Barrier nursing

Slide No. 2:Introduction

- Patients with infections are commonly admitted in hospitals, whobecome a potential source of infections for other non-infected patients as well as for the health care providers. The universal precautions are followed in these situations so as to prevent the spread of infections in the unit.
- Howeverthere are some situations, where we need to take more stringent measures to prevent spread of infections than just routine universal precautions. These situations include highly contagious infections (e.g. neonatal diarrhea or neonates with suspected or proven H1N1 infections), and neonates with multi drug resistant infections. On the contrary an uninfected neonate with very immature immune system (e.g. with severe neutropenia), is vulnerable to acquire infection from health care professionals or environment and thus also needs extra precaution.
- Theset of interventions consisting of stringent infection control practices so as to prevent spread of infections in such situations is referred to as Barrier Nursing.

Slide No. 3: Objectives of this webinar

In this webinar we will learn–

- The concepts of Barrier nursing
- Universal precautions
- Contact Prevention
- Use of Personal protective equipment
- Respiratory prevention

Slide No. 4: Concepts of Barrier nursing

- What is concept of Barrier Nursing? Itisa set of interventions consisting of stringent infection control practices used during nursing the neonate,so as to prevent the spread of infection from one neonate to another as well as to the health care staff. The spread of infection occurs in different ways, which include contact with contaminated surfaces or hands, fomites, droplets, inhaling aerosols, etc.
- The aim of the barrier nursing is to
    - Protect horizontal transmission of infection in SNCU i.e. from one baby to another
    - Protection of medical staff against infection from patients
    - Prevent spread of infection outside of unit’s and hospital’sboundary

Slide No. 5: Universal Precautions

- Universal Precautionsare the standard precautions exercised during routine nursing care of neonates so that they do not acquire infections from healthcare professionals, other neonates or fomites. As many neonates with blood-borne infections are unrecognized at admission, every neonate is considered potentially infectious and the universalprecautions are undertaken irrespective of the presumed infection status of neonates.
- Universal precautions include hand hygiene; use of gloves, gowns, masks during handling patients' body fluids;prevention of fomites and disinfection of anything which comes in contact with the baby.
- Fomites play a very important role in horizontal transmission of infection. Common fomites in SNCU include items related to the day-to-day nursing care such as stethoscopes, thermometer, inch-tape etc. Each bed should have an individual stethoscope, thermometer, inch-tape, nursing tray which include spirit and betadine swabs. The sharing of such items between neonates must be strictly prohibited.

Slide No. 6:Cohorting

- If one or more baby(s) with resistant organisms is identified in the SNCUs, then such patients should be given special attention.
- Universal precautions should be strengthened. Such neonates should be cohorted away from rest of the neonates e.g. in the isolation room. If possible the nurse looking after such neonates should be separate, who should not be involved in care of the rest of the neonates.
- Appropriate personal protective equipments (gloves, gowns or masks) used for such a neonate should be separate.
- Their biomedical waste disposal should be separate.

Slide No. 7: Body Substance Isolation

- The body secretions and excreta (saliva, blood, urine, feces, wound drainage, and other body fluids) should be handled after donning appropriate personal protective equipments (gloves, gowns, masks) regardless of their infection status.
- These should be discarded in yellow bin for biomedical waste disposal.
- However if the body secretions or excreta are considered highly contagious (e.g. during the episodes of diarrhea), the personal protective equipments should be worn and discarded in a special way as discussed subsequently. These equipment should be worn in such a way that the entire body of health care professional should be covered and no body secretion should come in ‘direct’ contact with the health care professional. The step by step details of this procedure are available in the Job aids. All items of PPE should be discarded after handling a neonate and hand hygiene should be performed in the end. Each neonate requires separate PPE during such period. Care must be taken to ensure separate biomedical waste of such patients.

Slide No. 8: Personal protective equipment

- The purpose of personal protective equipment is to prevent exposure of healthcare professional with highly contagious body fluids of the patient. Personal protective

equipments should be worn in a particular sequence i.e. gone first followed by mask or respirator, then goggles or face shield and gloves in the end.

Slide No. 9: Personal protective equipment- Donning

- First appropriate size gown with opening in the back is worn. The neck and the waste are secured. Then wear mask covering nose mouth and chin. Wear goggles and/or face shield if there is a risk of droplet spread to these areas. Don gloves in the end such that the gloves extend over the cuffs of the gown.

Slide No. 10: Personal protective equipment- Removing

- After handling the baby the personal protective equipment should be removed in a particular sequence- first gloves followed by face shield or goggles, then gown and mask or respiratory in the end. The outer front side of personal protective equipment should all be considered contaminated.

Slide No. 11: Personal protective equipment- Removing steps

- For removal of gloves to grasp outside edge of the left glove near the wrist and peel away from hand turning the glove inside out. Hold the glove in right gloved hand. Now slide the ungloved index fingerof the left hand under the rest of her right glove and peel it off from inside creating a bag of both the gloves. Discard in yellow bin. For removing goggles or face shield, grasp their rear end and lift them away from the face. For removing gown unfasten ties, peel it away from neck and shoulder, and start rolling it in such a way that the contaminated outside of the gone becomes inner side of the roll. Discard the fully rolled gown in the yellow bin. In the end untie the bottom followed by top tie to release the mask from the face and discard. In a similar fashion to remove the respirator by first lifting the bottom elastic followed by top plastic. Perform hand hygiene in the end.

Slide No. 12: Airborne precautions

- Airborne Precautions are designed for preventing infections which have a risk of airborne transmission of infectious agents. This occurs by either small-particle airborne droplet residue (5 μm or smaller). Because of their smaller size they remain suspended in the air for long periods or ride on dust particles.
- Microorganisms carried in this manner may disperse to far places. Therefore respiratory precautions require special air handling and negative pressure ventilation of the room to prevent airborne transmission. However generally such facilities are not available even in bigger hospitals. If such facility is not available in the hospital, the nearby hospitals should be contacted for such a patient.

Slide No. 13:Summary

To summarise, in this webinar we have learnt about-

- Barrier nursing is an effective way of infection spread within SNCU

- Universal precautions should be exercised during usual SNCU care.
- In case of neonates with highly contagious infections, appropriate PPE should be worn in addition. The particular sequence of donning and removal of PPE must be adhered to.
- Respiratory isolation is required for infections with the risk of airborne transmission.

Thank you