Environment Microbial Surveillance

Executive Summary

Special New-born Care Unit is a facility established in some states of India with relatively higher infant mortality rate. Regionalized neonatal/ perinatal care with good network at various levels is emerging as an effective strategy to manage neonatal disease burden. Therefore, the State of Chhattisgarh (a state in Central India) has also established 23 functional SNCUs; however, the presence of Hospital Acquired Infections (HAI) and emergence of drug resistance microbes at these SNCUs has challenged its gains and positive contributions.

Surveillance studies provide important information that is critical for creating and refining approaches to controlling antimicrobial resistance and for guiding clinician decisions regarding appropriate treatment. For improving the quality care of SNCUs, State Government and UNICEF has done the collaboration with All India Institute of Medical Science (AIIMS) and Ekam Foundation, Raipur with a major aim of decreasing the infection among the neonates and ensuring rational use of antibiotics. This activity proposed the collection and transportation of the environment and patient microbial samples from the SNCUs to AIIMS for further testing and evaluating the scope of treatment.

The activity was divided in to two phases (1. Environment Microbial Surveillance 2.Patient Sampling). First phase of environment sampling was done from Feb 2017 to Aug 2017. For these environmental samples from 13 NICUs were collected from Feb 2017 to Aug 207 from high touch areas and patient care items by swabbing. Commercially available sterile swabs and media plates were used for the purpose. Pre and post cleaning samples were collected from equipment's of SNCUs. Through the period of the study three rounds of sample collection were undertaken. In each round the samples from every NICU was collected once. The duration between two rounds of sample collection at any of the participating NICU varied between 20 to 25 days. For transporting the samples 4 runners were recruited and cost effective partnership was done with local bus services.

Among the total 1,284 swabs cultured, 381 (29.7%) showed positive bacterial/fungal growth. Out of these 381, 141 (37%) grew pathogenic bacteria while 240 (67%) were contaminants (Non-pathogenic) or environmental saprophytes. Mixed growth was noted in 33 (8.6%) samples.

Second phase was started from Oct 2017. During the 2nd phase numbers of SNCUs were increased from 13 to 18 units, hence blood samples were collected from 18 SNCUs. For collecting the blood samples bard coded bottles were used with media.

Total 1917 samples were collected from Oct 2017 to March 2019. Out of which 45% were positive and 55% were found negative.

The intervention demonstrated a successful model for motivating the team members for better infection control practices, thereby helping in reducing HAI and antibiotic usage thus morbidity and mortality among neonates admitted in such units. The Environmental Microbiological Surveillance is also helpful in identifying the MDR microorganisms present in the healthcare environment and prevent its spread to the vulnerable neonates, well in time.

The Rationale

Five preterm babies of 31week at District Hospital Ambikapur delivered via natural delivery process were fatalities of Hospital Acquired Infection (Klebsiella pneumoniae. Claiming this to be the first case in the country where all five babies are of the same gender (female) with same blood-group. All babies were premature and underweight at the time of birth i.e BabyA- 1.12 kg, BabyB- 1.18 Kg, BabyC- 0.78kg, BabyD- 0.16kg and BabyE- 0.98 kG. Now two out of 05 babies are moving ahead with strong steps in community.

The Healthcare Associated Infection in the Special Care Newborn Units (SNCUs) are those acquired in the intrapartum period (of maternal origin and occurring in the first 48 hours of life), during hospitalization, or 48 hours after discharge, except for trans placental infections. Newborns need special attention and care, because their skin is the main port of entry for these infections. There are several risk factors in a SNCU, including: invasive procedures, length of stay, low birth weight, early contact with parents. All these factors can trigger a higher proliferation of HCAI, impairing the recovery and the quality of life of the new born.

Facility based newborn care has assumed great importance in developing countries due to its potential to reduce Neonatal Mortality Rate (NMR) by 23-50% in different settings. Regionalized neonatal/ prenatal care with a good network of facilities at various levels is emerging as an effective strategy to manage neonatal disease burden. Establishing such special care neonatal units is one of the priority areas in South-East Asia currently. Provision of such Special Care Newborn Units (SNCUs) in India is a big step forward to reduce the static NMR. Presently Chhattisgarh has 23 such functional SNCUs. One of the main challenges faced by these units in achieving their target of reducing NMR is nosocomial infections among these neonates, which increases morbidity and mortality among them.

