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GREENPEACE

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4th November 1999

Mr Michael Ho Mun-Ka
Chairman, Panel on Health Services
Legislative Council
Hong Kong Special Administrative Region

RE.: GREENPEACE URGES THE USE OF NON-INCINERATION TECHNOLOGY TO TREAT MEDICAL WASTE

Dear Mr. Ho,

Hong Kong is now at a crossroads in waste management. We are faced with a choice between an obsolete method that we did use 30 years ago or sustainable alternatives that will guide us into the 21st Century and beyond. We are appealing to you to make the right decision to bring Hong Kong a sustainable solution and avoid bringing old problems back.

Greenpeace would like to draw your attention to the treatment of medical waste. The Government is planning to seek funding from the Finance Committee of the Legislative Council to modify the incinerator at the Chemical Waste Treatment Centre in Tsing Yi so that it can burn medical waste in future.

BACKGROUND

There once was a concern about incineration of medical waste because it was the major source of air-borne dioxin and mercury in Hong Kong. With the intervention of the Environmental Protection Department, 10 hospital incinerators in Hong Kong ceased operation from 1st January 1999.

At present, 3 hospital incinerators are granted permission to incinerate only body parts and human organs to minimize the pollution. The rest of the medical waste is disposed of at landfills.

However, the same department who stopped the burning is now re-igniting more toxic flames. After the failure to solicit funding to build a centralized incineration facility for medical waste, it has now proposed to utilize the spare incineration capacity at the Chemical Waste Treatment Centre to burn medical waste.

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THE PROBLEMS

Burden on Environment

The problem with burning medical waste is mainly the nature of the materials involved. Medical waste contains more plastic per volume (approximately 30% versus 7%) than municipal waste and much of this plastic is PVC. Mercury is also found to be in medical waste when devices such as thermometers are thrown away. It may account for 20 percent in the solid waste. Burning medical waste no doubt can kill all the bacteria and germs, but will also unnecessarily create toxic materials like dioxin, mercury, acidic gases and other hazardous chemicals which will be released into the atmosphere. The release of toxic gases is just one of the problems, we are also left with tonnes of even more toxic ashes to deal with.

- For more details on **Medical Waste Incineration**, please refer to **Attachment 1**.
- For more details on **Dioxin**, please refer to **Attachment 2**.
- For more details on **Mercury**, please refer to **Attachment 3**.

Finance Burden

Presently, according to the Environmental Protection Department, the disposal of medical waste in the landfill is costing taxpayers HK$200 per tonne. In addition to the initial cost of HK$100 million, making the Chemical Waste Treatment Centre "suitable" to burn medical waste, there is a price tag of HK$8000 per tonne attached. When the initial "investment" is made, Hong Kong is likely to be locked into this costly way of producing avoidable toxic gases and waste for the next 10–20 years.

Considering the fact that Hong Kong is producing around 7 tonnes of medical waste per day, if the Legislative Council decides to have it burned, then we will be spending HK$20 million a year, for a period of 10 to 20 years. This huge proportion of our taxpayers' money can be much better spent on a safer, cheaper and more environmentally friendly technology. And "non-burn" technologies are available and are widely used in thousands of hospitals in the United States.

No one benefits from the burning of medical waste, nor the health care system and definitely not the environment. The only company who may get a bit out from this, is perhaps Enviropace Ltd, the operating company of the Chemical Waste Treatment Centre which can have more of its incineration capacity utilized and earn a handsome profit.

THE SOLUTION

If what the Environmental Protection Department wants is to have the waste disinfected before the waste is disposed of at landfills, there are safer, cheaper options available, if operate correctly. However, same with any other waste, the best solution is first to reduce, segregate and reuse at sources. When that is done, consideration of alternative treatments can be given to technology such as autoclave, microwave, and chemical disinfecting systems.

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Various technologies have been developed to sterilize and reduce the volume of medical waste without incineration. Autoclaves are the most commonly used medical waste treatment alternatives in the United States. It destroys infectious agents through the use of steam heat. Unlike incineration, the materials are not burned, reducing the risk of dioxin production. Another alternative is microwave which use radiant energy to heat water that is sprayed onto the waste. Once the water reached its boiling point, it boils the microbes, rendering most of them harmless.

