Summer Training at
National Health Mission, Gujarat

Gap analysis in Special Newborn Care Unit

By
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MBA Hospital & Health Management
2017-2019

Institute of Health Management Research
The IIHMR University, Jaipur
2018

INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

CERTIFICATE

This is to certify that ~~MR.~~ Mr **Abhinav Choumal** has undergone summer training at **National Health Mission Gujarat** from 3rd April 2018 to 2nd June 2018.

The candidate himself completed the project assigned to him during summer training. His approach to the project was sincere and proactive. This summer training is in partial fulfillment of the course requirement recommended for the award of MBA in Health Management.

I wish him success in all his future endeavors.

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CERTIFICATE

This certificate is awarded to

Mr.Abhinav Choumal

In recognition of having successfully completed hisSummer trainingin the department of

Health and Family Welfare Department and National Health Mission, Gujarat State
Posted Under the CDHO, Bhavnagar

under the guidance of **Dr JAYENDRA R GOHIL,** HOD Paediatrics, Sir T G Hospital,

and has successfully completed his project on

Gap Analysis and Assessment of SNCU,

Bhavnagar Region, Gujarat

from**2nd April to1st June 2018**

at the**SNCU Department of Bhavnagar Region**

He comes across as a committed, sincere & diligent person who has a strong drive and zeal for learning.

We wish him all the best for future endeavours.

DrJAYENDRA R GOHIL,
Professor, Paediatrics,
Sir T G Hospital, BHAVNAGAR

Dr. J. R. Gohil
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CHIEF DISTRICT HEALTHOFFICER,
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District Panchayat, Bhavnagar.

Acknowledgment

The project was a success due to the help and support of many people. I would like to acknowledge the help of all people who contributed towards the completion of my project.

First of all, I would like to thanks **Secretary Govt. of Gujarat cum MD NHM Dr. Gaurav Dahiya** for providing me opportunity to work in public health system.

I also like to thanks **Dr. Jayendra R Gohil** organization mentor for guiding me during the project.

My special thanks to **Dr. Ashok Kaushik, Dean Academics and students Affairs, IIHMR University, Jaipur** for being a continuous guiding source throughout the training, I would also like to thanks Ms. **Sunita Nigam**, Assistant Professor at IIHMR University, my mentor for providing me a support in making my project a successful.

I would like to express gratitude and appreciation for all the people mentioned above to help me complete my project successful.

ABBREVATIONS

1.	MMR	Maternal mortality ratio
2.	ANM	Auxiliary nurse mid wife
3.	IMR	Infant mortality rate
4.	PHC	Primary health centre
5.	CHC	Community health centre
6.	NMR	Neonatal mortality rate
7.	NBCC	Newborn Care Corner
8.	NBSU	Newborn Stabilization Unit
9.	SNCU	Special Newborn Care Unit
10.	MDR	Maternal death review
11.	Hb	Haemoglobin
12.	ABG	Acid Blood Gas Analysis
13.	BMW	Bio- Medical Waste
14.	CBC	Complete Blood Count
15.	CME	Continued Medical Education
16.	CPAP	Continued Medical Education
17.	DCH	Diploma in Child Health
18.	DM	Doctorate in Medicine
19.	DR- CPAP	Delivery room continuous Positive Airway pressure
20.	FBNC	Facility Based Newborn Care
21.	GNM	General nursing and Midwifery
22.	KMC	Kangaroo Mother Care
23.	LBW	Low Birth Weight
24.	VLBW	Very Low Birth Weight
25.	PDCH	Project director Child health

ORGANIZATION PROFILE

Introduction

The National Health Mission seeks to provide effective health care to all population throughout the country. It aims is to undertake planning and correction of the health system, to enable to effectively handle increased allocation as promised under the National Common Minimum Program". The key components of it have provision of a female health activist in each village, a village health plan prepared through a local team headed by the Health & Sanitation Committee of the Panchayat. It aims at effective integration of health concern with determinants of health like Sanitation & Hygiene, nutrition and safe drinking water through a District plan for Health.

