

On-going surveillance and control of neonatal *Staphylococcus aureus* infection in the OB unit, an experience from Bansa Baptist Hospital (BBH) Surgical wound infections – a historical review

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The incidence of neonatal infections in less developed countries is high, likely due to unhygienic practices during delivery and post natal care. Neonatal infections contribute approximately 40% of the neonatal death burden in less developed countries.

Infection control has not received complete attention in most of these countries. Low cost interventions are needed to improve infection prevention leading to a decrease in neonatal infections.

Bansa Baptist Hospital (BBH) is a 250-bed tertiary referral hospital run by the Cameroon Baptist Convention Health Board. The maternity unit is an open nightingale ward and is often over crowded with patients and visitors.

The BBH infection prevention program was set up in May 2002 in response to frequent outbreaks of neonatal infections in the obstetrics (OB) unit. Skin pustules (septic spots) and deep tissue (systemic) infections were involved in the outbreaks. The outbreaks were attributed to three major causes.

1. **Common use.** Nurses used petroleum jelly from the same source to apply on babies after bath to

prevent the skin from drying. Nurse also used petroleum jelly from the same source to apply on hands and lips. A single bar of soap was also used to bathe multiple babies.

2. **Inadequate hand hygiene/glove use.** Nurses and doctors were examining patients and performing dressing changes without wearing gloves. Hand hygiene was also inadequate. Nurses do not know the importance of hand hygiene; even though hand washing facilities were limited, the few that were available were scarcely used. The lone available sink in the ward was used as a drinking fountain and patients were not allowed to wash hands in it.

3. **Equipment (even single use equipment) was used between babies without adequate disinfection.** Instruments were supposed to be soaked in 0.05% chlorine for 20 minutes before cleaning as per hospital protocol but they were usually soaked for less than 10 minutes. The solution is below the recommended strength of 0.5% chlorine which has been proven to be effective against viruses. Nurses also used mouth-operated suction devices to suction the baby after delivery. As a result of this practice they were at risk for blood borne infections.

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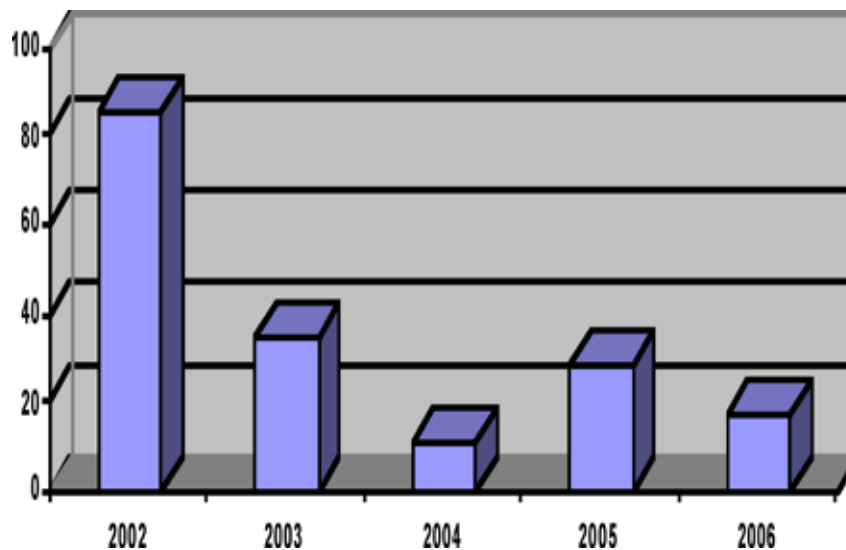


Figure 1. Septic spots per 1000 live births

Surveillance method

We culture samples of petroleum jelly from the common source and several skin pustules. They both grew *Staphylococcus aureus* and *Pseudomonas sp.* We then established a case definition and trained nurses on case identification and notification. Cases were recorded in a case register. The infection control nurse checked the register monthly, collected data, analyzed and interpreted it to unit staff and the administration in the form of bar charts. The nurses, the administration and the infection control nurse brainstormed and planned interventions.

Interventions

1. The common petroleum jelly source was removed. Moms were allowed to apply petroleum jelly at bed side on demand. They were not allowed to share it with neighbors.
2. Bar soap and bath basin are provided to each baby after birth.
3. Equipment is decontaminated with 0.5% chlorine for 10 minutes before cleaning.
4. Provided workshops on hand hygiene to staff and patients. Importance and technique of hand washing taught.
5. 3 portable hand washing facilities added to the unit.
6. Alcohol hand rub produced locally and distributed to procedure areas , toilets, etc.

Results

Cases dropped from 86/1000 live births in 2002 to 36/1000 live births in 2003. This trend has generally continued with a rate of 18/1000 live births in 2006.

Conclusion

The trend of results indicates that the problem is not completely solved. Hence there is need for on-going interventions and reinforcement of infection prevention practices in the OB unit.

Challenges

- a. Limited resources
- b. Difficulty changing behavior
- c. Limited expertise
- d. Poorly established local/national infection prevention standards/guidelines.

Recommendations

1. Seek funding to sustain the program.
2. Facilitative supervision to help staff change attitudes.
3. Train/build capacities of infection prevention personnel.
4. Include infection prevention in the national health policy.