In 1997 alone, 1,500 non-incineration medical waste treatment facilities were installed in the United States.

- For more details on the **Solution of Medical Waste**, please refer to **Attachment 4**.
- For the latest development of **non-incineration alternative with the University of Michigan**, please refer to **Attachment 5** – Press release dated 13th September 1999 from the organization "Health Care Without Harm".

GREENPEACE RECOMMENDATIONS

1) Vote AGAINST funding for the modification of the Chemical Waste Treatment Centre to burn medical waste;
2) Demand the Hospital Authority and the Health Department to do their utmost to minimize the generation of medical waste;
3) Encourage the Hospital Authority and the Health Department to use existing non-incineration facilities to treat medical waste on-site before disposal;
4) Demand the Environmental Protection Department to come up with cheaper, safer and the least polluting alternatives.

There is a long way to go to steer the existing Hong Kong Waste Management System back to a truly sustainable direction, you as well as your colleagues in the Legislative Council can make the correct first step. For the benefit of the people of Hong Kong, the environment of Hong Kong and the Pearl River Delta, Greenpeace urges you to exercise your right and fulfil your responsibility to your voters to make this crucial first step.

Should you require more information from Greenpeace, please do not hesitate to contact me at 2854 8377 or 9862 1877.

Thank you very much for your support.

Yours sincerely,

Clement Hau Keen Lam
Senior Campaigner
Greenpeace China

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Attachment 1

MEDICAL WASTE INCINERATION: THE ISSUES INVOLVED

Most waste coming from a hospital or medical center is not infectious waste and poses no hospital- specific threat to public health and the environment. The paper, plastic, food waste and other materials coming from a hospital is similar to the same waste coming from hotels, offices, or restaurants, since hospitals serve all of these functions. In the United States, about 10 to 15 percent of hospital waste is considered "infectious"; while percentages may vary in less-industrialized countries, it is certain that the vast majority of waste coming from hospitals is not infectious. In fact, according to the Society for Hospital Epidemiology of America, "Household waste contains more microorganisms with pathogenic potential for humans on average than medical waste". Thus, despite many unique characteristics of health care facilities around the world, most medical waste can be managed using the same waste minimization, segregation and recycling techniques used in homes and offices.

According to the Centers for Disease Control in the United States, 2 percent or less of a typical hospital's waste stream -- body parts or pathological waste -- may need to be incinerated or specially decontaminated to protect the public health. The unnecessary burning of polyvinyl chloride plastic, paper, batteries, discarded equipment and other noninfectious materials leads to emissions of dioxins and mercury as well as furans, arsenic, lead, cadmium and the generation of ash which needs to be treated as a hazardous waste.

As Dr. Paul Connett, of St. Lawrence University in Canton, New York, explains, "The reason for this is simple: while incineration is certainly capable of destroying the bacteria and viruses, it forces on itself the extra task of having to destroy the material on which the pathogens are sitting: the paper, cardboard, plastic, glass and metal. It is in this process that acid gases are generated (from the chlorinated organic plastic present), toxic metals are liberated (from the pigments and additives in the paper and plastic products as well as other miscellaneous items like batteries, discarded thermometers, etc.) and dioxins and furans are formed (from any chlorine present in the waste). None of these formidable chemical problems is inherent to the medical waste 'problem' itself; instead they all result from the supposed 'solution'."

Information on this fact sheet was taken from "The World Bank's Dangerous Medicine: Promoting Medical Waste Incineration in Third World Countries" written by Multinationals Resource Centre and Health Care Without Harm.

MEDICAL WASTE INCINERATION: THE ISSUES INVOLVED

The pollution from medical waste incinerators is significant. While comprehensive studies have not been conducted in other countries, in the United States the Environmental Protection Agency has identified medical waste incinerators as a leading source of both dioxin and mercury pollution in that country's environment and food supply. For this reason, as well as for the economic advantages of non-incineration approaches to waste management, medical waste incineration is becoming an obsolete technology in the United States.

