Northern Ireland Assembly

Windsor Framework
Democratic Scrutiny Committee

OFFICIAL REPORT (Hansard)

COM (2023)395 Proposal to Amend Regulation (EU) 2017/852: World Alliance for Mercury-Free Dentistry

18 April 2024

NORTHERN IRELAND ASSEMBLY

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Members present for all or part of the proceedings:
Mr Philip McGuigan (Chairperson)
Mr David Brooks (Deputy Chairperson)
Dr Steve Aiken
Mr Patrick Brown
Mr Jonathan Buckley
Ms Joanne Bunting
Mr Declan Kearney
Ms Emma Sheerin

Witnesses:

Mr Charles Brown	World Alliance for Mercury-Free Dentistry
Dr Graeme Munro-Hall	World Alliance for Mercury-Free Dentistry
Mr Florian Schulze	World Alliance for Mercury-Free Dentistry

The Chairperson (Mr McGuigan): I welcome the representatives to our meeting and invite them to provide their evidence. We will take questions afterwards.

Mr Florian Schulze (World Alliance for Mercury-Free Dentistry): Thank you very much.

Mr Charles Brown (World Alliance for Mercury-Free Dentistry): Mr Chairman, this is Charles Gailey Brown in Washington. Are you welcoming me? I did not hear you very well.

The Chairperson (Mr McGuigan): Charles, it is good to know that you can hear us. I was welcoming all three of you to the meeting. I was just asking you to begin your presentation, in whatever order you have decided.

Mr C Brown: I will be last, Mr Chairman. Thank you very much. Excuse me; I did not hear that.

The Chairperson (Mr McGuigan): Go ahead.

Mr Schulze: Thank you very much. Honourable Mr Chair and dear Members of the Legislative Assembly, thank you very much for the occasion to brief you on the civil society perspective on the proposed EU regulation to phase out dental amalgam by January 2025. I am the administrative vice president of the World Alliance for Mercury-Free Dentistry and the managing director of the European Network for Environmental Medicine. I have followed the process of regulating dental amalgam since

the adoption of the Minamata convention in 2013, and I was involved in the stakeholder process of the EU mercury regulation and its revision.

From our point of view, the regulation is not qualified to pull the Stormont brake. On the contrary, this society will benefit from it, especially because it reduces health risk and environmental pollution. My colleagues will go into greater detail on that. Let me just highlight the fact that dental amalgam is composed of 50% highly toxic mercury, which is inevitably released during placement and removal but also during its time in the mouth. An average filling contains 0·6 grams of mercury, which is twice the lethal dose if it ends up in the bloodstream. It is so toxic that it has already been banned for all other uses, such as lamps or batteries, and it should no longer be placed in the mouth.

There is no alternative but to phase it out in line with the EU deadline. The EU has made its decision for good reasons, and the supply of amalgam is drying up. That is due not only to the ban on export but to the medical device regulation, which applies to Northern Ireland. EU certifications will expire within one month, and we doubt that manufacturers will pay the fees to extend them until 2028 for a disappearing market. When the new requirements fully apply in 2028, there will be no more distribution of dental amalgam, and any stocks will be sold off.

Prevention is not resolving the problem, and dentists will always oppose a ban, whether in 2025, 2026 or 2030 — you have heard them — and that is for their financial interest. They are not even hiding that they make good money, given that they have private charters as an alternative. The sooner the cut, the better it is for the environment, health and consumers, and for oral health because minimal invasive dentistry increases the survival of the tooth.

Consumers should have access to less expensive and safe alternatives in Northern Ireland, as in other countries. Poland has fully replaced dental amalgam with glass ionomers and compomers in the public health system. In Germany, mercury-free dentists use glass ionomers, compomers or bulk composite for the same price as for dental amalgam, and dentists have just announced that there will be an agreement on the full reimbursement of alternatives by the public health insurance in the next month. Probably, they will publicly reimburse single-layer fillings and continue to sell more elaborate and more aesthetic fillings privately.

The text of the derogation is clear. It clearly says that it should apply to countries where dental amalgam is the only material that is reimbursed to more than 90% by the public health service. The purpose of the derogation is to facilitate the transition to mercury-free dentistry where the healthcare system might be particularly burdened. In Northern Ireland, public reimbursement is only 20%, and transition should be more than feasible, especially as the Department has just announced £4·3 million to increase reimbursement for fillings.

Globally, more than 30 countries have phased out dental amalgam, and, by January 2025, there will be more than 50. Northern Ireland should seek no exemption. We have provided a list of all the countries that have phased out dental amalgam.

I will hand over to my colleague.

Dr Graeme Munro-Hall (World Alliance for Mercury-Free Dentistry): Thank you, Florian. I am the chief dental officer for the World Alliance for Mercury-Free Dentistry. I have been a mercury-free dentist in general practice for the past 35 years, and I know, from experience, how damaging exposure to dental mercury can be. I spent my first 11 years working in the health service, after which I moved into a practice that treated mercury-damaged patients. My job as chief dental officer is to talk to Governments, politicians such as you, Ministries around the world and other stakeholders about the advantages and feasibility of amalgam-free dentistry, and to help them to deal with any objections that may arise. My job is also to help to develop transition programmes to mercury-free dentistry. Each country has its own unique circumstances and different challenges.

I have been involved in the Minamata negotiations since their outset in 2010 in Stockholm. Even though Minamata was an environmental convention, it decided, at the request of member countries, to set up an expert group to look at the health effects on patients of the release of dental mercury. I was part of that group and wrote two reports, to which you have access. The first was 'Dental Fillings Materials: A Comparison of Availability, Affordability, Effectiveness, Risks and Benefits'. It is a brief summary of the risks and benefits of the different materials. The other report was 'Avoiding Neurotoxicity: An Important Benefit of Non-Mercury Alternatives to Dental Amalgam'. I am married, fortunately, to a Danish dentist. We run a practice together and wrote a book called 'Toxic Dentistry

Exposed'. Part of the book shows why people in certain subgroups have health problems in response to mercury and how we try to solve those problems.

