



Submission to the Secretariat, Minamata Convention on Mercury, 29 June 2020, by Latin American Centre for Environmental Health (Montevideo)

Feasibility and Advantages of Alternatives to Dental Amalgam

In the framework of the Minamata COP3, the Parties made a great decision about amalgam, directing the governments to accelerate the phasedown in use of amalgam, and directing the Secretariat to do two studies that the Convention can use at COP4 in 2021. We submit to assist the Secretariat with the first report, addressing the technical and economic feasibility of the alternatives to amalgam, and on the environmental and health superiority of the alternatives to amalgam.

I. For caries treatment, atraumatic restorative treatment is superior to amalgam in developing region – says definitive study by WHO’s Western Hemisphere’s arm.

The Pan American Health Organisation (PAHO) is the Western Hemisphere’s office for the World Health Organisation (WHO). PAHO, whose origin precedes WHO, has a long and stellar history in serving our hemisphere.

PAHO’s conducted a detailed study on the use of atraumatic restorative treatment (ART) in Ecuador, Panama, and Uruguay. By choosing these three nations, PAHO reached across the breadth of the GRULAC region: Panama is Caribbean, Ecuador is Andean, and Uruguay is in the populous Southern Cone region. The report was published: Pan American Health Organization, *Oral Health of Low Income Children: Procedures for Atraumatic Restorative Treatment (PRAT)* (2006), http://new.paho.org/hq/dmdocuments/2009/OH_top_PT_low06.pdf

ART is a mercury-free technique that relies on glass ionomer for the filling material and uses only hand instruments to place the filling. Because it can be done in villages without electricity and outside of dental clinic setting, its reach is much broader than amalgam. By contrast, says the study, amalgam “*can be costly and is not always widely available, especially for disadvantaged populations.*”

ART offers many benefits over amalgam that makes it (1) technically feasible, (2) economically feasible, and, very importantly, (3) superior for oral health.

(A) ART costs only half as much as amalgam

WHO's Western Hemisphere arm writes: "The costs of employing [ART] for dental caries treatment, including retreatment, are roughly half the cost of amalgam without retreatment." To make clear: ART counting retreatment costs only half as much as amalgam without counting its retreatment. So lobbyists pushing to keep amalgam are incorrect when they claim amalgam costs less than alternatives. The opposite is the case!

So for countries on tight health care budgets – formerly the developing nations but now, *in this new Covid 19 era, all governments* – again quoting PAHO: "the cost savings that can be achieved are substantial."

(B) ART is more accessible than amalgam

The ART technique, says PAHO, uses "hand instruments only and.... does not require electrically-driven equipment." Across the Andean and Amazon regions of South America, across interior Africa, across South Asia – in both rural areas and shantytown cities – it is so important to be able to serve children and adults outside a dental clinic and in areas without electricity. Put simply: *ART can reach outside clinics and into regions without electricity; amalgam cannot!*

Here is another huge factor: Being simpler, ART can be done by dental auxiliaries in addition to dentists: The study found that in Ecuador and Panama, the effectiveness of ART by dentists and by dental auxiliaries were similar, while in Uruguay the dental auxiliaries did even better. Once again, ART is superior to amalgam for the public health: It can be done by dental auxiliaries.

(C) ART is better for oral health than amalgam

In two essential ways, ART is superior to amalgam for oral health:

1) Minimally invasive: Twenty-first century focuses on minimal intervention, preserving tooth structure. The more tooth removal, the weaker the tooth, and the greater the future problems. The PAHO study concludes: ART is "consistent with the modern concept of restorative care of minimal intervention", which preserves more tooth structure than amalgam.

Amalgam, by contrast, is the worst. Amalgam is a primitive 19th century relic that removes good tooth matter to create space to pour the liquid mercury mixture – whereas the alternatives, all the major alternatives are minimally invasive. The alternatives are tooth friendly; amalgam is tooth-unfriendly.

2) Preventive health care. Mercury-free glass ionomer filling materials used in ART can help prevent caries: "The advantageous properties of glass ionomer, including fluoride release, which has a caries preventive effect, chemical bonding to tooth

structure and biocompatibility with oral tissues, make it a potentially suitable restorative material.”

Annex A-II calls for preventive action to reduce tooth care: Glass ionomers, whether via ART or otherwise, have a preventive component. Amalgam, by contrast, is not only not preventive but is corrosive.

II. The Latin American and Caribbean Region is demonstrating that the alternatives are technically feasible and economically feasible.

The Latin American Centre for Environmental Health, together with the World Alliance for Mercury Free Dentistry, have been working since 2012 on the elimination of dental amalgams with Latin American countries, which all of them, at different levels are moving towards this aim.

Argentina

We refer the Secretariat to the report submitted to you by its Ministry of Health of the Nation, which calls for the end of amalgam use in 2025:

"establish, in conjunction with the provinces and the Autonomous City of Buenos Aires, a plan to minimize the use of mercury in dentistry, setting goals with deadlines and percentages of reduction, aimed at eliminating of the use of dental amalgam by 2025 ".

With Argentina being a federal system, the provinces have the ability to act on their own. The Province of Cordoba is working very hard on the elimination of the use of dental amalgam. In July 2018 started a campaign called: “Towards a mercury-free dentistry” with the aim to reduce and eliminate the use of mercury in the health sector, specifically in dental practices.

Uruguay

In Uruguay a small percentage of dental amalgam is used and is moving quickly towards the elimination of dental amalgams.

The School of Dentistry of the University of Uruguay (UDELAR), from the 2007 carried out institutional conferences "Future perspectives on the use of amalgam "the lines of work are consolidated, so in a second stage 2008-2011, restrictions were included in practical and theoretical teaching, as well as in its application clinic. The same also responded to a verifiable decrease in demand in patients, professionals and teachers.

In a third stage, from 2013 to the present, practical, preclinical teaching has been eliminated and clinical, maintaining its theoretical teaching (for the knowledge of the

material, indications and risks of mercury management and existing protocols for repairs and removals).

Other examples

- Bolivia has already got a regulation to end up with dental amalgam in children and pregnant women.
- Chile, very little percentage of dental amalgam is used, nearly none.
- Peru is working in a regulation.
- Brazil, being a huge country, in some areas dental amalgam is used, in other very little, it is also working on a regulation.

A consensus is emerging in the GRULAC region: As the major first step in the transition to mercury-free dentistry, to work to eliminate of dental amalgams in children and pregnant women.