Information on this fact sheet was taken from "The World Bank's Dangerous Medicine: Promoting Medical Waste Incineration in Third World Countries" written by Multinationals Resource Centre and Health Care Without Harm.

Attachment 2

DIOXIN

According to the U.S. Environmental Protection Agency, medical waste incineration is among the top sources of dioxin. Dioxin is a common name for a class of 75 chemicals. Dioxin has no commercial use. It is a toxic waste product formed when waste containing chlorine is burned or when products containing chlorine are manufactured. PVC (polyvinyl chloride) plastic is a major source of the chlorine in medical waste. Dioxin is atmospherically transported and enters the food chain long distances from its point of origin. Dietary sources of dioxin, which account for 90 percent of human exposure, are meat, dairy products, eggs and fish. Dioxin builds up in fatty tissues. Because of the high fat content of breast milk, nursing infants are exposed to about 50 times the adult dose and may receive more than 10 percent of their total lifetime exposure during the nursing period, a time when they are most vulnerable to the toxic effects of dioxin.

Dioxin can cause:

1) **Cancer.** Dioxin is a proven human carcinogen according to the International Agency for Research on Cancer (IARC). Liver, lung, stomach, soft and connective tissue cancers as well as Non-Hodgkin's lymphoma have all been associated with dioxin.
2) **Immune System Effects.** Low exposures to dioxin result in increased susceptibility to bacterial, viral and parasitic diseases.
3) **Reproductive and Developmental Effects.** In animals, dioxin exposure causes decreased fertility, decreased litter size, and inability to carry pregnancies to term. Maternal exposure results in offspring with lowered testosterone levels, decreased sperm counts, birth defects and learning disabilities. Human studies report lowered testosterone levels in exposed workers and birth defects in children of Vietnam veterans exposed to high dioxin concentrations in Agent Orange. Nursing human infants exposed to high dioxin concentrations in breast milk had significantly lower levels of the thyroid hormone necessary for normal development of the brain.
4) **Hormone Disruption.** Dioxin behaves like a hormone by way of attaching to a receptor and altering the genetic activity in cells. Since human hormones can exert effects at levels of parts per trillion, small amounts of dioxin could cause a chain reaction in the body.

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Attachment 3

MERCURY

Medical waste incineration is also a primary source of mercury pollution. Mercury is a heavy metal found in the earth's crust. It is used for a variety of industrial purposes and is found in many everyday items, such as batteries and paints. In the medical field, mercury is used in thermometers, blood pressure devices (sphygmomanometers), and dilation and feeding tubes, as well as batteries and fluorescent lamps. Where the use of these items is significant, medical waste may account for 20 percent of the mercury in the solid waste stream.

Mercury cannot be destroyed through incineration. Following release through a smoke stack, mercury is deposited back to land or to surface waters where it will essentially remain indefinitely. It exists in both an inorganic form (elemental mercury) and in an organic form called methyl mercury. Elemental mercury can be converted to methyl mercury by microorganisms such as bacteria. Methyl mercury is more biologically available, meaning that it can interact with human cells and damage them.

Mercury pollution exists widely in the environment and concentrates in animals and ultimately in the human body. Mercury pollution threatens a country's food supply, especially fish. According to the US Environmental Protection Agency's 1997 Report to Congress, 39 U.S. states have determined that all or some of their lakes, streams and rivers are too contaminated with mercury to allow people to eat the fish and seafood from those bodies of water.

Mercury causes neurological toxicity. It attacks the body's central nervous system; it can also harm the brain, kidneys and lungs. It can cross the blood-brain barrier as well as the placenta. Methyl mercury from contaminated fish easily crosses the placenta and enters the brain of the developing fetus. The critical effect from prenatal exposure to methyl mercury is psychomotor retardation.