The risk of nosocomial infections in neonates is the direct consequence of the severity of illness, prematurity, congenital defects, systemic diseases, and level of invasive monitoring, indiscriminate use of antibiotics, lapses in sterilization and disinfection techniques and the nature of diagnostic procedures. The National Surveillance Infection Surveillance System (NNIS) reports a rate of 14.1 nosocomial infections per 1000 patient days. Presently the state of Chhattisgarh is moving towards the phase of improving quality of the 23 functional SNCUs. One of the main prongs for improving quality care would be to decrease the Nis among the neonates and ensuring rational use of antibiotics.

To achieve this regular surveillance of NIs, formulation of antibiotic policy, training of Health caseworker's (HCW) for infection control practices, followed by its implementation and continuous monitoring is essential. This study is planned with these objectives with the ultimate aim to reduce NMR and reduce development of antibiotic resistance.

Aim - Reduction of Neonatal MR in Chhattisgarh SNCUs by reducing NIs and reducing antimicrobial resistance by ensuring rational antibiotic usage. The activity was divided in three phases:-

Phase 1: Environment Sampling
Phase 2: Patient Sampling
Phase 3: Labor room and SNCU environment sampling.

Objectives

1. Environmental Microbial surveillance of the SNCUs.
2. Profiling of various NI s in these SNCUs
3. Profiling of the causative pathogens and their antibiogram.
4. Prevailing antibiotic use surveillance
5. Formulating an antibiotic policy for these SNCUs

- ## Ethical Consideration

  AIIMS has taken the approval from institutional ethical committee for ethical consideration. As per the norms they are processing the samples and doing the further process accordingly.

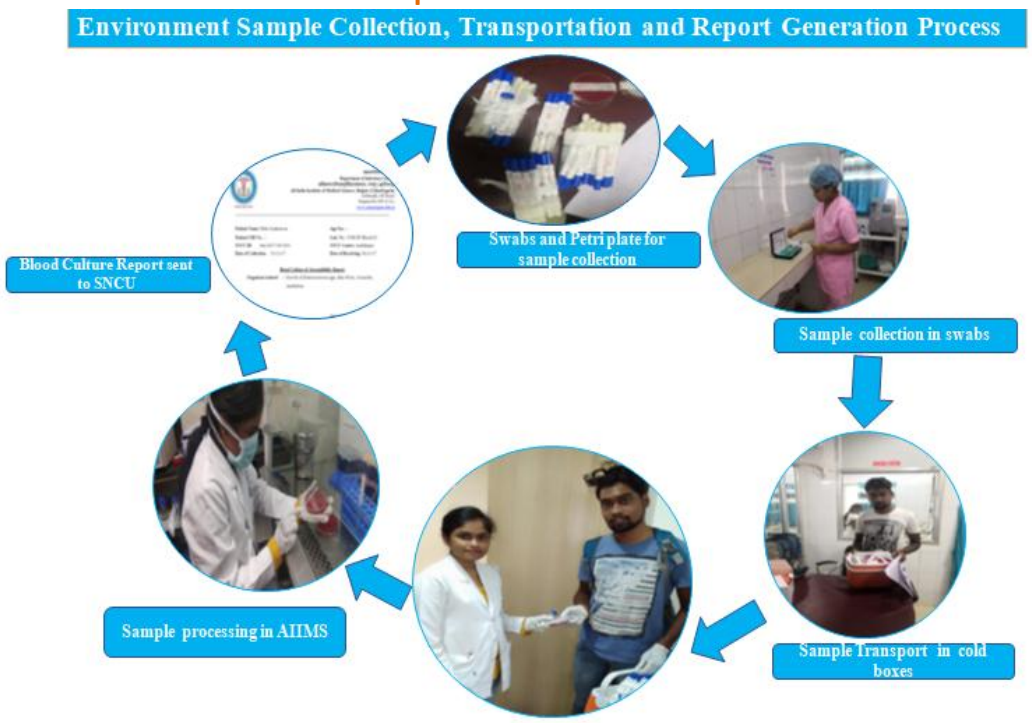
- ## Ethical Consideration

  Environment Microbial Surveillance activity was started in February 2017 with a workshop for two days, which was attended by the Pediatrician-in-charge and the Chief Staff Nurse from each of the 13 NICUs. The hands-on sessions for various infection control practices were organized on the first day of the workshop. Day

two was dedicated to sample collection, its packing and transportation to the laboratory. Microbiological environmental samples from 13 NICUs were collected from high touch areas and patient care items by swabbing. Samples were collected through two different ways:-

