Quick silver problems; slower reactions

Stephen Hancocks, OBE
Editor-in-Chief

Send your comments to the
Editor-in-Chief,
British Dental Journal,
64 Wimpole Street,
London
W1G 8YS
Email bdj@bda.org

EDITORIAL

The expression 'mad as a hatter' derives from the observation that people who made hats for a living were, how shall we put it politely, slightly eccentric? The reason for their often curious behaviour was neurological damage from exposure to mercury in the process of their work, using mercurial compounds to treat fur pelts to develop them into felt. Although there seems to be a lack of agreement as to exactly how and when the expression was derived, the observation of the behaviour which led to the phrase being coined is undeniable. As so often, what is one person's solution is another's problem. No one thought that the constant contact with, and inhalation of, the chemicals would put the hatters at such risk of a serious occupational hazard, which of course we now so easily understand as mercury poisoning.

Once the symptoms were recognised and the source traced, the use of mercury in the hat industry ceased. We know from many human examples that such a process takes a long time to implement. So in another instance of mercury poisoning, in a whole population due to industrial pollution in Minamata, Japan in the last century, it took over 30 years before connecting the observation to the symptoms resulted in corrective action taking place.

As dentists, it won't be difficult for you to see where I'm heading with this narrative. It is towards amalgam and specifically the incorporation of mercury within it. For some people who have an allergy to mercury the use of amalgam is obviously contra-indicated but for tens, probably hundreds of millions, maybe billions of others worldwide, now and in the past, mercury resides and has resided in their amalgam restorations without apparent problems.

NO COMPLACENCY

I understand that this is not the entire story because there is an emotional overlay to the issue. It is difficult to 'believe' that the inclusion of an element as potentially toxic as mercury can be 'safe'. Yet, to date there is no evidence (remember we are supposed to be maturing into an evidence-based profession) that it causes the widespread harm that is claimed from time to time. Not that we should be complacent about potential risks and research should be ongoing, as should observation of the type which lead to the suspicions and action in hatters and in Minamata.

But while it is one thing to debate an issue such as this is the hallowed, considered pages of the *BDJ* it is quite another when a government or regulatory authority abruptly decides that it is time to ban amalgam on an emotional, or at the very least, un-

critically appraised level. Just such an action has been taken recently by the Norwegian authorities and the arguments for this being a less than prudent step were cogently presented in the journal earlier this year.¹ What has been surprising is that, despite its controversial nature, the subject has not generated a single letter in response for either side of the debate.

Derek Jones argues the case for retaining amalgam as a dental restorative very thoroughly and points out the flaws in banning it, certainly on the environmental grounds which are increasingly being advanced but are virtually without foundation.¹ Others have also pointed to the less than comprehensive thinking in proposing such a ban. This includes the fact that the alternative materials are themselves not exactly environmentally friendly, nor are they entirely without biological risk. Indeed, with composites and their developmental offspring we are yet to build up studies with the same longevity of those on amalgam, once again invoking the plea to regard the evidence-base for the consideration of such radical policy changes.

Quite apart from the environmental and health arguments, the economic consequences are also stark. For example, a recent paper has estimated the financial impact of a ban on amalgam restorations in the USA. If it was applied to the entire population the first-year impact would be an increase in expenditures of \$8.2 billion.² In the USA that cost would fall primarily on individuals, as distinct from the UK where the NHS would have to pick up the bill, albeit having to recoup it from individuals via taxation.

Nevertheless, at a patient level the consequences would be an average increase of \$52 per restoration from \$278 to \$330, and total expenditure for restorations would increase from \$46.2 billion to an estimated \$49.7 billion over time. While one might argue that such a price might be a fair one to pay for safety and environmental protection, since both of these arguments are less than sound the cost looks distinctly unreasonable. As if that were not enough, as the price of restorations increased the paper predicts that there would be 15,444,021 fewer restorations inserted per year, with the consequent impact on oral health.

As ever, there are no simple or quick answers meaning that we have to continue to interrogate the problem to find new and equitable ways of solving it. In the meantime, knee-jerk, quick silver reactions are not the solution.

1. Jones D W. A Scandinavian tragedy. *Br Dent J* 2008; **204**: 233-234.
2. Beazoglou T, Eklund S, Heffley D *et al*. Economic impact of regulating the use of amalgam restorations. *Public Health Reports* 2007; **122**: 657-663.

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