Readiness and Availability of newborn services in 30 hospitals of Nepal

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Executive Summary

Neonatal period is very important phase of life. A healthy start is central to the human life course, with birth holding the highest risk of death, disability, and loss of development potential, leading to major societal effects. Nepal has made significant improvement in survival of mothers and children despite its difficult topography and socio-cultural diversity. Various reports however highlight that progress in newborn survival has been considerably slower than for mothers and children.

Newborn health is priority public health issue for the Government of Nepal and efforts to increase and improve institutional care of sick newborns is currently a major operational strategy to achieve and maintain sustainable developmental goals. Availability of service, readiness and willingness of the healthcare staff and quality for newborn care services delivered at majority of primary level health institutions however remain major problem areas in delivery of optimal neonatal care in these health facilities. Efforts to increase institutional deliveries have worked and over the next few years increased institutional deliveries are expected in all primary level referral hospitals. Most of these primary level referral health institutions have limited human resources, few birth attendant trained in SBA package, high stillbirth rate and limited infrastructure and logistics required to care sick newborns. Improving quality of care at these referral hospitals is therefore critical to reduce neonatal mortality further in the country. With anticipated increase in health institution delivery to 70-80 percent of all pregnancies over next three years, the health institution capacity is supposed to be overrun and the quality of care compromised, more so in the district hospitals. Ensuring improved quality of newborn care is necessary for survival of most sick newborns in district and zonal hospitals as the first level referral health institutions. To achieve this objective, the first step to strengthen the hospitals is to determine the current quality of care, service availability and readiness for service delivery and implement changes to produce desired results.

Nepal Pediatric society (NEPAS) has attempted to do exactly the same with financial help of UNICEF. We performed a health institutions survey with the objective of evaluating availability of service, current situation of newborn care services and the readiness of hospital for providing newborn care services as per the national protocol in district, zonal and regional hospitals.

Thirty hospitals were selected by UNICEF after consultation with Child Health Division along with other partners based on number of deliveries, hospitals with or without major support in strengthening of newborn care services, referral hospitals in remote areas and hospitals in UNICEF's priority districts.

Pretested standardized questionnaire and observational checklist was used and data was collected by paediatricians with the help of local facilitators during Jan 2017 to March 2017. Paediatricians were trained on the study methodology and questionnaire during a workshop prior to their departure to the field sites.

The survey showed that few hospitals were very busy to provide newborn care while some others have been poorly utilized by the public. Infrastructure seemed satisfactory except for equipments in most of the places. Approved government posts for manpower were not fulfilled in most hospitals and Hospital Development Committee had recruited technical manpower in many areas. In some hospitals there was a mismatch between the qualifications of appointed staff and the required qualifications of the post. Frequent rotation was also observed. Most of the hospitals had no proper

referral system of sick newborn although there was no issue of vehicle in most places. Essential drugs were maintained in most of the hospitals. There was multi source of drugs in most of the hospitals. Proper stuck management was not found. Most of the hospital had equipments as per the list made by CHD in the standard protocol according to levels of care they provided but all available equipment was not used and maintenance and training regarding the use of the equipment was highlighted by most users as the main problem. Chart reviews showed that no consistent standard treatment protocol was followed for managing different neonatal conditions. A significant scope for improvement was noted in the recording and reporting system despite the presence of standard delivery and new born register. Most healthcare providers had satisfactory knowledge of new born care but they questioned about work divisions, involvement of all manpower and not just the designated staff to provide maternal and neonatal health services, and availability of manpower in non-working hours.

This report has been divided in two parts. Part one covers the overall findings of the 30 hospitals and part two gives the details of each hospital surveyed.

NEPAS is thankful to all stakeholders involved in completing this survey and would also like to express its solidarity with the Government of Nepal and all partners including UNICEF in every effort to improve neonatal health in Nepal. NEPAS expects that this report on ground realities would help the government and partners in setting out priorities in these districts.

Introduction

Background

Availability, readiness and quality for newborn care services in hospitals are one of the most essential issues of the health facilities in our country. Nepal has made significant improvement in survivability of mothers and children despite diverse geography and ethnicities and also in times of the conflict. These achievements have been possible through adoption of evidence based maternal and newborn health interventions and because of the sound policies and dedicated commitment of all health workers from the community level to specialty hospitals.

Various reports shows the progress in newborn survival has been considerably slower than for mothers and children despite this is a proud achievement for the country. Nearly 23,000 nepalese children die each year before their fifth birthday, with almost two-thirds of these deaths occurring in the first month of life- the newborn period.

With the success of the safe delivery incentive scheme and effective community mobilization, there has been an increase in the institutional deliveries. In 2014 (MICS), 55.2% of all deliveries occurred in health institutions, which is more than a threefold increase from 2006. The shift towards institutional birth combined with high rate of intra-partum related neonatal death indicates a need to improve the clinical performance of health workers by compliance with the evidence based simplified neonatal resuscitation protocol.

A recent study found that in Terai and easy-access hill areas, referral hospitals were the most common destination for institutional childbirths, with 88% of all institutional births taking place in these hospitals. Public hospitals (65%) were more commonly used than private hospitals [23%J and only 12% of births took place at birth centers [smallest facility based maternity units). A measure of quality of care in these hospital found that the stillbirth rate is 20 to 30 per thousand births. Given the context of surmountable increase in institutional deliveries in a referral hospital with limited human resources, birth attendant trained in SBA package and a high stillbirth in these hospitals, improving quality of care at referral hospital is critical to reduce intra-partum related deaths.

Rationale

As there is an increment in the health institution delivery and more so in the district hospital, the health institution capacity is overrun and the quality of care is compromised. With anticipation that in next three years the health institution delivery reaches 70-80 percent, ensuring quality of newborn care is necessary for their survival. UNICEF Nepal has made commitment to Ministry of Health to strengthen the newborn care in district and zonal hospitals of Nepal such that the quality of care is ensured. As a first step to strengthen the hospitals - understanding the current quality of care, service availability and readiness will be key to ensure an effective strengthening of hospitals especially regarding newborn care services.

This report presents the result of assessment of the current status of newborn care services that are being provided by different district, zonal hospitals sub regional hospitals, regional hospitals and national hospital including logistics and determine the interventions that are required in each particular district and zonal hospital for improving newborn care services.

Purpose and Objectives of the assessment

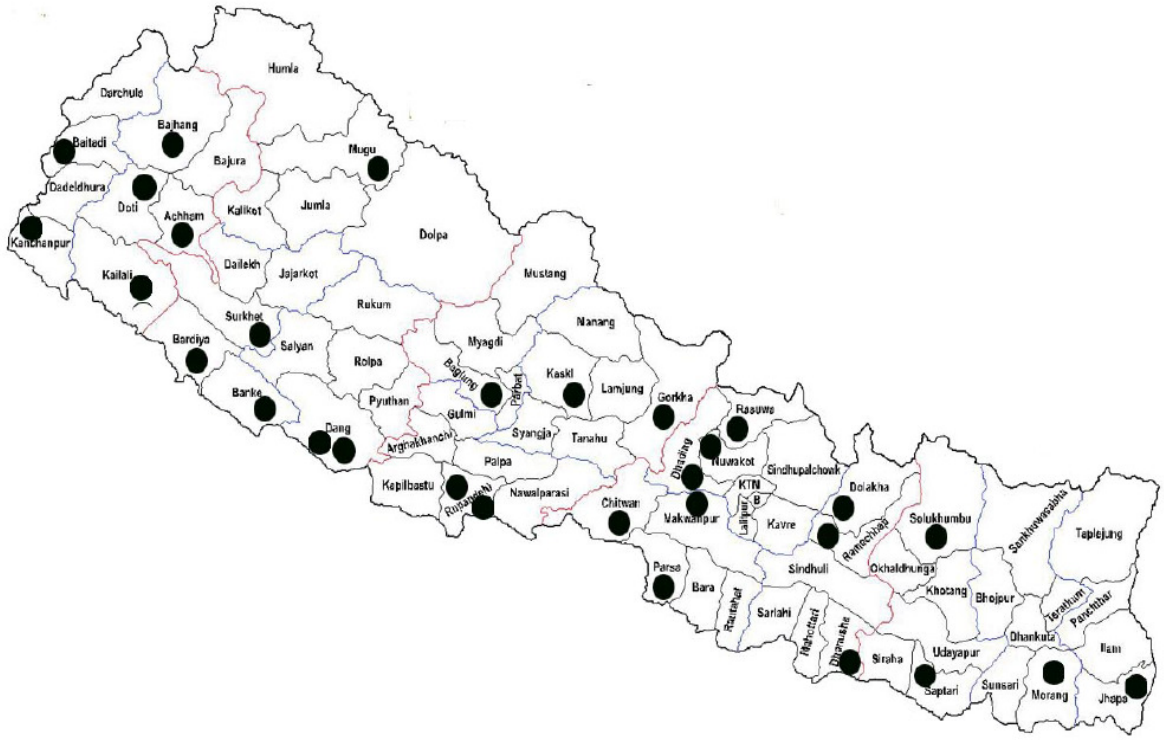
The main purpose of the assessment is to evaluate the current situation of newborn care services that are being provided in hospitals from different levels including taking stock of the supply management. The major objectives of the assessment were to assess and provide the information regarding

a. The readiness of hospital for providing newborn care services as per the protocol
b. The availability of services of newborn care in district and above hospitals
c. The service quality for newborn care in district and above hospitals

Methodology

A list of major hospitals from district to national level was identified with consultation with Child Health Division and UNICEF along with other partners, where the assessment needs to be conducted. Major criteria for the selection included hospitals with large number of deliveries; hospitals with or without major support in strengthening of newborn care services, referral hospitals in remote areas; hospitals in UNICEF's priority districts. There were all together 30 hospitals had been assessed for the current situation of newborn care services. The list of the hospitals is attached in the annex I.

List of Hospitals



The tool for assessment was designed and finalized after an enormous exercise and consultation with various subject expert and technical experts and approved after a session with major stakeholders. The assessment tool includes the questions regarding availability, readiness and quality for Newborn care services in hospitals which was divided in separate modules in different headings. The modules were further parted systematically into several section as per relevant. The modules were mainly divided into following headings

- Identification of Facility and Infrastructure
- Human resources
- Essential Drugs and Supplies
- Facility Case Summary
- Emergency Obstetric and neonatal Functions and Other Essential Services
- Provider Knowledge for Maternal and Newborn care
- Chart review of Newborns
- Observation checklist
- Availability of equipment/commodities
-

Different teams with of two consultants with at least one senior pediatrician consultant were formed to conduct assessment. The teams visited selected hospitals to meet and discuss with the hospital team including hospital management committee members. The team conducted assessment and accumulated data in the standard assessment tool.
The assessment was mainly focused on quality of newborn care, mechanism for quality audit and feedback, service utilization for newborn, service availability and readiness [human resource, equipment, infra-structure, medicine and commodities and standard precaution for infection prevention).

After collection of data, they were reviewed by the interviewer. The final review was done by the core team to check consistency of the data. Simultaneously, for data entry, a data dictionary format

was developed in computer by using MS Excel program. Then on the basis of data dictionary, a data entry format was developed by using SPSS program. The data entry was then carried out in that format and further check for consistency before analyzing them.

The data were analyzed by using SPSS program and tables were generated according to modules of the questionnaire. The tables were then organized in accordance with the sequence as in the modules of the questionnaire.

Findings

This chapter aims to describe about the availability, readiness and quality for Newborn Care Services in hospitals.

Facility type and Infrastructure

Table 1 .1.1: Type of facility

Type of Hospital	Number	Percentage
National hospital	1	3.3
Regional hospital	2	6.7
Sub regional	2	6.7
Zonal Hospital	10	33.3
District hospital	15	50.0

The study includes 30 government hospitals of different level of hospital from district hospital to national level hospital. One national level hospital, two hospital, two sub-regional hospital, 10 zonal hospital and 15 district hospital covered in the study.

Table 1.2 .1: Overall bed capacity and number of beds allocated to obstetric patients of the facilities

Type of Hospital	Bed capacity	Minimum	Maximum
National Hospital (1)	Total no. of beds available	600	600
	No. of bed allocated to obstetric patients	120 (20%)	120 (20%)
Regional Hospital (2)	Total no. of beds available	80	500
	No. of bed allocated to obstetric patients	30 (14%)	70 (37.5%)
Sub regional Hospital(2)	Total no. of beds available	100	300
	No. of bed allocated to obstetric patients	17 (17%)	65 (21.7%)
Zonal Hospital (10)	Total no. of beds available	37	350
	No. of bed allocated to obstetric patients	10 (15%)	100 (32.9%)
District Hospital (15)	Total no. of beds available	15	125
	No. of bed allocated to obstetric patients	2 (12%)	25 (43.3%)

Regarding the bed capacity of the facilities, it ranges from 15 to 600 beds. For different level of facilities, the available number of beds was 600 for national level hospital, likewise 80 to 500 for regional hospital, 100 to 300 for sub-regional hospital, 37 to 350 for zonal hospital and 15 to 125 for district hospital. The no of beds allocated exclusively for obstetric patients ranges from 2 to 120 for different level of hospital. The percentage of beds dedicated to obstetric patients with compare to total numbers of beds available ranges from 2% to 43.3%.