As Florian said, mercury is constantly released from amalgams. The average exposure from them is 10 micrograms of mercury a day. I will give you a few bullet points on the health aspects of that. We will talk about maternal amalgams. The mercury that a mother has in her fillings travels on a one-way street to the fetus. The fetus acts as a sponge to soak it up. Mercury goes through the placenta and cannot come back. The Centers for Disease Control and Prevention (CDC) say that one in seven children — 500,000 in the United States — has a lower IQ due to exposure to mercury, as seen from measuring mercury in the cord. That lowered IQ is enough to have an economic impact on the gross national product. One amalgam can expose the fetus to levels of mercury that are above the safety levels set by different Governments, different boards, the Food and Drug Administration (FDA), the Environmental Protection Agency (EPA) and others around the world. The level can affect brain development. Research from Norway shows that, if, within the first two months of conception, a mother has an amalgam filling, it increases seven-fold the chance of the baby having a cleft palate. Perinatal deaths — a death between 22 weeks and one week after birth — increase with the number of maternal amalgam fillings. That is a linear dose relationship: the more amalgam fillings you have, the higher the risk.

As a mercury-free dentist for the past 35 years, I have not met a situation yet in general practice, including in special needs, in which I have had to use amalgam. The quality of materials used 35 years ago was far inferior to that used now, so, if it was possible for me to do that then, I am certain that it is possible for dentists to do it now. In 2020, the FDA advised that amalgam should not be given to patients with neurological diseases, such as Alzheimer's, multiple sclerosis or Parkinson's disease, because of the exacerbation that would happen due to exposure to mercury vapour from the amalgam fillings. The National Institutes of Health (NIH) published a study saying that there is a relationship between the number of amalgam fillings and neurological diseases. That is countered by genetic predisposition. Whatever genes you have may dispose you towards Alzheimer's or multiple sclerosis. That does not apply to just neurological conditions, of course. As you can see on page 22 of the report, there are also cardiovascular effects. Dental assistants are exposed to mercury vapour, and their major problems are, in order, peripheral neuropathy, vision disturbance, cognition issues and reduced fertility.

All of that is backed up by science. The Supreme Court of Norway held a case. Its judgement, on 12 December 2013, was that mercury vapour is emitted from dental offices and that dental assistants are harmed by it. That was its judgement. Dentists who use amalgam have reduced IQ, reduced hand-to-eye coordination and increased anxiety, depression, irritability, memory loss and cognitive disturbance compared with control groups of dentists who do not use mercury.

I will touch on one part of the Concorde report for the EU in 2012, "The Real €o$t of Dental Amalgam": the loss of IQ due to mercury vapour. The report says that there is a disproportionately large effect "at the margin" when it comes to IQ. If you imagine that, in an overall population, there is a bell-shaped curve on which most of us sit in the middle with the very bright on one side and the not-so-bright on the other side, that would mean that, if you were to move that curve even a few points down, you would wipe away a large number of the very bright people in society. That report looked at that and measured the economic impact. It said that the reduction of those bright individuals, who are the political and economic drivers of society, has an effect on the gross national product of the society at large.

Before we come to any questions, at the back of the report, members have a letter to the Department of Health, written by the Chief Dental Officer in 2012. In May 2012, he said:

> *"DEFRA as the lead department on behalf of the UK Government ... convened a meeting to agree a UK response to"*

the EU

> *"recommendations. It was agreed at this meeting that the UK should support the EU Strategy to reduce the environmental impact of mercury and could support a ban on the use of dental amalgam from 2016".*

If, in 2012, he saw that it was necessary and possible to do that by 2016 in all aspects, from the health service on, why are we sat here still talking about it in 2024? He said in the letter that it was possible and that he wanted to do it, but it did not happen. Other countries have taken the lead, and it has

happened there. If it was OK to do it then, why would it not be OK to do it now? Thank you for your time and for listening.

The Chairperson (Mr McGuigan): We invite Charles to give his presentation.

Mr C Brown: Yes, sir. Thank you. I am Charles Gailey Brown of the Gaileys of County Tyrone, talking to you from Washington. It is wonderful to be in front of the Northern Ireland legislative Assembly. It is a wonderful honour, as a historic Irish-American, to see you and to participate. I want to convey that I am glad that my distinguished colleagues came to Belfast, and I am sorry that I could not come.

Mercury-free dentistry is so exciting. You should have a parade in Belfast. You have ended this primitive pollutant — this tooth-unfriendly material — that was invented during the time of Queen Victoria's uncle. It is not modern dentistry. Its cost is £70 per filling more than composite when you add the environmental effects. The pro-mercury British Dental Association (BDA) did not say that it would pay the extra £70 that it is causing. It is causing that. You cannot control the pollution, because it walks out of the office. It goes from there into the environment: with cremation, it goes into the community. That mercury pollution is why you are not supposed to build a crematorium near a school. The BDA will not use that word: it calls it silver, and that is false.

Logically, this is exciting, and that is why the European Parliament voted 98% to 2% to ban mercury fillings eight months from now, on 1 January 2025. The BDA says, "No, we don't like modern dentistry; we want polluting dentistry. We want to return mercury to this part of the island". Obviously, that will upset the entire island, because the mercury goes into the streams, rivers and loughs, and it will pollute the entire island. When that dental mercury gets into fish — the US Environmental Protection Agency is clear on this — some of the children who eat the mercury in that fish will get permanent brain damage from it. That is the price that the BDA is extorting from you, because it is saying, "We want to use mercury fillings. We don't want to ever stop using mercury fillings".

