



# SRISHTI *med* waste UPDATE

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All these years we were campaigning for safe medical waste practices which focused on segregation, sharps management, use of non-polluting technologies and eliminating the use of burn technologies. This was the reason our newsletter had a lot of material on the situation of incineration around the world.

This year our aim is to stop/minimize the use of toxic substances in healthcare, and as our first targets we would focus on PVC (Poly vinyl chloride) and mercury. We would try to get you more and more examples of campaigns against these to help you convince others to switch over to safer alternatives.

## ***Nation Wide:***

### **Survey of Incinerators**

#### **A. Delhi**

Of the 60 Incinerators in Delhi, Srishti surveyed 27 incinerators, out of which-

1. 82 % of these incinerators were burning mixed waste.

2. 80% of these incinerators were not maintaining the temperatures specified in the rules, the rest 20% were maintaining the temperatures but were not checked for other parameters specified in the rules. Checking of other parameters may bring the number to 100% incinerators in Delhi not complying with the Rules.

#### **B. Mumbai**

Of the 10 Incinerators surveyed in Mumbai-

1. 100% of these incinerators were burning mixed waste.

2. 80% incinerators are not working according to the standards laid down in the Rules.

#### **C. Chennai**

Of the 11 Incinerators surveyed in Chennai-

1.100% of these incinerators were burning mixed waste.

2. 100% incinerators are not working according to the standards laid down in the Rules.

#### **D. Kerala**

Of the 57 Incinerators surveyed in Kerala-

1.100% of these incinerators were burning mixed waste.

2.100% incinerators are not working according to the standards laid down in the Rules.

### **Private firm to treat bio-medical waste**

The Chennai Corporation and the generators of bio-medical waste have identified a treatment facility for handling the waste generated in the city.

The Corporation has agreed to pay Rs.9,500/- per tonne of the waste disposed of by the firm. The private sector hospitals would also have to accept the rates, though scope of further negotiations cannot be ruled out.

The company is at present awaiting the Pollution Control Board nod for its project site.

Firm - Healing Medicaids - said they were adequately equipped to make the treatment plant operational by April, subject to TNPCB's clearance. Equipment for the facility, such as incinerators, sterilizers and hydro-claving gadgets.

With the medical fraternity living on 'borrowed time' after the Bio-Medical Waste and Handling Rules 1998 came into effect, the IMA appears to be working overtime to train its member hospitals for disposal of the medical waste according to the norms. Training programmes have been arranged for doctors, administrators and paramedics. The State Aids Control Society had also agreed to sponsor a portion of the training programme and modules have been made for their benefit.

The 400 odd hospitals in the city, both in private and government sector together, had about 24,000 beds.

Sources in the Pollution Control Board said, while there appeared no hitch in according consent to the Navaloor site on technical aspects, there were reservations on the location of the project due to its proximity to the IT industry corridor and the proposed Bio-tech Park. The environment impact of the project on the 'green corridor' could hold back the Board's approval.

by S. Shanker, The Hindu

#### **More Centralized Facilities in Tamil Nadu-**

*Tamil Nadu Medical Services Corporation Ltd has called for Expression of Interest for projects on a Long Term Supply Contract basis, for setting up treatment facility for Hospital wastes from Govt. Hospitals in the state. The entrepreneur will set up the facility on his own land with all expenses towards internal electrification, plumbing etc born by him. The regions where the facilities are planned for are- Chennai, Madurai, Coimbatore, Trichy, Tirunelveli, salem, Vellore and Tanavur.*

## **Events**

**Environmental Training Institute (ETI) Tamil Nadu Pollution Control Board** organized training program on Bio-Medical Waste Management for all its board engineers and Scientist. The members were made aware of all the aspects of bio-medical waste including the rules, in house management and outhouse management. The members were also taken to Sundaram Medical Foundation and Sri Ramachandra Medical College for field visits. The field visits were aimed to give a practical overview of the subject to the members which would help them during monitoring and evaluating bio-medical waste management systems in various health care establishments.

The Chairperson put the concept of centralized facility forward and she also asked the board engineers not to give approval to on site incinerators

#### **From the horse's mouth: Experience with Incinerators**

I am a former government air pollution inspector of industrial, municipal and medical combustor facilities. As a regional air quality field inspector for the Texas Air Control Board, I observed numerous operational problems and deficiencies with incineration equipment including new State-of-the-Art incinerators. Problems occurred during day, and night, even at new facilities. I am quite skeptical of the ability of incinerators to operate in full and continuous compliance with the most stringent permit requirements. It is

Technically remote to achieve even 80% continuous compliance.

My greatest concern is for the public who live downwind-even several miles away from large incinerators-because they will inevitably suffer over time as I observed from the fallout of toxic particulate matter, unburned hazardous chemicals, a rain of acid gases including hydrochloric acid, and dangerous heavy metals to which human beings

and particularly children should not be unnecessarily exposed.

