



January 1993

## 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.

This 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 discovery of AIDS, many people have raised questions about how the disease is transmitted and how long the virus can survive outside of the human body. The same questions also have been raised about Hepatitis B.

There are no known cases where wastewater workers have contracted HIV or 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

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# Blood in Sewer Systems

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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 handwashing 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.

## For More Information:

Ohio EPA  
Division of Water Pollution Control  
Pretreatment Unit  
1800 WaterMark Drive  
Columbus, OH 43215  
614/644-2001

Ohio EPA  
Division of Solid and Infectious Waste  
1800 WaterMark Drive  
Columbus, OH 43215  
614/644-2621

Ohio Department of Health  
Division of Preventative Medicine  
Occupational Health  
P.O. Box 118  
Columbus, OH 43266-0118  
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