Mission–To improve the quality of life of people by providing better Health services. It strives to help people improve their productivity and reduce risks of diseases and injury in a cost – effective way.

Vision-To establishes long term relationship with groups and individuals to enable them to continue to work to achieve optimal health. It delivers cost – competitive health promotion services with patient's satisfaction and accountability.

- **Duties of Health Department-**

- To provide Promotive, Preventive, Curative and rehabilitative services to the community through PHC system.
- To provide equitable and quality Health Care at Primary, Secondary and Tertiary level.
- To Extend and Expand and Consolidate the Health infrastructure.
- To respond to the local community needs and requests.
- Provide RCHS with the objective to reduce MMR & IMR.

- Provide immunization services against vaccine preventive diseases of childhood as well as pregnant mothers against tetanus during child birth.
- Provide family welfare services and to provide essential obstetric care.
- Enforcement of PNDT Act to prevent sex determination.

Managerial Task I did w.r.t the Department –

During the last two months of working period as summer trainee in child health department of NHM Gujarat, I observed and learned the various program in the department. During this period I was assigned a project with gap analysis and assessment of SNCU and also with the on –site corrections at SNCU located at SIR T govt. Hospital and medical colleges. And along with this I also did a minor project based on AGANWADI.

Learning's in Summer Training Time–

- I have learned the various health programs managed by the organization.
- I have came to know about the Work culture in govt. organizations as we think, is not the same everywhere.
- This provided me an opportunity to field exposure, and I got to learn a lot.
- I came to know the reality of health conditions prevalent in Bhavnagar region.
- I got to learn about the AGANWADI workers and got the feedbacks of parents along with children up to 5 years.
- In accordance with the comparative study of 15 projected and 15 non projected AGANWADI, I came across the different situations and their solutions in the program.

<u>Suggestion</u>

On the basis of analysis, an attempt has been made to present recommendations for strengthening SNCU's service delivery in Bhavnagar region. These recommendations are given below:

Manpower:

- Number of class IV staff must be fulfilled for the proper cleaning and dusting of SNCU.
- Sanctioned positions of Medical Officers (4) for SNCU must be fulfilled for the better and smooth functioning of SNCU.
- A special trained staff should be kept in hospital to meet any emergency in absence of official concerned.

Training:

- All medical staff must be FBNC trained as early as possible before and after joining in SNCU and at least one FBNC trained MO must be available for twenty four hours at the SNCU.
- All staff members of SNCU must be trained in handling equipments independently. And they should be provided with correct and essential knowledge regarding any emergency.

Infrastructure:

- There must be separate area in SNCUs for mothers of out born babies and also a separate area for keeping a high risk babies along with their mothers with good nursing cover, beds and separate toilets/washrooms for mothers.
- There must be some contingency space for shifting the unit in case of epidemics.
- Power audit must be done in the unit.
- Proper facilities of electricity and water should be there.
- There must be some medium like mike/bell for communication between staff available in the SNCU and parents/relatives of baby outside the SNCU so that no outsider have to enter inside the SNCU to know the condition of their admitted baby or to talk with the staff for any other reason.

- Lab facility with proper tools should be available at the unit. Facilities like blood culture, exchange transfusion, CPAP, short term ventilation, CT scan, echocardiography, portable X-ray be available also at the unit to improve the functioning of SNCU and also to reduce referral rate

Equipments and Supply:

- Equipments for SNCU like radiant warmers, monitors, pulse oximeter, suction machines, oxygen concentrators, breast pumps, head boxes etc. must be provided on the basis of delivery/admission load in each SNCU instead of as per standard only. But at least, each SNCU must have all equipments as per standard. During the visits for this study.

- Repair of any equipment of SNCU must be done as early as possible and within the time limit.

- Guidelines/written instructions/protocols must be displayed in the unit to handle or operate equipments and also for management of common newborn conditions. Staff must follow these guidelines.

- Other general equipments like washing machine for laundry, refrigerator for storing mother's milk and vaccines, vacuum cleaner for cleaning of unit, adequate number of surgical equipment sets and spot lamps must be provided separately to the unit.