The price is brain-damaged children, and the US Food and Drug Administration says that children should not get amalgam. I know that they do not, according to your law, and that the BDA has already converted on that, and it can convert for adults. There is also the issue of kidney damage and all the issues that my colleagues talked about. Basically, the BDA wants to regress you. It wants to say. "We want mercury coming in". The EU studied this for 14 years and finally said no to the Germans, the French and the Council of European Dentists, but also to the pro-mercury British Dental Association, which was over there lobbying, even after Brexit. It was saying, "Don't end this", because it knew that this was coming. It has had so many years to get ready.

The mistake here from the Health Department — maybe it needs more money, or maybe not, and we will get to that — is that there is no quid pro quo. The BDA said that it needed £3·5 million to change to mercury-free dentistry: 80% of that is paid by consumers, but did the BDA say, "We will give the consumers 80% of this"? No, there is not a halfpenny to consumers: the BDA wants all the millions. It asked for £3·5 million for the conversion, but it has ended up with £9 million and no quid pro quo. The quid pro quo is to stop using mercury fillings.

The threat of some of the dentists is to say, "We will go into private practice". If they use mercury fillings in the private sector, I assure you that they will be on the dole very soon. No consumer with any choice wants mercury fillings, including Irish consumers. The BDA says, "Well, just give it to the working families and the people on the NHS". Those consumers do not have a choice. I think that some constituents may have written to you, but I am sure that no consumers in your constituencies — outside of just a few dentists, because many of them have stopped using it — are saying, "We want more".

Amazingly, the BDA said that dentists will need uptraining. That is astounding. Moldova has banned amalgam. The average monthly income in Northern Ireland is something like £4,000, or maybe a little less. The average income in Moldova is £5,000 a year, and it has banned mercury fillings. The British Dental Association is selling its members short, because it is saying that they cannot do mercury-free dentistry because dentists need uptraining. That is libellous to its own dentists. The dentists know how to do mercury-free dentistry. If they go into private practice, they certainly will, and they know how to do it. Every dentist is trained to do that. The idea that it has conveyed to you, that dentists need uptraining — I am sure that it wants you to pay for it — is astounding. Dentists do not need uptraining. Every dentist is ready.

Dentistry is ready, but, if not, the BDA needs to be told, "You have got your money, but, if you do not want it, fine". The BDA's approach has been to strong-arm this legislative Assembly. It has gone to the

BBC first and said. "Oh, this is terrible". I am sure that the physicians and the hospitals are watching. Everybody in the National Health Service is watching that approach — strong-arm them in the media, then run in and say, "You have to give us money". That is not the way to appropriate.

I was a state attorney general in my state — the state, by the way, has the same population as Northern Ireland. I have been before many legislative Assemblies, including for appropriations, of course, and asked for money. If I said, "All my lawyers are going to leave", they would not have believed it, but, if I had gone to the press first and then gone to them, they would have considered that to be strong-arming. That is exactly what the BDA is trying to do. It is trying to say, "It's such a crisis". OK, if it makes the case for money, fine, but there cannot be amalgam. If you choose this route, I think that your constituents will say, "Two million of us; a few hundred dentists. It's time to tell the dentists to change, rather than us continuing to get mercury fillings".

There is of course, the Good Friday accord. The BDA can say, "We'll block mercury fillings" — we are very proud of that in America — "from going to the rest of Ireland and into Europe", but it cannot do that under the Good Friday accord. If the BDA does not block it, it will go into Ireland in some way, be that the black market or whatever. If you get it to this part of the island, it will be in the rest of Ireland and, therefore, the rest of the EU. Neither the EU nor the Irish Parliament will accept this idea of saying, "We're going to keep mercury fillings within the EU trade areas". It would be the worst application. That is why the non-profit groups from across England, Scotland and Ireland have said what they have said, and it is why Friends of the Earth Northern Ireland wrote a letter saying, "No, don't invoke the Stormont brake for mercury. Invoke it for something that might be needed". This is not wanted by a single consumer in Ireland. It is the pro-mercury BDA, which was decisively defeated — 98% to 2% on the continent and by the Irish MEPs — saying, "We can win in Northern Ireland". Do not let them win. Do not let them bring mercury to your island. Instead, celebrate — have a parade.

The Chairperson (Mr McGuigan): Thank you very much. I will open up now to members' questions. Members, if you wish to ask a question, please indicate that you wish to do so.

You have made a number of points, some around the health risks. We are meeting with Department of Health officials after your presentation, so we will probably put some of those points to them. Graeme, I think that it was you who talked about Poland and Germany being mercury-free currently. If we were to remove or completely phase out dental mercury amalgam from use here, would appropriate substitutes be available? How suitable would the substitute products be? How much would they cost?

Mr Schulze: I will start by reminding you that, in Europe, we have phased out the use of dental amalgam for children and pregnant women, and, in line with the regulation that came into force in 2018, there are all sorts of reimbursement schemes, but not all European countries have public reimbursement for fillings. Those who do have put in place alternatives to dental amalgams. There were choices: some countries went for glass ionomers, and some went for composites. In 2022, Poland chose to phase out amalgam immediately, replacing it with glass ionomers and compomers for not only children but the general population, as was the case in Germany, as I said. Bulk-fill composites are also in use. They are one-layered, time-saving materials that are already in use for standard treatment. They have aesthetic disadvantages, so you can still offer more aesthetic composites with multiple layers. That is the situation in other countries. The European Commission has studied the issue in depth. Dr Munro-Hall — Graeme — may add something about the quality of the alternatives that we have nowadays.

Dr Munro-Hall: If you stopped using amalgam tomorrow, enough composite would be available around the world — it is made in more and more countries — to immediately take its place, so there is no availability problem. The Swedish Chemicals Agency said in 2010 that composite was "available, effective and affordable". That was the case then, and it is true now. As the years have gone by, composite has become more effective. I have seen composite fillings that I did over 30 years ago that are still in place and working. I can say that, from an effectiveness point of view, they work. I have not used any metal in dentistry for over 30 years. We have had quite challenging circumstances, and, in the beginning, it was very difficult, but I had seen the damage that mercury could do to health, so I committed never to using it again.

