



**A Report on
Public Health and
Embalming Discharge**

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Down
the Drain

Since 1988, attention at all levels of government has focused on the generation, storage, transportation and disposal of solid and liquid medical waste. The inception of this concern started with the wash-ups of debris (including medical waste) on beaches during the summers of 1987 and 1988 in the New York and New Jersey area. It is now generally acknowledged that most of this debris was not medical waste, as studies conducted by the New York State Department of Environmental Conservation and the New Jersey Department of Law and Public Safety show:

“The results of these studies ... concluded that RMW (*regulated medical waste*) represents a small percentage of the total amount of floatable waste collected.

“In fact, this data shows that the medical waste component represented less than 1% of the number of floatables found.

“The major sources of material identified include the mismanagement of municipal solid waste at land-based and marine transfer stations; raw sewage discharges from malfunctioning sewage collection and treatment systems; and through combined sewer overflows.” (Draft Solid Waste Management State Plan Update, 1993-2002, Section II, Comprehensive Regulated Medical Waste Management Plan, State of New Jersey, April 1993, hereinafter referred to as “NJ Plan.”)

Nevertheless, the significant media attention and consequent economic fallout caused by a decline in tourism during this period directly resulted in the enactment of the Medical Waste Tracking Act of 1988 by the federal government, the New Jersey Comprehensive Regulated Medical Waste Management Act of 1989, and a variety of related administrative rules.

In turn, these laws led to the passage of a host of medical waste laws and rules in state capitals and localities across the nation. These actions were often attended by hysteria concerning unfounded fears about the spread of the Human Immunodeficiency Virus (HIV) and Hepatitis B.

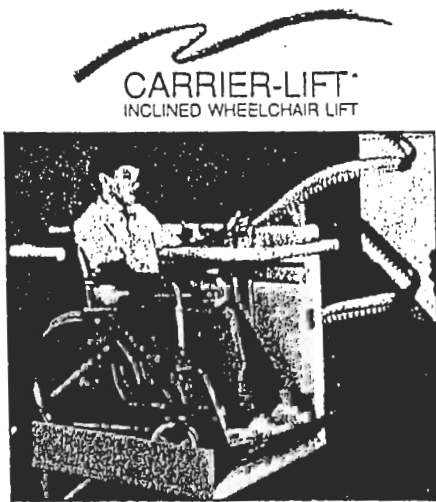
As these public discussions advanced, questions concerning blood and body fluids from funeral home embalming operations and hospital and clinical surgical rooms became more common. Unfortunately, the initial reaction of many to the disclosure that these materials are merely disposed

of via sanitary sewer systems and septics was that something was fundamentally wrong with doing this. And certainly, in the case of funeral homes, these unreasonable concerns were compounded by that traditional phobia about death which causes an exaggeration of fears as though there was something inherently worse about funeral home discharge than the discharge from someplace like a hospital, or for that matter, from an average household.

In some instances this led to the imposition of highly questionable demands on funeral homes from treatment works authorities in scattered cases, and has coincidentally led to the marketing to the industry of unnecessary products designed to "disinfect" the embalming effluent before being discharged. At one point the New Jersey Department of Environmental Protection even suggested, in a discussion relating to embalming discharge to septic systems, that "there is a concern over pathogenic, infectious organisms which may be present in body fluids

"... as though there was something inherently worse about funeral home discharge than discharge from someplace like a hospital..."

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and which, having been passed into a subsurface disposal system, may be introduced into the environment through discharge to the water table." (The FORUM, March 1991, New Jersey State Funeral Directors Association, reproducing a March 1990 letter issued by the New Jersey Department of Environmental Protection.)

In one jurisdiction, funeral homes were ordered to stop discharging. In another, to disinfect the discharge with bleach prior to releasing.

In the meantime, the National Funeral Directors Association (NFDA) has been conducting an audit of the funeral service waste stream in order to intelligently and effectively meet the growing number of questions relating not only to the nature of the biological discharge, but to the chemical discharge as well. This study is presently being completed.