1. Four runners were recruited for collecting samples from units
2. A cost-effective partnership was established with a private bus service (Kanker Roadways), for delivering samples efficiently and punctually. As a social responsibility, the activity was carried out free by them for which high amount of gratitude and acknowledgement has been expressed.

Process Flow for Environment Sample Collection:



Methodology:

Microbiological environmental samples from 13 NICUs were collected by runners from high touch areas and patient care items by swabbing during March to Aug 2017. Commercially available sterile swabs were used for the purpose. The surfaces swabbed included following areas:

Nursing station, cradle bar/frame, phototherapy hood, warmer basinet, suction tube, suction jar, oxygen humidifier, oxygen concentrator, oxygen hood, ventilator tubing, C-PAP instrument, ambu-bag, nebulizer mask, infusion pump, intravenous stand, water tap handle, door handle, and medicine trolley.

Through the period three rounds of sample collection were undertaken. In each round the samples from every NICU was collected once. The duration between two rounds of sample collection at any of the participating NICU varied between 20 to 25 days. In each round of sample collection, following were collected: A pair of surface swabs from each site – one pre-cleaning and another after 30 minutes of cleaning procedure. In each round of sample collection, following were collected:

a) A pair of surface swabs from each site – one pre-cleaning and another after 30 minutes of cleaning procedure.
b) Samples of disinfectant being used at the time of sample collection.

Sampling Process:

1. Air sampling: Blood agar and Chocolate gar plates will be exposed to air for 30 minutes using a plate exposure technique with minimum movement in the room. Thereafter the plates will be closed, sealed and transported to the laboratory.

2. Wet swabs soaked in sterile normal saline/ Nutrient broth will be used to collect samples from predefined sites as mentioned above before and after disinfection. These samples will be properly labeled and promptly transported to the Microbiology laboratory of AIIMS, Raipur. The swabs after reaching the laboratory will be inoculated on Blood agar, Chocolate agar, and McConkey agar and incubated at 35 °C for 18-24 hours aerobically. The air sample plates will also be incubated at 35 °C for 18-24 hours aerobically. All the culture plates will be observed after 18-24 hours for growth. Further processing, interpretation, and reporting will be done as per standard methodology. Any pathogenic bacteria thus grown will be further subjected to Antibiotic susceptibility testing by Kirby Bauer disc diffusion method.

3. The pathogenic bacteria were identified to the species level by standard laboratory protocol. For all identified pathogenic bacteria antibiotic sensitivity test (AST) was conducted as per CLSI guidelines. The antibiotic sensitivity pattern was recorded. The MDR organisms thus identified were stocked for future studies.

Analysis

Environment Microbial Surveillance: First Phase of environmental surveillance has been completed by AIIMS; total 1260 environmental samples were collected from different SNCUs during first phase (May-Sept, 17) out of which 298 samples were found positive which is 24% of total collected Samples. Out of 298 positive growths 114 were pathogens and 184 were contaminants.

1. Among the total 1,284 swabs cultured, 381 (29.7%) showed positive bacterial/fungal growth. Out of these 381, 141 (37%) grew pathogenic bacteria while 240 (67%) were contaminants (Non-pathogenic) or environmental saprophytes. Mixed growth was noted in 33 (8.6%) samples. Among the 1,284 swabs, 655 were collected prior to cleaning while 629 were post-cleaning swabs (Table 1).
2. Nearly 30% of the samples showed growth of microorganisms. This comprised 19% non-pathogenic bacteria/fungus and 11% pathogenic bacteria. The number of pre-cleaning swabs showing no-growth (NG) were 52%, 59%, and 71% in the first, second and third round of sampling, respectively. The number of post-cleaning swabs showing no-growth was 78% in the first round of sampling, 81% in the second and 82% in the third round of sampling.
3. The number of pre-cleaning swabs showing growth decreased from 48% in the first round of sampling to 41% in the second and 29% in the third round of sampling. Growth in post-cleaning swabs decreased from 22% in the first round to 18% in the third round of sampling

