



Dental public health in action: The covid-19 restrictions on dentistry in England and their impact on access to dental care for high-risk patient groups in the North-East and North Cumbria

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The Covid-19 pandemic has significantly impacted dental practices with the initial response being a complete suspension of face to face care unless designated as an urgent care centre. Even with subsequent easing of restrictions, a significant change to the delivery of dental care is continuing to restrict patient access. The introduction of new Standard Operating Procedures, with a benchmark fallow time of 15 to 30 minutes after aerosol generating procedures, has also reduced capacity levels within dental practices. Triaging systems have been implemented within practices to ensure those with the highest oral health care needs are prioritised for face to face care. Altered patient attendance, due to the Covid-19 restrictions placed upon dental care, may also be compounded by patients avoiding dental care due to personal perceptions of risks associated with Covid-19 or due to a desire not to overburden health systems. With the additional Covid-19 restrictions in place the access to dental care for vulnerable populations may have been even further impacted, there is therefore a concern that the restrictions may have exacerbated inequalities in oral health for these groups.

Public health competencies illustrated:

Developing and monitoring the quality of dental services, Dental Public Health Intelligence, and Policy and Strategy Development are illustrated within this project.

Keywords: *vulnerable populations, dental health services, covid-19 pandemic, Delivery of dental care*

Initial impetus for action

The Covid-19 pandemic significantly impacted dental practices, with the initial response being a complete suspension of face-to-face care unless designated as an urgent care centre (Hurley and Neligan, 2020). Even with subsequent easing of restrictions, changes to the delivery of dental care continues to restrict patient access. The introduction of new Standard Operating Procedures, with a benchmark fallow time of 10 to 30 minutes after aerosol generating procedures (Public Health England, 2020a), reduced capacity within dental practices. Triaging systems have been implemented to ensure those with the highest oral health care needs are prioritised for face to face care (Hurley and Neligan, 2020). Altered patient attendance, due to the Covid-19 restrictions, may also be compounded by patients avoiding dental care due to personal perceptions of risks associated with Covid-19 or due to a desire not to overburden health systems (Mulholland *et al.*, 2020).

Before the Covid-19 restrictions particular population groups including children, older adults, and those of a lower socioeconomic status already experienced greater levels of dental disease, with access to NHS dentistry being a longstanding issue (Healthwatch, 2020). For example, the National Dental Epidemiology Programme for England: oral health survey of 5-year-olds 2019 reported

that 23.4% of participating 5-year-olds had experience of dental decay; with the dental decay experience increasing to 34.3% in 5-year-olds living in more deprived areas, including the North of England (Public Health England, 2020b). Disproportionate levels of poor oral health have also been found in older patients, with care home residents not being able to access high street dental practices easily (Public Health England, 2020c; Healthwatch 2020). The Adult Dental Health Survey 2009 reported that 26% of adults had their treatment choices influenced by cost and 19% electively delayed treatment for the same reason (Nuttall *et al.*, 2011).

With the additional Covid-19 restrictions in place there is therefore a concern that the restrictions may have exacerbated inequalities in access to dental care for these groups.

Solution(s) suggested

The pandemic created an urgent need to investigate whether Covid-19 restrictions to dental practice had an impact upon higher-risk population groups accessing dental care in the North East and North Cumbria. Commissioners could then use this information to inform their recovery plans for dental services and mitigate the impact on the most vulnerable sections of society.

The North East and North Cumbria, Health Education England Foundation Dental Therapy training programme is one year in duration, running from September to September. Available on the 2020/2021 programme was the option of enhanced placements in research with Newcastle University and Dental Public Health with the North East Public Health team. This work was developed as part of that collaboration.

