

PUBLIC HEALTH

Hospital Infection Grows

Strict aseptic procedures, greater care in sterilizing and laundering hospital bedding and less indiscriminate use of antibiotics are needed to control hospital infections.

► STAPHYLOCOCCAL infections originating in hospitals and spreading to the community are becoming increasingly severe and frequent. The recent outbreaks that took the lives of 25 babies in Houston and Dallas, Texas, are tragic proof.

The hospital nursery is one of the primary sources of infection by new strains of these bacteria that are highly resistant to many antibiotics. Doctors state, however, that application of well-known sterilization techniques can control future outbreaks of serious epidemics.

Often the disease is overlooked as a cause of death.

In a survey of hospitals in Seattle, Wash., more than 100 of the 7,837 deaths that occurred in Seattle-King county in 1956 could be attributed to staphylococcal infections. But only four official death certificates recorded these commonly found bacteria as the cause of death.

This is reported by Dr. Reimert Ravenholt and Otto H. Ravenholt in the *American Journal of Public Health* (March). The investigators find that deaths from staphylococcal infection occur most commonly in infants and older patients with low resistance. Staphylococcal pneumonia is the most common cause of death. The discrepancy in mortality statistics and the estimates of these investigators comes about because most physicians do not attempt in post mortem examinations to identify the organism causing death. Virulent

staphylococcal diseases are usually acquired in the hospital and are considered only as complications of the disease that caused the patient to enter the hospital rather than as primary cause of death.

Normally staphylococci cause such common infections as boils, infant impetigo, carbuncles and other similar superficial disorders, but they can also kill.

The bacteria have been known since the inception of surgery as a major cause of post-operative infection, but by using aseptic procedures developed many years ago by Lister and other early investigators, this type of infection has been reduced to a minor problem.

The outbreaks in Seattle hospitals, and typical of other locations across the country, frequently originate in the nursery. Newborn infants become infected from contaminated air, contaminated linen or by contact with hospital personnel who may be carriers without showing symptoms. The infants pass the infection to mothers while breast feeding. At the same time rapid cross infection from one infant to another may occur. This has been noticeable when the virulent antibiotic resistant strains of the bacteria have been responsible.

The situation is further complicated in the majority of cases involving mothers and nursing children because infection does not appear until after the patients are discharged from the hospital.

Results of a telephone survey of mothers

who had returned to their homes after childbirth, made by Drs. Walter A. Murray Jr. and Gerald E. McDaniel, showed only four of 51 mothers showing symptoms of infection by staphylococci had been diagnosed as infected while in the hospital.

This post-hospital infection has been termed an "iceberg of infection submerged into the community" with serious possibilities of causing still wider spread by contact, if not properly diagnosed.

Recognizing the appearance of numerous severe outbreaks of staphylococcal infections as a national problem, the American Medical Association held an earlier symposium in Cleveland in November, 1957. After thorough exploration of the seriousness of the situation, this conference drafted a resolution that was adopted without dissent. This resolution stressed there was widespread evidence of the existence of strains of *Staphylococcus pyogenes* var. *aureus* that had developed resistance to antibiotics and were readily transmitted from one carrier to another.

It further stated that there had been a tendency to relax vigorous aseptic "house-keeping" practices in hospitals largely because of the effectiveness of the antibiotics in combating infection. It emphasized the need for all hospital administrators and medical personnel to improve current procedures in order to maintain aseptic conditions at all times.

The detection of the particular strains of "Staph" that have been shown to be the causal agent in these epidemic outbreaks is a highly complicated procedure. Recognizing that most community hospitals do not have laboratory facilities for adequate identification, the U. S. Public Health Service has offered to assist in analyzing specific problems as they arise.

Detection of the presence of the particular strain of the bacterium is especially important in preventing serious outbreaks because if preventive measures are delayed until numerous cases appear in the hospital, the epidemic is well-established and is particularly difficult to bring under control.

Other preventive measures presented at the AMA symposium included careful checks on sterilizing and laundry procedures to remove or destroy any bacteria that might be on contaminated bedding; checks on personnel to be sure that no carriers of the bacteria, who might not show symptoms, were assigned to nursery duty; return to strict aseptic procedures in all hospital operations including wound dressing and also scrub-up by personnel; and discouragement of the indiscriminate use of antibiotics which, it was conceded, has done more than anything else to bring about the existence of the resistant strains.

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Dr. Murray is a Public Health Service officer at the Communicable Disease Center, Atlanta, Ga.; Dr. McDaniel is with the South Carolina State Board of Health in Columbia. They were assisted in their work by Miss May Reed, also of the State Board of Health.

Science News Letter, April 12, 1958



COLOR FROM NO COLOR—A new projection technique, developed by Dr. William Glenn of the General Electric Research Laboratory, translates "color information," recorded in ripples on a clear gelatin film, into primary colors projected simultaneously onto the screen.