Cleaning and disinfection:

- Proper written instructions /rules which to be followed must be displayed in the unit for the unit's cleaning, disinfection and fumigation routines, for method of equipment cleaning and disinfection. All the Staff members must follow these guidelines.

- There must be at least two wash basins with hand wash, having system which does not require use of washer's hands (e.g. elbow or foot operated taps) for every 5 beds. Hand hygiene technique poster should be displayed at all hand washing stations. And other play cards should be made available for people as well as for staff.

- Good quantity of disinfectants, soaps, diapers, eye patches for phototherapy, disposable hand wipes/sterile paper, color coded BMW bins must be available in the unit.

- There must be an infection control committee for the periodic bacteriological surveillance of the unit.

- There must be an entire separate uniforms or gowns, slippers', masks, caps and gloves to enter in the unit and it must be followed by everyone entering into the Unit.

- There must be separate routes for clean and dirty linen going in and out of the unit and housekeeping staff must do vacuum cleaning of the unit regularly.

Case record management:

- All the Case sheets and old files related to SNCU should be available at any time and kept properly within the hospital.

- An alternate staff member should always be present there to meet any emergency.

Improvement in admissions:

It is observed from analysis that there is a big difference in number of inborn and out born admissions in some SNCUs. So it is important to increase number of out born admissions in SNCU by increasing their catchment area by maximizing referral from community and other health facilities to SNCU. There is a need to-

- Create awareness among community about all services provided at SNCU without any charges to save lives of newborns.

- Create awareness among community about free ambulance service provided by government for referral.

- Sensitize staff of private hospitals or nursing homes and peripheral health facilities to refer sick newborns as soon as possible to nearby SNCU.

Improvement in referral rate:

There is a need to reduce number of referrals from SNCU to higher centers by providing all required facilities (e.g. lab tests) at that unit.

Gap analysis on Special Newborn Care Unit, Gujarat

Introduction

In India, 1.5 million babies are born every month and 0.4 million babies die before one month of life. India alone carries the single largest share around 25-30% of Neonatal deaths in the world. The neonatal period is only 28 days yet, Neonatal Mortality Rate (NMR) contributes to about two- thirds of Infant Mortality Rate (IMR) and about half of under-5 Mortality Rate (U5MR)

"There is an increase awareness to meet National goals and the MDG to bring down the child mortality, substantial reduction in NMR and reduction in number of deaths in the first week of life to make essential progress. The Government of India is committed to improve the quality newborn care services in addition to renewing efforts in providing the quality health care for women, infants and young children under the RCH Program of NHM.

Preventable morbidities such as hypothermia, asphyxia, infections, prematurity and respiratory distress continue to be the main causes of mortality in the neonatal period. (2) There is an increasing need to focus on newborn care and survival for significant reduction in IMR and U5MR and strengthen the care of sick, premature, low birth weight newborns at the various levels of facilities right from the moment to birth through the neonatal period.

One of the key steps in this direction is the establishment of FBNC services at various levels of health care facilities. It has a significant potential for improving newborn survival and reducing the neonatal mortality by 25-30% approximately.

Neonatal care at different levels under FBNC Program (3)

Three levels of neonatal care under the FBNC program are as following:

Level 1 Care includes referral of sick newborns from PHC to higher centre's and care at NBSU in the first referral units. Care in the NBSU includes Stabilization of sick newborns and care of LBW babies not requiring intensive care.

Level 2 Care includes functioning of Special Newborn Care Units (SNCUs) at the district hospital and some of the sub district hospital level. These units are being established at any health facility where the delivery load is more than 3000 per year and are equipped to handle sick newborns other than those who need ventilator support and surgical care. It has been estimated that around 15-20 % of all newborns require level 2 care in rural settings.

Level 3 units are the NICU which provide all care including assisted ventilation and major surgery.

Under this initiative, MOHFW established Special Newborn care Unit (SNCU) in 2009-10 focusing on comprehensive care to a sick newborn.