Table 1.2.2: Electricity central supply connection

	Number (30)	Percentage
Electricity connection	30	100
Interruption of power for more than two hours in last seven days	14	46.7
Having other sources of electricity	30	100
Type of other sources of electricity (multiple answer)		
Generator (fuel operated)	28	93.3
Inverter (battery operated)	11	36.7
Solar power	11	36.7
Having functional generator (28)	25	89.3

All the facilities found to have connected with electricity. It was reported that 46.7 % of the facilities experienced power interruption over past seven days. Regarding the other sources for power, all the facilities reported to have alternative sources. Fuel operated generator reported to be available in 93.3 % of the facilities, whereas 36.7% of facilities reported to have inverter and same number of facilities were reported to have installation of solar power. Among 28 facilities those having generator, only 89.3 % of them seems to be functioning.

Table 1.2.3: Water Supply Facility

	Number (30)	Percentage
Having water supply facility	30	100
Major source of water supply		
Piped water	24	80
Others (Deep boring, Spring water)	6	20
Distance of water source from facility		
Onsite	17	56.7
Within 500m of facility	3	10.0
Beyond 500m of facility	10	33.3
Having shortage of water routinely at a time of year	7	23.3

Water supply was available in all 30 facilities as reported. Among all facilities, 80% reported piped water as the major source of water. Similarly 20% reported deep boring or spring water as their major source. The majority of the facilities (56.7) informed that accessibility of the source is within onsite to the facility. Only 10 % facilities have accessibility within 500 meter from the facility and 33.3 % reported beyond 500 meter of distance.

Table1.2.4: Information about newborn/neonatal facility

Physical facility	Having separate room (30)		Having functional electricity		Having water facility	
	Number	%	Number	%	Number	%
Newborn corner together with delivery room	26	86.7	23(26)	88.5	23(26)	88.5
Neonatal care unit	8	26.7	7(8)	87.5	8(8)	100
Newborn corner/NCU	26	86.7				
Neonatal special care unit	11	36.5	10(11)	89.9	9(11)	81.8
NCU/NSCU	12	40				
Neonatal intensive care unit						
National hospital	1(1)	100	1(1)	100	1(1)	100
Regional hospital	2(2)	100	2(2)	100	2(2)	100
Sub regional Hospital	1(2)	50	1(2)	50	1(2)	50
Zonal Hospital	1(10)	10	1(10)	10	1(10)	10
District hospital	0(15)	0				
Milk expression room	1(30)	3.33	1(1)	100	1(1)	100
Breast feeding corner	4(30)	13.3	4(4)	100	4(4)	100
Newborn Outpatient site	6(30)	20	5(6)	83.33	5(6)	83.33
Post-natal ward	23(30)	76.7	19(23)	82.6	18(23)	78.3

Concerning about newborn corner together with delivery room 86.7% out of all 30 facilities reported to have that facility. Among those who have newborn corner together with delivery room, 88.7 reported to have functional electricity and same percentage reported to have water facility. 26.7 of facilities reported to have neonatal care unit, among which 87.5 have functional electricity and all have water facility. The facilities those either having newborn corner or neonatal care unit or both comprise 86.7%. Neonatal special care unit were reported to exist in 36.7% of the total facilities. 40% of the facilities informed to have either neonatal care unit or neonatal special care unit or both. Neonatal intensive care unit was reported to have existed in national level hospital and regional hospitals, but only one among two sub-regional hospitals reported to have that facility. Similarly one out of 10 zonal hospitals reported to have that facility and none of the 15 district hospital reported to have neonatal intensive care unit. Regarding milk expression room and breast feeding corner 3.33% and 13.3 % facilities reported to have those services. Provision of newborn outpatient site and post-natal ward is reported by 20% and 76.7% of the facilities respectively.

Table 1.3.1: Service provided at the facility

Service Delivery	Number (30)	Percentage
Focused antenatal care	30	100
Postnatal care for mother	23	76.7
Postnatal care for newborn	23	76.7
Family planning services	28	93.3
Immunization services	29	96.7
Diagnosis and treatment for sexually transmitted infections	23	76.7

The above table shows the services provided at the facility. Among which Focused antenatal care claimed to provide by all facilities, where as Postnatal care for mother, Postnatal care for newborn, Diagnosis and treatment for sexually transmitted infections are claimed to provide by 76.7 % each.

Table 1.4.1: Information about the payment for services

	Number (30)	Percentage
Payment for private ward/EHS/cabin	13	43.3
Payment for public ward	11	36.7
Fee schedule for services posted in a visible and public place	19	63.3

Provision for payment for private ward or EHS or cabin and public ward was reported by 43.3% and 36.7 of the facilities respectively. Display off fee schedule for services in a visible and public place was reported by 63.3 % of the facilities.

Table 1.4.2: Information about payment for tickets

	Number(30)	Percentage	Minimum(NRs)	Maximum(NRS)
Payment for tickets for mothers	3	10	50	500
Payment for tickets for neonates	3	10	50	500
NSCU/NICU per day	5	16.7	20	1500

Fee for tickets for mothers and neonates were provisioned in 10 % of each among all facilities, which ranges from 50 to 500 rupees. The cost for NSCU or NICU per day was provisioned in 16.7 % among all facilities ranges from 20 to 1500 rupees.

Table 1.4.3: Provision for separate charge for following service

Service Item	Number (30)	Percentage
Bed	5	16.7
Food for mother	5	16.7
Blood transfusion/Cross matching	13	43.3

The bed charge, charge food for mother and Blood transfusion/Cross matching charge is provisioned in 16.7%, 16.7%, 43.3 respectively.

Table 1.5.1: Policy of Health Facility

	Both newborn deaths/still births		Newborn deaths only	
	Number(30)	Percentage	Number(30)	Percentage
Carry out audits or case reviews for newborn deaths and/or stillbirths on a routine basis	10	33.3	3	10
Policy regarding frequent staff rotation to different areas for staff who provide				
	Number (30)		Percentage	
Maternal care	12		40	
Newborn care	12		40	
Facility ever been certified by any mother-baby friendly birthing facility initiative	5		16.7	
Provision of register maternal deaths by cause	21		70	

Regarding audits or case reviews for newborn deaths and/or stillbirths on a routine basis, 33.3% have audits on both newborn deaths/still births whereas only 10% have audits on newborn deaths only. Policy regarding frequent staff rotation to different areas for staff that provide maternal care is

provisioned in 40% among all facilities, same percentage in the case of newborn care was reported. 60% of the facilities reported that they had ever been certified by any mother-baby friendly birthing facility initiative. Register maternal deaths by cause were seemed to provision in 70% among the facilities.

Table 1.6.1: Information about HMIS

Routinely calculation of following indicators	Number (30)	Percentage
Institutional delivery rate	21	70
Institutional stillbirth rate	21	70
Institutional low birth weight rate	18	60
Provision of data manager for MNH services data	27	90

The above table explains the information regarding routinely calculation of following indicators such as Institutional delivery rate, Institutional stillbirth rate, Institutional low birth weight rate, Provision of data manager for MNH services data. Institutional delivery rate and institutional stillbirth rate was found to be recorded in 70% of the facilities whereas 60 % of the facilities were reported that they have system of recording institutional low birth weight rate. Overall 90% of the facilities reported that they have provision of data manager for MNH services data.

Table 1.7.1: Provision for communication facility and there use of referral

Communication facility	Available and functional		Used for referral	
	Number	Percentage	Number	Percentage
Landline telephone in the maternity area	20	66.7	9(20)	45
Landline telephone elsewhere in facility	28	93.3	9(28)	32.1
Cell phone (owned by facility)	10	33.3	6(10)	60
Cell phone (owned by individual staff)	28	93.3	17(28)	60.1
Public telephone in the vicinity	10	33.3	3(10)	30
Other facility				
	Number (30)		Percentage	
Reimburse of use of cell phones for work-related calls by staff	1		3.3	
Having computer	28		93.3	
Having internet access/email	26		86.7	

Only 66.7% reported to have functional landline telephone in the maternity area whereas 93.3 % of the facilities claimed to have landline telephone (elsewhere in the facility). Cell phone owned by the facility was claimed by only 33.3% and 93.3 % staffs having their own cell phone.93.3% reported to have computer and 86.7 have internet access. Among the facilities which have functional landline telephone in the maternity area only 45% said they used them for referral. Likewise 32.1 % of the landline telephone (those were having in elsewhere in the facility) were used for referral. Reimburse of use of cell phones for work-related calls by staff was claimed by only one facility.

Table 1.7.2: Provision of transportation for referral

	Available and functional		Needing minor repair		Needing major repair	
	Number (30)	Percentage	Number (30)	Percentage	Number (30)	Percentage
Ambulance	18	60	3	10	6	20
Vehicles from private sector	30	100				

Regarding provision of transportation for referral, 60% reported to have functional ambulance facility. 10% of the facilities reported to have ambulance which needs minor repair and 20% with major repair. Vehicle from private sector was claimed to have available in all the facility. The reported types of vehicles were varied from cart to helicopter.

Table 1.8.1: Availability of service and general referral

Type of service	Number (30)	Percentage
Provision for obstetric care 24 hours a day, 7 days a week	30	100
Provision for neonatal care 24 hours a day, 7 days a week	25	83.3
Referral		
Referral to the nearest facility	Maximum distance(km)	Maximum time(min)
With a newborn special care unit	300	720
With a NICU	425	840

Regarding availability of service for24 hours a day, 7 days a week, 100% and 83.3% reported to have provision for obstetric care and neonatal care those services respectively. Regarding referral to the nearest facility with a newborn special care unit the maximum distance reported was 300 km and maximum time to reach the facility was 720 minutes. Similarly, the maximum distance for referral to the nearest facility with a NICU was reported 425 km and maximum time to reach the facility was 840 minutes

Human resources

2.1 Situation of the staffing pattern

Table 2.1.1: Overall Sanctioned posts to the facility

Type of staff member	Minimum number	Maximum number
General practitioner	0	6
Pediatrician	0	4
Obstetrician	0	5
Neonatologist		
Medical Officer	1	143
Paramedics	1	79
Nurse	2	135
Anesthesia assistant	0	5
Laboratory related HR	2	17

The above table shows the information about sanctioned posts for the various types of health human resources to the facilities. It was reported that the number of posts sanctioned was varied from 1 to 143 for medical officers in a facility followed by nursing staffs. No provision for neonatologist was found in any of the facility.

Table 2.1.2: Currently working human resources in the facility (Government)

Type of staff member	Minimum number	Maximum number
General practitioner	0	2
Pediatrician	0	4
Obstetrician	0	5

Medical Officer	0	32
Paramedics	0	44
Nurse	0	120
Anesthesia assistant	0	2
Laboratory related HR	0	17

The above table shows the information about currently working posts (Government) for the various types of health human resources to the facilities. The number for currently working in the facility under government appointment reported was varied maximum for nurses followed by paramedics.

Table 2.1.3: Currently working human resources in the facility (HDC and other resources)

Type of staff member	Minimum number	Maximum number
General practitioner	0	1
Pediatrician	0	2
Obstetrician	0	2
Medical Officer	0	47
Paramedics	0	33
Nurse	0	163
Anesthesia assistant	0	5
Laboratory related HR	0	8

The above table shows the information about currently working posts (HDC and other resources) for the various types of health human resources to the facilities. The number for currently working in the facility under HDC and other resources reported was maximum varied for nurses followed by medical officers.

Table 2.1.4: Human resources currently on extended leave (more than 1 month)

Type of staff member	Minimum number	Maximum number
General practitioner	0	2
Pediatrician	0	1
Medical Officer	0	5
Paramedics	0	6
Nurse	0	10
Anesthesia assistant	0	1
Laboratory related HR	0	3

The above table shows the information about various types of health human resources who were currently on extended leave (more than 1 month) from the facilities. The number for currently on extended leave (more than 1 month) reported was maximum varied for nurses followed by paramedics.

Table 2.1.5: Human resources actually provide obstetric and newborn care currently

Type of staff member	Minimum number	Maximum number
General practitioner	0	2
Pediatrician	0	4
Obstetrician	0	11
Medical Officer	0	26
Paramedics	0	28
Nurse	0	47
Anesthesia assistant	0	2
Laboratory related HR	0	4

The above table shows the information about staffs that actually provide obstetric and newborn care currently for the various types of health human resources to the facilities. The number who actually provides obstetric and newborn care currently reported was varied maximum for nurses followed by paramedics and then medical officers.