Units wise Positive Growths-

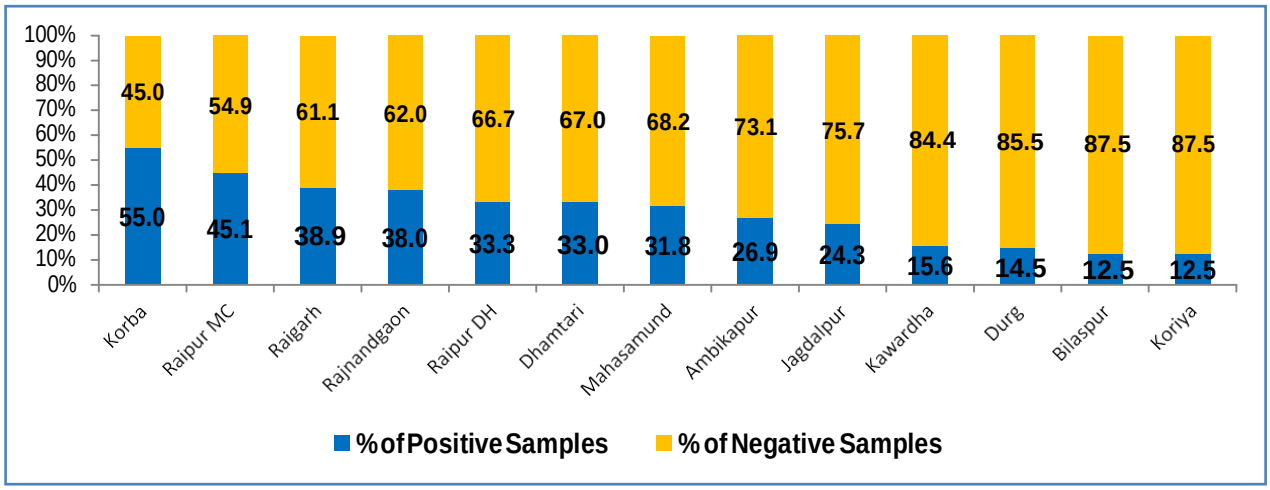


Figure 2- Unit wise Positive growths

SNCU Korba and Raipur MC has highest positive growths which is 55% and 45.1% respectively of total samples collected, similarly SNCU Bilaspur and Koriya has lowest positive growth in total sample collected.

Relation between bed occupancy rate, % of +eve environmental samples, neonatal sepsis, antibiotic use rate and Mortality in SNCUs:

