

# UT News

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October 30, 1985

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\*\*\*UTHSCD epidemiologist says one-third of all hospital-acquired infections can be prevented.

DALLAS--Nosocomial, or hospital-acquired, infections take thousands of lives and cost hospitals billions of dollars each year. Dr. Robert Haley, director of Epidemiology and Preventive Medicine at The University of Texas Health Science Center at Dallas, is promoting an infection control program that he says can prevent one-third of the infections patients contract as a result of being hospitalized.

With an evangelist's zeal, Haley talks about the importance of recognizing the evils of nosocomial infections and the ways hospitals and patients can be saved.

"This is one way to cut costs and improve the quality of care at the same time," Haley says. "Hospitals need to recognize the importance of it and do the things that work."

Hospital-acquired infections are among the leading causes of death in the United States. Each year hospital-acquired infections directly cause 20,000 in-hospital deaths, Haley says. In an additional 60,000 deaths, hospital-acquired infections contribute to death but are not the only cause.

If the two figures are combined, the resulting 80,000 deaths rank nosocomial infections as one of the top ten causes of death in the United States behind heart disease, cancer and stroke. But these deaths are not counted in the U.S. system of vital statistics because hospital-acquired infections rarely are recorded as the cause of death on death certificates, Haley says. The illness that the patient was hospitalized for is usually listed as the cause of death.

Haley says managing infection in hospitals becomes more difficult with the increasing use of highly technical devices. "Medical technology is absolutely fabulous--but the miracle is bought at the price of infection," Haley says.

For example, 20 years ago a child who had leukemia was expected to die. Now, over half of the children who get leukemia can expect to live normal lives. But the powerful chemotherapy that kills cancer cells also paralyzes the immune system. If a nurse touches someone who has an infection and then touches the leukemia patient without thoroughly washing her hands, that patient may contract the infection and die.

Several years ago a new arterial pressure monitoring device was marketed. The device is important in the constant monitoring of blood pressure as it flows through the arteries of patients in intensive care. A catheter is inserted into the artery of the patient. The patient's blood flows up a tube and pumps against a membrane in a transducer that registers the blood pressure as an electrical signal.

The manufacturer's instructions for use of this device said to discard the membrane after each patient. But, in an effort to save money, the medical staffs of several hospitals decided that it appeared to be safe to clean and reuse the membranes. As a result, the membranes developed microscopic holes that allowed bacteria to pass from the device into the patient's blood stream. Several patients contracted blood poisoning. Some died. But, the medical staffs never recognized that the infection was coming from the device. An epidemiological investigation revealed the source of the infection.

(More)



## Hospital-Acquired Infections--Add One

In addition to the cost in lives, hospital-acquired infections exact a heavy toll in health care costs--almost \$4 billion a year. Hospitals generally do not recover costs for hospital-acquired infections under prospective payment by diagnosis-related groups (DRGs), the categories used by insurance companies and federally funded programs such as Medicare to designate how much they will pay for each illness.

According to Haley, the average hospital with 250 beds can prevent 168 infections each year by establishing an effective infection control program. By preventing these infections, the hospital would save about 640 extra hospital days--a savings of \$320,000. Subtract the \$60,000 cost to implement the program and the net savings is \$260,000. In addition, Haley says the infection control program is an effective tool in reducing malpractice losses.

Haley was director of the Hospital Infections Program at the Centers for Disease Control in Atlanta in the early '70s when the CDC began recommending an infection surveillance and control program. Haley says the most important aspect of infection surveillance and control is an aggregate view of infections in the hospital.

"Because doctors and health care workers have been trained to treat patients as individuals, they don't see that several patients are having the same symptoms," Haley says. "The clinical epidemiologists put all the pieces together to see the big picture."

According to Haley, the most effective infection control program involves a dedicated infection control staff--one full-time infection control coordinator for every 250 beds and a physician who has taken courses in infection control and can spend part of his or her time on the infection control program. The hospital needs to incorporate an intensive surveillance system to gather data on all nosocomial infections and feed back results to the clinical staff in a way that will influence practice. It is important to develop an active program to intervene when an epidemic is discovered.

Hospitals have had problems in establishing effective infection control programs because of the volume of statistical analysis involved. Recently micro-computer software has been developed so that hospital staffs can use personal computers to keep track of these statistics, Haley says.

In early 1974, the CDC initiated the SENIC Project (Study on Efficacy of Nosocomial Infections Control) to find out how effectively infection control programs were working in hospitals across the United States. The four-year study canvassed 338 hospitals at random. Half of the hospitals were using infection control programs, the other half were not.

Researchers found that the hospitals with infection control programs had a 33 percent reduction in hospital-acquired infections, while hospitals without the program had an increase in infections.

This study provided the scientific evidence needed to convince hospital administrators, doctors and others in the health care field that hospital-acquired infections can be controlled effectively to save lives and reduce costs.

Haley, who has written a book on the subject, is taking this message to hospital administrators across the country. "Managing Hospital Infection Control for Cost Effectiveness" should be published by the end of this month. The publisher is American Hospital Association. The book can be ordered by writing to American Hospital Publishing, Inc., Attention Book Division, Suite 1520, 200 East Chicago Avenue, Chicago, Illinois 60611.

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