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Attachment 4

THE SOLUTION

Waste Reduction

The most important part of waste management is waste minimization. Waste reduction begins with the initial process of procurement of hospital supplies. Purchasing professionals working with vendors can considerably increase the amount of reusable items and decrease the amount and toxicity of waste generated. Minimizing packaging and buying products that are durable rather than disposable, when feasible, all lead to reduced waste disposal. Investing in improving procurement practices easily pays off in both lower procurement costs and decreased waste management requirements.

Waste Segregation

Waste segregation, essential for successful recycling and widely practiced with household waste, is perhaps the most important step in reducing the volume and toxicity of the medical waste stream. Waste segregation has the added benefit of decreasing risk to workers. If the bulk of waste which is not potentially infectious is mixed with the small percentage which is potentially infectious, the entire waste stream becomes a potential hazard. If waste which is not potentially infectious is kept separate from infectious waste, the paper and cardboard products, glass, some plastics, and metals can be easily reused or recycled in existing markets. Waste segregation is not difficult to implement with adequate investment in education, regulations, monitoring and enforcement. There are many examples of hospitals in the United States, as well as some in less-industrialized countries, which have implemented some level of successful waste segregation programs in order to protect public health and the environment and to reduce waste disposal costs.

The best way to design an appropriate waste reduction and segregation system for any hospital is to conduct a waste assessment to become familiar with the waste types and generation patterns in all areas of the hospital.

Information on this fact sheet was taken from "The World Bank's Dangerous Medicine: Promoting Medical Waste Incineration in Third World Countries" written by Multinational's Resource Centre and Health Care Without Harm.

THE SOLUTION

Reuse

Hospitals can reduce their waste stream, cut costs and reduce their negative impact on the environment through a conscious procurement preference for reusable products that meet the need of health care workers and their patients. Many hospitals in developing countries have reprocessing facilities to sterilize instruments and materials for reuse. Investments in upgrading and enhancing these facilities to increase the use and safety of use of reusable materials would contribute significantly to addressing the waste problem.

After several decades of decline in the United States and Europe, reusable are making a comeback. Many common single-use disposable products have safe, reusable alternatives including sharps containers, gowns, linens, bedpans, urinals, dishware, etc.

Responsible systems for waste segregation and, when appropriate, reuse will address many of the problems with the unregulated scavenging and reuse of medical supplies which occurs in many Third World countries.

Alternative Treatment Technologies

Even the hospital with the best waste reduction, segregation and reuse program will still produce some waste that is potentially infectious. Almost none of this waste needs to be incinerated to be rendered harmless and unidentifiable. Various technologies have been developed to sterilize and reduce the volume of medical waste without incineration. In 1997 alone, 1,500 non-incineration medical waste treatment facilities were installed in the United States. Interest in these alternative technologies is also increasing in other countries.

Autoclaves are the most commonly used medical waste treatment alternative in the United States and are growing in popularity in other countries. An autoclave destroys infectious agents though the use of steam heat and pressure. Unlike incineration, however, the materials are not burned, reducing the risk of dioxin production. Frequently wastes are shredded before autoclaving in order to facilitate the process. Autoclaves are less expensive and

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THE SOLUTION

are easier to maintain and repair than modern incinerators. Most hospitals are already familiar with autoclaves as they use smaller ones in their laboratories to sterilize equipment.

Another alternative technology is **microwaving**, which uses radiant energy to heat water that is sprayed into the waste. Once the water reaches its boiling point, it boils the microbes, rendering most of them harmless. Other technologies, including chemical disinfection, rotoclaves, and thermal treatment systems are also available. While none of the alternative technologies are totally risk-free, they can be combined with an effective program of waste reduction and segregation to reduce the environmental impacts and the financial costs of medical waste disposal.

Information on this fact sheet was taken from "The World Bank's Dangerous Medicine: Promoting Medical Waste Incineration in Third World Countries" written by I[illegible] Resource Centre and Health Care Without Harm.