Table 2.1.6: Human resources left the facility in the last 12 months

Type of staff member	Minimum number	Maximum number
General practitioner	0	3
Pediatrician	0	2
Obstetrician	0	1
Medical Officer	0	8
Paramedics	0	3
Nurse	0	10
Anesthesia assistant	0	1
Laboratory related HR	0	4

The above table shows the information about staffs left the facility in the last 12 months for the various types of health human resources to the facilities. The number who left the facility in the last 12 months reported was varied maximum for nurses followed by medical officers.

Table 2.1.7: Human resources posted the facility in the last 12 months

Type of staff member	Minimum number	Maximum number
General practitioner	0	2
Pediatrician	0	1
Obstetrician	0	2
Medical Officer	0	18
Paramedics	0	28
Nurse	0	53
Anesthesia assistant	0	3
Laboratory related HR	0	7

The above table shows the information about staffs posted in the facility in the last 12 months for the various types of health human resources to the facilities. The number who posted the facility in the last 12 months reported was varied maximum for nurses followed by paramedics.

2.2 Information about staffs who provide Emergency Obstetric and Newborn Signal Functions and Other Essential Services

Table 2.2.1: Parenteral antibiotics

Type of staff member	Number (30)	Percentage
General practitioner	11	36.7
Pediatrician	7	23.3
Obstetrician	10	33.3
Medical Officer	20	66.7
Paramedics	18	60.0
Nurse	28	93.3
Anesthesia assistant	11	36.7

About administration of parenteral antibiotics, in 36.5% of the facilities, general practitioners were reported to provide that service. Pediatrician reported to provide this service in 23.3 % of the facility. Among almost all i.e. 93.3% facilities, nurses were involved to provide this service. The involvement of obstetricians, medical officers, paramedics and anesthesia assistants was claimed to provide this services by 33.3, 66.7, 60, and 36.7 percentages of the facilities respectively.

Table 2.2.2: Antenatal corticosteroids for preterm labor

Type of staff member	Number (30)	Percentage
General practitioner	9	30.0
Pediatrician	1	3.3
Obstetrician	5	16.7
Medical Officer	13	43.3
Paramedics	5	16.7
Nurse	21	70.0
Anesthesia assistant	1	3.3

Antenatal corticosteroids for preterm labor was most commonly given by nursing staffs which was reported by 70% of the facilities followed by medical officers i.e. 43.3 % of the facilities. The least common human resources providing this service were pediatrician and anesthesia assistant, which was reported by only 3.3 % each.

Table 2.2.3: Antibiotics for preterm premature rupture of membranes

Type of staff member	Number (30)	Percentage
General practitioner	8	26.7
Pediatrician	2	6.7
Obstetrician	4	13.3
Medical Officer	16	53.3
Paramedics	5	16.7
Nurse	22	73.3
Anesthesia assistant	1	3.3

The table 2.2.3 shows the situation of the human resources who were responsible for providing antibiotics for preterm premature rupture of membranes. The most common human resource for this service was seemed to be nurse, which was reported by 73.3 % of the facilities. Also more than half of the facilities claimed to provide this service by medical officers. The least common human resources providing this service was anesthesia assistant, which was reported by only 3.3 %.

Table 2.2.4: Antibiotics for neonatal infections

Type of staff member	Number (30)	Percentage
General practitioner	6	20.0
Pediatrician	6	20.0
Obstetrician	1	3.3
Medical Officer	16	53.3
Paramedics	11	36.7
Nurse	21	70.0

Regarding the human resources for providing antibiotics for neonatal infections, 70% of the health facilities said to provide this service by nursing staffs. The second common human resource for providing this service reported are medical officers (53.3 %) and least common is obstetrician (3.3%).

Table 2.2.5: Kangaroo mother care (KMC) and follow up

Type of staff member	Number (30)	Percentage
General practitioner	4	13.3
Pediatrician	3	10.0
Obstetrician	2	6.7
Medical Officer	7	23.3
Paramedics	3	10.0
Nurse	19	63.3

The data showed that nurses were the most commonest human resources to provide KMC and its follow up. It was seen that in 63% of the facilities nurses were involved in providing KMC followed by medical officers which was reported by around one fourth of the facilities. All others type of human resources to involve in that activities were reported by less that 20% of the facilities.

Table 2.2.6: Resuscitation to newborn with bag and mask

Type of staff member	Number (30)	Percentage
General practitioner	14	46.7
Pediatrician	12	40.0
Obstetrician	2	6.7
Medical Officer	27	90.0
Paramedics	14	46.7
Nurse	28	93.3
Anesthesia assistant	13	43.3

Almost all the facilities mentioned the involvement of nurses in resuscitation to newborn with bag and mask except 2 facilities out of 30 facilities. Similar number of facilities reported the involvement of medical officer in the same task. The involvement general practitioner, pediatrician, paramedics and anesthesia assistant in this task reported by the facilities were ranges from 40% to about 47%. The least involvement were from obstetrician which were reported by only two facilities.

Table 2.2.7: Administer oxygen to a newborn

Type of staff member	Number (30)	Percentage
General practitioner	14	46.7
Pediatrician	12	40.0
Obstetrician	3	10.0
Medical Officer	27	90.0
Paramedics	18	60.0
Nurse	28	93.3
Anesthesia assistant	13	43.3

It was seen that administration of oxygen to a newborn were mainly carried out by nurses and medical officers, which was mentioned by 9 out of 10 facilities. The least involved human resource was obstetrician as reported by only 10% of the facilities.

Table 2.2.8: Administer IV fluids to a newborn

Type of staff member	Number (30)	Percentage
General practitioner	10	33.3
Pediatrician	11	36.7
Obstetrician	1	3.3
Medical Officer	20	66.7
Paramedics	13	43.3
Nurse	25	83.3
Anesthesia assistant	6	20.0

Regarding the administration of IV fluids to newborn, more than 80% facilities reported the involvement of nurses whereas two third indicated the involvement of medical officers in the same task. only one facility reported the involvement of obstetrician in this task.

Table 2.2.9: Focused antenatal care

Type of staff member	Number (30)	Percentage
General practitioner	10	33.3
Pediatrician	1	3.3
Obstetrician	6	20.0
Medical Officer	15	50.0
Paramedics	3	10.0
Nurse	20	66.7
Anesthesia assistant	2	6.7

Two third of the facilities mentioned that there were involvement of nurses in providing focused antenatal care. Similarly half of the facilities reported the involvement of medical officers in the same task. only one facility mentioned the involvement of pediatrician in focus antenatal care.

Table 2.2.10: Immediate newborn care

Type of staff member	Number (30)	Percentage
General practitioner	9	30.0
Pediatrician	8	26.7
Obstetrician	2	6.7
Medical Officer	18	60.0
Paramedics	6	20.0
Nurse	26	86.7
Anesthesia assistant	5	16.7

The above table shows the involvement of various human resources in immediate newborn care. The involvement of nursing staffs in immediate newborn care had been reported by 26 out 30 health facilities. Three out of five facilities mentioned that medical officers also provide immediate newborn care service. The involvement of other human resources regarding immediate newborn care was reported from 6% to 30% of the facilities.

Table 2.2.11: PMTCT services

Provide PMTCT services		
Type of staff member	Number (30)	Percentage
General practitioner	5	16.7
Obstetrician	5	16.7
Medical Officer	5	16.7
Paramedics	3	10.0
Nurse	21	70.0
Anesthesia assistant	1	3.3
Laboratory related HR	1	3.3

Regarding PMTCT, 70% of the hospital reported involvement of nursing staffs in providing the service. But involvement of other human resources were reported by very few facilities, which ranges from 3% to 16% fo the facilities.

Table 2.2.12: Family planning counseling

Provide family planning counseling		
Type of staff member	Number (30)	Percentage
General practitioner	10	33.3
Pediatrician	4	13.3
Obstetrician	5	16.7
Medical Officer	14	46.7
Paramedics	7	23.3
Nurse	28	93.3
Anesthesia assistant	1	3.3

Almost all facilities mentioned the active contribution by nursing in providing family planning counseling. Likewise about 50% reported the involvement on medical officers regarding this service. Very few facilities reported of other human resources in this service.

Table 2.2.13: Support for establishing breastfeeding

Provide support for establishing breastfeeding		
Type of staff member	Number (30)	Percentage
General practitioner	11	36.7
Pediatrician	10	33.3
Obstetrician	5	16.7
Medical Officer	17	56.7
Paramedics	6	20.0
Nurse	28	93.3
Anesthesia assistant	2	6.7

Nursing staffs were seems to be common human resources in providing support for establishing breastfeeding, which was mentioned by 93% of the facilities. Similarly more the 50% facilities mentioned about the involvement of medical officers concerning this service. Only a few number of facilities pointed out about other human resources for this service.

Table 2.2.14: Alternative feeding if baby unable to breastfeed (cup feeding and nasogastric feeding)

Type of staff member	Number (30)	Percentage
General practitioner	8	26.7
Pediatrician	7	23.3
Obstetrician	1	3.3
Medical Officer	14	46.7
Paramedics	4	13.3
Nurse	25	83.3
Anesthesia assistant	4	13.3

The involvement of nursing staffs in alternative feeding (cup feeding and nasogastric feeding) whenever the baby was unable to feed was reported by 25 out of 30 facilities. Apart from this 46% facilities reported the contribution of medical officers in this service. Few among 30 facilities had reported about the involvement of other human resources in providing this service.

2.3 Availability of staffs in the facility-

Table 2.3.1: Physically present Sunday-Friday during the day

Type of staff member	Number (30)	Percentage
General practitioner	15	50.0
Pediatrician	16	53.3
Obstetrician	14	46.7
Medical Officer	27	90.0
Paramedics	26	86.7
Nurse	29	96.7
Anesthesia assistant	21	70.0
Laboratory related HR	27	90.0
Others	3	10.0

About a question during a typical week, the presence of human resources physically present in facility during day time from Sunday to Friday, most commonly mentioned by the facilities were nurses (96%) followed by medical officers and laboratory related HR (90% each), almost equally mentioned HR were paramedics (86.7%) and the least mentioned were among obstetrician (46.7%).

Table 2.3.2: Availability of staffs in the facility- On call Sunday-Friday during the day

Type of staff member	Number (30)	Percentage
General practitioner	12	40.0
Pediatrician	14	46.7
Obstetrician	13	43.3
Medical Officer	20	66.7
Paramedics	11	36.7
Nurse	14	46.7
Anesthesia assistant	14	46.7
Laboratory related HR	15	50.0
Others	1	3.3

Concerning the availability on call during Sunday to Friday during day time, most commonly mentioned category of HR is medical officers (66.7%). All others categories of the human resources were mentioned to be available on call during day time were from almost half of the health facilities.

Table 2.3.3: Availability of staffs in the facility- Physically present Sunday-Friday at night

Type of staff member	Number (30)	Percentage
General practitioner	6	20.0
Pediatrician	1	3.3
Obstetrician	3	10.0
Medical Officer	18	60.0
Paramedics	21	70.0
Nurse	28	93.3
Anesthesia assistant	10	33.3
Laboratory related HR	15	50.0

As reported in the study, nurses were the most available (93.3%) among the facilities during the night time. Similarly, 70% and 60% facilities reported that there were availability of paramedics and medical officers in there respective facilities during the night time. Only 3.3% of the health institution mentioned the availability of pediatrician during the night time.

Table 2.3.4: Availability of staffs in the facility- On call Sunday-Friday at night

Type of staff member	Number (30)	Percentage
General practitioner	12	40.0
Pediatrician	12	40.0
Obstetrician	14	46.7
Medical Officer	25	83.3
Paramedics	10	33.3
Nurse	14	46.7
Anesthesia assistant	14	46.7
Laboratory related HR	14	46.7

About 83% facilities mentioned that medical officers were available on call during the night time. The availability of other human resources during the night time in the facilities were mentioned ranges from 33.3% (i.e. paramedics) to 46.7% (i.e. Anesthesia assistant, Laboratory related HR, Nurse, Obstetrician)

Table 2.3.5: Availability of staffs in the facility- Physically present Saturday/Holiday

Type of staff member	Number (30)	Percentage
General practitioner	5	16.7
Pediatrician	3	10.0
Medical Officer	17	56.7
Paramedics	22	73.3
Nurse	28	93.3
Anesthesia assistant	12	40.0
Laboratory related HR	18	60.0

During Saturday /holiday, in 93.3% facilities, it was reported the availability of nurses. Similarly about 73% and 56% of the facilities reported the availability of paramedics and medicl officers during Saturday and holiday. Only about 16% facility mentioned the availability of general practitioner in there institutions during night time.