Incinerators malfunction! I observed this problem in all units I inspected for 12 years. Even new incinerators can have malfunctions, but as an incinerator ages like anything else, malfunctions tend to become part of the normal routine of daily operation. When an upset occurs in an incinerator, the unit suffers poor combustion due to sudden temperature drops, excess combustion air loss, pollution control equipment failures, loss of scrubber/quench spray, and other serious problems.

**The only safe level of incinerator air pollution is zero!** Unfortunately, no incinerator technology in the world can meet a set of zero emissions standards. Another unfortunate fact is that most incinerators even have difficulty passing the Trial Burns. Trial Burns may not necessarily be representative of daily operations, since surrogate simple organic chemicals (rather than more complex chlorinated hydrocarbons like dioxins, dibenzofurans and PCBs) are used in the Trial Burns such as carbon tetrachloride to measure the combustion efficiency of the units for destroying organic compounds. Trial Burns fail to adequately address the delayed releases of dioxins formed during or after the tests by being emitted after the stack sampling has officially ended.

What is most unfortunate of all is that virtually all incinerators do not perform on a normal daily basis nearly as efficiently as during Trial Burns when operational conditions are idealized as much as possible. Incineration is not a real solution.

It is simply a shell game of creating more toxic substances for your citizens to breathe from the garbage. Banning incineration is the most enlightened approach to incineration.

Sincerely yours,  
Neil J. Carman, Ph.D.  
Lone Star Chapter of the Sierra Club

**EPA links incinerator dioxins to cancer** A U.S. Environmental Protection Agency report in May stated for the first time that dioxin emitted from incinerators and other combustors causes cancer in humans.

The report listed 2,3,7,8-tetrachlorodibenzo-p-dioxin as a human carcinogen. TCDD previously was listed as a likely human carcinogen. Based on full compliance, the report estimated annual dioxin emissions of 12 grams of toxic equivalency from municipal solid waste combustors and 6 grams of toxic equivalency from medical waste incinerators by 2005.

Environmentalists continue to point back at incinerator operators, saying the burners should be phased out along with polyvinyl chloride plastics and chlorine bleaching of paper, which adds to the release of dioxin.

**Hospitals across the country continued closing their on-site medical waste incinerators in 2000, or upgrading the pollution controls, in preparation for the EPA deadline for Clean Air Act standards.**

Cheryl A. McMullen

**Monetary/ing Dioxins not easy: Some facts about Dioxin Analysis and Monitoring**

The laboratory and regulatory infrastructures required to monitor dioxin levels in incinerator releases -- stack gases, fly ash, bottom ash or slag, and other residues (e.g., effluent and sludge from wet scrubbers, quenching water, etc.) -- and to ensure compliance with requisite legal standards are both costly and complex. Fewer than 50 laboratories in the world have been certified by WHO for the analysis of dioxins in human tissue, and the cost of such an analysis ranges from US\$1,000 to US\$3,000 per sample. The costs for analyzing other media, such as gases and ashes, are comparable. The cost of establishing a laboratory for dioxin analysis is estimated at US\$1.5-2 million. Even in the wealthiest countries, such costs are barriers to adequate monitoring of incinerator releases, as illustrated by the admitted paucity and uncertainty of relevant data presented in the European Union's dioxin inventories.

Pat Costner, Senior Scientist, Greenpeace International

### **Mercury Levels High in Some U.S. Women**

Nearly one in 10 US women could have levels of mercury in their blood that are close to hazardous. Findings imply that efforts to reduce mercury exposure should be continued. Exposure to dangerous levels of mercury can result in permanent damage to the brain and kidney. Exposure is particularly risky for women of childbearing age, because "a fetus is highly susceptible to adverse effects," researchers from the Centers for Disease Control and Prevention write. CDC researchers measured levels of mercury in blood and hair samples from about 700 women and 300 children as part of the ongoing National Health and Nutrition Examination Survey.

SOURCE: Morbidity and Mortality Weekly Report 2001; 50:140-143.  
Emma Patten-Hitt

### **New study finds that Incineration will cost more**

Assessment of Kerbside Recycling in Australia Revised Final Report states on Waste to Energy Plants: " This alternative involves collection of garbage with recyclables in a single bin with subsequent thermal treatment and energy recovery. Under the WtE alternative, the financial cost per household per year would increase by more than \$70 from current system costs (garbage and recycling)." This report is available from [www.environment.gov.au/epg/covenant/](http://www.environment.gov.au/epg/covenant/)

### **Victory in Thailand! : DECISION TO DROP INCINERATOR**

**Bangkok** -- The international environmental group Greenpeace today welcomed the decision by Bangkok governor to terminate the incinerator project in On nut. The Governor said "Bangkok should learn from the sad experiences of other cities which have chosen the incineration route over other safe and productive waste management options, only to find themselves in utter

bankruptcy or in deep economic quagmire as a result of a bad decision.

