffed by a dentist, dental nurse and a CDS outreach worker.

Families had consented to information sharing between schools and healthcare professionals so evaluation was based on anonymised data extracted from patients' records. Data collected included information on treatment activity, the NHS measurement of units of dental activity (UDA), access and attendance and the safety indicator of updated medical history for a course of treatment. Parental feedback was obtained through phone calls conducted after completion of the programme, using patient experience indicators, to ensure that the service delivered was in line with patient expectations and that the outcomes were in line with what parents wanted (DH, 2011).

Actual Outcome

Contact was attempted with all 496 families; 209 (42%) parents could not be contacted as their phone number was invalid or unanswered, even after repeated attempts; 220 children (44%) were booked for care on the MDU, with 101 siblings. From the 321 booked appointments, 264 children attended (82%) while 57 failed their appointments, despite reminders, telephone conversations and texts. Notably, 42 children were seen in the 6 Saturday sessions and there were no failed appointments on those days. Four children needed referral to hospital for extractions, all from the UTN children, and 37 were referred internally within the CDS for further treatment under inhalation sedation, 20 UTN children and 17 siblings. These treatments were classed as incomplete. Of the 80 siblings seen on the MDU, 42 (52%) had a need for treatment. There were 223 completed treatments, 160 for the UTN children and 63 for siblings. One child had already had extractions in hospital and the remaining 159 courses of treatment for the UTN children resulted in 477 UDAs, with 25 sibling treatments resulting in 75 treatment UDAs and 38 UDAs for examination. From the completed treatments, 18 children had extractions and the number of restorations ranged from 1 to 7, with a total of 489 being placed. FV was applied to 92% of the children. These data are compared to the 2012 pilot in Table 1. The 264 children attending came from 174 families. Telephone contact was made with 126 (72%) parents to complete the patient experience questionnaire in the month after the programme, 93 (74%) parents requested that the MDU return as a regular treatment centre.

Table 1. Clinical outcomes for the 2012 pilot and 2013 programmes

	2012 pilot		2013 programme	
Number of children with UTN (% of those screened)	88	(15%)	496	(18%)
Number (%) of children proposing to go to GDP following screening	7	(8%)	39	(8%)
Number (%) of children visiting GDP following screening	5	(6%)	28	(6%)
Contact with families				
Number (%) of children with UTN families contacted	75	(85%)	287	(58%)
Number (%) of families unable to be contacted	13	(15%)	209	(42%)
Number (%) of families refusing to attend MDU or see a GDP	13	(15%)	0	
Attendance at MDU				
Total number of children including siblings booked on MDU	72		321	
Total number of children who attended	56		264	
Number (%) of children with UTN who attended MDU	38	(43%)	184	(37%)
Number (%) of children failing to attend MDU appointments	16	(22%)	57	(18%)
Number (%) of MDU attending children previously visiting a GDP	8	(14%)	38	(14%)
Referrals for further care				
Number (%) of attending children referred for extractions in hospital	2	(4%)	4	(2%)
Number (%) of attending children referred for sedation	10	(18%)	38	(14%)
Cost effectiveness				
Number of MDU sessions	10		48	
Units of Dental Activity (UDAs) achieved	95		590	
UDAs per session	9.5		12.3	
Cost per UDA	£61.84		£48.92	

Challenges Addressed

Access

In 2012 and in 2013 about 87% of the children seen had not previously been to a dentist. It has been shown amongst children referred for hospital extractions in South London 40% of parents reported little contact with a health professional and attended their dentist only when in trouble. Even following hospital care most parents had no plans for continuing dental care for their child (Olley *et al.,* 2011).

The high proportion of telephone numbers that were unobtainable illustrates how difficult it is for schools to keep up to date information and that engagement with parents is challenging. Despite the outreach worker communicating with parents in their own language, 18% of the target children and siblings were not brought to appointments that their parents had made for them and had confirmed they would attend. This is comparable to an MDU programme at a primary school in a socially deprived, multi-ethnic area in Birmingham (Clarke *et al.,* 1992).

Cost effectiveness

The programme produced 590 UDAs, which at a GDP rate of payment of £20-£30 per UDA would equate to £11,800-£17,700. The MDU costs (which include transportation of the mobile, petrol, permits, maintenance, cleaning, operation support, dental consumables, overheads, office support costs and decontamination costs) are currently £370 a session, with staff costs of £219. While the 42 weekday sessions in the programme cost £589 each, the six Saturday sessions each cost £690 as staff and driver costs are increased. The overall cost of the MDU for the 2013 programme was £28,865, i.e. £49 per UDA. This cost is high, but is an improvement on the 2012 pilot, demonstrating that cost savings can be made and is considerably lower than the cost of a hospital admission for extractions which is about £686 per episode. The Back2School programme may have the potential to avert the high cost and emotional impact of dental treatment in hospital for a young child and the emotional costs of possible dental neglect.

Quality

The families' feedback on the patient experience indicators for their children's treatment on the MDU was very positive with all scores above 95% (Figure 1). Four parents felt uninvolved in treatment decisions, all of these were from families awaiting hospital appointments and they felt frustrated that the MDU could not provide a solution to their children's treatment needs and one child was still in pain. All patients had a completed medical history, which was checked by the dentist in line with the safety indicator of the Dental Quality Outcomes Framework.