Table 2.3.6: Availability of staffs in the facility- On call Saturday/Holiday

Type of staff member	Number (30)	Percentage
General practitioner	11	36.7
Pediatrician	12	40.0
Obstetrician	1	3.3
Medical Officer	23	76.7
Paramedics	11	36.7
Nurse	14	46.7
Anesthesia assistant	14	46.7
Laboratory related HR	14	46.7

Medical officers were the most commonly mentioned HR that were available on call during Saturday and holiday (mentioned by 76% of the facilities). The least commonly mentioned HR in this context. All other categories of HR were mentioned by below half of the facilities.

3.1 Essential drug supplies

This section includes the information about pharmacy, provision of essential drugs including antibiotics and anticonvulsants, drugs used in emergencies, steroid and supply of medicine.

Table 3.1.1: Information about pharmacy

	Number (30)	Percentage
Having own Pharmacy/drug store	20	66.7
Pharmacy accessible 24 hours a day	14 (20)	70
Sufficient supply of medicines in the facility	14	46.7
Major source of medicines for this health facility (multiple answers)		
Government supplier	20	66.7
Private pharmacy	8	26.7
Non-governmental organization (NGO)/Mission	3	10
Others(Purchase from private supplies, hospital development committees, tender etc.)	10	33.3
Having drug inventory register/system	21	70
Provision for drugs ordered		
Order same time each week/month/quarter	4	13.3
Order every 6 or 12 months	4	13.3
Order whenever stocks reach reorder level	12	40
Reorder when run out	5	16.7
Never order drugs (shipments come/kits arrive)		
Others (supply from regional medical store)	1	3.3
Did not mentioned	4	13.3
Regular mechanism to ensure that expired drugs are not distributed	20	66.7
Having at least one functioning refrigerator	24	80

Among 30 health facilities, 66% mentioned that they have their own pharmacy/drug store. Those who have pharmacy, 70% claimed that it is accessible 24 hours a day. Only 46% facilities reported the sufficient supply of medicines in the facility. Two third of the facilities mentioned that their major source of medicine was supplied by the government institutions where 26% mentioned private pharmacy and 10% mentioned NGO as their major source of medicines. Among the facilities, 70% mentioned that maintained drug inventory register/system. 40% of the facilities stated that they ordered drugs whenever stocks reach reorder level. Similarly 13% of the facilities mentioned that they used to order drugs same time each week/month/quarter and same number of facilities mentioned they used to order drugs every 6 or 12 months. About 16% facilities reported to order the drugs when they run out.

Provision of Essential Drugs

Table 3.1.2: Availability of antibiotics and anticonvulsants

	Number (30)	Percentage
Having antibiotics	**27**	**90**
Having anticonvulsants		
Diazepam (injection)	**26**	**86.7**
Phenobarbital (injection)	**6**	**20**
Phenytoin (injection)	**14**	**46.7**

It was found that antibiotics were available in 90% of the facilities. Among anticonvulsants diazepam was reported available in 86% of facilities. Similarly, phenytion and phenobarbital were reported available in 46% and 20% of the facilities.

Table 3.1.3: Availability of Drugs used in emergencies

	Number (30)	Percentage
Drugs used in emergencies		
Adrenaline (epinephrine)	26	86.7
Aminophylline	15	50
Atropine	25	83.3
Calcium gluconate	19	63.3
Digoxin	9	30
Furosemide	26	86.7
Hydrocortisone	26	86.7
Naloxone	3	10
Promethazine	22	73.3

The above table shows the availability of drug used in emergencies, in which adrenaline, furosemide, hydrocortisone were reported available in 86% of the facilities. Naloxone was reported available by only 10% of the facilities. All other drugs were reported available in half or more facilities except digoxin (30%).

Table 3.1.4: Availability of steroids, IV fluids and vitamin K

	Number (30)	Percentage
Having steroids		
Dexamethasone	24	80
Prednisone	19	63.3
Having IV fluids	**26**	**86.7**
Having Vitamin K (for newborn)	8	26.7

It was found that 80% of the facilities reported that they have dexamethasone and only 63 % have prednisone. Availability of IV fluids were reported by around 86% of the health facilities. Just more than quarter of the facilities reported the availability of vitamin K for newborn.

Table 3.2.1: Information about Labor, Delivery and Maternity and Post Natal-Infrastructure

In the last 3 months	Number (30)	Percentage
Inpatients shared beds at any time before or after delivery	10	33.3
Delivery patients slept on the floor	12	40
Delivery patients delivered on the floor, in a corridor or bathroom	13	43.3

One third of the health facilities mentioned that in their facility inpatients shared beds at any time before or after delivery in last 3 months. Regarding the delivery patients, 40% of the facilities said there was a situation that they should sleep in the floor and 43% of the facilities mentioned that delivery took place on the floor or in the corridor or bathroom during last 3 months.

Table 3.2.2: Information about Labor, Delivery and Maternity and Post Natal-Equipment and Supplies

facility having following items	Number (30)	Percentage
Filled oxygen cylinder with cylinder carrier and key to open valve	25	83.3
Ultrasound	28	93.3
Blood pressure cuff	29	96.7
Stethoscope (for adults)	30	100.0
Fetal stethoscope	21	70.0
Doppler	19	63.3
Kidney basins	30	100.0
Sponge bowls	30	100.0
Clinical oral thermometer	22	73.3
Low reading thermometer (32 or 35 degree C)	4	13.3
Scissors	29	96.7
Needles and syringes (10-20cc)	30	100.0
Syringes (1ml, 2ml, 5ml, 10ml)	29	96.7
Needles (23-25 gauge)	22	73.3
Suture needles/suture materials	29	96.7
Catheter for IV line (16-18)	25	83.3
IV Infusion stand(s)	30	100.0
Urinary catheters	29	96.7
IV cannulae	30	100.0
Dipstick for protein in urine (Uristix)	14	46.7
Blood sugar/glucose dipsticks	14	46.7
Dipsticks for bacteriuria / urinary tract infections	5	16.7
Adult Bag and Mask	29	96.7
Wheelchair	29	96.7
Stretcher with trolley	28	93.3
Examination table	24	80.0
Labor/delivery table with stirrups	23	76.7
Labor/delivery table without stirrups	24	80.0
Dressing forceps	28	93.3
Pulse oximeter	25	83.3
Apnea monitor	0	0.0
Instrument trolley	23	76.7

Regarding equipment and supplies, none of the facility mentioned about the availability of apnea monitor. The availability of Stethoscope (for adults), Kidney basins, Sponge bowls, Needles and syringes (10-20cc), IV Infusion stand(s) were assured by all health facilities. Unfortunately only 13% of the facilities mentioned about the availability of Low reading thermometer (32 or 35 degree C) and similar figure (16%)were mentioned regarding Dipsticks for bacteriuria / urinary tract infections. Availability of all other equipments and supplies were mentioned by more half of the facilities except about the availability of Dipstick for protein in urine (Uristix) and Blood sugar/glucose dipsticks (both of then mentioned by 46% of the facilities).

Table 3.2.3: Availability of Autoclave room items

	Number (30)	Percentage
Separate autoclave room	23	76.7
Autoclave with temperature and pressure gauges	24	80.0
Hot air sterilizer (dry oven)	6	20.0
Steam sterilizer	18	60.0
Steam instrument sterilizer/pressure cooker, electric	18	60.0
Sterilizer/pressure cooker, kerosene heated	7	23.3
Sterilization drum	28	93.3
Sterilization drum stand	20	66.7

Overall 76% health facilities reported to have a separate room for autoclave. Four out of five facilities mentioned to have autoclave machine with temperature and pressure gauges. Only one fifth facilities claimed to have hot air sterilizer and similar number used electric sterilizer or pressure cooker, on contrast three out of five reported to have steam sterilizer and same number in the case of kerosene heated sterilizer or pressure cooker. More than 90% of facilities claimed to have sterilization drum whereas only two third mentioned to have sterilization drum stand.

Table 3.2.4: Availability of Miscellaneous items

	Number (30)	Percentage
Having a functioning incinerator	15	50.0
Provision food to patients	27	90.0
Empty beds for the next patients	19	63.3
Liquid spills or trash seen on the floor	13	43.3

Half of the facilities reported that they have at least one functional incinerator. It was found that 90% of the facilities mentioned they have a provision of food to patients. Among the facilities about two third mentioned the availability of empty beds for the next patients. While observing, it was found that in 43% of the facilities, liquid spills or trash seen on the floor.

3.3 Neonatal Care: Equipment and Supplies -

Table 3.3.1: Material for the newborn

Material for the newborn	Number (30)	Percentage
Baby weighing scale	30	100.0
Cord ties	30	100.0
Thermometer for newborn	22	73.3
Caps or hats to prevent heat loss	11	36.7
Towels or cloth for newborn	19	63.3
Newborn linen	18	60.0
Newborn blanket	11	36.7
Growth chart	8	26.7

All facilities assured the availability of baby weighing scale and cord ties. Thermometer for newborn was available in 73% of the facilities. Regarding growth chart, only one fourth facilities reported to have growth chart. About 60% facilities reported to have towels or cloth for newborn and similar situation seen in the case of newborn linen. The provision of caps or hats to prevent heat loss and newborn blanket was reported by 36% of the facilities.

Table 3.3.2: Materials for Neonatal resuscitation pack

Neonatal resuscitation pack	Number (30)	Percentage
Newborn resuscitation table	27	90.0
Mucus extractor/simple suction	27	90.0
Neonatal face mask, size 0	26	86.7
Neonatal face mask, size 1	28	93.3
Neonatal size ambu (ventilatory) bag	28	93.3
Suction catheter, 10, 12 Ch	26	86.7
Infant laryngoscope with spare bulb and batteries	24	80.0
Endotracheal tubes, 3.5, 3.0	24	80.0
Disposable uncuffed tracheal tubes, sizes 2.0 to 3.5	20	66.7
Suction aspirator (operated by foot or electrically)	24	80.0
Mucus trap for suction	19	63.3
Anatomical model (for practice)	12	40.0

Regarding neonatal resuscitation pack, 90% or more facilities stated to have newborn resuscitation table, mucus extractor/simple suction, neonatal face mask (size 1), and neonatal size ambu (ventilatory) bag. Likewise 80% or more facilities mentioned to have Neonatal face mask (size 0), Suction catheter(10, 12 Ch) , infant laryngoscope with spare bulb and batteries, endotracheal tubes(sizes 3.5, 3.0), and suction aspirator (operated by foot or electrically). Similarly, 60% or more facilities mentioned to have disposable uncuffed tracheal tubes (sizes 2.0 to 3.5), and mucus trap for suction.

Table 3.3.3: Neonatal Care Equipments

	Number (30)	Percentage
Equipment for resuscitation within reach or less than a minute away	26	86.7
Decontamination supplies for bag and mask	16	53.3

Half of the facilities reported to have decontamination supplies for bag and mask whereas 86% claimed that equipments for resuscitation were in reach within or less than a minute.

Table 3.3.4: Materials for Small or sick newborn care

Small or sick newborn care	Number (30)	Percentage
Register for sick babies	15	50.0
Daily patient chart	25	83.3
IV fluid (neonatal giving) set/umbilical catheter	16	53.3
Syringes (0.5, 1.0 ml)	25	83.3
Radiant warmer	27	90.0
Incubator	11	36.7
Designated space or beds for kangaroo mother care	2	6.7
KMC register	4	13.3
Nasogastric feeding tube (newborn size and premature	18	60.0
Cup and spoon for infant feeding	13	43.3
Small cup for breast milk expression	11	36.7
Icterometer/Bilirubinometer	1	3.3
Phototherapy unit	19	63.3
IV cannulae (neonatal)	26	86.7
Stethoscope (pediatrics size)	18	60.0
Blood pressure cuff (neonatal)	6	20.0
Glucometer	15	50.0

Only half of the facilities said to have maintained register for sick babies. Designated space or beds for kangaroo mother care were rarely provisioned as only 6% of facilities mentioned about that service. Only one out of 30 facilities reported to have Icterometer/Bilirubinometer. Radiant warmer was reported to available at 83% of the facilities whereas only 36% claimed to have incubator. Blood pressure cuff (neonatal) was reported to have available at 20% of the facilities but 60% of the facilities said Stethoscope (pediatrics size) were available in their institutions.

Table 3.4.1: Information about laboratory and blood bank

	Number (30)	Percentage
Having a laboratory	30	100.0
Having set of guidelines for the laboratory	8	26.7
Having blood bank	0	0

All the facilities have laboratory setup but only 26% reported to have set of guidelines for the laboratory. None of the facilities mentioned to have their own blood bank but it was managed by Nepal Redcross Society in all facilities.

Table 3.4.2: Information about availability of registers

	Number (30)	Percentage
Newborn unit register	21	70.0
Discharge register	24	80.0
Death/mortuary register	11	36.7
PMTCT labor and delivery register	22	73.3
Referral / counter referral register	13	43.3
Outpatient register	21	70.0
Post-natal ward register	13	43.3
KMC register	4	13.3

Regarding availability of various type registers, the most maintained register was seemed to be discharge resister which was claimed to be available in 80% of the facilities. The least maintained register is KMC register, only 13% said that KMC register was available in their facilities.