**Incineration is the most costly of all waste management options. Incinerators are expensive to build and operate with disposal tipping fees ranging from \$60 to \$ 90 USD per ton of waste discarded at such facilities. In New Jersey (USA), one of the first states in America to embrace municipal waste incineration, incinerators have accumulated a debt of \$1.35 billion USD.**

A new curriculum for teaching and learning environmental health is now available free online: "Environmental Health in Family Medicine is a set of modules based on clinical cases which can be used for self-learning, small-group learning or for case-based teaching.

The modules cover six content areas important to primary care: Lead, Indoor Air Quality, Outdoor Air Quality, Pesticides, Clusters-Human Health and water Quality, Persistent Organic Pollutants

The full curriculum can be viewed or downloaded free using Acrobat Reader from the following website: <http://www.ijc.org/boards/hptf/modules/content.html>

The curriculum is also available free on CD-ROM on request from: International Joint Commission, 234 Laurier Ave. W 22nd Fl. Ottawa K1P 6K6, houstonj@ottawa.ijc.org

### **Citizen investigations of medical waste incinerators' HCl emissions**

One of the major weaknesses and vulnerabilities of medical waste incinerators are that they are allowed by state/federal agencies to emit hazardous air pollutants such as HCl (hydrochloric acid and hydrogen chloride gas). In the case of HCl emissions, incinerators are authorized to spew out large quantities of this dangerous acid gas while even low volumes may pose health and property damage concerns in the immediate neighborhoods downwind of the facility.

All HCl emitted is unacceptable since it has such a harmful effect on human lung tissue and even at remarkably low concentrations well below 1.0 ppm down to the low ppb range. HCl is an aggressive acid and such strong acids will attack and destroy human lung tissue resulting in increased infections, including colds, pneumonia, etc. HCl is a dangerous

air pollutant regulated as a Hazardous Air Pollutant under Title III of the 1990 Clean Air Act Amendments and a HAP regulated under the MACT standards for medical waste incinerators. Demand zero HCl emissions. Citizens need to press their state and local pollution control agencies to require the incinerator to meet zero HCl emissions as the more protective operation. Incinerators are usually required to meet 95-99% control efficiency for HCl.

Neil Carman

### **Your fillings will live on after your death ... to kill the living**

If you are cremated when you die, toxic mercury from the fillings in your teeth will pollute the air, contaminate rivers and endanger the health of those you leave behind.

Every year crematoria in Scotland and Britain belch out about 130kg and 1300 kg of mercury, a liquid heavy metal that attacks the nervous system and can cause brain damage.

For decades mercury has been in the amalgam used by dentists to fill holes caused by decay in teeth. Millions of people still have two to four grams of mercury in their mouths.

Crematoria now contribute 11% of all the mercury released by industry and power plants, which is why they are being targeted by environmental agencies.

The 440,000 people cremated in Britain every year are estimated to discharge 1300kg of mercury.

*Rob Edwards, Environment Editor*

### **Terminate the terminator: No more Mercury in big stores**

In the US, HCWH (Healthcare Without Harm, an international coalition of NGOs working on medical waste) members have had considerable success in getting retail stores to stop selling mercury-based thermometers.

Chains committed for the cause:

CVS  
rite aid  
Walgreen  
Wal Mart  
Toys R US  
Albertsons  
Kmart  
Winn Dixie  
Royal Ahold (Stop and Shop, Giant, BiLO)  
Target  
Longs  
Brooks  
Meijers  
Kinneys  
Thrifty White  
Safeway

To date 11 of the top 15 national retailers have agreed to no longer sell mercury thermometers. Of the total 31,844 retail stores that are represented in the National Association of Chain Drug Stores, 20,429 of these, or 64% no longer sell mercury thermometers, as a result of agreements with HCWH. It is anticipated that within the next few months this total will climb to 26,00 stores or 85% of the total retail stores.

It all adds up to more than 7764 pounds, yep that's a ton, actually 3.4 tons less mercury going into commerce.

Jamie Harvie, HCWH

### **Forthcoming:**

#### **Indian Society of Hospital Waste Management is organizing its First Annual Conference in Bangalore.**

The objectives of the conference are to provide platform to share and exchange thoughts for endeavors towards Safe Management of Health Care waste and facilitate information dissemination. To identify issues and concerns for development of systems and building capacity for Safe Management of Health Care Waste in the Country and to contextualise the systems within

the endeavors of an Integrated waste Management system. Registration: Rs600/- before 30<sup>th</sup> April. Date: 25<sup>th</sup> and 26<sup>th</sup> May 2001

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**Fourth National Seminar on, Hospital Clinical Waste, Hazards Management and Infection Control, May 10-12, 2001, at Bangalore**

The seminar shall cover National and International concern for Hospital Waste; Sources; Systems of Management, Legal Aspects, Economics of Waste Management, Incineration Systems, Environmental Management Systems; infection control systems, universal precautions.

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