". . .all confirm what we have been arguing: sewers are the best place for embalming discharge and that nothing need be done with it prior to discharge "

While the report remains incomplete, the committee involved with its development (of which this author is a

member) and its retained consultants and resources established early on that the discharge of embalming effluent into the sanitary sewer system should be considered the "best management practice" possible in handling this form of medical waste for the following basic reasons:

1. Sewer systems exist precisely to handle the types and kinds of organisms that are present in embalming discharge.
2. That the nature of embalming discharge is not any different biologically than the average domestic discharge.
3. Discharges from funeral homes are quantitatively insignificant compared to other sources of discharge in a sewer system.

All of which would seem to make perfect common sense. But oftentimes, in public affairs, problems that routine consultation with common sense would solve remain unresolved until an "authority" in government weighs in.

Fortunately, government is starting to speak up.

Recent reports published by the Ohio Environmental Protection Agency, the U.S. Department of Health and Human Services and the New Jersey Department of Environmental Protection and Energy all confirm what we have been arguing: that sewers are the best place for embalming discharge and that nothing need be done with it prior to discharge.

In April of this year the Ohio EPA affirmed this in a fact sheet entitled: Blood in the Sewer System: Does it Pose a Health Risk? In that report the Ohio EPA noted that:

"Blood and other body fluids are discharged into sanitary sewers from a variety of sources including hospitals, funeral homes and slaughter houses. This blood makes up only a very small part of the total amount of waste water treated.

"A very small portion of the blood discharged into sewers may be from humans infected with the HIV (AIDS) or Hepatitis B virus. A concern has been raised recently

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over whether waste water plant workers can be infected with the HIV virus or Hepatitis B virus through contact with this sewage.

"Ohio EPA and the Ohio Department of Health have determined there is no significant risk of contracting these viruses from contact with waste water."

The report goes on to note that the reasons for their conclusions are that "waste water treatment plants are specifically designed to break down" this type of material through the treatment process.

Endorsing this position was the report to Congress issued by the U.S. Department of Health and Human Services, the Agency for Toxic Substances and Disease Registry:

"These medical waste materials constitute a small portion of the sanitary sewer discharges from those sources. Any blood and blood products discharged to the sanitary sewer are diluted by the large amounts of residential sewage to well below the concentration needed for blood borne disease transmission.

"Secondary treatment methods are very effective in reducing the microbiological content of sewage. More than 90 percent of sewage microbiological content, including infectious agents, can be removed from secondary treatment followed by disinfection. Effective treatment of medical waste can also be accomplished by septic tank systems because the anaerobic conditions of septic tanks are hostile to human pathogens." (The Public Health Implications of Medical Waste: A Report to Congress, U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, page 7.8 ff.)

And finally:




"The amount of medical waste discharged into sanitary sewer systems represents only

a small portion of the waste those systems process. In addition, infectious agents are a part of the normal flora of residential sewage. The treatment processes used by sanitary sewer systems in the United States have been shown to effectively treat infectious disease transmission. An epidemiological study of waste water workers showed that these workers have no increased potential of becoming infected by blood borne infectious agents. Therefore, medical waste discarded into the sanitary sewer is not likely to present any additional public health effects to waste water workers or to the general public."

" . . . medical waste discarded into the sanitary sewer is not likely to present any additional public health effects to waste water workers . . . "

And now, the New Jersey Department of Environmental Protection has just released its long awaited report on the management and operation of the state's regulated medical waste program, probably the most stringent, detailed and

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comprehensive plan in the nation. Dated April 1993, this report unequivocally states the obvious:

"In 1990, approximately three and one-half percent (3 1/2%) of the total RMW generated or 700 tons of liquid waste was disposed of via sanitary sewer. This was primarily Class 3 blood and blood products and other body fluids generated by hospitals and funeral homes. This quantity represents about 500 gallons of sewage flow per day being introduced to the statewide waste water flow which is measured in hundreds of millions of gallons per day. Further, disposing of blood and other body fluids through sewer systems has been a standard operating procedure for decades.