Special Newborn Care Unit (SNCU)

SNCU is a neonatal unit in the vicinity of the labor room which provides level 2/3 care (all care except assisted ventilation and major surgery) for sick newborns. All district hospitals and sub – district hospitals with more than 3000 deliveries per year should have a SNCU.

Services to be provided at SNCU

Table 1 : Expected services to be provided at SNCU		
Care at birth	**Care of normal newborn**	**Care of sick newborn**
- Infection Prevention - Provision of warmth - Resuscitation - Early initiation of Breastfeeding - Weighing the newborn	- Breast – feeding / Feeding support	- Managing of LBW babies under 1800 gm - Managing all sick newborns (except those requiring mechanical ventilation and major surgical interventions) - Post – Natal Care - Follow- up of high- risk newborns - Immunization services and referral services

***(Source: facility based newborn care operational Guidelines 2011)**

Components of SNCU

Newborn care area: This should have at least 12-16 warming beds divided into two inter-connected rooms in-born and out-born separated by transparent observation window with the nursing station in-between.

Step- down unit: This is an additional 4 bedded step-down unit where neonates who do not need an intensive monitoring.

Newborn ward: This is a 10-25 bedded unit, where both mother and the newborn stay together. This facility is to be used for neonates who require minimal support such as phototherapy, un-complicated LBW babies who require only observation and those babies who require only intravenous antibiotic therapy.

Ancillary area: Sufficient space should be provided for all other services that are routinely performed at SNCU. The ancillary area should include space for the following:

- Nursing station, hand washing and gowning area at the entrance.
- Laboratory room and examination area.
- Follow-up clinic.
- Clean area for mixing intravenous fluids and medication, store room and power room.
- Teaching and training room.
- Place for in-house facility for washing, drying, boiling and autoclaving equipments and Lenin.
- Duty room for doctors, nurses and for other staff members.
- Place for promotion of breast-feeding and learning mother craft etc.

Human resources for Special Newborn Care Unit

A 12 bedded unit (plus 4 beds for the step- down area) requires at least one pediatrician or 4 trained MBBS doctors. It is purposed that one pediatrician trained in neonatology should be posted at the unit, supported by two or three medical officer trained in FBNC. There should be three nurses in each shift, round the clock and sufficient nurses recruited to provide for leave vacancy and contingency.

Dedicated support staff should be available to clean the unit at least once during every shift and more often depending on the need. A part- time lab technician, a counselor, and a data entry operator should also be posted at the unit.

Criteria for admission to SNCU:

- Any Newborn With Following Criteria Should be Immediately Admitted to the SNCU:
- Birth Weight < 1800gm or gestation < 34 weeks
- Large baby (>4 .0kg)
- Peri-natal asphyxia

- Apnea or Gasping
- Refusal to Feed
- Respiratory distress (Rate > 60 or grunt/retractions)
- Severe jaundice (Appears <24 hrs/s palms and soles/ lasts > 2 weeks)
- Hypothermia < 35.4 degree C or Hyperthermia (> 37.5 degree C)
- Central Cyanosis
- Shock (Cold periphery with CFT> 3 seconds and weak & fast pulse)
- Coma, Convulsions or Encephalopathy
- Abdominal Distension
- Diarrhea / Dysentery
- Bleeding
- Major malformations

Criteria for discharge from SNCU:

- If the Baby is able to Maintain temperature without radiant warmer
- Baby is Haemodynamically stable (normal CFT, strong peripheral pulses)
- Baby accepting breast feeds well.
- Baby has documented weight gain for 3 consecutive days, and the weight is more than 1.5 kg.
- When the Primary illness has resolved.

Training of SNCU staff on newborn care:

To ensure that the staff has the necessary skill to provide the appropriate level of care the medical and paramedical staff posted at SNCU need to undergo:

Navjaat Shishu Suraksha Karyakram (NSSK)

NSSK address important interventions of care at birth, that is basic newborn resuscitation, prevention of hypothermia, prevention of infection, early initiation feeding, and equips the staff with 2 days knowledge and skill based training to provide essential newborn care in primary health care settings.

