

BACKGROUND AND SUMMARY OF PENNSYLVANIA'S DENTAL MERCURY REDUCTION PROGRAMS

In January 2004, the Department of Environmental Protection (DEP) launched the Mercury Reduction Initiative (MRI), a comprehensive strategy for reducing/eliminating mercury in the environment. The objectives of the MRI are to develop sound, cost-effective programs to reduce mercury pollution to the air, water and soil and to raise awareness of the dangers of this toxic, naturally occurring element.

Two components of the MRI pertain to dental offices. One deals with collecting and recycling unused elemental mercury that has been stored by dentists for some time. The other relates to reducing mercury discharges to groundwater and public sewer systems from dental operations. The Pennsylvania Dental Association (PDA), which encourages environmentally sound dental practices, has partnered with DEP to implement programs to address these concerns. In conjunction with DEP, the PDA surveyed dentists in 2004 to determine the quantities of elemental mercury available for collection and has established a budget to promote and fund a collection program. PDA has also embraced the concept of reviewing amalgam waste management practices within the dental community to determine the extent of mercury contributions to wastewater.

Programs established to execute these initiatives began as a six-month pilot project in DEP's Southeast Regional Office (SERO) and were implemented on a statewide basis in January 2006. The five-county SERO was selected for its heavy concentration of dentists and the high volume of unused elemental mercury identified in that area. The details of the programs are specified in a [Memorandum of Understanding \(MOU\) between DEP and PDA](#).

Elemental Mercury Collection Program

The elemental mercury collection program has been offered to all of the more than 8,000 dentists across the state. In its 2004 survey, PDA identified approximately 1,062 lbs. of mercury ready for pickup from dentists statewide. Under the terms of the MOU, DEP's radiological health physicists, who inspect dental offices, collect and transport the elemental mercury to one of DEP's six regional offices where it remains in a secure storage unit until a large quantity of mercury is accumulated. PDA arranges for and pays all costs associated with collection containers and transportation from DEP regional offices to a mercury recycler.

The DEP inspectors perform this pick-up service in conjunction with scheduled X-ray inspections at each facility. The elemental mercury collection program will continue until all of the mercury identified has been picked up from dental offices. As X-ray inspections are on a four-year cycle for each facility, this aspect of the dental programs has the potential to continue through 2009.

Review of Amalgam Waste Practices

The other aspect of the dental programs, review of amalgam waste management practices of dental offices, is to determine whether mercury waste is being collected and recycled, or if it is being released to the environment through wastewater discharges. DEP inspectors also facilitate this program during an inspection by ensuring that an amalgam waste BMPs verification form is completed in conjunction with a dentist or hygienist.

Of the 8,000 Pennsylvania dentists, most of them discharge to POTWs. At the present time, there is no hard data in Pennsylvania to determine the amount of mercury being discharged from dental offices because dentists' waste management practices are unknown. Data on the percentage of dentists currently implementing BMPs will help to determine whether a regulatory approach to reducing mercury discharges is warranted.

Verifying amalgam waste BMPs will continue through December 2007, which is expected to generate data for roughly half of all dentists based on the four-year inspection cycle.