Relation Between BOR Vs +eve Environmental samples & Mortality

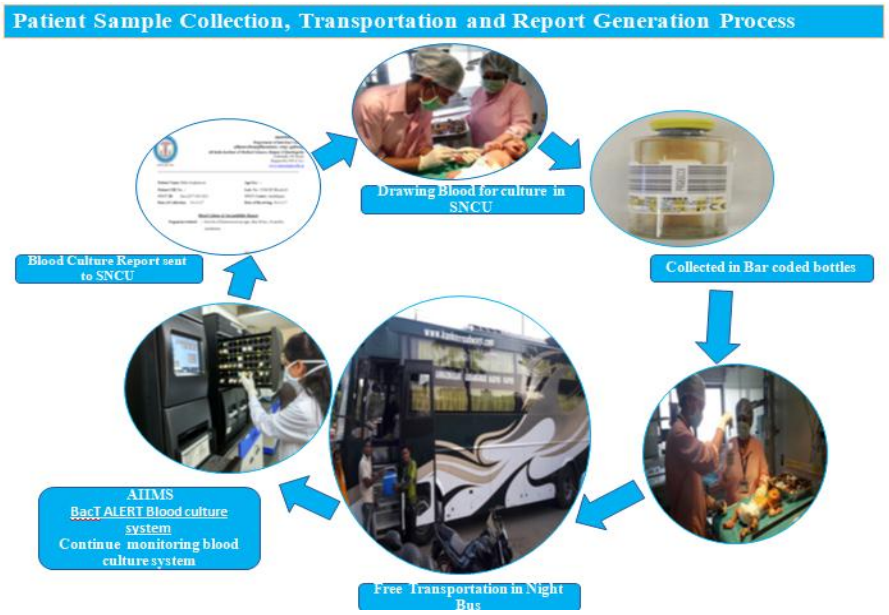
District / Unit Name	Bed Occupancy Rate	% of Positive Environmental Samples	Neonatal Sepsis (%b)	Antibiotic use rate	Mortality (%)
SNCU DH Ambikapur	269.6	27	15.3	96.5	18
SNCU MC Raipur	265.4	45	13.5	86.4	24.7
SNCU DH Raigarh	202.6	39	11.4	74.1	20.9
SNCU MH Jagdalpur	160.8	24	3.8	54.1	25
SNCU DH Rajnandgaon	130.2	38	6.4	12.0	12.1
SNCU DH Durg	107.7	15	3.2	51.0	6.4
SNCU DH Dhamtari	103.1	33	7.6	69.4	14.7
SNCU DH Baikunthpur	87.0	12.5	3.4	35.2	8.4
SNCU DH Mahasamund	82.7	31.8	4.8	81.6	9.9
SNCU DH Bilaspur C	72.3	12.5	1.5	20.1	0.1
SNCU DH Korba	58.6	55	3.5	75.3	6.9
SNCU DH Raipur	53.8	33.3	0.7	86.4	0.2
SNCU DH Kawardha	50.8	15.6	0.6	63.5	3.4

The above table clearly shows that there is definite relation between Bed occupancy rate, positive environmental growth, neonatal sepsis, and mortality in SNCUs. Mortality and neonatal sepsis is higher where +eve growths and BOR is high.

Phase 2: Patient Sample Microbial surveillance:

Patient sampling was started in Oct 2017. The patient samples were collected in bar coded bottles with media. For collecting the sample doctor and staff nurse withdraw the blood from neonate and collect in bottle and inform it to Ekam 24*7 helpline. Then on the availability of bus services, Data entry operator gives the sample to bus otherwise runner collect it. After reaching the sample to AIIMS, further processing done in automated machine (BacT alert blood culture system) and for sensitive test Biomeriuzlx Vitexk 2 machine is used.

Process flow for blood sample collection:



Result

Second phase of Patient based surveillance has been started since Oct, 17. Total 1917 samples were collected from Oct 2017 to March 2019. Out of which 45% were positive and 55% were found negative.

District wise findings:-

District SNCU	No. of cases	No. of positive cases	Organism
Raipur MC	7	2 (28.6%)	1. CoNS(Coagulase-negative staphylococci) 2. Streptococcus spp.
Raipur DH	89	22 (24.7%)	1. CoNS (5 cases) 2. Entericoccus spp. 3. Enterobacter aerogenes 4. MRSA Methicillin-Resistant staphylococcus aureus 5. MSSA(Methicillin Sensitive Staphylococcus Aureus)
Ambikapur	78	37 (47.4%)	1. Enterococcus spp. 2. Candida krusei 3. CoNS 4. Enterobacter aerogenes 5. Klebsiella pneumoniae 6. Candida non-albicans 7. E. coli 8. C. glabrata 9. Klebsiella pneumoniae 10. Morganella morgannii 11. Sphingomonas spp.
Balod	79	21 (26.6%)	1. CoNS 2. MRSA 3. MSSA

Balrampur	9	4 (44.4%)	1. CoNS 2. Candida albicans 3. Candida tropicalis
Bilaspur	28	15 (53.6%)	1. CoNS 2. Streptococcus spp 3. Klebsiella pneumoniae 4. Aeromonas hydrophila 5. Entercoccus faecium
Dantewada	118	27 (22.9%)	1. CoNS 2. MSSA 3. S. aureus 4. Klebsiella pneumoniae 5. Seratia 6. S. epidermidis 7. MRSA 8. Candida tropicalis 9. Sphingomonas paucimobilis 10. E. coli 11. St. payogenes 12. Enterococcus faecalis 13. Candida guilliermondii 14. Ochrobactrum anthropi
Dhamtari	46	34 (73.9%)	1. Burkholderia cepacian (11 Cases) 2. CoNS (10 cases) 3. Klebsiella pneumoniae (6 cases) 4. Candida krusei (2 cases) 5. Candida albicans (1 cases) 6. Candida tropicalis (1 cases) 7. Burkholderia spp. (1 cases) 8. E. coli (1 cases) 9. Candida parapsilosis (1 cases)

