

INFECTION CONTROL IN NICU



GALGOTIAS
UNIVERSITY

INTRODUCTION :

Prevention is better than cure .

Infection control is the discipline concerned with prevention of nosocomial infection or HAI .

Infection control measures are widely discussed topic comprises of some simple facts .

If we execute them well & precisely , we will be able to bring down the burden of sepsis & in turn neonatal mortality easily .

Good infection control remains the mainstay of prevention of healthcare-associated infections in

RECENT TRENDS IN NEONATOLOGY UNIT :

□ **ORGANISMS :**

- *Klebsiella pneumoniae* - **M/C**
- *Escherichia coli*
- *Staphylococcus aureus*
- *Streptococci*
- Coagulase negative *Staphylococci* (CoNS)
- *Pseudomonas*
- *Acinetobacter*
- *Enterobacter* species

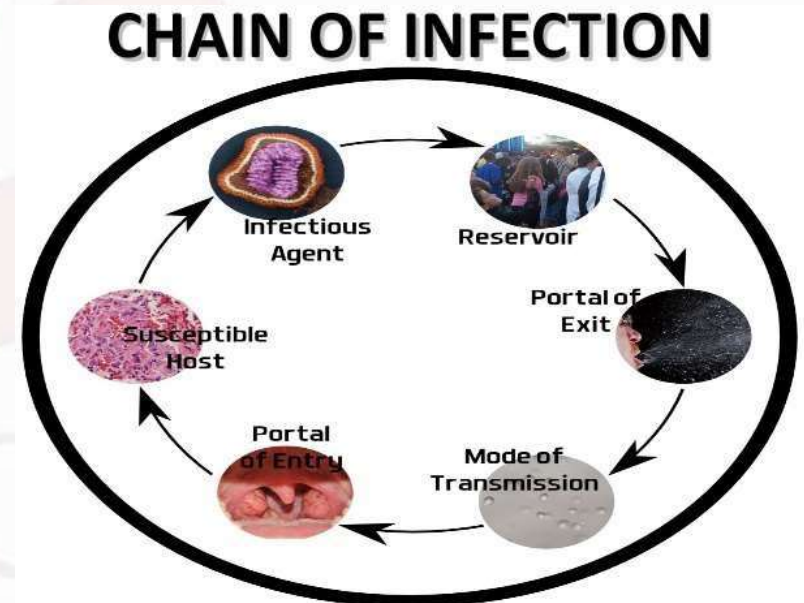
☐ HEALTHCARE ASSOCIATED INFECTIONS :

- Bloodstream infection (65.4%) – **M/C**
- Lower respiratory tract infection (12.9%)
- Urinary tract infection (8.6%)
- Skin infections
- **Prevalence** of healthcare-associated infections - **7.32%**.

Mortality rate - 2.1%.

MODES OF TRANSMISSION :

- Contact
- Droplet
- Airborne



BASIC ELEMENTS OF INFECTION CONTROL :

1. RISK ASSESSMENT
2. HAND HYGIENE
3. ENVIRONMENTAL CONTROL
4. APPROPRIATE NEONATAL CARE PRACTICES
5. ADMINISTRATIVE CONTROL / HOSPITAL INFECTION CONTROL POLICIES

1. RISK ASSESSMENT -

Applied before interaction with every newborn .

Appropriate interventions & barriers may be put in place – reduce transferring infection .

HOST RISK FACTOR :

- LBW
- PREMATURITY
- ACQUITY OF ILLNESS
- IMMATURE IMMUNE SYSTEM
- PERMEABLE SKIN

2. HAND HYGIENE - single **most important & effective** infection prevention and control measure to prevent health care associated infections (HCAIs)

‘WHO FIVE MOMENTS OF HAND HYGIENE’1.

