State of Alaska Epidemiology **Bulletin**

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Staphylococcal Outbreak In A Newborn Nursery

From January 1 through July 31, 1985, 16 culture-confirmed and 5 clinical cases of staphylococcal skin infection were identified among newborns in a hospital nursery. The onset of disease occurred during the first 28 days of life in all cases. The 21 definite and presumptive cases represented 5.1 % of the total discharges during that period, a significant increase over the baseline rate of 0.5%. There were no cases of systemic staphylococcal infection. The most common sites of infection were: groin 38% (8/21), face 23% (5/21), and buttocks 19% (4/21). The mean age of onset was 9 days with a range of 3 to 24 days. Staphylococci isolated from 5 cases were phage type 3-C.

Initial control measures--active surveillance and enforcement of hand washing--were begun during the third week of March following the identification of the first 7 cases. These measures did not appear to be effective. Ten additional cases were identified during the next five weeks. On May 2, daily bathing of all infants in the nursery with 3% hexachlorophene was begun and continued through June 13. No new cases among infants born during that time were identified.

Inspection of all nursery personnel identified one (Nurse A) with dermatitis of her hands. This person, one of three who had primary responsibility for the nursery, was removed from the nursery from May 7 until her lesions cleared on July 12. Three weeks after cessation of hexachlorophene bathing, two additional cases were identified. Daily hexachlorophene bathing of infants in the nursery was reinstated. No additional cases were identified after August 18. Hospital charts for the 23 cases and 44 controls were reviewed. An inspection was made of the hospital nursery and the obstetrical unit. Policies and procedures were reviewed.

A significantly larger proportion of cases than controls had documented exposure to Nurse A as delivery room nurse ($p<.01$) and as nursery admitting nurse ($p<.001$). The difference between the proportions of cases and controls exposed to a discharge physician also reached statistical significance ($p<.05$). Cases were also more likely than controls to have had any documented exposure to Nurse A ($p<.01$). No other significant differences were found between documented exposure to cases and controls among the 23 nursery personnel.

Cases were exposed to a significantly larger number of different individuals (mean = 7.2) than were controls (mean = 6.0; $p<.05$). Cultures of multiple sites were obtained from Nurse A. Staph was isolated from the hands only and was of a phage type different from that isolated from cases. Only one sink was available in the nursery for hand washing--especially inconvenient during periods of high patient census.

Of the 23 cases, 6 (26%) had no documented exposure to Nurse A. Culture results did not verify that Nurse A was a staph carrier. It is likely that cross-contamination among infants and nursery personnel occurred, as is usually the case during staphylococcal outbreaks. Cases were more likely to occur during periods of high census when strict handwashing practices may have been less likely to be practiced. An increase in the number of different individuals to which an infant was exposed also appeared to increase risk of disease.

Strict adherence to hand washing with bactericidal soap and an active surveillance program were recommended as the primary methods of control. An initial 3-minute scrub to the elbows and a 15-second scrub with bactericidal soap immediately before and after handling each infant should be required of all personnel. Staff contacts with infants should be recorded. A separate record should be maintained for each infant at the crib side and made a part of the permanent patient record. Personnel with active skin lesions should not be allowed to handle infants, and the number of different hospital personnel who come in contact with each infant should be minimized.

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