Attachment 5

HCWH Press Release
SEPTEMBER 13, 1999
Contact:
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MICHIGAN LEADS THE WAY IN CLOSING MEDICAL WASTE INCINERATORS

Groups Praise University of Michigan, BFI for Closing Burners

Cleaner air is on the way for Michigan, as two of the state's largest medical waste incinerators have announced that they plan to close their doors in the coming months. In what may signal an important national trend, both facilities found alternatives to incineration may be more cost-effective, as well as less polluting.

On August 19, the University Of Michigan hospital, a leading national research and teaching institution, announced plans to switch to autoclaving for the disinfection of medical was[illegible] One week later, Browning-Ferris Industries (BFI) announced plans to permanently shutter its commercial facility in Grand Rapids. The University Of Michigan hospital incinerator, and the Grand Rapids BFI facility are among the three largest incinerators in the state.

"The newest measure of quality for top hospitals is fast becoming their environmental stewardship, said Tracey Easthope, MPH, environmental health director of the Ecology Center, a regional environmental organization based in Ann Arbor. "The University of Michigan's decision boosts its environmental performance towards the level of its stature in medical care." The Ecology Center campaigned for five years to shut the facility.

BFI's commercial medical waste incinerator is one of two facilities the company operates in the region. According to the company, unused capacity led to the decision. The facility has had a recent history of compliance problems, and community opposition to its operation was growing.

HCWH Press Release
SEPTEMBER 13, 1999
Michigan Leads The Way In Closing Medical Waste Incinerators

Jenny Allen, of the West Michigan Environmental Action Council (WMEAC), praised the decision. WMEAC had led citizen efforts to resolve violations and to close the facility. "We are very pleased that the facility is closed. We can rest a little easier today as we have made West Michigan's air a little cleaner," said Allen.

Combined, the two facilities burned almost 40 tons per day of medical waste. The University of Michigan hospital has indicated that it plans to install an autoclave system to steam-sterilize its waste. BFI has also indicated that the majority of the waste formerly destined to be burned in Grand Rapids will be autoclaved at another of its facilities.
"We are particularly pleased that most of the waste that would have been burned by these two incinerators will now be steam-sterilized," said Jackie Hunt Christensen, national co-coordinator of Health Care Without Harm. "We expect this trend to continue across the country, as hospitals realize that there are effective, less polluting and economical alternatives to incineration." While HCWH does not endorse any particular technology for treating medical waste, what is known about autoclaves indicates that the technology is less polluting when operated correctly, and is not likely to release dioxin into the environment. Medical waste incinerators are among the top three identified sources of dioxin air emissions.

Health Care Without Harm is an international coalition of more than 180 organizations dedicated to eliminating environmental pollution from the health care industry. In addition to the Ecology Center and WMEAC, its diverse membership includes 41hospitals, the American Nurses Association, the Breast Cancer Fund and many others. HCWH emphasizes the need for hospitals to reduce the quantity and toxicity of their waste and to look for methods other than incineration for disposal of the remaining waste. For more information about HCWH, visit www.noharm.org.

