What price dental amalgam waste?

It's about time dentists practice better 'waste management'

By Danny Chan

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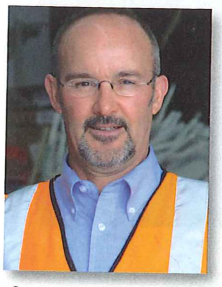


Gary Robbins, National Sales Manager, CMA Ecocycle

When dentists in Australia get together, 'waste management' is not exactly the kind of topic they would normally discuss. However, that may soon change, as a Victorian campaign encouraging dentists to be responsible for their own dental amalgam waste, gathers momentum.

Since its launch on 1 July 2008, the state wide initiative called 'dentists for cleaner water' has been the talk of Victoria's dental town, as dentists come to grips with the harmful effects of mercury being released into the public water systems, as a result of their handling of dental amalgam waste.

The $1 million voluntary program is jointly organized by the Victorian Branch of the Australian Dental Association (ADAVB) and metropolitan water retailers, in partnership with the Environment Protection Authority (EPA) Victoria.

Toxic impact of dental amalgams

Under the program, private sector dentists who install ISO 11 143 compliant amalgam separators will receive a rebate of $1,000 or 20 per cent of purchase and installation costs (whichever is greater) per practice. Amalgam separators catch the amalgam waste and prevent it from entering the clinics' water drainage and public sewerage systems.

"Mercury is being released into Victoria's sewerage systems from a range of industrial, domestic and commercial premises, including dental practices, "says Ian Crawford, Project Manager, ADAVB.

"The ADAVB, in conjunction with the water industry and EPA have been in discussion on this matter for years, and in October last year, joined forces to work towards eliminating mercury in the sewerage."

Essentially composed of silver, tin, copper and mercury, amalgam is still the preferred filling material among Australian dentists. Based on current sales, amalgam constitutes 60 per cent of fillings placed by local dentists. When dentists place and remove dental amalgam restorations, the procedure generates amalgam waste that gets suctioned through the dental unit vacuum line and released into the public sewer.

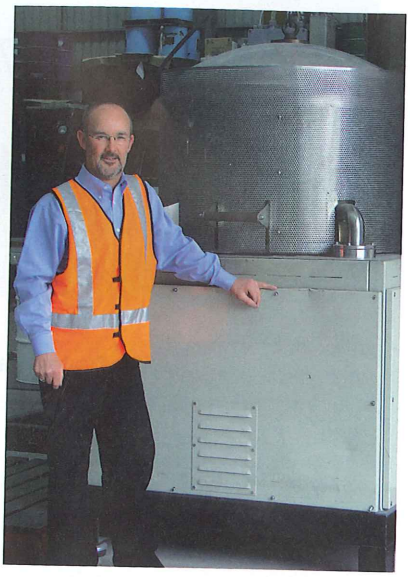
Approximately 60 per cent of the amalgam metals by weight end up in sewer effluent. This results in unacceptably high mercury levels accumulating in waste treatment plants' bio solids, which are organic material obtained from treated wastewater, often used as a fertilizer.

"Recent independent studies show that hundreds of kilograms of toxic mercury enter our wastewater stream annually. The negative impact is therefore rendering the potentially valuable bio solids useless as a fuel or land application," says Gary Robbins, National Sales Manager, CMA Ecocycle.

The rest is taken care of.

The only EPA-licensed mercury distilling company in Australasia, CMA Ecocycle offers critical support to dentists who wish to take up the program.

"Our EPA licensed mercury recycling facility in Melbourne is the only one of its type in



Australasia offering a solution to the dental fraternity; we service all types of separators and work closely with their respective manufacturers and agents."

With depots and branches located in every state and territory of Australia, the recycling company provides collection and transport of all mercury waste material, in addition to offering solutions in amalgam separation. For example, CMA Ecocycle manufactures and sells the ECOAS04, a non-electric and hassle-free amalgam separator that eliminates the need for dental staff to handle or clean the separator.

"Our ECOAS04 unit offers an alternative solution for most suction systems and dirty sinks. It is gravity fed and works via enhanced sedimentation."

Robbins stresses that the recycling services they offer extend to other makes and models of amalgam separators available in the market.

On the costs involved for installing the mercury-catching contraption, Robbins says:

"It depends on the type of suction system and the availability of an integrated separator that can be retro fitted or the suitability of an after market unit. The cost can start at around $1,300 plus installation."

He urges those considering to install the device to first consult with their "trusted equipment technician" in order to make informed decisions about their purchase.

Closing the loop of responsibility

As local wastewater treatment plants face increasing pressure to reduce the concentration of mercury in effluent from their plants and the concentration of mercury in sludge, initiatives like 'dentists for cleaner water' close the loop of cooperation between all concerned parties. After all, the responsibility of keeping mercury out of the waste stream involves not only the water authorities and treatment plants, but the dental profession as well.

"While the amount of waste produced by a single dentist is relatively low, the cumulative total is having a significant impact," says Crawford.

A simple calculation illustrates the extent of dentist-related pollution:

With approximately 9000 dentists in Australia, each dentist need only to release about 1 – 1.3 kg of waste amalgam into the water per year, in order to accumulate a yearly load of 4.5 – 6 tonnes in mercury pollution from amalgam being released into the environment.

Sadly, this equation is based on test results that only include wastewater collected from the suction system, and does not take into account the equally harmful waste that goes to landfills and incineration plants.

Off to a flying start

On a positive note, the 'dentists for cleaner water' campaign has so far exceeded the most optimistic expectations. Calling it "a most positive response", Crawford says that in just three months following the July launch, over 700 dentists – against the forecasted 400 – have indicated their desire to participate in the program.

Robbins enthuses: "The positive response and resultant uptake speaks for itself. Most dentists were looking to their industry bodies for initiative and leadership."

Convinced that the high level of support for the Victorian program also bodes a similar trend in other states, Robbins predicts: "You will see a high level of compliance in Victoria with the other states and territories following suit."

In terms of the initiative's future outlook, Crawford reckons: "The signs are most positive that this particular project will be a huge success with early indicators showing incredible awareness. It is predicted that in 3-5 years, most Victorian surgeries will comply."

Pointing to other benefits to be gained from the campaign, Robbins avers: "Overseas studies and projects clearly show that by just stopping the waste amalgam disposal into wastewater, the previously contaminated bio solids in treatment plants are rendered safe within 2-3 years." ◆

For further enquiries on the program, contact Ian Crawford, Project Manager, ADAVB, on 03 8825 4611.