

## ZMWG Views on Mercury Use in Dental Amalgam

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The Zero Mercury Working Group (ZMWG) supports establishing an amalgam phase out date in the mercury treaty, since mercury free alternatives are effective, available, affordable and already used around the world. We do recognize however, that the phase out time frame may be longer than for other products. Therefore, as interim measures leading to the phase-out, we also support “phase down” language for dental amalgam, as provided in the Chair’s text in Part II of Annex C. Below in quotations is the Chair’s text, and the corresponding reasons why these six phase down steps should be adopted.

### “(i) Promoting use of available and effective Hg free dental filling alternatives.”

- ✓ **This phase-down step is reasonable:** (1) *Alternatives are Effective:* A 2011 World Health Organization report, *Future Use of Materials for Dental Restoration* (2011 WHO), states that, “Recent data suggest that RBCs [resin-based composites] perform equally well” as amalgam.”<sup>1</sup> It cites an example of a study showing that composites can last as long as amalgam and have a higher overall survival rate.<sup>2</sup> (2) *Alternatives are Available:* Amalgam accounts for less than 4% of restorations in Japan<sup>3</sup>, less than or around 10% in the Netherlands<sup>4</sup>, Switzerland<sup>5</sup> and Mongolia<sup>6</sup>, and 20% in Singapore<sup>7</sup> and Vietnam<sup>8</sup>. Denmark<sup>9</sup>, Sweden<sup>10</sup>, and Norway<sup>11</sup> use almost no amalgam. (3) *Alternatives are Increasingly Affordable:* Based on current mercury reduction trends, amalgam use is expected to continue declining as costs rise due to tighter regulations, trade restrictions, and the rising price of both silver and mercury. Correspondingly, the alternatives will become more competitive with more training, public education and increased use.
- ✓ **This phase-down step offers additional benefits:** Mercury-free dental care can result in better dental care. As explained in the 2011 WHO report “Adhesive resin materials [such as composite] allow for less tooth destruction [than amalgam] and, as a result, a longer survival of the tooth itself...Preservation of the tooth in a functional state should be taken into consideration rather than retention of the material used for restoration; this is in line with goals for oral health suggested by WHO.”<sup>12</sup> This can also save the costs associated with lost and damaged teeth.

### “(ii) Educating consumers and training dental professionals and students on the use of mercury free dental filling alternatives”

- ✓ **This phase-down step is consistent with WHO recommendations:** WHO recommends that the transition away from dental amalgam should involve raising of public awareness and careful planning. “Dental professionals will need to be made aware of the environmental impact of dental materials. Similarly, educating other stakeholders, governments, governments, insurance companies and manufacturers is needed.”<sup>13</sup> Consumer education and outreach is essential and provides patients with the information needed to make informed decisions.

### “(iii) Discouraging insurance policies, programs and mandates that favor dental amalgam use over mercury free dental filling alternatives”

- ✓ **This phase-down step is consistent with UNEP findings:** Discouraging insurance policies, programs, and mandates that favor amalgam is cost-effective, as a successful country phase-out in Sweden demonstrated. “Many insurance companies have traditionally only covered the cost of amalgam fillings, for marginal price reasons,” according to an advisory note from the United Nations Environmental Programme.<sup>14</sup> “However, the full long-term environmental cost burden is not reflected in these price differences.”<sup>15</sup> So ensuring that reimbursement policies cover mercury-free alternatives is “a move that will encourage dentists and patients to shift to mercury-free alternatives.”<sup>16</sup>

- ✓ **This phase-down step offers additional benefits:** The 2011 WHO report says, “Third-party payment can help solve inequity in dental care....Third-party payment systems must consider reimbursement schemes incorporating dental care which make use of materials alternative to dental amalgam.”<sup>17</sup>

**“(iv) Discouraging the use of dental amalgam in children, pregnant women and other sensitive populations”**

- ✓ **This phase-down step follows “the precautionary principle”:** Many countries – including Canada<sup>18</sup>, Australia<sup>19</sup>, Sweden<sup>20</sup>, and Denmark<sup>21</sup> – already discourage amalgam use in sensitive populations. These include placing restrictions on amalgam use in vulnerable populations and directives on the use of dental restorative materials. This approach is consistent with principle #15 of the Rio Declaration: “In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”<sup>22</sup>
- ✓ **This phase-down step is reasonable and serves as an education measure:** As explained in the 2011 WHO report, “Alternative restorative materials of sufficient quality are available for use in the deciduous [primary or milk] dentition of children.”<sup>23</sup> This step allows dentists to gain experience with the mercury-free alternatives – so then they will be more likely to use and recommend them as they see how well they work. Also parents learn that there are mercury-free alternatives – and are more likely to choose mercury-free fillings for their children and themselves too.

**“(v) Restricting the use of dental amalgam to its encapsulated form.”**

- ✓ **This phase-down step will reduce mercury exposures:** Restricting use of amalgam to its encapsulated form reduces mixing of amalgam, which reduces mercury use, waste, spills and risks to dental personnel. It also reduces the potential for mercury diversion to other uses, such as artisanal and small scale gold mining (ASGM).