Information about Emergency Obstetric Signal Functions-

Table 4.1.1: Administration of Parenteral antibiotics

	Number (30)	Percentage
Administration of parenteral antibiotics to a pregnant or recently delivered woman in the last 3 months	29	96.7
Cause of no administration in the last 3 months		
No indication	1(1)	100

All facilities except one reported to have service of administration of parenteral antibiotics to a pregnant or recently delivered woman in the last 3 months.

Table. 4.2.1: Newborn resuscitation

	Number (30)	Percentage
provided antenatal neonatal resuscitation in the last 3 months	28	93.3
Person provided neonatal resuscitation in the last 3 months (multiple answer)		
General practitioner	5 (28)	17.9
Pediatrician	14(28)	50.0
Obstetrician	1(28)	3.6
Medical Officer	23(28)	82.1
Paramedics	3(28)	10.7
Nurse	23(28)	82.1
Anesthesia assistant	7(28)	25.0
Cause of no performance of newborn resuscitation with bag and mask in the last 3 months(multiple answer)		
No indication	2(2)	100

Almost all facilities said that they provided antenatal neonatal resuscitation in the last 3 months, but only two did not provide such service as there was no indication for such service. Medical officers and nurses were the major human resources responsible to provide such service as claimed by more than 80% of the facilities.

Table 4.2.2: Antenatal corticosteroids

	Number (30)	Percentage
provided antenatal corticosteroids to manage pre-term labor in the last 3 months	18	60.0
Person provided neonatal resuscitation in the last 3 months(multiple answer)		
General practitioner	4 (18)	22.2
Pediatrician	1(18)	5.6
Obstetrician	8(18)	44.4
Medical Officer	9(18)	50.0
Paramedics	1(18)	5.6
Nurse	11(18)	61.1
Cause of not provided antenatal corticosteroids to manage pre-term labor in the last 3 months(multiple answer)		
Lack of human resources	2 (12)	16.7
Training needed	2(12)	16.7
Weak management	1(12)	8.3
No indication	8(12)	66.7
Other	1(12)	8.3

Three out of five facilities reported to provided antenatal corticosteroids to manage pre-term labor in the last 3 months. The major human resources who provide such service are nurse followed by medical officers and obstetrician as reported by the facilities. Among the facilities who claimed not to provide such service, two third facilities pointed to that there is no such indication. Lack of human resources was reported by 16% among those facilities who claimed not to provide such service and similar number of facilities indicated the need of training to provide such service. Lack of management in service was reported by one facility.

Table 4.2.3:Antibiotics for PROM

	Number (30)	Percentage
Administration of antibiotics for preterm premature rupture of membranes (PROM) in the last 3 months	27	90.0
Person provided antibiotics for preterm premature rupture of membranes (PROM) in the last 3 months		
General practitioner	4 (27)	14.8
Obstetrician	11(27)	40.7
Medical Officer	14(27)	51.9
Nurse	22(27)	81.5
Anesthesia assistant	1(27)	3.7
Cause of not provided antibiotics for preterm premature rupture of membranes (PROM) in the last 3 months		
Lack of human resources	1 (3)	33.3
Training needed	1(3)	33.3
Weak management	1(3)	33.3
Unsupportive or no policy	1(3)	33.3
No indication	2(3)	66.7

Administration of antibiotics for preterm premature rupture of membranes (PROM) in the last 3 months was reported by 90% facilities. The major human resources who provide such service are nurse followed by medical officers and obstetrician as reported by the facilities. The causes for not to provide antibiotics for PROM as reported were lack of human resources, training needed, weak

management, unsupportive or no policy by one facility. Two facilities reported no indication for such service.

Table 4.2.4: Information about -Antibiotics for neonatal infections

	Number (30)	Percentage
Administration of antibiotics for neonatal infections in the last 3 months	25	83.3
Person provided antibiotics for neonatal infections in the last 3 months		
General practitioner	5 (25)	20.0
Pediatrician	9(25)	36.0
Obstetrician	1(25)	4.0
Medical Officer	14(25)	56.0
Paramedics	2(25)	8.0
Nurse	20(25)	80.0
Anesthesia assistant	1(25)	4.0
Cause of not provided antibiotics for neonatal infections in the last 3 months		
Training needed	1 (5)	20.0
No indication	2 (5)	40.0
Other (no case or information found)	2(5)	40.0

It was reported that administration of antibiotics for neonatal infections was provided by more tan 80% of facilities in the last 3 months. The major human resources for providing such service are nurse and medical officers as reported by the facilities. Two facilities reported to have on case found in this regards and two of them reported no indication. One facility gave emphasis on training for such service.

Table 4.2.5: Information about -Kangaroo Mother Care

	Number (30)	Percentage
provided Kangaroo Mother Care (KMC) to very small babies in the last 3 months, either continuous or intermittent KMC	8	26.7
Person provided KMC in the last 3 months		
Medical Officer	1(8)	12.5
Nurse	8(8)	100.0
Cause of not provided KMC in the last 3 months		
Lack of human resources	8 (22)	36.4
Training needed	10(22)	45.5
Lack of supplies/equipment/drugs	9(22)	40.9
Weak management	9(22)	40.9
Unsupportive or no policy	9(22)	40.9
No indication	4(22)	18.2

Only 26% facilities reported to provide Kangaroo Mother Care (KMC) to very small babies in the last 3 months, either continuous or intermittent KMC. It was found that nurses were the main health personnel to offer such service. Only 18% among those who did not provide Kangaroo Mother Care (KMC) to very small babies in the last 3 month said that there was no indication.

Table 4.2.6: Administration of oxygen

	Number (30)	Percentage
Administration of oxygen to a newborn in the last 3 months	27	90
Person provided oxygen to a newborn in the last 3 months		
General practitioner	8 (27)	29.6
Pediatrician	12(27)	44.4
Obstetrician	5(27)	18.5
Medical Officer	17(27)	63.0
Paramedics	5(27)	18.5
Nurse	22(27)	81.5
Anesthesia assistant	5(27)	18.5
Cause of not provided oxygen to a newborn in the last 3 months		
Lack of human resources	1 (3)	33.3
Training needed	1(3)	33.3
Lack of supplies/equipment/drugs	3(3)	100.0
No indication	1(3)	33.3
Oxygen therapy monitored by pulse oximetry	21	70

Among 30 hospitals, 90% of them reported that they had administered oxygen to a newborn in the last 3 months. The most common health personnel in this function seems to be nursing staffs which was reported by more than four fifth of the facilities. Similarly medical officers were the second highest common health personnel for the same function. About 45% and 30% health facilities reported the involvement of pediatrician and general practitioner. Less than 20% of the facilities mentioned the involvement of obstetrician, paramedics and anesthesia assistant in this regards. The facilities which did not provide this service in the last 3 months mentioned the main causes for not able to provide the function as lack of supplies, equipment, drugs. The other causes mentioned were lack of human resources, lack of training. One facility reported that no indication was found during last 3 months to provide such service. In response to question for monitor of oxygen therapy by pulse oximetry, 70% of the facilities responded positively.

Table 4.2.7: Administration of IV fluids

	Number (30)	Percentage
Administration of IV fluids to a newborn in the last 3 months	24	80
Person provided IV fluids to a newborn in the last 3 months		
General practitioner	5	20.8
Pediatrician	8	33.3
Obstetrician	1	4.2
Medical Officer	14	58.3
Paramedics	4	16.7
Nurse	21	87.5
Anesthesia assistant	1	4.2
Cause of not provided IV fluids to a newborn in the last 3 months		
Lack of human resources	1	16.7
Training needed	1	16.7
Weak management	1	16.7
Unsupportive or no policy	2	33.3
No indication	1	16.7
Routinely apply chlorhexidine gel to the newborn's cord stump	19	63.3

During the study, 80% of the facilities mentioned the administration of IV fluids to a newborn in the last 3 months. Among those facilities, it was found that 87% the service delivery administered by nursing staffs. About 60% facilities reported that medical officers were also involved in this activity. Other health human resources seems to involved in less than 50% of the facilities but in the case of obstetrician and anesthesia assistant less than 5% of the facilities reported the involvement in this regards. among six facilities who did not provide any administration of IV fluids to a newborn in the last 3 months mentioned Unsupportive or no policy, lack of human resources, lack of training, unsupportive or no policy as the causes for not able to provide the service. One health facility reported that no indication was found to apply such service. Routinely apply chlorhexidine gel to the newborn's cord stump was reported by 63% of the facilities.

Table 4.2.8: Newborn gestational age

	Number (30)	Percentage
Measurement of newborns gestational age	26	86.7
How was the newborns age measured		
LMP	25 (26)	96.2
USG	22(26)	84.6
Clinical assessment (New Ballard)	2(26)	7.7
Others		
Person measured the gestational age		
General practitioner	8(26)	30.8
Pediatrician	7(26)	26.9
Obstetrician	9(26)	34.6
Medical Officer	17(26)	65.4
Paramedics	1(26)	3.8
Nurse	18(26)	69.2
Others (radiologist)	2(26)	7.7
Cause of not measured the gestational age		
Lack of human resources	3(4)	75.0
Training needed	2(4)	50.0
Lack of supplies/equipment/drugs	1(4)	25.0
Weak management	2(4)	50.0
Unsupportive or no policy	1(4)	25.0

Gestational age of newborn found to measure by 86% of the facilities. Among the 26 facilities who reported to have that service claimed to use LMP (96%) and USG (85%) to provide the facilities. Less than 10% of them mentioned to use clinical assessment (New Ballard) method. About 70% of those facilities informed that the service usually provided by nurses followed by 65% medical officers. The involvement of general practitioner, pediatrician, obstetrician were mentioned by 27% to 34% of the facilities. The involvement of radiologist and paramedics mentioned by less than 10% of the facilities.

Table 4.3.1: Other Maternal, Newborn and RH Practices and Services

	Number (30)	Percentage
Alternative feeding (expressing breast milk and using a cup or spoon for feeding and/or using nasogastric tube feeding) for babies in the last 3 months	23	76.7
Cause of not used alternative feeding		
Lack of human resources	2(7)	28.6
Training needed	1(7)	14.3
Lack of supplies/equipment/drugs	1(7)	14.3
Weak management	1(7)	14.3
Unsupportive or no policy	3(7)	42.9
No indication	3(7)	42.9
Provided ARVs to newborns in the maternity / labor ward (PMTCT) in the last 3 months	11	36.7
Cause of not provided ARVs		
Lack of human resources	2(19)	10.5
Training needed	4(19)	21.1
Lack of supplies/equipment/drugs	2(19)	10.5
Weak management	3(19)	15.8
Unsupportive or no policy	3(19)	15.8
No indication	12(19)	63.2

Regarding alternative feeding (expressing breast milk and using a cup or spoon for feeding and/or using nasogastric tube feeding) for babies in the last 3 months, 76% of the facilities mentioned about the service provided in their respective hospitals. Among those who were not able to provide that service, three of them indicated not having any indication to use that service. Similar number of facilities indicated weak management and lack of training was mentioned by four of the facilities. Lack of human resources and Lack of supplies/equipment/drugs were mentioned by two of each facilities.

5.1 Provider's Knowledge for Maternal and Newborn Care

Table 5.1.1: Personal characteristics of provider

	Number (28)	Percentage
Current occupational category or qualification		
General practitioner	2	7.1
Pediatrician	3	10.7
Medical Officer	5	17.9
Nurses	18	64.3
	Minimum	Maximum
No. of years since received your professional qualification	3	34
No. of different health facilities have posted in the past 3 years	1	5
No. of years at this facility	0	37
No. of deliveries did you attend last month	0	310

Regarding provider's knowledge for maternal and newborn Care, only 28 out of 30 facilities provided information. Among those 64% were nurses, 17% were medical officers, 11% were pediatrician and 7% were general practitioners. The numbers of years of achieving their professional qualifications varied from 3 to 34 years. Regarding the numbers of different health facilities have posted in the past 3 years, the information given were varied from one to five facilities. The numbers of years in they had been working in the facilities ranged from zero to 27 years. Deliveries they had attended in the last months varied from zero to 310.