Durg	139	44 (31.7%)	Klebsiella pneumoniae (7 cases) CoNS (7 cases) E. coli (4 cases) MRSA (2 cases) S. epidermidis (2 cases) Staph. Haemolyticus (1 case) Enterococcus faecium (1 case) Enterobacter cloacae (1 case) Chryscobacvterium indologenes (1 case) Streptococcus spp (1 case) Candida albicans (1 case)
Jagdalpur	2	2 (100%)	Candida tropicalis
Jashpur	23	12 (52.2%)	1. CoNs (6 cases) 2. MSSA (2 cases) 3. Enterococcus spp (1 cases)
Kanker	30	11 (36.7%)	1. CoNS (2 cases) 2. Candida albicans (2 cases) 3. Candida krusei (2 cases) 4. Candida tropicalis (1 cases) 5. S. epidermidis (1 cases) 6. Candida parapsilosis (1 cases) 7. Trichosporum spp. (1 cases) 8. Enterococcus Spp (1 cases)
Kawardha	47	9 (19.1%)	1. CoNS (3 cases) 2. Enterococus faecium (1 case) 3. MSSA (1 case)

Korba	130	93 (71.5%)	1. CoNS (25 cases) 2. Klebsiella pneumoniae (8 cases) 3. Candida parapsilosis (4 cases) 4. Enterococcus faecalis (4 cases) 5. S. aureus (3 cases) 6. Acinetobacter baumannii (2 cases) 7. Burkholderia cepecia (2 cases) 8. Candida Famata (2 cases) 9. Candida albicans 10. Enterococcus spp. 11. MRSA 12. S. epidermidis
Koriya	87	56 (64.4%)	1. Klebsiella pneumoniae (13 cases) 2. CoNS (9 cases) 3. Candida pelliculosa (5 cases) 4. Enterococcus Spp. (4 cases) 5. Enterococcus faecium (3 cases) 6. Candida parapsilosis (2 cases) 7. Candida tropicalis (2 cases) 8. S. Epidermidis (2 cases) 9. Burkholderia spp (1 case) 10. Candida Spp 11. Enterococcus faecalis
Mahasamund	87	19 (21.8%)	1. Klebsiella pneumoniae (11 cases) 2. Candida tropicalis 3. Enterobacter aerogenes 4. Ralstonia pickettii

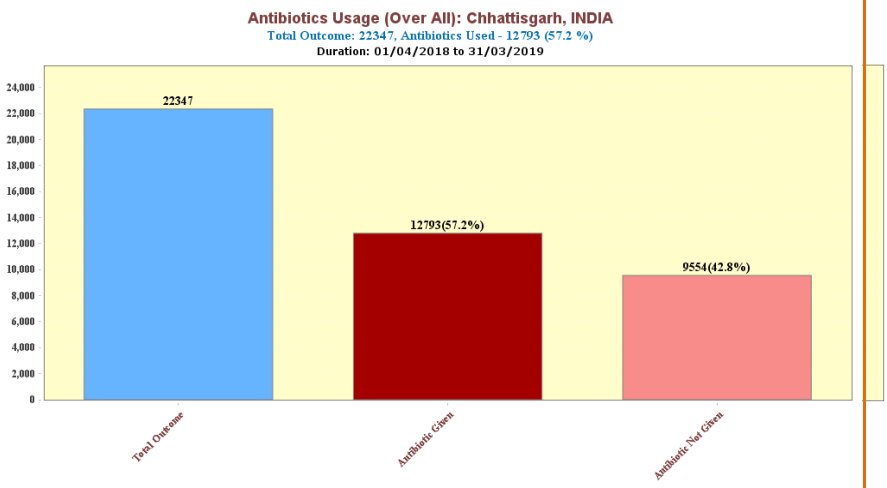
Raigarh	112	63 (56.3%)	1. Klesiella pneumoniae (23 cases) 2. CoNS (9 cases) 3. Candida non-albicans (4 cases) 4. Enterobacter aerogenes (4 cases) 5. Enterococcus Faecalis (4 cases) 6. Candida pelliculosa (3 cases) 7. Candida krusei (2 cases) 8. Acinetobacter spp. 9. Candida albicans 10. Candida parapsilosis 11. GNB 12. Klebsiella oxytoca 13. MRSA 14. Pseudomonas aeruginosa 15. Staphylococcus haemolyticus 16. Streptococcus spp.