The cost of composites has come right down, so it is now on a par with that of amalgam on a filling-for-filling basis. The dental manufacturers have realised that the end of amalgam is coming, and they have made a composite that handles like amalgam for those dentists who find it difficult to transition. It was originally designed for developing countries where dentists do not have access to electricity, given that they have to go out into socially and economically deprived areas that do not have the

infrastructure. A satisfactory mercury-free alternative has been made that handles like amalgam for the same price as amalgam. That is why, to this day, dentists in a lot of developing countries get in touch with me to say that, now that that material is available, they, who have a lot of challenges, are ending their use of amalgam.

The benefits and effectiveness of a composite are far superior to those of an amalgam. Amalgam has an Achilles heel: as it ages, it loses its mercury. The mercury comes off 24 hours a day. When you brush your teeth or have a hot cup of tea, the mercury leaves the amalgam. The mercury is not chemically but physically bound within the amalgam — it is not a chemical bond — so, with abrasion, the mercury is released. As the mercury is released, there is corrosion. That corrosion expands the amalgam and cracks the tooth. When a patient comes to you, their amalgam filling looks fine in the tooth, but half the tooth has fallen away because the filling has expanded and something has to go. An amalgam is, because of its nature, held in place by mechanical retention; in other words, you have to make the base of the cavity wider than the top or it will fall out. Composite is glued, if you like, or bonded in, therefore, you do not lose as much tooth structure. When you make those undercuts, you create weaknesses at the base of the tooth, the filling material expands, and, crack, off it goes. It is a very unsuitable material in the long term. That is why a composite is far better, and it can be repaired. It is easier to repair a tooth with a composite filling than it is to repair one with an amalgam filling.

The Chairperson (Mr McGuigan): Thank you. I will open the meeting up to other members.

Mr Brooks: The comment about the costs being similar is interesting, because, as far as I am aware, it does not align with other advice that we have received on the matter. I am keen to investigate that with not just you but others. Do you accept that, if the recommended hygiene procedures for mercury are followed, the risks of health effects from amalgam are minimised? If we are in line with the clinical procedures and so on that we have, the associated risks are —.

Dr Munro-Hall: Do you mean best management practices when handling amalgam, such as the use of separators?

Mr Brooks: Yes.

Dr Munro-Hall: That has been extensively looked into. As Mr Brown said, most of the mercury in the amalgam walks out the door. Even with best management practice, including fully serviced separators, over 50% of the dental mercury that is used will end up in the environment. The waste water that comes out of even a fully serviced dental separator is not suitable for putting into waste water treatment plants, because, even having gone through a separator, it exceeds environmental limits for mercury. That happens even with the best management practices, and it concerns only the mercury in the environment. Then there are health effects on people who have been exposed to mercury vapour, because, 20 seconds after you breathe in mercury vapour, it lodges in your brain and goes straight through the blood-brain barrier.

Mr Brooks: Given your concerns about that and the fact that most of the population probably has at least one filling of that type, what are the short- and medium-term health benefits of a ban? Are you advocating that people who already have those fillings have them removed?

Dr Munro-Hall: Absolutely not. In no circumstances, because, as soon as you remove an amalgam filling, you expose that patient to a lot of mercury vapour. If you do not have overt symptoms or do not believe that your health has been adversely affected by the mercury, as and when the fillings need replacing, use a non-mercury replacement. We certainly do not advocate that amalgam fillings be taken out.

Mr Brooks: Your concerns about people having mercury fillings are not such that you would be more concerned about them having the fillings in their mouth for some years than having them removed. How does that align?

Dr Munro-Hall: I appreciate your point, but there is no way of measuring what will happen. It could be, as Professor Vera Stejskal from the Karolinska Institute explains with the 25/25/50 rule, that 25% of patients who have been exposed to a toxic substance will experience some side effects in a matter of months. Some 50% will experience side effects, but it could take 30 years before that happens, and 25% will sail through and get nothing. However, when you go to a doctor with your symptoms and mention that they come from an exposure that happened 25 years ago, there is no connection to link it

back. We just do not know. It is a bit like playing Russian roulette. It depends on the individual's genetics.

Mr Brooks: Your argument, I guess, is that we do not have more fuss about this because there is a gap between the tooth being filled and a condition being reported, and the link is not made to health conditions.

Dr Munro-Hall: Even a direct allergy to mercury takes five years before it becomes apparent. A patient can see a doctor or an allergy specialist, but given that they have had no recent exposure to mercury, because it takes five years to develop, a lot of the symptoms are missed.

Mr Brooks: Chair, thank you. Some of our friend Charles's contribution was relatively disparaging of the BDA. I have to say that the BDA has engaged with Members not just since the Assembly has been restored but with members across the room on various issues. It is not a case of the BDA running to the BBC to create a fuss. To be honest, some of today's contributions have been more dramatic than what the BDA brought to the Committee. The attack on the BDA was probably unnecessary, and I will put that on the record.

Mr P Brown: Thank you, Charles, Florian and Graeme, for your impassioned testimony this morning. I declare an interest as someone with a mouthful of amalgam. I feel like I have a ticking time bomb in my head at the moment. It is a bit scary. I felt like booking a dental appointment to have them taken out and replaced, but David asked about that and had it clarified, so I know that that would possibly set the bomb off. I will not do that.

I will touch on one of the points that David raised about the short- and long-term impacts. Am I right in thinking that the impact is there for as long as the filling is in the mouth and that there is no half-life, so to speak, of the filling? Is it your view that, as long as there is amalgam in the mouth, it poses a danger?