5.2 Clinical Experience and Training

Table 5.2.1: Clinical services provided

List of services	Number (28)	Percentage
Provided following services in the past 3 months		
Provide focused antenatal care	20	71.4
Provide antenatal corticosteroids for women at risk of preterm birth	16	57.1
Begin IV fluids	27	96.4
Provide essential newborn care	26	92.9
Resuscitate a newborn with bag and mask	24	85.7
Provide alternative feeding if baby unable to breastfeed (cup feeding and nasogastric feeding)	5	17.9
Provide kangaroo mother care (KMC), including follow up	9	32.1
Administer antiretroviral for PMTCT	10	35.7
Provide antibiotics for neonatal infections	21	75.0
Ever received instruction		
Provide focused antenatal care	13	46.4
Provide antenatal corticosteroids for women at risk of preterm birth	8	28.6
Begin IV fluids	13	46.4
Provide essential newborn care	14	50.0
Resuscitate a newborn with bag and mask	13	46.4
Provide alternative feeding if baby unable to breastfeed (cup feeding and nasogastric feeding)	2	7.1
Provide kangaroo mother care (KMC), including follow up	8	28.6
Administer antiretroviral for PMTCT	6	21.4
Provide antibiotics for neonatal infections	9	32.1
Use of clinical simulation or regular practice of skills as a way to maintain readiness	8	28.6

Among 28 providers interviewed, 71% informed that they had provided focused antenatal care during the three months periods. Similarly 57% of the providers claimed to provide antenatal corticosteroids for women at risk of preterm birth. Almost all except one or two providers had said to give IV fluids and provide essential newborn care. 86% of them stated to resuscitate a newborn with bag and mask. Among the facilities 18% had reported to provide alternative feeding if baby unable to breastfeed (cup feeding and nasogastric feeding). KMC and antiretroviral for PMTCT were reported to provide by 32% and 37% of the provider who were interviewed. Three fourth of the interviewed provider said they provided antibiotics for neonatal infections in past three months. About the questions whether they got any instructions to provide above mentioned service, the providers answered affirmative regarding focused antenatal care, antenatal corticosteroids for women at risk of preterm birth, IV fluids, essential newborn care, resuscitation a newborn with bag and mask, alternative feeding if baby unable to breastfeed (cup feeding and nasogastric feeding), KMC, antiretroviral for PMTCT and antibiotics for neonatal infections were from 46%, 28%, 46%, 50%, 46%, 7%, 28%, 21% and 32% facilities respectively. Providers from 28% of the facilities reported the use of clinical simulation or regular practice of skills as a way to maintain readiness.

Table 5.2.2: Knowledge regarding maternal and child health and immunization

List of services	Number (28)	Percentage
primary aspects of focused antenatal care		
Minimum of 4 consultations	25	89.3
Ensure woman has birth plan	21	75.0
Prevent illness and promote health (tetanus toxoid vaccine, iron, Calcium ,Folic acid, PMTCT)	26	92.9
Detect existing illnesses and manage complications	21	75.0
Teach the danger signs (of pregnancy, childbirth, and the postpartum period)	23	82.1
Promote breastfeeding	22	78.6
Task performed for the newborn immediately following delivery		
Deliver the baby skin-to-skin onto the mother's abdomen/chest	19	67.9
Dry the baby's body	28	100.0
Cover the baby with dry towel	25	89.3
Assess the baby's breathing	27	96.4
Tie cord after 2-3 minutes	22	78.6
Care for umbilical cord – apply chlorhexidine	24	85.7
Ensure baby is kept warm (skin-to-skin)	20	71.4
Initiate breastfeeding within the first 60 minutes	26	92.9
Give vitamin K (after 90 minutes)	10	35.7
Weigh the baby (after 90 minutes)	20	71.4
Give BCG	17	60.7
key counseling messages related to cord care		
Put nothing on the cord while waiting for the cord to fall off	28	100.0
Cord should remain dry	27	96.4
hours after birth would you recommend that the baby have its first bath		
24 hours	21	75.0
48 hours	3	10.7
Do not know	1	3.6
Other answers	3	10.7

Regarding the primary aspects of focused antenatal care, providers from facilities mentioned most about Prevent illness and promote health (tetanus toxoid vaccine, iron, Calcium ,Folic acid, PMTCT) i.e. 93% and least mentioned about ensure woman has birth plan and detect existing illnesses and manage complications i.e. 75%. Regarding task performed for the newborn immediately following delivery, all providers mentioned about dry the baby's body and the least mentioned category is Give vitamin K (after 90 minutes) i.e. about 36%. Likewise concerning key counseling messages related to cord care, 100% providers who were interviewed had mentioned about Put nothing on the cord while waiting for the cord to fall off and 96% mentioned that cord should remain dry. 75% among the providers interviewed mentioned 24 hours as appropriate recommendation to have first bath of baby after birth.

Table 5.2.3: Special care for newborn weighs less than 2000 grams

special care for newborn weighs less than 2000 grams	Number (28)	Percentage
Ensure the baby is warm with skin-to-skin with mother	21	75.0
Ensure baby is warm by placing baby in incubator	10	35.7
Ensure baby is warm by placing baby in radiant warmer	23	82.1
Provide extra support to the mother to establish breastfeeding	17	60.7
Monitor ability to breastfeed	21	75.0
Assess for danger signs	24	85.7
Assess for breathing difficulties (need for O_2 supplementation)	20	71.4
Monitor baby for the first 24 hours	17	60.7
Ensure infection prevention	20	71.4

Regarding special care for newborn weighs less than 2000 grams, about 86% of the providers interviewed had mentioned about assess for danger signs, the least mentioned category was ensure baby is warm by placing baby in incubator which was responded by only 38% .

Table 5.2.4: Signs and symptoms of infection, or sepsis, in the newborn

signs and symptoms of infection, or sepsis, in the newborn	Number (30)	Percentage
Temperature $\geq 38^{o}$ C (hyperthermia)	26	92.9
Temperature $<35.5^{o}$ C (hypothermia)	22	78.6
Movement only with stimulation	18	64.3
Severe chest in-drawing	23	82.1
Poor feeding on observation	25	89.3

Regarding signs and symptoms of infection, or sepsis, in the newborn,92% providers interviewed mentioned hyperthermia whereas 78% mentioned about hypothermia. The least mentioned category was movement only with stimulation i.e. 64%.

Table 5.2.5: Signs of critical illness for a newborn baby that would indicate the need for referral

signs of critical illness for a newborn baby that would indicate the need for referral	Number (28)	Percentage
Unconscious	25	89.3
Convulsions	20	71.4
Unable to feed	25	89.3
Weak or absent cry	21	75.0
Cyanosis	25	89.3
Bulging fontanels	19	67.9
Fever/Hypothermia	10	35.7
Difficulty breathing	14	50.0

About signs of critical illness for a newborn baby that would indicate the need for referral, most mentioned categories are unconscious, unable to feed and cyanosis (about 90% each). The least mentioned category is fever/hypothermia (36%).

Table 5.2.6: Diagnosis of birth asphyxia

Diagnosis of birth asphyxia	Number (28)	Percentage
Depressed/no breathing	26	92.9
Floppiness	19	67.9
Heart rate below 100 beats per minute	18	64.3

While asking about the diagnosis of birth asphyxia, 93% mentioned about depressed/no breathing, 68% mentioned about floppiness and 64% mentioned about heart rate below 100 beats per minute.

Table 5.2.7: Steps for performance neonatal resuscitation on a baby who is not breathing and for whom back rubbing does not help

Steps for performance neonatal resuscitation	Number (28)	Percentage
Call for help	21	75.0
Explain to mother condition of baby	20	71.4
Place the newborn face up	24	85.7
Wrap or cover baby, except for face and upper portion of chest	21	75.0
Position baby's head so neck is slightly extended	23	82.1
Clear secretions if seen	26	92.9
Start ventilation using bag and mask	28	100.0
steps mentioned in sequential order	9	32.1

Concerning steps for performance neonatal resuscitation on a baby who is not breathing and for whom back rubbing does not help, 100% mentioned about starting ventilation using bag and mask. The least mentioned was about explaining to mother condition of baby i.e. by 71% of the respondents. Only 32% of them were able to mentioned the steps in sequential order.

Table 5.2.8: Check the baby during a postnatal visit

check (for the baby) during a postnatal visit	Number (28)	Percentage
Baby breastfeeding well	28	100.0
Proper positioning for breastfeeding	23	82.1
Color tone of baby	24	85.7
Fever of baby	25	89.3
Difficulty breathing	25	89.3
Eye swelling or discharge	21	75.0
Umbilical cord	26	92.9
Alertness of baby	20	71.4

Regarding information about checking the baby during a postnatal visit, all respondent mentioned about whether the baby was breastfeeding well or not. The least mentioned category was alertness of baby, which was mentioned by only 71% of the respondents.

Table 5.2.9: Check for the mother during a postnatal visit

check for the mother during a postnatal visit	Number (28)	Percentage
Vaginal bleeding	25	89.3
Signs of infection (fever)	26	92.9
Blood pressure	26	92.9
Abdominal tenderness	24	85.7
Size and firmness of uterus	24	85.7
Deep vein thrombosis	14	50.0
Breast engorgement	23	82.1
Signs of anemia	21	75.0
Assess lochia (vaginal discharge)	22	78.6
Signs of depression	12	42.9
Dribbling urine	16	57.1
Cough or breathing difficulties	13	46.4

Checking signs of infection and blood pressure were the most mentioned i.e. about 93% of the respondents answered affirmatively in response to a question for checking mother during a postnatal visit. The least mentioned was signs of depression among above listed categories.

Management & Working Conditions

Table 5.6.1: Management & Work environment

	Number (28)	Percentage
currently having a written job description for your position	13	46.4
having written management structure or an organogram that details reporting relationships	12	42.9
clear reporting structure for administrative purposes	18	64.3
clear reporting structure for clinical purposes	15	53.6
having a policy that promotes frequent staff rotation (more frequent than once a year) to different areas of the facility	13	46.4
Receive on the job training		
Has never received	4	14.3
In the last 6 months	7	25.0
In the last year	5	17.9
More than a year ago	12	42.9
ever complete or make reports that are sent to the next administrative level	17	60.7
ever received training in how to complete registers, compile reports or use the services statistics at this facility	12	42.9

Only 46% of respondents reported to have a written job description for your position currently. Similarly 42% mentioned about having written management structure or an organogram that details reporting relationships. Likewise 64% mentioned about having clear reporting structure for administrative purposes while only 53% mentioned that for clinical purposes. Regarding to have a policy that promotes frequent staff rotation (more frequent than once a year) to different areas of the facility 46% mentioned about that. About 60% respondent had mentioned that they ever complete or make reports that are sent to the next administrative level while only 43% mentioned to have ever received training in how to complete registers, compile reports or use the services statistics at their respective facility. About 14% of the respondents indicated that they never received any kind of on the job training. Similarly about 25% received on the job training during last 6 months and 18% received during last year. About 43% received that for more than a year ago.

6.1 Observation of Facility Infrastructure Information, Essential Drugs and Supplies, Infection Prevention

Table 6.1.1: Facility Infrastructure

	Number (30)	Percentage
Toilet (latrine) in functioning condition for general staff use	28	93.3
Type of toilet or latrine (multiple answers)		
Flush or pour flush toilet	21	70.0
Ventilated improved pit latrine	5	16.7
Pit latrine with slab	5	16.7
Pit latrine without slab/open pit	1	3.3
Other type of toilet (squatting type)	3	10.0
Toilet (latrine) in functioning condition for patient use	30	100.0
Type of toilet or latrine(multiple answers)		
Flush or pour flush toilet	21	70.0
Ventilated improved pit latrine	3	10.0
Pit latrine with slab	6	20.0
Other type of toilet(squatting type)	2	6.7

On observation about 93% of the facilities found to have Toilet (latrine) in functioning condition for general staff use. Most of them were flush or pour flush toilet (70%) type and few were pit latrine with slab and same number were ventilated improved pit latrine. Only one facility had pit latrine without slab/open pit. Very few (10%) were with squatting type. Regarding toilet (latrine) in functioning condition for patient use, most of the facilities had Flush or pour flush toilet (70%) followed by it latrine with slab (20%) and ventilated improved pit latrine (10%). Very few facilities had squatting type latrine.

Table 6.1.2: Essential Drugs and Supplies

	Number (30)	Percentage
up-to-date drug inventory register/system or bin cards	18	60.0
“First-in-First-out” system for supply management	18	60.0
Drugs are protected from moisture, heat, or infestation	26	86.7

Overall 3 in 5 facilities are found to be up-to-date drug inventory register/system or bin cards. Regarding “First-in-First-out” system for supply management, similar situation was observed. In 87% of the facilities, it was observed that drugs are protected from moisture, heat, or infestation.

Table 6.1.3: Infection Prevention materials

	Number (30)	Percentage
Availability of Infection Prevention Basic Items		
Soap	28	93.3
Antiseptics	25	83.3
Disposable latex examination gloves	30	100.0
Heavy duty gloves	21	70.0
Non-sterile protective clothing	21	70.0
Decontamination container	23	76.7
Bleach or bleaching powder (chlorine)	23	76.7
Prepared disinfection solution	22	73.3
Regular trash bin	27	90.0
Covered contaminated waste trash bin	26	86.7
Puncture-proof sharps container	28	93.3
Surgeon's hand brush with nylon bristles	13	43.3
Availability of Disinfectants and antiseptics		
Ethanol	14	46.7
Povidone iodine	29	96.7
Alcohol-based rub	17	56.7

To essure whether the facilities had availability of infection prevention Basic Items, disposable latex examination gloves were found to be present in all facilities, the least available item was found to be surgeon's hand brush with nylon bristles which was present in 43% of the facilities. Regarding availability of disinfectants and antiseptics, povidone iodine was seemed to be commonly present in almost all facilities except one facility but ethanol was present in only 47% of the facilities.