Safeguarding

For parents who failed appointments on the MDU, leaving children with remaining treatment needs, the information was shared with the school in the following term. Parents gave consent for this on the initial form for the prevention programme. This enabled identification of wider concerns about a family and enabled the safeguarding lead to work with the school, and in some cases social services, to support the child into dental care.

Future Implications

This repeated evaluation shows that a significant group of children have treatment needs but no history of dental attendance. To overcome the obstacles for obtaining care there is a need to work closely with schools to identify children at risk, use parent information sessions, feedback to schools, and strategically placed MDUs to provide an alternative approach treatment provision.

Learning Points

This programme highlighted that more work is needed if all vulnerable children are to be reached. The Saturday service was very busy with no failed appointments and suggests that weekends are easier for these families who may have long working hours and large families. An MDU or a fixed site clinic weekend service may help to address this problem. Other recommendations are to investigate staffing the MDU with dental therapists as this may provide a high quality service at a slightly reduced hourly cost. Headteachers and their teams were given feedback from the CDS on the programme and suggested providing the MDU during school term-time, at weekends, immediately after school or within school hours. They wanted to work more closely with the parents who failed to bring their children to the treatment appointments. This may assist with the problem of incorrect telephone contact details as parents could be approached discreetly at child drop off or collection times and home school liaison workers could be more involved.

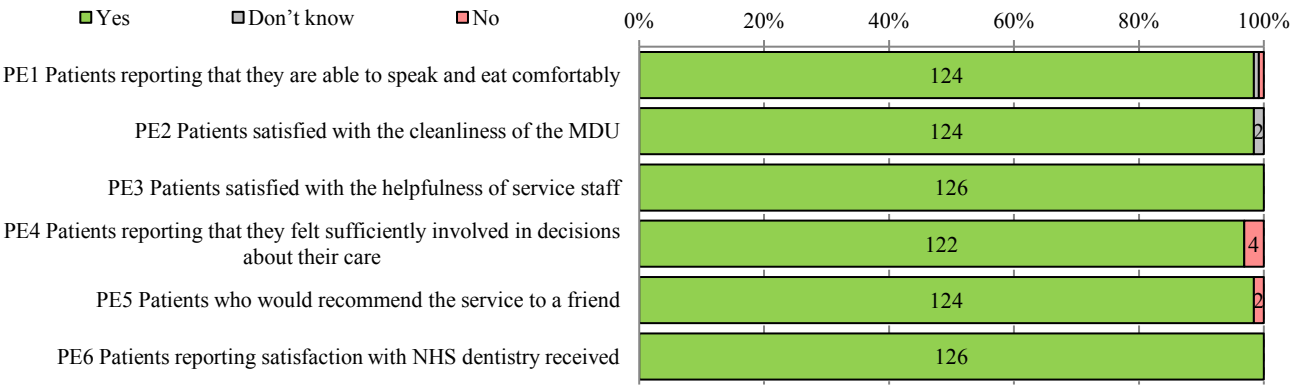

Figure 1. *Patient experience (PE) indicators and the numbers of parents/carers responding to whether they are met (n=126)*

References

Clarke, J.R., Bradnock, G. and Hamburger, R. (1992): The uptake and completion of dental treatment using a mobile clinic in central Birmingham, UK. *Community Dental Health* **9**, 181-185.

Croucher, R. and Sohanpal, R. (2006): Improving access to dental care in East London's ethnic minority groups: community based qualitative study. *Community Dental Health* **23**, 95–100.

Department of Health (2013): *NHS dental contract reform*. London: DH. www.gov.uk/government

Evans, P., Pearson, N. and Simons, D. (2013): A school-based oral health intervention in East London: the Happy Teeth fluoride varnish programme. *British Dental Journal* **215**, E14.

Finch, H., Keegan, J., Ward, K. and Sanyal Sen, B. (1988): *Barriers to the receipt of dental care: a qualitative study*. London: Social and Community Planning Research.

Fox, C. (2010): Evidence summary: what is the effectiveness of alternative approaches for increasing dental attendance by poor families or families from deprived areas? *British Dental Journal* **208**, 167–171.

Gallagher, J.E., Cooper, D.J. and Wright, D. (2009): Deprivation and access to dental care in a socially diverse metropolitan area. *Community Dental Health* **26**, 92-98.

HSCIC (2013): *NHS Dental Statistics for England - 2011/12*. www.hscic.gov.uk/catalogue/PUB07163

Olley, R.C., Hosey, M.T., Renton, T. and Gallagher J. (2011): Why are children still having preventable extractions under general anaesthetic? A service evaluation of the views of parents of a high caries risk group of children. *British Dental Journal* **210**, E13.

Public Health England (2013): *National Dental Epidemiology Programme for England: oral health survey of five-year-old children 2012. A report on the prevalence and severity of dental decay*. London: PHE. www.nwph.net/dentalhealth/Oral Health 5yrold children 2012 final report gateway approved.pdf

Simons, D., Pearson, N. and Evans, P. (2013): A pilot of a school-based dental treatment programme for vulnerable children with possible dental neglect: the Back2School programme. *British Dental Journal* **215**, E15.

Department of Health (2011): *Dental Quality and Outcomes Framework*. London: The Stationery Office.