**“(vi) Ascertaining baseline data on quantities of dental amalgam used, and reporting every three years to the CoP on the amount of mercury manufactured, imported, or used in dental amalgam, and the progress made to meet the Party’s obligations under this paragraph and reduce mercury use over this period.”**

- ✓ **This phase-down step facilitates treaty implementation:** Establishing baseline data and reporting is critical to not only measuring progress in reducing dental mercury use over time, but also to signaling when additional steps are needed to ensure that the Party is meeting its treaty obligation. It may be possible to integrate this data gathering into other Article 6 or 22 reporting obligations.

<sup>1</sup> World Health Organization, FUTURE USE OF MATERIALS FOR DENTAL RESTORATION (2011); [http://www.who.int/oral\\_health/publications/dental\\_material\\_2011.pdf](http://www.who.int/oral_health/publications/dental_material_2011.pdf)

<sup>2</sup> WHO report (2011) (citing Opdam NJ, Bronkhorst EM, Roeters JM, Loomans BA. *A retrospective clinical 29. study on longevity of posterior composite and amalgam restorations.* DENT MATER. 2007; 23: 2-8)

<sup>3</sup> Bio Intelligence Service/European Commission, *Review of the Community Strategy Concerning Mercury* (4 October 2010)

<sup>4</sup> WHO report (2011); [http://www.who.int/oral\\_health/publications/dental\\_material\\_2011.pdf](http://www.who.int/oral_health/publications/dental_material_2011.pdf)

<sup>5</sup> Letter, Federal Office for the Environment to Francesca Romana Orlando (8 August 2011)

<sup>6</sup> WHO report (2011); [http://www.who.int/oral\\_health/publications/dental\\_material\\_2011.pdf](http://www.who.int/oral_health/publications/dental_material_2011.pdf)

<sup>7</sup> WHO report (2011); [http://www.who.int/oral\\_health/publications/dental\\_material\\_2011.pdf](http://www.who.int/oral_health/publications/dental_material_2011.pdf)

<sup>8</sup> WHO report (2011); [http://www.who.int/oral\\_health/publications/dental\\_material\\_2011.pdf](http://www.who.int/oral_health/publications/dental_material_2011.pdf)

<sup>9</sup> BIO Intelligence Service, *Study on the potential for reducing mercury pollution from dental amalgam and batteries*, Final report prepared for the European Commission-DG ENV (2012)

<sup>10</sup> WHO report (2011); [http://www.who.int/oral\\_health/publications/dental\\_material\\_2011.pdf](http://www.who.int/oral_health/publications/dental_material_2011.pdf)

<sup>11</sup> WHO report (2011); [http://www.who.int/oral\\_health/publications/dental\\_material\\_2011.pdf](http://www.who.int/oral_health/publications/dental_material_2011.pdf)

<sup>12</sup> WHO report (2011); [http://www.who.int/oral\\_health/publications/dental\\_material\\_2011.pdf](http://www.who.int/oral_health/publications/dental_material_2011.pdf)

<sup>13</sup> WHO report (2011); [http://www.who.int/oral\\_health/publications/dental\\_material\\_2011.pdf](http://www.who.int/oral_health/publications/dental_material_2011.pdf)

<sup>14</sup> United Nations Environmental Programme, Chemicals Branch, *Phasing down dental mercury use: Advisory note for the insurance working group of UNEP Finance Initiative*

<sup>15</sup> UNEP, Chemicals Branch, *Phasing down dental mercury use: Advisory note for the insurance working group of UNEP Finance Initiative*

<sup>16</sup> UNEP, Chemicals Branch, *Phasing down dental mercury use: Advisory note for the insurance working group of UNEP Finance Initiative*

<sup>17</sup> WHO report (2011); [http://www.who.int/oral\\_health/publications/dental\\_material\\_2011.pdf](http://www.who.int/oral_health/publications/dental_material_2011.pdf)

<sup>18</sup> Health Canada, *The Safety of Dental Amalgam* (1996)

<sup>19</sup> National Health & Medical Research Council, *Dental Amalgam – Filling You In* (2002)

<sup>20</sup> KEMI, *Mercury*, <http://www.kemi.se/en/Content/In-focus/Mercury/>

<sup>21</sup> Danish Ministry of the Environment, *Fact Sheet: Mercury*, [http://www.mst.dk/English/Chemicals/legislation\\_on\\_chemicals/fact\\_sheets/Fact\\_Sheet\\_Mercury.htm](http://www.mst.dk/English/Chemicals/legislation_on_chemicals/fact_sheets/Fact_Sheet_Mercury.htm)

<sup>22</sup> Rio Declaration on Environment and Development (1992)

<sup>23</sup> WHO report (2011); [http://www.who.int/oral\\_health/publications/dental\\_material\\_2011.pdf](http://www.who.int/oral_health/publications/dental_material_2011.pdf)