The aim was to determine if the composition of dental practice attenders had changed from pre- (July to September 2019) to peri- (July to September 2020) pandemic, in relation to age and socio-economic status, and if the provision of care to attenders had changed. Existing Middle Super Output Area (MSOA) data were requested from the Business Services Authority (BSA) to study changes across the North East and North Cumbria. MSOAs are a geographic hierarchy of small area statistics in England and Wales with an average population of 7,200 people (NHS Digital, 2021a). Changes in the following were then assessed: the composition of attenders according to 5-year age bands and socio-economic status; and the composition of claims, according to NHS dental bands. Patient socio-economic status was determined by their postcode and its associated MSOA. The MSOAs were allocated to deciles of deprivation according to their Index of Multiple Deprivation (IMD) score. Decile 1 was the most deprived and decile 10 was the least deprived (Ministry of Housing, Communities & Local Government, 2015; b; Mills, 2019).

Following analysis the findings were presented to local commissioners in the North East, to Consultants in Dental Public Health at the 2021 network meeting, and to representatives of the Office of the Chief Dental Officer (OCDO) England.

Actual outcome

The BSA data indicate that 573,119 patients, 155,297 of whom were children aged 0-17 years, attended dental practices in the North East and North Cumbria between July and September 2019 (pre-pandemic). In the peri-pandemic period (July to September 2020) 120,595 patients attended, with 24,738 of these being children. These data indicate a 79% reduction in patients attending in the peri-pandemic period. The greatest reduction was observed amongst children, with an 84% decrease.

The 5-year age band BSA data indicated an increase in the relative proportion of patients aged 20 years+ accessing care during peri-pandemic period. However, the 0-19 years age groups saw an overall marked decrease in the relative proportion of attenders from, 28.9% to 21.9%. The largest decrease was seen among 0-4 year olds (5.4% to 2.64%) (Figure 1).

A marked change to the proportion of patients receiving emergency care was observed in the peri-pandemic period. Of the adults and children accessing dental care from July to September 2020, 53.12% received emergency treatment, whereas only 8.84% received emergency care in the pre-pandemic period. Among child attenders, 24.71% received emergency treatment peri-pandemic, compared to 4.09% pre-pandemic.

Despite an overall reduction in patient attendance from pre-pandemic to peri-pandemic, no major change was observed in the proportions accessing care across the deprivation deciles when adult and child populations were combined. However, the relative proportion of children accessing care the least deprived deciles (9 and 10) increased by 2.86% and 1% respectively. There was a corresponding decrease in access for children in