1998 Alternative Medical Waste Treatment Technologies

Jane E. Rubinstein

Type	Years in Business	Waste Type	When Shred/ Grind?	Operating Units in U.S.	Operating Units Abroad	No. of States Permitted	Capacity (pph)	Treatment Cost (HK$/lb.)	Capital Cost in 1000's (HK$)
HEAT/STEAM/THERM									
Antaeus Group	6	RMW	during	4	0	15	150	0.31	1,548
Basic Envirotech, Inc.	5	RMW, Path, Sharps	-	12	9	6	600-1,200	0.15-0.46	10,062
Hydroclave Systems Corp.	3	RMW, Sharps	post/ optional	1	1	50	200-1,000	0.08	1,161-2,129
Lajtos TDS	5	RMW, Path, Sharps	before	0	19	1	17-300	0.08-0.23	1,207-2,398
MDS Nordion	-	Pathologic	post	-	-	-	3,300	0.08	46,440
Medifor-X*	6	RMW	post/ optional	8	0	41	40-500	0.23-1.24	464.4-2,709
PMA Services, Inc.*	3	RMW	-	1	1	35	25	0.43	194
SAS Systems, Inc.*	4	RMW	during	1	3	1	300-600	0.31-0.39	2,322-5,031
DMI Companies, Inc.	20	RMW, Sharps	post	15	0	5	-	-	-
Isolyzer Co., Inc.	8	RMW, Path, Sharps	before	50	4	20	-	-	-
ELECTRO-THERMAL / RADIATION									
BioSterile Technologies	5	RMW, Path, Chemo	post	1	1	8	400-600	0.54	1,698-2,709
Sterlcycle, Inc.	9	RMW	before	4	0	17	n/a	n/a	n/a
MICROWAVE									
Bio-Oxidation	6	RMW, Path, Sharps, Chemo	-	1	1	2	100-2,500	0.54-0.77	7,740
CMB/Sintion*	7	RMW	post/ optional	0	60	0	100	0.39	348-464
EWMC*	5	RMW	-	0	0	0	250-3,000	0.23-0.39	774-1,355
Rostan Medical Technologies	5	RMW, Path	post	3	0	38	50	0.62-0.93	873
Thermal Waste Technologies	11	RMW, Path, Sharps	-	200	40	40	-	0.46	23,220
Sanitec, Inc.	8	RMW, Path, Chemo	during	45	11	42	220-900	0.23-0.46	3,606-4,605
PLASMA/ PYROLYSIS/ GASIFICATION									
Crawford Equipment & Eng.	-	RMW, Path, Chemo	-	60	30	48	1,000	0.62	-
Leslie Technologies, Inc.	6	RMW, Path	before	0	10	0	100-600	0.62-1.01	1,161-11,610

** 1997 Data Source: Environmental Industries Association*

1998 Alternative Medical Waste Treatment Technologies

Jane E. Rubinstein

Type	Years in Business	Waste Type	When Shred/ Grind?	Operating Units In U.S.	Operating Units Abroad	No. of States Permitted	Capacity (pph)	Treatment Cost (HK$/lb.)	Capital Cost In 1000's (HK$)
PEAT, Inc.	6	RMW, Path, Chemo	before	1	0	4	500-3,000	0.15-1.32	30,186-64,242
Vanish, Inc.	8	RMW, Path, Chemo	-	0	0	0	300	0.31-0.46	8,966
AUTOCLAVE									
Bondtech Corp	15	RMW	post/ optional	75	5	48	250-3,000	0.39-0.54	774-1,355
The Mark Costello Co.	25	RMW	post/ optional	225	75	48	225-1,125	0.48	201-485
Environmental Technonics	7	RMW	post/ optional	10	1	50	400-2,000	0.23-0.62	1,161-2,129
OnGuard Sterilization*	5	RMW	post/ optional	4	0	50	200-600	0.15-0.23	611-1,099
San-I-Pak, Inc.	20	RMW	post/ optional	400	25	50	25-3,000	0.31	271-4,644
Sierra Industries*	17	RMW	post/ optional	150	0	50	50-5,000	0.27-0.46	271
Tempico, Inc.	8	RMW, Path, Sharps	post	20	7	40	208-1,370	0.89	3,034-13,158
Tuttnauer USA, Co., Ltd.	4	RMW, Sharps	post	42	70	50	70-2,000	0.15	2,322-3,870
United McGill Corp.*	11	RMW	post	5	1	50	550-650	0.23-0.31	2,322
CHEMICAL									
Bio Conversion Technologies	1	RMW, Path	before	1	0	1	700	-	-
Circle Medical Products	14	RMW, Path	during	100	20	30	1,200-3,000	0.23	1,540-3,862
MedCompliance Services	10	RMW, Path	during	2	0	45	2,000-3,000	0.54	5,418-6,966
Medwaste Technologies	4	RMW, Path, Sharps, Chemo	all times	6	3	48	4,000-5,000	0.08	4,605-4,838
Sterile Technology Industries	3	RMW, Path, Sharps	before	2	0	43	850-3,000	0.08	3,483-7,353
Steris Corp.*	7	RMW	during	40	5	47	25-30	7.74	139
Unitrade LTD.	9	RMW, Path, Sharps, Chemo	during	18	8	14	200-400	0.23	271-519
Winfield Environmental*	6	RMW, Path	before/ after	2	7	47	15-25	1.18-1.94	2,709

