

NORTHERN IRELAND PLAN TO PHASE DOWN THE USE OF DENTAL AMALGAM

EU Regulation 2017/852 on mercury was introduced for environmental reasons rather than any relating to the patient safety of amalgam fillings (restorations) used in dentistry. Factors to minimise environmental discharge of mercury and amalgam in dentistry are already in place such as the use of pre-dosed amalgam capsules; the use of amalgam separators on discharge from dental surgeries; and the collection of amalgam waste. Changes over the years in population needs and the delivery of dental care have already contributed to a gradual background reduction in the use of amalgam restorations; compared to its former, almost ubiquitous use, to restore most types of cavities. Article 10(3) of this Regulation requires the publication of national plans of measures intended to phase down the use of dental amalgam

The greatest opportunities to continue the phase down in the use of amalgam will be through three broad means. Through opportunities to improve oral health to reduce the need to use amalgam; the use of new treatment techniques and materials instead of amalgam; and continuing changes in service delivery to better enable the first two means.

1. Improve oral health

We are always striving to achieve better oral health outcomes as improved dental health reduces the need for restorations of any material (primary prevention); and allows for earlier, and smaller-scale, restoration with adhesive materials (secondary prevention). We have seen a very significant improvement in dental health in recent years, so for example in the 2003 Child Dental Health Survey only 39% of 5 year old children were caries free (i.e. no decay); whilst the 2013 survey showed 60% were now caries free. For 12 year old children the trend is also improving from 27% caries free in 2003; to 43% caries free in 2013. The surveys likewise showed that the severity of dental decay is also lessening in these age cohorts too, with the mean number of decayed/missing/filled teeth per child favourably reducing. The levels of improving oral health in our younger cohorts should mean that the primary need for any type of dental restoration will reduce. Better oral health trends are also evident in our adult population and as these younger generations mature the overall oral health status of the whole population will improve. This will be particularly so given the very nature of dental health indicators where past decay is still counted even when successfully restored, oral health has improved, and the risk of new decay has reduced. However, we still need to be mindful of the other end of the age spectrum, where the more aged demographic, particularly the frail elderly, present special challenges and the risk of compromised oral health.

Whilst we are encouraged by these improvements we will not be complacent. We will plan to continue this improving trend and to aspire to the better levels of some oral health outcomes achieved in other UK regions. We recognise though that in terms of a population-level preventive strategy, water fluoridation has to date not achieved sufficient political and public support. So, we will continue to seek funding to promote community-level schemes such as fluoride toothpaste and tooth brushing; and also at an individual-level, preventive therapies such as fluoride varnish applications and fissure sealants, oral hygiene education, and dietary advice. We thank our dedicated and hard-working dental

teams, along with other health care professionals across Northern Ireland, in this role as they will again be crucial to continuing improvements in oral health by these means.

We know that oral health maps directly to socioeconomic status, and that oral health inequalities are found in those of lower socioeconomic status. We are ever mindful of other factors that might be at play, such as ethnicity, where language barriers or cultural traditions might lead to a higher risk of poor oral health outcomes. Whilst dental decay is theoretically preventable, family lifestyle choices such as dietary, personal hygiene, and accessing healthcare behaviours, may mean that positive behaviour change can be difficult to achieve and sustain. We will still endeavour to empower change in individuals and communities so they can increase control over their health and its determinants; so improving health outcomes, and reducing health inequalities; including those relating to oral health. It would also be expected that the reformulation of fizzy drinks in response to the sugar tax will lead to background oral health gains.

We recognise though the main challenge to increasing the level of preventive therapies to improve oral health will be funding constraints within available resources and against competing health and social care demands.

We will continue to seek opportunities to promote evidence-based preventive interventions to expedite improved oral health so as to reduce the need for restorations in general, and, in particular, further phase down the use of dental amalgam. We will especially prioritise them in the young, where they will have the greatest effect in the longer term, but also in the most vulnerable sections of our population.

2. New treatment techniques and materials

Early intervention using Minimally Invasive Dentistry techniques is already good practice and such options are available for dental professionals to use for early decay and smaller cavities, when delivering dental services. Indeed newer graduates into the profession often complete their training having gained more experience with these restorations than with amalgam. Further, emerging UK data appears to indicate a shift in the main use of amalgam for replacement, rather than new, restorations.

We know that dental caries (decay) results in a lifetime disease trajectory, meaning that those in our population who are middle-aged and elderly usually have larger numbers of amalgam fillings that will require replacement and extension over their lifetimes. There is currently no ideal replacement material that can be substituted for all clinical scenarios and there are mechanical and chemical limitations of existing alternative materials such as strength, durability, shrinkage, and biocompatibility. Technique sensitivities also present limitations when the successful placement of an adhesive filling material might be compromised by individual patient ability to cooperate or difficulties keeping a tooth dry. We believe that until more ideal replacement materials are available patients and dental professionals should still have the option to use amalgam.

Increasing the phase down of amalgam will be dependent on the pace of development of new materials with improved mechanical properties and that are easier to use clinically. Once more, there will likely be increased service costs for such materials, with funding constraints within available resources again being relevant.

Dentists who have been practising for longer already have had experience placing composite, ionomer, and newer variant adhesive restorations. Dental professionals can, as per GDC requirements, carry out self-directed Continuing Professional Development to keep up to date with evolving treatment techniques and materials. Our Northern Ireland Medical and Dental Training Agency also regularly seeks feedback on educational course provision and can plan accordingly if the profession highlights a desire for such further training.

We will respond to new treatments and technologies as they become available and consider their incorporation within the delivery of dental services to further phase down the use of dental amalgam.

3. Continuing changes in service delivery

Preventive therapies for individual patients have already been incorporated over the years into our primary dental care contract. In 2018 we introduced restrictions, in line with EU Regulation 2017/852, on amalgam use for under 15 year-olds, and pregnant and breastfeeding women; except when deemed strictly necessary for clinical reasons. These changes now allow and remunerate dentists for the use of composites and ionomers in these patient groups. Supporting [communications and guidance](#) has kept the profession updated; and we have endorsed [SDCEP's Implementation Advice \(2018\)](#). A public-facing [patient information leaflet](#) has also been made available. As ever, the treating clinician is best placed to discuss treatment options with the patient. The widening availability of these alternative adhesive materials, which can be used at an earlier stage and with their inherent preventive properties, should lead to improvements in the longer term disease trajectory, so lessening the future need for amalgam restorations.

We have also piloted and evaluated a capitation-based primary dental care model for a future contract which should encourage greater use of preventive interventions targeted according to individual patient need. A capitation model could also be weighted at a practice level, to recognise community need. We will also consider within a capitation-based contract the incorporation of other models of preventive care delivery we have tested, including one to better utilise the skill-mix within dental teams.

Our Community Dental Services teams already play a vital role in providing oral health care and preventive interventions to those with special care needs; and also deliver preventive interventions to young children and the elderly. We will consider how these services might be further developed to meet rising population needs.

We will consider future changes to service delivery, in liaison with the profession, to act to encourage prevention and the use of alternative treatments, so as to reduce the need for restorations in general, and, in particular, further phase down the use of dental amalgam.