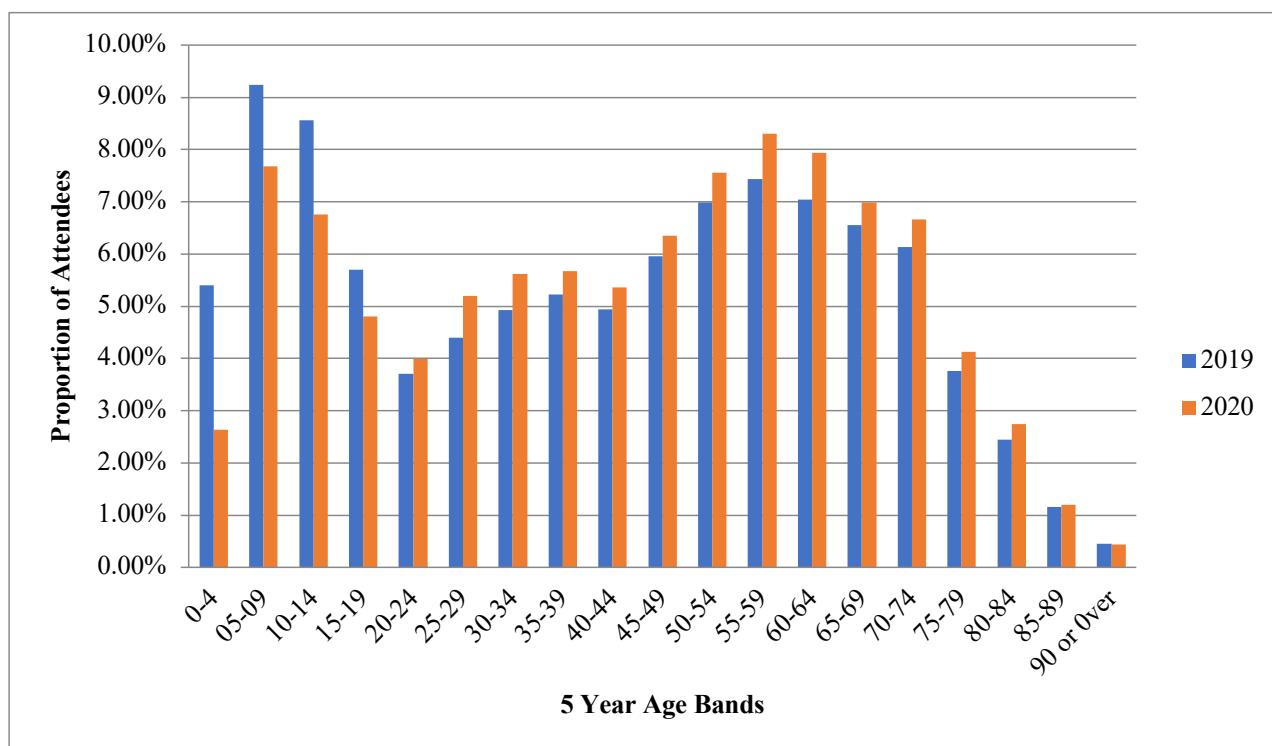


Figure 1. NHS Dental Practice Attendees in 5 Year Age Bands in July to September 2019 (Pre-Pandemic) and July to September 2020 (Peri-Pandemic) In The North East and North Cumbria

the most deprived decile (1) from 10.46% to 7.77% (Figure 2). Supplementary analysis of changes in the rates of child attendance within each deprivation decile (as opposed to changes in the composition of attenders relative to other deprivation deciles) again indicated a difference in the impact between the most deprived and least deprived deciles. MSOAs in the most deprived decile showed a 92.47% decrease in the proportion of children accessing services in the peri-pandemic period compared to a smaller decrease of 90.39% in the most affluent.

Challenges addressed

The BSA does not allow reporting of patient data where there are less than 5 observations in any geography. When examining smaller geographies this can result in data suppression. According to Tiwari, Beyer and Rushton (2014) data suppression in smaller geographies can underestimate observations. This was mitigated by analysing MSOAs as opposed to Lower Super Output Areas, which have a smaller average population of 1,500 compared to MSOAs having 7,200 (NHS Digital, 2021b). Increasing the size of the area analysed means the impact of data suppression will be reduced.

From the BSA data the care provided in an emergency course of treatment is unknown, however, the data do show a change in care from routine in the pre-pandemic period to emergency during the pandemic. Detail of the emergency care provided is outside the remit of this study.

Future implications

Children in deprived areas of the North East and North Cumbria have faced a greater decrease in access to dental care, compared to those in less deprived areas. There

is therefore concern that alongside the restrictions on routine care, announced by Hurley and Neligan (2020), oral health inequalities may have increased amongst child population groups. As previously discussed, before the Covid-19 dental restrictions, 5-year-olds living in more deprived areas, including the North of England, already experienced greater levels of caries than those from the least deprived areas (Public Health England, 2020b). As children had restricted access to routine preventative treatments during the peri-pandemic period, such as the application of 22,600ppm fluoride varnish twice a year, which can reduce the risk of caries in primary dentition by 37% (Public Health England, 2017), there is concern that caries incidence in children may increase and pre-existing inequalities may widen/worsen.