Dr Munro-Hall: Yes, because it will constantly emit mercury vapour. In the little report that I gave to the Committee, there is a photograph of a 22-year old amalgam filling. We take the tooth out, use a pencil eraser to rub it for 10 seconds and photograph the mercury. We can see a giant plume of mercury vapour even after 22 years, as it still comes off on abrasion.

Mr P Brown: OK. We have heard a lot about the environmental benefits of moving away from mercury amalgam, but I have heard from others about the increased reliance on single-use plastics that would result from moving to alternatives to composite. Can you comment on that?

Dr Munro-Hall: Yes. One of the things that the BDA mentioned was the fact that microplastics in the environment have become a hazard. That was raised a few years at the Minamata by the FDI, which is the World Dental Federation, so it was answered by the dental manufacturers. They said that microplastics are not created when using composites, because, when a dentist drills out a composite, the size of drill that they use is such that the particles created are of a greater size than that defined for microplastics. In the manufacturers' view, microplastic pollution does not happen with composite or glass ionomer fillings due to the way that they are removed.

Mr Schulze: One important aspect to clarify is the composition of composites nowadays. A composite is not a plastic filling. Usually, 80% of it is a ceramic or glass powder, so it is an organic material. Nowadays, you even have composites that have 90% to 96% of ceramic powder.

Just to understand what we are talking about, I will say that, of all the materials that might be on the market, nothing compares with the toxicity of mercury. We had other material questions about maybe bisphenol A, but the Commission's *[Inaudible]* report in 2012 provided a list of products that at that time were already bisphenol A-free. I talked about a medical device regulation, and that is making the alternative much safer. You have the Commission's requirements, which are met not by dental amalgam but by those alternatives.

Mr P Brown: Thank you very much, and thanks for picking up on microplastics. I meant microplastics as well as single-use plastics. Is there a difference in the amount of single-use plastics in composite and in amalgam, for example?

Dr Munro-Hall: The amalgam is encapsulated nowadays, so each filling will require at least one or two capsules of amalgam. Those capsules are made of mercury and are disposed of in landfill.

Mr P Brown: You all, particularly Florian, dwelled on the proven health impacts of continuing to use mercury. Florian, I think you even referenced that it could be a potential cause of death. Graeme, you mentioned Alzheimer's and infertility and so on. Is it your view that that is proven?

Mr Schulze: I was not reporting what is written in —.

Dr Munro-Hall: Science says that there is a link, but actually proving that is a different matter. You have to have a control group, and you cannot ethically have control groups with humans where you say, "We'll give this half mercury and that half not, and see who dies of Alzheimer's". We can say that there is a theoretical link, and that is backed up by the data that we see. That is as far as we can go.

Mr P Brown: It is important that we get that on the record. I have just brought up the EU Commission website to look at some of the evidence, and I checked that there is a valid link; it is not just some random site. It says:

> *"There have been claims that amalgams might be involved in many diseases and in some neurological and psychological disorders such as Parkinson's or Alzheimer's diseases, depression and anxiety. However, for many of the claims, scientific investigations have generally provided either refutation or found no link. No link has been found between dental amalgams and chronic fatigue syndrome, kidney diseases, autism, fertility, birth defects or coronary heart disease."*

It also says:

> *"Among dental workers, there does not seem to be a link between exposure to mercury and health."*

There are various other aspects there that seem to be very much contrary to a lot of the evidence that we have received from you. That is on the EU Commission website, and we are considering EU legislation.

Dr Munro-Hall: Yes, I understand that, but all that I can say is that what we are saying to you is our experience of the data as the scientists have reported the data to us. We understand that people have different points of view, but we are entirely data-driven. We on this side of the fence are 100% data-driven. We say, "Here is the data. This is what the experimental data said". Various scientists from all around the world have said the same things about the neurological impact. There is a study from Taiwan that says that, if you have amalgam fillings, you are 1·6 times more likely to get Parkinson's disease. That corresponds with what Echeverria found in the United States. Multiple scientists agree with that report.

I would happily argue the data. If you claim that that is not the case, let us see the data. I have travelled around the world and talked to the various scientists who are involved, and with the data that I have, I am perfectly clear that there is a connection between mercury and neurological disease, and the National Institutes of Health say that there is that connection.

Mr P Brown: Connection and causation are different things, of course.

Mr Schulze: On the one hand, the European Commission made the proposal, although not especially on the direct health impacts but on the environmental and secondary health impacts of mercury, which is accumulated in the environment and can be picked up through the food that we eat. The latest health risk assessment on dental amalgam, which was in 2015, said that data was missing. That was picked up by the FDA in 2020, which said, "Well, OK, we can't see what happens with the mercury when it is accumulated in the body, and when it adds to the mercury that is taken up by the fish and other sources. We don't see what happens to the vulnerable population". Those aspects were not clear in the 2015 report. That assessment should have been repeated every five years, but that has not happened. The FDA did the same job by looking at all the studies from 2011 to 2019. That is the most recent report, and the Commission made the statement about phasing out dental amalgam. We do not know the outcome of a revised assessment of the health effects, but it might come soon and might be similar to what the FDA says.

Dr Aiken: I have just two questions. Thank you very much indeed for your evidence and for coming before the Committee today. Charles, what is the FDA's position on amalgam? Is it banned in the US?

Mr C Brown: The Food and Drug Administration recommends against amalgam for major categories of the population, so that is between a third and one half of the population. It recommends no amalgam for children or women who are pregnant, breastfeeding or planning pregnancy, which is a very general term, but we say presumptively that young women, at some stage of their life, might be planning pregnancy. That is very broad; it covers younger women of childbearing age. It also recommends no amalgam for people who have kidney disease. Dentists do not have the slightest idea how to diagnose kidney disease, so, again, you are taking risks. Kidney disease is very high in the prison population, so dentists should be aware of that recommendation. All dentists, even those in the pro-mercury lobby, say that you should not give it to people with kidney disease; they just do not want to check on it. It should not be given to people with neurological disease or any kind of a neurological condition or to people who have metal sensitivity. If you add that up, you find that we are certainly at a third, or even half, of the US population.