Table 6.1.4: Availability of Infrastructure

Availability of Infrastructure	Number (30)	Percentage
Sufficient light source to perform tasks during the day	28	93.3
Sufficient light source to perform tasks at night	28	93.3
Means of ventilation	24	80.0
Heating/heating arrangements	17	56.7
Functional fan/air conditioning	17	56.7
Curtains/means of providing patient privacy	20	66.7
Waiting area for visitors and family	14	46.7

Availability of Infrastructure seemed to be vary 47% to 93%. Sufficient light source to perform tasks during the day and night observed to be present in 28 out of 30 facilities. only 47% of facilities had availability of waiting area for visitors and family.

Table 6.1.5: Quality of Registry Data

	labor and delivery ward register		post-natal ward register		KMC register	
	Number (30)	Percentage	Number (30)	Percentage	Number (30)	Percentage
All columns completed	22	73.3	11	36.7	5	16.7
Up-to-date	20	66.7	10	33.3	3	10.0

All the columns of labor and delivery ward registers were seemed to be filled complete in 73% of the facilities and two out of 3 facilities also maintained up-to-date. Regarding post-natal ward register only 37% facilities had seemed all columns completed and only one third facilities kept it up-to-date. It was also observed that one in six facilities had all columns completed regarding KMC register and only 10% facilities had made register up-to-date.

Table 7.1 Information about Availability of equipments/commodities

	Number (30)	Percentage
IV Cannula: 24 – 26 G	20	66.7
Bed with radiant warmer	17	56.7
Resuscitation set	20	66.7
Foot suction + disposable tube (10-12 F)	20	66.7
Penguin suction	9	30.0
Laryngoscope + blade (0-1) with battery (+ spare set of batteries)	17	56.7
Room digital thermometer with room clock	8	26.7
Digital thermometer (°C)	19	63.3
Pulse oximeter	19	63.3
Sterile gloves	21	70.0
Syringe pump	6	20.0
Weighing scale (digital pan)	13	43.3
Infantometer	2	6.7
Weighing scale, spring	9	30.0
Measuring tape	16	53.3
Glucometer with strip	11	36.7
Phototherapy unit	14	46.7
Neonatal stethoscope – per bed	6	20.0
Neonatal BP Instrument – per bed	3	10.0
Portable x-ray machine	2	6.7
Oxygen hoodbox – per bed	10	33.3
Oxygen cylinder/oxygen concentrator – per bed	11	36.7
Oxygen flowmeter – per bed	8	26.7
Polythene occlusive wraps (disposable)		
Icterometer	1	3.3
Transport incubator with oxygen cylinder	1	3.3
Open care system: radiant warmer, fixed height, with trolley, drawer, O_2bottles	15	50.0
Weighing scale, spring	11	36.7
Bedside Monitor-, vital sigh, NIBP, HR, SpO_2,ECG, RR, temp	6	20.0
Transport Incubator, basic, with battery and O_2, without ventilator		0.0
Tape, measure, vinyl-coated, 1.5 m	7	23.3

ANNEX I

S.No.	Name of Hospital
I	**Far Western Region**
1	Mahakali Zonal Hospital
2	Seti Zonal Hospital
3	Tikapur
4	Doti District Hospital
5	Achham District Hospital
6	Baitadi District Hospital
7	Bajhang District Hospital
II	**Mid-Western Region**
1	Bheri Zonal Hospital
2	Surkhet Regional Hospital
3	Bardiya District Hospital
4	Mugu District Hospital
5	Tulsipur Hospital, Dang
6	Ghorahi Sub-Regional Hospital
7	Lumbini Zonal Hospital
8	Bhim Hospital
III	**Western Region**
1	Western Regional Hospital
2	Dhaulagiri Hospital

S.No.	Name of Hospital
IV	**Central Region**
1	Narayani Sub-Regional Hospital
2	Bharatpur Hospital
3	Hetauda Hospital
4	Gorkha District Hospital
5	Rasuwa District Hospital
6	Nuwakot District Hospital
7	Dolakha District Hospital
8	Ramechhap District Hospitla
V	**Eastern Region**
1	Mechi Zonal Hospital
2	Koshi Zonal Hospital
3	Sagarmatha Zonal Hospital
4	Janakpur Zonal Hospital
4	Solukhombi District Hospital

ANNEX II

List of Contributors

1. Dr. Daman Paudel
2. Dr. Amrit Pokharel
3. Dr. Deepeshwora Nepal
4. Dr. Piush Kanodiya
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37. Dr. Suman
38. Dr. Rahul
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40. Ms. Babina
41. Dr. Prakash
42. Dr. Kumar
43. Dr. Tanka
44. Dr. Pitambar
45. Dr. RN
46. Dr saroj
47. Dr. Jamun
48. Dr. Dilip
49. Dr. Mingmar

ANNEX III

Assessing the availability, readiness and quality for Newborn Care Services in hospitals of Nepal

MODULE 1: Identification of Facility and Infrastructure

Interviewer Name:

Date (dd/mm/yyyy): ___ / ___ / ___

SECTION 1. Facility Identification Information

INSTRUCTIONS: *Direct these questions to the officer in charge.*

No.	Item	Response
1.03	Type of facility (*circle one)*	National Hospital 1 Regional Hospital 2 Sub-Regional Hospital……...3 Zonal Hospital…….4 District Hospital 5 Primary Health Center 6 Other (*specify*): 7 _____

SECTION 2. Facility Infrastructure Information

I'd like to ask you a few questions about the facility's overall capacity and infrastructure.

No.	Item	Response	Skip to
2.01	How many beds are available for patients in this facility (total in all departments)? *(write number)*	|___|___|___|	
2.02	How many of the total number of beds are dedicated exclusively to obstetric patients? *(write number)*	|___|___|___|	
2.03	Is this facility connected to the electricity grid (central supply)? *(even if irregular, circle 1 for "Yes")*	Yes 1 No 0	If "No," skip to Item 2.05.
2.04	Thinking back over the last 7 days, has the power from the grid been interrupted for more than 2 hours at a time?	Yes 1 No 0	
2.05	Does this facility have other sources of electricity?	Yes 1 No 0	If "No," skip to Item 2.08.

No.	Item	Response		Skip to
2.06	What other sources of electricity does the facility have? a. Generator (fuel operated) b. Invertor (battery operated) c. Solar d. Other *(specify)* _____	Yes 1 1 1 1	No 0 0 0 0	If other sources were 'solar' or 'other', skip to Item 2.08.
2.07	Is the generator functional, in other words, if you needed it today, could you use it?	Yes 1 No 0		
2.08	Does this facility have water for functions such as infection prevention, patient and staff use, etc.?	Yes 1 No 0		If "No," skip to Item 2.12.
2.09	What is the *most commonly used* source of water? *(circle one)*	Piped water 1 Hand pump 2 Well 3 River 4 Other (*specify*) 5 _____		
2.10	Is the water from this source onsite, within 500 meters of the facility, or beyond 500 meters of the facility?	Onsite 1 Within 500 m of facility 2 Beyond 500 m of facility 3		
2.11	Is there a time of the year when the facility routinely has a severe shortage or lack of water?	Yes 1 No 0		

For each physical area below ask if the facility has a separate room, for example, for ANC. If the answer is yes, ask if electricity and water are functioning in the room at the time of the visit. If there is no separate room for ANC, circle '0' for questions a, b and c.

No.	Physical areas	a. Does this facility have a (separate) room/space for…?		NA	b. Is electricity functioning at the time of this visit in ….?		NA	c. Is there a source of water at the time of this visit in ….?		NA
2.24	Newborn corner together with delivery room	1	0	9	1	0	9	1	0	9
2.25	Neonatal care unit	1	0	9	1	0	9	1	0	9
2.26	Neonatal special care unit	1	0	9	1	0	9	1	0	9
2.27	Neonatal intensive care unit (NICU)	1	0	9	1	0	9	1	0	9
2.28	Milk expression room	1	0	9	1	0	9	1	0	9
	Breast feeding corner	1	0	9	1	0	9	1	0	9
2.29	Newborn Outpatient site	1	0	9	1	0	9	1	0	9
2.30	Post-natal ward	1	0	9	1	0	9	1	0	9
2.32	Laboratory and blood bank together	1	0	9	1	0	9	1	0	9
2.33	Laboratory	1	0	9	1	0	9	1	0	9
2.34	Blood bank	1	0	9	1	0	9	1	0	9

SECTION 3. Facility Service Delivery

No.	Item	Response		Skip to
3.01	We'd like to know about some of the basic services provided at this facility. Does the facility provide: *(read each item)*	**Yes**	**No/NA**	
	Focused antenatal care	1	0	
	Postnatal care for mother	1	0	
	Postnatal care for newborn			
	Family planning services	1	0	
	Immunization services	1	0	
	Diagnosis and treatment for sexually transmitted infections (STIs)	1	0	

SECTION 4. Payment for Services

The next series of questions have to do with payment for services in general and for obstetric/gynecological emergencies.

No.	**Item**	**Response**	**Skip to**
4.01	Is there a formal payment required before receiving a service/ treatment (for private ward/EHS/cabin)?	Yes 1 No 0	
	Is there a formal payment required before receiving a service/ treatment (for public)?		
4.05	Is there a fee schedule for services posted in a visible and public place? *(by observation only)*	Yes 1 No 0	

No.	Item	Response		Skip to
4.06	**For mothers:** What is the approximate current cost to the patient in this facility (in local currency) for: (*read each item, and enter 0000.00 if there is no cost to the patient; 9999.99 if service or item not available; 8888.88 if the respondent does not know)* (NB: inj = injection)			
	Admission fee	|___|___|___|___| .|__|__|		
	Costs for Neonates: What is the approximate current cost to the patient in this facility (in local currency) for: (*read each item, and enter 0000.00 if there is no cost to the patient; 9999.99 if service or item not available; 8888.88 if the respondent does not know)* (NB: inj = injection)			
	Admission fee	|___|___|___|___| .|__|__|		
	Neonatal special care unit (per day)	|___|___|___|___| .|__|__|		
4.07	Are women charged separately for the following things(if new born admitted) *(read each item)*	Yes	No	
	a. Bed	1	0	
	b. Food for mother	1	0	
	c. Blood transfusion	1	0	

SECTION 5. Policy of Health Facility

No.	Item	Response		Skip to
5.03	Does the facility carry out audits or case reviews for newborn deaths and/or stillbirths on a routine basis? *(Routine basis: after every stillbirth and newborn death, or on a systematic, regular basis; for example, every month or every 6 months.)*	No 0 Yes for both 1 Yes, but only newborn deaths 2 Never had a death 9		
5.04	Does this facility have a policy that promotes frequent staff rotation (more than one rotation a year) to different areas of the facility? For example, for staff who provide: *(read each item)* Maternal care Newborn care	Yes 1 1	No 0 0	
5.06	Has this facility ever been certified by any mother-baby friendly birthing facility initiative?	Yes 1 No 0		
5.07	Does this facility register maternal deaths by cause?	Yes 1 No 0		

SECTION 6. HMIS

No.	Item	Response		Skip to
6.04	Does this facility routinely calculate the following indicators:	Yes	No/DK	
	Institutional delivery rate	1	0	
	Institutional stillbirth rate	1	0	
	Institutional low birth weight rate	1	0	
6.05	Does this facility have a designated person, such as a data manager, who is responsible for MNH services data?	Yes 1 No 0		

SECTION 7. Communication and Transportation

The next few questions I'd like to ask you are related to communication and transportation to enable referral.

If the answer to the question "Is at least 1 available and functional?" (column a) is "No," do not ask whether people on duty use the telephone or radio for referral. Skip to the next item.