The potential increase in access inequalities indicates the need for an England wide study to clarify the impact of the Covid-19 restrictions at a national level. The OCDO England has commissioned such a study via Public Health England to explore changes in access to NHS primary care dental services throughout the Covid-19 pandemic and recovery periods, comparing levels to the pre-pandemic period. More specifically, changes in the proportion of populations accessing services throughout these periods will be mapped at various geographic levels, right down to LSOA's. Variations in access will also be explored separately for adult and child populations as will associations with area deprivation and ethnicity. The England data will be made available to commissioners and other stakeholders via geographic information systems to inform commissioning decisions as dental services recover from the impact of the pandemic. This will promote equity of access and in-turn reduce the inequality of access that developed during the 2020 peri-pandemic period.

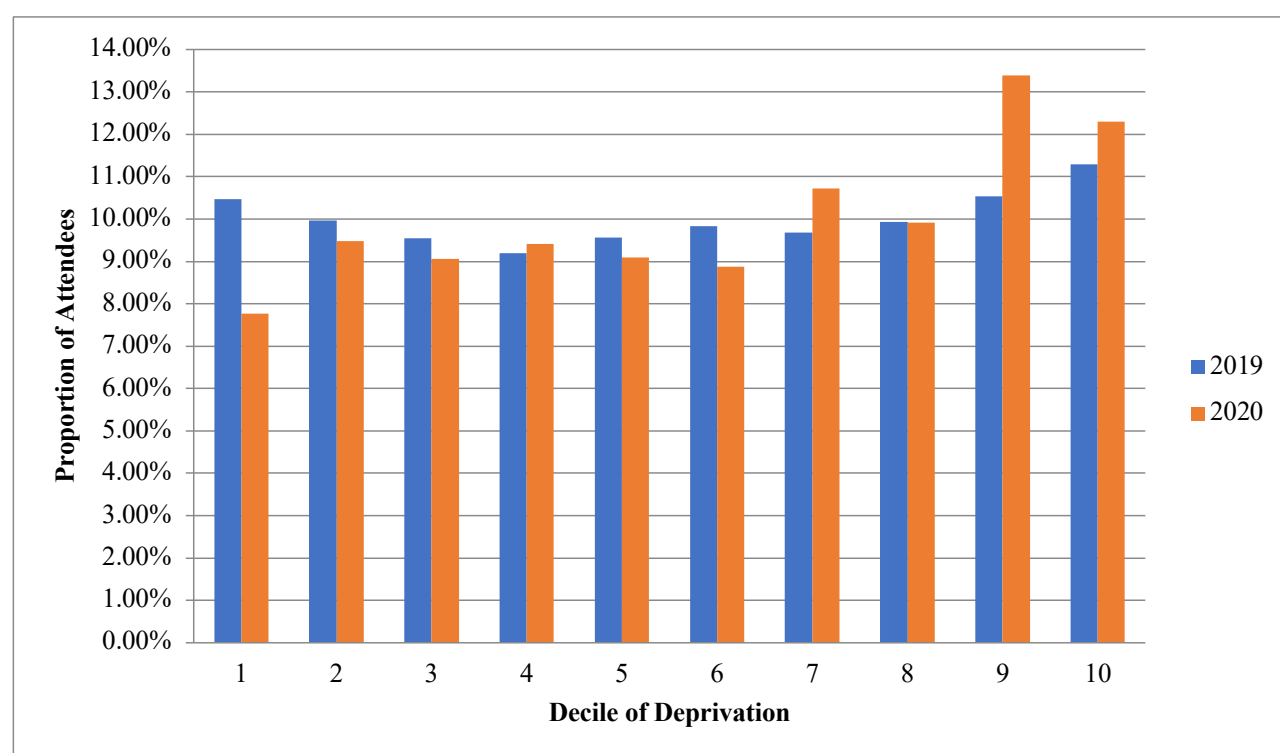


Figure 2. Child NHS Dental Attendees by Deprivation Deciles in July to September 2019 (Pre-Pandemic) and July to September 2020 (Peri-Pandemic) In the North East and North Cumbria

Learning points

BSA data can provide a rich source of information and, when combined with open access official demographic and community data available from the Office of National Statistics, they can be used to identify inequalities in access to oral health care services and help to inform policy decisions for commissioning dental health services.

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