

HOSPITAL/MEDICAL FACILITY SOURCE CONTROL PROGRAM

There are numerous chemicals used in various areas throughout hospitals. Most of these are used in fairly small quantities although there are some chemicals that are used in larger volumes. The wastewater discharged from hospitals and medical facilities to the sanitary sewer contains relatively low concentrations of pollutants. However, the mass contribution for some pollutants can be significant due to the large flows from such facilities. Therefore, the Regional Water Quality Control Plant (RWQCP) has designed a program and established Best Management Practices (BMPs) for hospitals and medical facilities.

Industrial Wastewater Discharge Permits are currently used to regulate the four hospitals and on BMPs and educational materials included pertinent information for doctors' offices and small clinics as well as for specific groups within the larger regulated institutions.

Public Involvement

Since there are relatively few large medical facilities in the RWQCP service area, it was possible to involve all of the facilities in the BMP development. Information was collected from individuals directly involved with each activity during facility inspections. In addition, several group meetings were held to discuss the proposed topics for waste minimization reviews and BMPs, and to review draft and final BMPs. BMPs were finalized and distributed to the larger facilities in 1994.

Medical facility representatives suggested a need for more targeted documents. In 1995, brochures that address specific BMPs for targeted groups were developed, published, and mailed to more than 1,000 doctor's offices, nursing services, ophthalmologists, blood banks, veterinarians, nursing homes, medical clinics, chiropractors, podiatrists, and medical laboratories. The brochures were mailed to the same groups again in 1997. The RWQCP also gave this literature to environmental staff at service area hospitals for distribution to hospital personnel. Information was also distributed during an employee health fair at one of the hospitals.

Pollution Prevention Reviews

A formal waste minimization review was conducted at Stanford University Hospital in 1993. Stanford's hospital conducts most of the functions of a full service hospital. However, it does not operate an infectious waste incinerator or a laundry service. In order to evaluate all possible hospital activities the survey was extended to evaluate these support facilities at two other locations.

Extensive inspections were also conducted at each of the other four major medical institutions in the RWQCP's service area in 1993. Participating medical facilities other than Stanford University Hospital included El Camino Hospital, the Veterans Administration Medical Center, LSP Children's Hospital, and the Palo Alto Medical Foundation.

Many controllable discharges of various pollutants were identified. The information from these reviews was used to develop BMPs in 1993 and to identify areas needing further study.

In 1994, the RWQCP conducted follow-up studies focusing on one of the identified priorities—recirculating hot water systems. The 1994 studies conducted at Stanford University Hospital and LSP Children's Hospital confirmed that recirculating hot water systems are the major source of copper found in hospital wastewater. The recommendations of this study include suggestions for improved operation and enhanced monitoring for circulating hot water system operations and drinking water disinfection systems. This study was completed and published in early 1996 and was shared with all local hospitals.

In 1997, Rita Leone conducted a follow-up study as a thesis project at the Stanford University Hospital with technical support and subsidized laboratory analysis from the RWQCP. The thesis project involved determining corrosion rates and characteristics for the recirculating hot water system, and developing a corrosion control plan. Copies of the thesis were distributed to local hospitals in early 1998.

Best Management Practices

Review of the chemical and material use practices at different medical facilities has shown that many of these can be modified to minimize and in some cases eliminate the use or discharge of hazardous chemicals. The BMPs offer solutions for many of the problems that were identified.

The educational packet includes both general information on water pollution and 13 inserts providing specific pollution prevention information on the following specialized topics:

- Administration
- Facilities Management
- Housekeeping
- Laboratories
- Nursing and Patient Care
- Physicians
- Radiology
- Central sterilization
- Hemodialysis
- Infectious Waste/Incinerators
- Materials management
- Pharmacy
- Radiation Therapy

In 1998, the hospital BMPs were posted on the City of Palo Alto's web page.

RWQCP inspectors have continued to pressure all medical facilities to reduce the use of mercury containing equipment. The medical facilities have responded to this, and to cost pressures, and eliminated a majority of these mercury uses. In late 1998 the medical facilities were also each asked to develop and submit a mercury free policy statement. Review and evaluation of the implementation of the hospital policies will occur in 1999.