Private dentistry has pretty much ended the use of amalgam, as, I believe, have you in private dentistry. Government programmes have been much slower. They are in other countries too. It is just that bureaucracies have more trouble changing. Our focus right now is on ending it. We are pleased with the FDA position, but let me go further and say that the US Environmental Protection Agency (EPA) says, "We have to stop the pollution because of what it's causing in the environment. It gets out, it methylates, it poisons the fish, and children eat the fish". The EPA has statistics on the number of children who get poisoned permanently, meaning that they suffer brain damage, from mercury. Remember that dentistry is one of many mercury uses, but it is the most common.

Dr Aiken: Thanks for that —.

Mr C Brown: In the US, most major dental products manufacturers have stopped making amalgam. That is the tremendous oddity. Can you imagine a profession saying that it wants to use a product that the manufacturers consider too dangerous to make? They have to bring it in from Australia from a rogue company. That is the point that we have reached.

On one other point, the American Dental Association (ADA) owns patents on amalgam, so we understand its motivation: the more sales, the more money.

Dr Aiken: Charles, to bring it to a conclusion, basically, the FDA advice about not using amalgam on pregnant women and others is the same advice as it is in the UK and in the EU. There is no difference.

Mr C Brown: Yes, and it includes women who are planning pregnancy. It is broader than the UK rule for women who are pregnant and breastfeeding and children who are under 15. It is a recommendation.

Dr Aiken: I have been checking the website and have not really got an answer to my second question. So far, only five EU countries have banned amalgam, have they not?

Mr Schulze: I can count it. From the European Union, Sweden was the first, and we have a couple of others. We have Poland, which, in 2022 —.

Dr Aiken: No, I think that Poland says that it is still doing it.

Mr Schulze: Poland has no ban on dental amalgam. It has replaced dental amalgam in public health services. So, you are right, but it is, in effect, no longer used. There is a phaseout in Denmark, with exceptions, and there is a phaseout in Lithuania with exceptions. You can see on my list that there are many countries, including Netherlands, Finland, Spain and Portugal, where the use is below 1%.

Dr Aiken: We are specifically looking at the EU legislation. I could be wrong; I am just going by what I have seen. Ireland, Finland, Sweden, Slovakia and Lithuania are the only countries that have banned it, and there are indications that many European countries are looking at derogations leading up to 1 January 2025. I would like something definitive on the number of EU countries that have actually banned it.

Mr Schulze: To clarify on the derogations, from the discussions in the Council, derogations were put in place for two countries, so not many countries. As I mentioned in my opening statement, countries qualify for the derogation only where they have reimbursed only dental amalgam at a rate of more than 90% in the public health services. That concerns two countries: Czech Republic; and Slovenia. I was telling you which countries already have a phaseout in place. There are, of course, countries that set out objectives in their national plans to phase out dental amalgam or replace it in the public health insurance system with alternatives. Croatia did that for 2025, and Italy announced a phaseout for 2025. You will have read in my position paper that half of the European Union countries by 2025, which is in the next eight months, will have already phased out dental amalgam. Their use of it will be below 1%, or they will have replaced it in the public health insurance system.

The Chairperson (Mr McGuigan): We have two more members to speak. I am conscious that we have other evidence coming and that we have to wrap up by 1.00 pm. If you can, please keep the answers to questions as brief as possible.

Ms Bunting: Gents, thank you very much for your evidence. It seems to me that the argument is not about whether it is good or otherwise to use amalgam. I think that everybody agrees that it is preferable not to use amalgam. The issue of dispute in our legislation is the time frame for stopping the use of amalgam. It is the difference between phasing down the use of amalgam, to which everybody has agreed, and stopping its use, which is a ban. That is what we face. Our difficulty is that we have the worst oral health on these islands — people are already not going to the dentist — and we already have a crisis in National Health Service dentistry, whereby people can receive treatment, and cheaper treatment, elsewhere, and it is becoming inordinately difficult in Northern Ireland for people to register for and access National Health Service dental care. That, combined with the cost-of-living circumstances in Northern Ireland at present, has created the perfect storm, and that is why the issue is to do with nothing other than the time frame. It is not about the merits or otherwise of the use of amalgam but specifically about the time frame. It is important that we put that on the record.

With that in mind, I will ask you a couple of questions about the health impacts of amalgam use and the statements that you have made. The introduction to your written evidence states that the amended EU regulation:

> *"will not have a significant adverse impact on everyday life in Northern Ireland."*

It also states:

> *"It is not an exceptional circumstance requiring the Stormont Brake to be used as a matter of last resort."*

Our Department of Health has given us advice that indicates that that is not true, that it will have a significant adverse impact and that it is an exceptional circumstance. Both viewpoints cannot be right. Our own Department of Health and the British Dental Association are saying that, for the purposes of the Committee — that the amended EU regulation will have a significant adverse impact, which is likely to persist, and that, yes, the criteria for applying the Stormont brake are met. You say otherwise.

Mr Schulze: I can reply. From our perspective, the question is this: who are you looking at? If you are looking at the dental profession, it is, of course, defending its interests, especially its financial interests, and giving you its arguments for continuing with its work. From looking at the arguments about the impacts of amalgam use on this society, however, we view it differently. We do not consider using an alternative not being as good as using dental amalgam. We consider it feasible to treat patients with the alternative, and we gave you our arguments for thinking that. We even consider there to be a benefit to oral health as a result of using minimal invasive dentistry. We see there being a positive impact on environmental costs, on the environmental burden and, of course, on health risks.