Before patient contact

2. Before aseptic task

3. After body fluid exposure risk

4. After patient contact

5. After contact with patient surroundings

WHO Guidelines Hand Hygiene

hand washing with soap and water -

Recommend

- visibly dirty
- visibly soiled with body fluids
- toilet use
- exposure to potential spore-forming pathogens

Recommend alcohol-based

hand rub -

- ✓ before and after touching patients
- ✓ before handling invasive devices
- ✓ contact with body fluids or excretions, mucous membranes, nonintact skin, or wound dressings
- ✓ between touching contaminated body site and another body site
- ✓ contact with inanimate surfaces and objects
- ✓ after removing gloves

3. ENVIRONMENTAL CONTROL

➤ BARRIER PRECAUTION

- a) CONTACT PRECAUTION
- b) AIRBORNE PRECAUTION
- c) DROPLET PRECAUTION

➤ HOUSE-KEEPING & FUMIGATION

➤ LINEN & FEEDING UTENSILS HANDLING

➤ WASTE DISPOSAL

➤ VISITOR MANAGEMENT

HOUSE-KEEPING & FUMIGATION

House keeping:

- Thrice a day
- Avoid – dry dusting & sweeping
- Vacuum cleaner , wet mop up (3% phenol)
- 2% bacillocide - 1/ week – wall spray
- Incubators dis-infected every 1 week

Fumigation :

- 30ml formalin (40% formaldehyde) in 90ml water/30 cubic meter – oticare – 6 hours

LINEN & FEEDING UTENSILS HANDLING

- **Availability**
- **Autoclaving**
- Transported in covered carts or laundry bags
- Soiled linen – discard in **leak proof yellow bag** – taken to laundry twice daily
- **Diaper change** - 2-3 hourly with disposable gloves
- Cleaning of **feeding utensils** after each feed

WASTE DISPOSAL

- Waste must be placed in **color coded** , leakage proof bags – collected with barrier precaution gloves
- **Soiled diapers and medical waste** should be collected 3-6 hourly
- Proper disposal of sharps – prevent **needle stick injuries**

VISITOR MANAGEMENT

- Preferably mothers should be allowed only.
- Visitors should be treated on a **individual basis** .
- **Viewing box**
- **Hand hygiene protocol and PPE**
 - before entering into neonatology unit
 - to prevent spread of infection

4. APPROPRIATE NEONATAL CARE PRACTICES

- 1) CLEAN TECHNIQUES
- **Hand rub**
- Patient exam , noting vitals , feeding , social touch
- Instruments/equipments **disinfected**
- 2) ASEPTIC TECHNIQUES
- Antiseptic **hand wash**
- IM/IV injections
- Instruments/equipments **disinfected**
- 3) STERILE TECHNIQUES
- **Surgical hand scrub** with antiseptic hand wash solution
- PICC , Central line , Umbilical line , Endo-tracheal Intubation .

4. ADMINISTRATIVE CONTROL / HOSPITAL INFECTION CONTROL POLICIES :

❖ **STANDARD PRECAUTION**

- **PPE-CAP,FACE MASKS,SPECTACLES,GOWNS,GLOVES,COVERED SLIPPERS/SHOES**

❖ **STRICT PROTOCOL – ASEPSIS & STERILITY**

❖ **STAFFING NORMS & INFRASTRUCTURE**

❖ **EMPLOYEE HEALTH**

❖ **SURVEILLANCE & ACCOUNTABILITY**

STAFFING NORMS & INFRASTRUCTURE

STAFF:

Neonatal physician

1 : 6-10 newborns

Nursing staff

- NURSERY – 1: 6-8 newborns
- SNCU – 1 : 2-3 newborns (Max. 5 newborn per shift)
- NICU – 1: 1-2 NEWBORNS

INFRASTRUCTURE :

- ✓ Close to labour room & obstetric OT
- ✓ 10 cubic meter for every newborn
- ✓ Atleast 6 air change / 24 hour
- ✓ 2-3 feet gap between two newborn cot .
- ✓ Effective air ventilation

NEONATOLOGY UNIT EMPLOYEE HEALTH

- **PPE availability**
- **Immunisation** against mumps, rubella, measles, chicken pox , HBV.
- Yearly influenza vaccination
- Infection safety & sharp disposal – prevent **needle stick injury**

ANTI-SEPTIC , DISINFECTANTS AND STERILANTS

ANTISEPTICS : (Inhibit micro-organism growth)

- Iodophors
- Chlorhexidine , Chloroxylenol , Cetrimide
- Ethanol
- Sterilium: ethyl hexadecyl dimethyl ammonium ethyl sulfate

DISINFECTANTS : (Kill micro-organisms)

- Sodium hypochlorite
- Phenolic compounds (iso-propylalcohol)
- Formaldehyde

STERILANTS : (Kill micro-organisms including vegetative state)

- Ethylene oxide

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