Rajnandgaon	261	202 (77.4%)	1. Klebsiella pneumoniae (45 cases) 2. Candida krusei (24 cases) 3. Candida tropicalis (18 cases) 4. Enterobacter aerogenes (18 cases) 5. Citrobacter spp. (10 cases) 6. Enterobacter cloacae (10 cases) 7. CoNS (8 cases) 8. Enterococcus spp. (7 cases) 9. Enterococcus faecalis (4 cases) 10. MSSA (4 cases) 11. Acinetobacter spp. (3 cases) 12. Enterococcus spp. (3 cases) 13. Candida parapsilosis (2 cases) 14. E. Coli (2 cases) 15. Methicillin sensitive Staphylococcus aureus (2 cases) 16. Acinetobacter baumanii 17. Candida albicans 18. Candida non-albicans 19. citrobacter freundii 20. citrobacter freumalii 21. Morgenella morgani 22. MRSA 23. Serratia spp. 24. Staph aureus

After discharge from SNCU follow up of neonates done whose sample was collected to know the condition in field. It was observed that 763(40%) babies were found alive, 14% found expired and 46% babies were not contacted due to wrong no.

Conclusion and Recommendation:

Environmental Microbiological Surveillance of a new intensive healthcare setting would be an effective tool in motivating the team members for better infection control practices, thereby helping in reducing HAI and thus morbidity and mortality among neonates admitted



in such units. The Environmental Microbiological Surveillance is also helpful in identifying the MDR microorganisms present in the healthcare environment and prevent its spread to the vulnerable neonates, well in time.

Patient microbial surveillance is also an effective procedure for controlling antibiotic usage and reduces the chance of MDR cases. It has been observed that antibiotic usage was 67% in 2016-17 whereas after intervention it got reduced by 57% in 2018-19. Hence it is recommended to do environment and patient sample regularly for reducing the morbidity and mortality in SNCUs.

Annexure 1

Sample Collection & Transportation

UNICEF – SNCU Project

Centre Address:-

Date of Collection:-

Ward:-

Sr. No.	Pre cleaning	Post cleaning	Site	Time
1				
2				
3				
4				
5				
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39				
40				

Collected by
Name:
Signature:

Transported
Name:
Signature

Received by
Signature:
Date & Time

Annexure 2

TEST REQUISITION FORM

(SNCU-UNICEF Project)

Baby of (Mother's name) …… (Father's name) ……

Address……

Date of admission…… Age (in days)…… Birth weight……

SNCU ID…… Patient UID ……Outborn/ Inborn

Clinical symptoms……

Clinical diagnosis……

Laboratory Investigation/s

1. Blood culture sensitivity
   - Paired sample/ Single sample
   - Date of collection……
   - If paired: Details of two blood samples-
     1st Sample: Site of collection …… Time of collection……
     2nd Sample: Site of collection …… Time of collection……
   - Skin disinfectant used before sample collection ……
2. Any other sample: CSF/ Pus/ Urine/ Other……
   Site of collection…… Date & time of collection……

Antibiotic History

Name of Antibiotic	Indication for starting	Date of starting	Date of stopping/changing/ adding another antibiotic

Other Laboratory investigations

- CBC:
- CRP
- Blood sugar

Any Interventions: Central Venous line/ Peripheral venous line/ Umbilical line/ Ventilator/ …….

Sample collected by …… (Name and signature) Date of dispatch of samples: …… (Runner/ By Bus) Sample received in Laboratory by …… (Name and signature)

Date of receiving…….. Lab ID given……..