I believe that and made it clear in my statement when I pointed out the problem with the profession. There is one profession with which you need to find an agreement, and I believe that doing so will also be good for the consumer, as a large part of the population will benefit from a phase-out of dental amalgam when alternatives become more accessible. For now, consumers have a choice. The Committee will probably hear from the Department of Health later about how much money it will cost the National Health Service in fees, but, for now, people have a choice whether to pay quite a lot of money for an alternative filling. It costs £80 to £150 for an alternative filling under the National Health Service, and it is even more when undertaken privately, at over £200. I assume that based on what I have heard. Alternatively, people can have an amalgam filling.

I will give some examples from other countries. For public dentistry, the position for children in Poland is that the fee can be reimbursed. Elsewhere, people can receive an alternative filling as a basic treatment for much less cost. Patients would benefit from that if you were to impose what the Health Department and the BDA have suggested. Fees for composite fillings are £20 to £50, which is not much and is still less than what dentists can earn privately. The Scottish model, where the cost is about £30 to £70, is still feasible when you realise that the NHS is reimbursing only 20% of the cost. From what I see, doing that would also have a benefit for people.

Ms Bunting: I reiterate that the benefit is a given. We all absolutely understand that. The issue is that, fundamentally, a line in the sand has now been drawn for everybody in advance of the preparation for the phase-down. From our point of view, the fear is that, given the lack of access to National Health Service dentistry and the crisis that NHS dentistry is in, an increase in cost will lead to people choosing not to go to the dentist. We are aware of the links between oral health and general health. The fear therefore is that people in financial straits will make the choice, because of the cost involved, not to receive oral healthcare. That is something that we are weighing up.

Chairman, if I may, I would like to ask a couple of questions. Graeme, you cited a list of symptoms in your evidence. I want to pick up on some things that you and Patrick discussed. I appreciate that the risks of amalgam use are difficult to measure, because it takes such a long time for anything to manifest itself, but is any data whatsoever available that outlines the list of symptoms and the population numbers impacted on by amalgam fillings? We have data on the number of people who have amalgam fillings.

Dr Munro-Hall: Yes. To go back to the NIH study that looks at genetic susceptibility, it identified a number of genes that mercury affects. We have data on one mutated gene. It is called CPOX4, which 28% of the population have. It is more prevalent among boys. Should that section of the population be exposed to mercury, especially when young, it would cause measurable neurobehavioural changes. Any exposure to mercury would have that effect on 28% of the population. That is because it takes a linear approach: the more that a person is exposed to mercury, the greater that the symptoms are. Other genes have been identified, but the NIH has also said that there are more genes out there that it has not yet identified. CPOX4 is just one.

Ms Bunting: OK. Thank you. In your evidence, you reference the impact of mercury on fish in Sweden after it got into the water. We have been using amalgam here for a considerable number of years. Charles referred to its being invented during the time of Queen Victoria's uncle. On that basis, surely we would already have seen an impact on our fish and on the water here and in the Irish Sea, and thus an impact in the Republic and on the mainland as well. Is there any evidence of that?

Dr Munro-Hall: There is Scandinavian evidence, through the Swedish evidence. Sweden monitors the impact, but I have not been able to find evidence at all of monitoring of heavy metals in inland fish.

Ms Bunting: OK. Thank you.

Mr Schulze: May I add to that? The European Environment Agency (EEA) report fed into the European Union decision. It came to the conclusion that 40% of all European surface waters exceeded the safe thresholds for chemicals. In, I think, 90% of cases, the chemical was mercury. The problem with mercury is that it is toxic in such a little dose, with microgram dosages having an impact. You are on an island, so you have rivers, lakes and, of course, an ocean next to you. The most recent study found that, since the industrial era, oceans have in excess of five times the safe level of concentration of mercury. That is alarming, and the European Commission took measures to stop it. Dental amalgam accounts for the largest use of mercury. I do not know how much is used in Northern Ireland, but, as I said 40 tons of amalgam were used in the European Union in 2019. It is the main use of mercury.

Ms Bunting: Thank you. Part of the difficulty that we face is the separation from the rest of our own country, as well as well dental practice and dentist availability, not to mention, as I have outlined, the perfect storm that Northern Ireland is experiencing. You will appreciate that our aim is to weigh up the evidence and move in accordance with what is best for our constituents and the people of Northern Ireland. I do not think that there is any doubt among us, you or, for that matter, the BDA that it is preferable not to use mercury. We have other factors that we must consider, however, because of the time frame for the proposed ban. That is where the issue lies in all of this.

I welcome your evidence today, but I want to read from a letter from World Alliance for Mercury-Free Dentistry to the Committee, which Charles referenced orally:

> *"The World Alliance for Mercury-Free Dentistry is watching carefully. Unless the demands of this pro-mercury lobby group are rejected, we are prepared to file a petition with the US State Department asking for my government to investigate a violation of the Good Friday Agreement."*

In circumstances in which we are trying to move in accordance with the needs of our population, while understanding the circumstances and what might be best for us, I am not sure that threatening us with the American Government is an appropriate way in which to move forward.

Mr P Brown: Would that not also be strong-arming?

Mr Brooks: Yes.

Ms Bunting: I welcome your evidence, but I feel that it is inappropriate for you to say that in the letter. We are making decisions with the best intentions in difficult circumstances. Thank you.

Mr Buckley: That was a very timely contribution from my colleague, Joanne Bunting, particularly on the pros and cons of mercury use.

I welcome the evidence, particularly from those in the room. It is helpful for us to hear that side of the debate, and you are probably right that such a discussion has been missing to date. The debate for us, however, is about the phase-down of dental amalgam. The UK-wide policy position on phasing down its use is already supported by the UK's four Chief Dental Officers and the wider dental profession. With that in mind, and Steve mentioned the number of EU countries that have already banned dental amalgam, which country is the case-study example for leading the way on banning dental amalgam?