* *1997 Data Source: Environmental Industries Association*

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INCINERATOR ALERT

Incinerators for medical and municipal waste have been linked to severe public health threats and pollution in the United States and Europe. The combination of intense public opposition to incinerators and increasingly strict environmental pollution regulation has forced the closure or cancellation of many incinerators in industrialized countries. Incinerators are fast becoming an obsolete technology as hospitals and cities are moving towards safer and more economical alternative approaches to medical and municipal waste management.

As a result, many incinerator companies are targeting overseas markets where people are not yet aware of the serious health and environmental threats associated with incineration or the many advantages of alternatives. Incinerator companies are now targeting Asia, Africa, and Latin America to sell their toxic technology.

THE DANGERS OF INCINERATION

The U.S. Environmental Protection Agency has found medical and municipal waste incineration to be the top sources of severely toxic dioxin, as well as mercury and other toxic substances, in the U.S. environment.

Dioxins and related chlorinated organic compounds are extremely potent toxic substances that produce a remarkable variety of adverse effects in humans and animals at extremely low doses. These compounds are persistent in the environment and accumulate in magnified concentrations as they move up the food chain, concentrating in fat, notably in breast milk. They are distributed globally and are present in every member of the human population. Dioxin is known to cause cancer. Interacting directly with DNA through a receptor-based mechanism, dioxin also acts as an endocrine disruptor with adverse effects on reproduction, development, and the immune system. Developing organisms are particularly susceptible in all species studied, and very small fetal exposures to dioxin frequently have permanent, life-long effects.

Mercury is also bioaccumulative and is toxic to the kidneys and nervous system. Readily converted to its organic form in the environment, mercury interferes with normal brain development. In the United States, current environmental levels of mercury pollution are sufficient to prompt 27 states to advise pregnant women and women of reproductive age not to eat fish caught in local waters.

HEALTH CARE WITHOUT HARM

In the United States, a national coalition effort of physicians, nurses, patients, scientists, environmental and health advocates, religious institutions, and labor representatives have formed a campaign called Health Care Without Harm: The Campaign for Environmentally Responsible Health Care.

Health Care Without Harm's mission is to transform the health care industry so it is no longer a source of environmental harm by eliminating pollution in health care practices without compromising safety or care. In particular, HCWH is concerned about dioxin and mercury emissions resulting from medical waste incineration. Additional information about the Health Care Without Harm Campaign is available on the Internet at http://www.noharm.org.

HEALTH CARE WITHOUT HARM - SOUTH

As the incinerator market shrinks in the global North, there is a massive rush to build medical waste incinerators in Southern countries. This migration of the incinerator industry is supported by multinational incinerator companies, international financial institutions such as the World Bank and Northern government foreign aid agencies. There are currently plans to build or ship medical waste incinerators to Asia, Latin America, Africa, the Pacific and elsewhere. In order to stop this incinerator invasion, we need to expose proposals for incineration, share information with each other and link together to demand environmentally responsible solutions to medical waste in both the North and South.

If you are concerned about the growing incinerator migration to the South, we invite you to join an email listserve which focuses on sharing information and strategies to prevent the incinerator industry from simply shifting their dirty business to less-industrialized countries. The list is called HCWH-South (Health Care Without Harm-South).

To subscribe to HCWH-South, send an email message to action@essential.org providing your name, organization, email address, mailing address, and particular interest in incineration issues so we can be sure to get you the most relevant information. If you don't have email, write to us and we will make sure you are kept informed and connected to other anti-incineration activists.

The Multinationals Resource Center (MRC) operates a free information clearinghouse about incinerators, pollution, and multinational corporations in less-industrialized countries. If you have any questions about incineration and related issues or would like to join the growing international network against incinerators, please contact MRC at mrc@essential.org and we will help you get the information you need to keep incinerators out of your community.