"... much of the scrutiny being paid to funeral home discharge results not from the biological component, but rather concern over its chemical composition"

"From a management perspective, the departments strongly support such a practice for public health reasons and consider that continued use of sewers for liquid RMW disposal to represent best management practice. The domestic treatment works operating in the state are multi-million dollar investments in high-technology

equipment designed to treat waste water and appropriately discharge effluent under controlled and permitted conditions. It is most appropriate to continue to actively utilize this vast infrastructure for all liquid RMW disposal and to avoid the management of liquids through solid waste systems." (NJ Plan, page B-36)

In conclusion, it is increasingly clear that expert opinion and common sense are meeting on the same ground and threats to the continued discharge of embalming effluent based on fears of biological transmission of disease are abating. It should be kept in mind, however, that this will probably continue to be an occasional public relations and education problem, but one that can be combated utilizing the strong documentary evidence just cited.

However, it needs to be pointed out that much of the scrutiny being paid to funeral home discharge results not from the biological component, but rather from a concern over its chemical composition (e.g., formaldehyde, methanol, phenol). This remains under study by the NFDA.

Last, products being marketed to the industry that are designed for the decontamination of biological matter prior to discharge serve no useful public or occupational health purpose and should not be purchased.

That's why we have sewer systems. □

Next Month: "Fours Year Later: An Analysis of Funeral Home Medical Waste in New Jersey"

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Blood In The Sewer System, Does It Pose A Health Risk?

Blood and other body fluids are discharged into sanitary sewers from a variety of sources including hospitals, funeral homes and slaughter houses. This blood makes up only a very small part of the total amount of wastewater treated.

A very small portion of the blood discharged into the sewers may be from humans infected with the HIV (AIDS) or Hepatitis B virus. A concern has been raised recently over whether wastewater plant workers can be infected with the HIV virus or Hepatitis B virus through contact with this sewage.

Ohio EPA and the Ohio Department of Health have determined there is no significant risk of contracting these viruses from contact with wastewater. These conclusions are based on research and conversations with health, Infectious waste and wastewater treatment specialists from all over the United States.

The fact sheet explains why there is no significant risk and describes precautions a wastewater worker should take to protect against all health risks.

Background

Blood and other body fluids are discharged to sanitary sewers from a variety of sources including residences, hospitals, funeral homes and slaughter houses. These fluids are normally released into the sewers without any prior treatment. This method of disposal has been used for many years with no documented adverse health effects. The Centers for Disease Control in Atlanta continues to recommend sanitary sewers as the most appropriate disposal method.

Since the discover of AIDS, many people have raised questions about how the disease is transmitted and how long the virus can survive outside the human body. The same questions also have been raised about Hepatitis B from contact with sewage.

The reasons for this relate to the nature of viruses. Overwhelming scientific evidence shows HIV is susceptible to physical and chemical agents and does not survive well outside the human body or in the environment.

For example, a study done by the University of Pittsburgh found HIV is significantly less likely to survive in wastewater than the polio virus.

Additionally, sanitary sewers do not provide optimum conditions for pathogens to survive. A virus needs a live host to continue living and to reproduce.

Safeguards

The wastewater treatment process provides a number of reasons why there is no risk posed by blood containing the HIV or Hepatitis B virus, including:

- Blood is an organic material and wastewater treatment plants are specifically designed to break down and treat organic materials;
- Blood is only a small part of the waste stream of which infected blood is an even smaller portion;
- This small amount of blood is diluted by many gallons of wastewater. This significantly reduces the possibility of transmission because a fairly large number of pathogens is needed for disease transmission;

In addition, the treatment process reduces risk by:

- Chemicals used at the plant for chlorination would kill the viruses; and
- Bacteria levels are monitored in the treated wastewater at the discharge pipe. If unusual levels of bacteria were detected, this would indicate the treatment process may not be effective.

Recommendations for Worker Safety

Every worker involved in wastewater treatment needs to take health and safety precautions to guard against common infections associated with working around sewage. Health and safety experts recommend frequent, routine hand washing as the most important safeguard in preventing infection by agents present in sewage. These precautions will also reduce the risk of infection from HIV or Hepatitis B.

In addition, standard liquid repellent, protective clothing such as work clothes, coveralls, boots, gloves and goggles or face shields should be worn when potential contact with sewage exists.

Source: OHIO EPA, Public Interest Center