Facility based IMNCI (F-IMNCI) training:

F-IMNCI is skill based training, based on a participatory approach combining classroom sessions with hands- on clinical sessions. Medical officers and nurses not trained in IMNCI and working at health facilities should receive the full package of training with 11days Duration of training and 5 days for those already trained in IMNCI.

Facility based newborn care (FBNC) training

All doctors and nurses posted in SNCUs need to undergo a more intensive training programme at a recognized centre. The training program includes 4 days skill-based training on essential and special care. Besides skills on clinical management, additional training is provided on housekeeping and Maintenance of the equipment.

Equipments for SNCU

- Radiant warmers
- Incubators
- Transport incubator
- Pulse oximeter
- Apnea monitor
- BP monitor
- Thermometer
- Weighing scale
- Transcutaneous Bilirubin meter
- Blood gas monitor
- Phototherapy unit
- Infusion pump
- Oxygen analyzer
- Flux meter

- CPAP machine
- Neonatal Ventilator
- Suction machine
- Breast pump
- Manual resuscitator

RATIONALE OF STUDY

There is an urgent need to focus on newborns care and survival, for significant reduction in IMR and U5MR and to strengthen the care of sick, premature, low birth weight newborns at the various levels of facilities right from the moment to birth through the neonatal period. Hence, the need has emerged to evaluate the overall functioning of SNCUs in terms of utilization, performance on the basis of geographical and ecological factors, treatment outcome, socio-demographic and clinical factors, and functionality, availability and adequacy of the facilities at SNCU.

As identifying the gaps, it help in the decision making process and the corrective actions can be taken immediately.

This study can be replicated in other districts of **Gujarat**.

Objective

- To assess the status of SNCU, Gujarat according to FBNC Operational Guidelines for Planning and Implementation. (2011)

Method and Tools:

- **Study area-** Special Newborn Care Unit of Gujarat
  - 1 District hospital
  - 2 Medical colleges
- **Study Design** – Descriptive study.
- **Study period** – April 3rd to June 2nd 2018
- **Study population-** Special newborn care units
- **Sampling Frame –** 3 Special newborn care units in Bhavnagar region.
- **Sample Size –** 3 SNCU
- **Sampling technique-** Convenient sampling
- **Study Tool –** A pre-designed questionnaire given by FBNC guidelines.
- **Data Collection Technique** – At first facility based newborn care operational guideline was reviewed but some criteria did not fulfill according to the study objective, hence Facility Based Newborn Care Operational Guide- Guidelines for Planning and Implementation (2011). tool was taken for data collection under guidance of PDCH. Primary data collected from 3 SNCUs that are functional from past one year. NNF Self-Assessment Tool was used for primary data and secondary data was obtained from online software of SNCU.

General observation

- The Bio-medical waste management policy was not being properly followed at facility.
- Proper Triaging of newborn was not being followed at unit.
- The X- Ray machine along with other equipments at SNCU was not in use.
- ABG machine not was not used due to various unavailability of reagents.
- Stethoscope available in store but was not used.
- In NBCC hygienic and infection control practices are not followed in the unit.

General Mandatory Fields of Lacking:

- One Stethoscope with each of the neonatal bed was not available in SNCU.

- Utility areas were not well maintained
- A log book with daily shift –wise recording of temperature was not maintained in SNCU.
- One resident doctor (post MBBS) for the unit in each shift was not available in SNCU.
- The neonatal nursing staff or trained doctors in all transports (documentary proof) were not available in Ambulance**.**
- A separate emergency tray for every 4 babies was not available in SNCU.
- Surgical instruments (suture/ SET) along with essential equipment were not available in SNCU

Conclusion-

A Modern sick Newborn Care facility created in a district hospital can successfully reduce hospital neonatal deaths and NMR of the district. This model can turn out to be an effective tool to reduce NMR of the country. Mandatory requirements and facilities for Thermoregulation were not met by any of the SNCU. Protocols and processes, human resources, drugs, IV fluids management and nutrition, neonatal resuscitation in labor rooms, infection control practices and case record maintenance criteria.

Depending upon the NMR, SNCU's are much required in each district to reduce the deaths of newborn.