Annexure 3

Cleaning/Disinfectant Methods for various Devices/Sites:-

Article	Method of decontamination
Airways and endotracheal tubes	Autoclave preferably or Chemical high level disinfection
Ambubag	Clean with detergent and water, dry and sterilize by autoclaving.
Arterial catheters	Sterile, single use only, must be discarded after use.
Baby weighing scales	A fresh liner should be used for each baby. Clean tray with detergent and water. Wipe with 0.1% Hypochlorite if contaminated.
Baby bath	Clean after each use with detergent and water
Beds and couches Frame	Clean with detergent and water between patients and as required If contaminated with body fluids or If used in isolation room after cleaning, should be wiped with any of the surface disinfectant
Breast pumps	Wash with detergent and water and immerse in freshly prepared sodium hypochlorite 0.1% solution at least for 20 minutes.
Cheatle forcep	Autoclave daily & keep in fresh solution of 1% savlon (change solution daily) Or Glutaraldehyde solution (2%) as per MR
Cradles	Clean with detergent and water and dried. If contaminated use any of the surface disinfectant (as mentioned in 6.2.4)
Drainage bottles	1. Disposable – single use; discard after use. 2. Reusable- rinse and autoclave / immerse in 7% Lysol/ phenol solution followed by rinse with sterile water before reuse.
Dressing trolleys	Clean daily with detergent and water. After each use - wipe with 70% isopropyl alcohol.
Dustbins	Detergent and water every morning
Leads and monitors	Dismantle to smallest components and clean with detergent and water and dried.
Furniture	Damp dusted with detergent and water.
Humidifiers	Clean and sterilize at low temperature by plasma/ETO sterilizer/ immerse in glutaraldehyde solution (2%) for 10 hours. Water used in humidifiers - Use normal saline/ sterile distilled/ sterile tap water. Replace the water used daily/ for every patient.

Incubators	Daily clean with detergent and water and switch on to dry. Terminal sterilization with ethylene oxide gas / Plasma/ Chemical steriliant (Glutaraldehyde based compounds) may be required after some nfections.
Intravenous monitoring	Clean the outer surface with detergent and water and dry.
pumps(andfeedpumps)	
Mattresses and pillows	Clean with detergent and water between patients and as required
	Should not be used if cover is damaged. Contaminated pillows must be discarded. Mattress covers must be replaced before mattress is reused
Metal buckets	Clean with vim powder every week

Mops	Disposable use for one day. Re-usable to be laundered.
Oxygen	Cleaning and low temperature sterilization (ETO) between patients. Fill
Humidifier/Ventilator/	With sterile distilled water/sterile tap water/ sterile normal saline only.
C- Pap	• Replace the water used daily/ for every patient. • Should be sent to CSSD (Central sterilization and supply department) for cleaning and reprocessing, if facility is available. • Nebulizer tubing- Wash with detergent and water and then send to CSSD (ETO).For patients with Respiratory tract infection and other serious infection use disposabletubing. • Oxygen/ Nebulizer masks- Clean with soap and water and send to CSSD. Never use the same mask for two patients. • Endotracheal tubes- single use only. If they are to be used again, they need disinfection with Intermediate level disinfection • **NeveruseGlutaraldehydetodisinfectrespiratoryequipment**.
Phototherapy Hood	Clean with Intermediate Level Disinfectant (ILD) e.g., 0.1% Hypochlorite solution or Isopropyl alcohol (60-95%)
Nebulizers	Cleaning and low temperature sterilization by plasma/ ETO/ Immerse in Glutaraldehyde solution (2%) for 10 hours.
Sphygmo-manometer cuffs	Made up of cloth - Should be laundered if soiled. Made up of material other than cloth – disinfect with 70% alcohol.
Stethoscopes	Should be wiped with 70% alcohol.
Suction bottles, tubes and Jar	Clean with soap and water followed by disinfection with sodium hypochlorite (0.1%) and dried. Change daily and in between patients.
Stretcher&Wheelchairs	Clean between patients with detergent and water.
Medicine Trolley	Clean with detergent and water and dried.
Procedure Trolley	Clean with detergent and water and dried.
Warmer Basinet	Should be wiped with 70% alcohol.