Dr Munro-Hall: In the EU, it would be Sweden. Norway was the first to ban dental amalgam, in 2008, followed closely by Sweden. As a case study, Sweden then banned it again with exceptions. Its dentists have to ask permission from the Ministry of Health and Social Affairs to access amalgam and then justify its use. Sweden has now removed exemptions, because its dentists did not ask for them. In 2018, only one dentist in the whole country asked for an exemption.

Mr Buckley: Are you aware of the time frame in Sweden from the announcement of a ban to the ban's taking effect?

Dr Munro-Hall: For Sweden, no, but Norway was an interesting case. Norway announced its ban on 31 December 2007 and said that, as of 1 January 2008, dentists could still use dental amalgam. It is so dangerous, however, that it could not be transported, so it was an immediate ban. Norway therefore did it over a public holiday, so the time frame was from one day to the next.

Mr Buckley: To clarify, dentists could still use it.

Dr Munro-Hall: Yes, Norway was not banning its use. Rather, it banned it for transportation reasons.

Mr Buckley: Are you passionately against the UK's phasing down of amalgam use? As a point of policy, there is a UK-wide agreement among all Chief Dental Officers to have a phase-down. To go back to the point that my colleague raised, it is about the time frames now involved and the societal impact that a ban will have. We are now into the final nine months. We have a serious crisis in our dental services and with people being able to access them. We have serious concerns about the ban's impact, particularly on those from a working-class background, who, statistically, already have issues with accessing dental services. With only nine months to go, time is ticking on. Do you appreciate the serious concerns that we have as a Committee about not being able to safeguard people?

Dr Munro-Hall: Yes. My understanding is that it really comes down to economics. It is just not economically feasible for dentists, under the present structure, to do alternative fillings. I can understand their issues and problems, but, to come back to it, the argument that you make is exactly the same one that I heard years ago in the EU. The Swedish delegate then said, "Why poison people just because they are poor? There has to be a way out of this". You have one of the top dental schools in the whole world here. Dentists here are certainly competent and trained enough to do alternatives. It

is just a case of finding a political solution here. It is a question of how you facilitate that, because, as your colleague said, and we all agree, this is necessary but that it is a case of finding a way forward here.

Mr Buckley: We do have a competent dental profession in Northern Ireland. It excels.

Dr Munro-Hall: Absolutely.

Mr Buckley: Those dentists are the ones who are coming to us with huge concerns about what a ban would mean for their patients. That is where the concern lies.

I will stick with Graeme for a moment, given his particular experience in the field. What, in your understanding, is the difference in timescales between fitting amalgam fillings and composite fillings? That is where the cost argument comes into it for the profession.

Dr Munro-Hall: You have put your finger on the nub of the issue there. Although we are not comparing like with like here, a composite filling is done in one visit, while doing an amalgam filling takes two visits. Patients have one visit to place the amalgam, and it then has to be polished 24 hours later, otherwise the filling will corrode, be substandard and not last as long. If you factor in the second visit that has to be done for an amalgam filling, the timescales certainly become equal. In my own case, I never found the use of composite fillings to take any longer, especially the newer composite. Initially, yes, I did, but not now. I just do not see that. I think that dentists have received the training. Are dentists really saying that they are not sufficiently trained to use like-for-like materials? I honestly have difficulty believing that. The Norwegian Government measured that in 2012 and found that the cost factor was not an issue because of the materials then involved — it was only 15% of the extra cost — but because of what dentists used. The manufacturers have overcome that time differential through the use of the new, bulk-fill composites. They have reduced the amount of time taken to fit them. Composite fillings take one visit, while amalgam fillings take two. Nobody ever factors in the second visit.

Mr Buckley: You can come in on this, Florian, but my final question is this: did the World Alliance for Mercury-Free Dentistry take a position when the UK originally announced a phase-down approach across the four nations?

Dr Munro-Hall: Yes. We always welcome a phase-out or a phase-down of dental amalgam use. Any move on that is therefore certainly welcome, but we do not want the phase-down just to have been announced years ago. What has the UK done about phasing down dental amalgam use over the years? Absolutely nothing. The phase-down approach has been taken just to kick the can further down the road. The Government say that they will phase down the use of dental amalgam, but they do not do anything. The problem has been barrelling towards the dental profession for years, so if the Government have not prepared for it, I am very sorry.

Mr Schulze: I will add to that. We can compare with what happens in other countries. In what you might call the business of the dental profession, dentists charge privately for alternatives, for which they can establish the price themselves. It was similar in Germany. We had opposition from the German Dental Association. It was leading the opposition in the European field, because it wanted to keep that business. Until the decision came, it said that everything would become more expensive and that a ban would have a terrible effect. Just this week, it was published in the news that an agreement is on its way with public health insurers so that people will be reimbursed for alternatives. I am just telling you how fast this could change. While there is still a chance to extend the derogation, the BDA will tell you to keep things as they are and that it would be terrible and unfeasible to stop using amalgam now because the time frame is too short. It is in the BDA's interests to say that; it will keep the good business for longer.

I am not saying that it is impossible to keep the business, even with the phaseout of dental amalgam. As I said before, in Germany, it is not the end for private charging for alternatives. You can make a difference, and that is what other countries are doing. You can make a difference with a standard treatment that is also effective, using glass ionomers, compomers and bulk-fill materials. Like amalgam, that has a bit of a disadvantage on the aesthetic side, but you can continue with private treatment from a dentist for a more aesthetic solution and, maybe, more elaborate fillings. It is possible. If you look into the availability of the alternatives, as soon as you make a decision, there will be a solution. As I said earlier, in the National Health Service there is a 20% reimbursement. There are also the benefits for society. The transition is feasible and should be implemented.

The Chairperson (Mr McGuigan): Thank you. We have run way over schedule, but we wanted to give everybody the appropriate time to make their points and take and ask questions. Thank you all very much, Florian, Graeme and Charles, for coming along.