Communication to enable referral					
No.	Item	a. Is at least 1 available and functional?		b. If "Yes," is it used for referral?	
		Yes	No	Yes	No
7.01	Landline telephone in the maternity area	1	0	1	0
7.02	Landline telephone elsewhere in facility	1	0	1	0
7.03	Cell phone (owned by facility)	1	0	1	0
7.04	Cell phone (owned by individual staff)	1	0	1	0
7.05	Public telephone in the vicinity	1	0	1	0

No.	Item	Response	Skip to
7.09	Is it a policy in this facility to reimburse staff who use their cell phones for work-related calls?	Yes 1 No 0	

7.10	Does this facility have a computer?	Yes 1 No 0	
7.11	Does the facility have internet access to email?	Yes 1 No 0	

DOES THE FACILITY HAVE PROVISION OF Transport to enable referral?				
No.	**Item**	**a. Available and functional?**	**b. Available needing minor repair?**	**c. Available needing major repair?**
7.12	ambulance			
7.13	Motorcycle/motorized tricycle ambulance			
7.14	Bicycle ambulance			
7.15	Other motor vehicle			
7.16	Animal drawn cart			
7.17	Stretcher			
7.18	Other (*please specify*): _____			

If the facility does not have provision for enabling referral, can such transport be availed from private sector?	YES NO If Yes, What type of transport can be availed? ----------

SECTION 8. 24/7 Availability of service and general referral

No.	Item	Response
8.01	Does the facility provide obstetric care 24 hours a day, 7 days a week?	Yes 1 No 0
8.02	Does the facility provide neonatal care 24 hours a day, 7 days a week?	Yes 1 No 0
8.05	How far is the nearest facility with a newborn special care unit (if not available in the facility)? *(0000 = facility has unit; 9999 = does not know)*	|___|___|___|___| km
8.06	How long does it take to get to that facility with a newborn special care unit? *(record time in minutes under ideal circumstances: 0000 = facility has unit; 9999 = does not know)*	|___|___|___|___| minutes
8.07	How far is the NICU from the labour and delivery ward (if not available in the facility)?	|___|___|___|___| km
8.08	How long does it take to travel to the NICU from the facility?	|___|___|___|___| minutes

Comments

Assessing the availability, readiness and quality for Newborn Care Services in hospitals of Nepal

MODULE 2: Human Resources

Interviewer Name: _

Date (dd/mm/yyyy): ___ / ___ / ___

INSTRUCTIONS:

Direct questions under:

Overall staffing *to the facility officer in charge or the administrator who works with payroll. If s/he does not know, go to the person in charge of the maternity/neonatal ward.*

Include visiting medical personnel who are accredited and professional staff. Do not include students of any cadre in responses.

SECTION 1. Overall Staffing

No.	Item	a. General practitioner)	b. Pediatrician	Obst	c. Neonatologist	d. MO	e. Paramedics	f. Nurse	g. Anesthesia assistant	h. Laboratory related HR	i. [to be filled in if needed or drop]
1.01	How many sanctioned posts does this facility have for this type of staff member? *(write*										

No.	Item	a. General practitioner)	b. Pediatrician	Obst	c. Neonatologist	d. MO	e. Paramedics	f. Nurse	g. Anesthesia assistant	h. Laboratory related HR	i. [to be filled in if needed or drop]
	number)										
1.02	How many are currently working in this facility (Govt)? *(write number)*										
	How many are currently employed by this facility (Devt committee and other sources)? *(write number)*										
1.03	How many are currently on extended leave (more than 1 month)?										

No.	Item	a. General practitioner)	b. Pediatrician	Obst	c. Neonatologist	d. MO	e. Paramedics	f. Nurse	g. Anesthesia assistant	h. Laboratory related HR	i. [to be filled in if needed or drop]
	(*write number)*										
1.04	Of those not on leave, how many actually provide obstetric and newborn care? (*write number)*										
1.07	How many staff members left this facility in the last 12 months? *(write number)*										
1.08	How many were posted to this facility in the last 12 months? *(write number)*										

Go to Section 2 and circle or mark each category of health worker that currently works in this facility. This should help you remember **to only ask questions** about professionals who are currently working in this facility. Medical residents and interns should be considered as medical doctors (general practitioners). Do not include students of any cadre when asking the following questions.

SECTION 2. Emergency Obstetric and Newborn Signal Functions and Other Essential Services

Do staff from these groups of health workers provide the following services? *(Provision of services should reflect real circumstances and not whether the health worker is authorized or formally trained to provide the care. Exclude health workers who only assist. Ask the questions only if there is someone on staff in each available group.)*

	Signal Functions/ Essential Services	**a. Medical doctor (general practitioner)**	**b. Pediatrician**	**Obs**	**c. Neonatologist**	**d. MO**	**e. Paramedics (HA)**	**f. Nurse**	**g. Anesthesia assistant**	**h. Laboratory related HR**	**e. to be specified**
	Administer parenteral antibiotics	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0
		Newborn Signal Functions									
	Provide antenatal corticosteroids for preterm labor	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0
	Provide antibiotics for preterm premature	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0

	Signal Functions/ Essential Services	a. Medical doctor (general practitioner)	b. Pediatrician	Obs	c. Neonatologist	d. MO	e. Paramedics (HA)	f. Nurse	g. Anesthesia assistant	h. Laboratory related HR	e. to be specified
	rupture of membranes										
	Provide antibiotics for neonatal infections	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0
	Provide kangaroo mother care and follow up	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0
	Resuscitate newborn with bag and mask	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0
	Administer oxygen to a newborn	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0
	Administer IV fluids to a newborn	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0

	Signal Functions/ Essential Services	a. Medical doctor (general practitioner)	b. Pediatrician	Obs	c. Neonatologist	d. MO	e. Paramedics (HA)	f. Nurse	g. Anesthesia assistant	h. Laboratory related HR	e. to be specified
		Other essential services									
	Provide focused antenatal care	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0
	Provide immediate newborn care[1]	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0
	Provide PMTCT services	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0
	Provide family planning counseling	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0
	Provide support for establishing breastfeeding	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0

[1]Immediate drying, skin-to-skin, delayed cord clamping, exclusive breastfeeding within the hour, etc.

	Signal Functions/ Essential Services	a. Medical doctor (general practitioner)	b. Pediatrician	Obs	c. Neonatologist	d. MO	e. Paramedics (HA)	f. Nurse	g. Anesthesia assistant	h. Laboratory related HR	e. to be specified
	Alternative feeding if baby unable to breastfeed (cup feeding and naso gastric feeding)	Yes 1 No 0	Yes 1 No 0		Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0	Yes 1 No 0

Facility Name: _____

UFI: |___|___|___|___|

SECTION 3. 24-Hour Availability

Direct these questions to the person in charge of the maternity as we are interested in staff who work with obstetric and newborn patients. "Physically present" means that there is at least one staff member in this category who is physically present in the facility or nearby. "On call" means that the worker can be contacted, and if called, could reach the facility in less than 30 minutes.Ask about each health care worker cadre.

During a typical week, what staff are …….?		**Yes**	**No**
3.01	Physically present Sunday-Friday during the day.		
	(general practitioner)	1	0
	Pediatrician	1	0
	Obs		
	Neonatologist	1	0
	MO	1	0
	Paramedics (HA)	1	0
	Nurse	1	0
	Anesthesia assistant	1	0
	Laboratory related HR	1	0
	Other – to be adapted	1	0
3.02	On call Sunday-Friday during the day.		
	Medical doctor (general practitioner)	1	0
	Pediatrician	1	0
	Obstetrician		
	Neonatologist	1	0

Facility Name: _____

UFI: |___|___|___|___|

	MO	1	0
	Paramedics (HA)	1	0
	Nurse	1	0
	Anesthesia assistant	1	0
	Laboratory related HR	1	0
	Other – to be adapted	1	0
3.03	Physically present Sunday-Friday at night.		
	Medical doctor (general practitioner)	1	0
	Pediatrician	1	0
	Obstetrician		
	Neonatologist	1	0
	MO	1	0
	Paramedics (HA)	1	0
	Nurse	1	0
	Anesthesia assistant	1	0
	Laboratory related HR	1	0
	Other – to be adapted	1	0
3.04	On call Sunday-Friday at night.		
	Medical doctor (general practitioner)	1	0
	Pediatrician	1	0
	Obstetrician		
	Neonatologist	1	0
	MO	1	0
	Paramedics (HA)	1	0
	Nurse	1	0
	Anesthesia assistant	1	0

Facility Name: _____

UFI: |___|___|___|___|

	Laboratory related HR	1	0
	Other – to be adapted	1	0
3.05	Physically present Saturday/Holiday		
	Medical doctor (general practitioner)	1	0
	Pediatrician	1	0
	Neonatologist	1	0
	MO	1	0
	Paramedics (HA)	1	0
	Nurse	1	0
	Anesthesia assistant	1	0
	Laboratory related HR	1	0
	Other – to be adapted	1	0
3.06	On call Saturday/Holiday.		
	Medical doctor (general practitioner)	1	0
	Pediatrician	1	0
	Neonatologist	1	0
	MO	1	0
	Paramedics (HA)	1	0
	Nurse	1	0
	Anesthesia assistant	1	0
	Laboratory related HR	1	0
	Other – to be adapted	1	0

Duty list ……..

Facility Name: _____

UFI: |___|___|___|___|

Assessing the availability, readiness and quality for Newborn Care Services in hospitals of Nepal

MODULE 3: Essential Drugsand Supplies

Interviewer Name: _

Date (dd/mm/yyyy): ___ / ___ / ___

INSTRUCTIONS: *This module includes five sections. You could separate the sections and ask for assistance for:*

Section 1(Pharmacy) from the Pharmacist

Section 2(Labor & Delivery, Maternity) from the Head Midwife or Nurse in the Maternity

Section 3 (Neonatal Care) from the Head Nurse in the Neonatal Care Unit or Maternity

Section 5 (Laboratory) from the Head Laboratory Technician

If the person indicated above is not available, seek someone else who can help you answer the questions for each section.

Not every health facility will have all of these physical spaces. Thus, please follow the skip patterns in the first questions at the beginning of each section. Sometimes you will skip sections after documenting that the facility does not have that space.

Module Comments

Facility Name: _____

UFI: |___|____|____|____|

SECTION 1. Pharmacy

These questions should be directed to the pharmacist. Most questions should be answered by circling 1 for "Yes," or 0 for "No." Some questions have several pre-coded answers (see Item 3 as an example). In these cases, please circle the number next to the answer given. If the respondent does not give one of the pre-coded answers, circle the number next to "Other" and specify the answer in the space provided.

General Drugs

No.	Item	Response	Skip to
1.01	Does this facility have a pharmacy/drugstore?	Yes 1 No 0	If "Yes," skip to 1.03
1.02	Is the pharmacy accessible 24 hours a day?	Yes 1 No 0	
1.02	Does the facility have a sufficient supply of medicines?	Yes 1 No 0	If "No," end Section 1 and continue with Section 2
1.03	What is the major source of medicines for this health facility? *(circle one response; if there are 2 sources of equal importance, specify both in "Other")*	Government supplier 1 Private pharmacy 2 Non-governmental organization (NGO)/Mission 3 Other (*specify)*4 _____	

Facility Name: _____

UFI: |___|____|____|____|

1.04	Is there a drug inventory register/system? *(this could be computerized)*	Yes 1 No 0	If "No," skip to 1.06
1.06	When are drugs ordered? *(circle one response)*	Order same time each week/month/quarter 1 Order every 6 or 12 months 2 Order whenever stocks reach reorder level 3 Reorder when we run out 4 Never order drugs (shipments come/kits arrive) 5 Other *(specify)*6 _____	
No.	**Item**	**Response**	**Skip to**
1.11	Is there a regularly used mechanism to ensure that expired drugs are not distributed?	Yes 1 No 0	
1.15	Does this facility have at least one functioning refrigerator?	Yes 1 No 0	

Facility Name: _____

UFI: |___|____|____|____|

Essential Drugs

No.	Drug	Available Yes	Available No	Skip to
1.16	**Antibiotics**: Does this facility have antibiotics?	1	0	If "No" skip to number 1.18
Add abics				
1.18	**Anticonvulsants**: Does this facility have anticonvulsants?	1	0	If "No" skip to number 1.20
1.19	Does the facility have…(*read a-c)*			
	Diazepam (injection)	1	0	
	Phenobarbital (injection)	1	0	
	Phenytoin(injection)	1	0	
1.24	**Drugs used in emergencies**: Does this facility have drugs used in emergencies?	1	0	If "No" skip to number 1.26
1.25	Does the facility have…*(read a-k)*			
	Adrenaline (epinephrine)	1	0	
	Aminophylline	1	0	
	Atropine	1	0	
	Calcium gluconate	1	0	
	Digoxin	1	0	
	Furosemide	1	0	

Facility Name: _____

UFI: |___|____|____|____|

No.	Drug	Available Yes	Available No	Skip to
	Hydrocortisone	1	0	
	Naloxone	1	0	
	Promethazine	1	0	
1.30	**Steroids**: Does this facility have steroids?	1	0	If "No" skip to number 1.32
1.31	Does the facility have…(*read a-b)*			
	Dexamethasone	1	0	
	Prednisone	1	0	
1.32	**IV fluids**: Does this facility have IV fluids?	1	0	If "No" skip to number 1.34
1.40	**Other drugs and supplies**: Does this facility have … *(read a-n)*			
	Vitamin K (for newborn)	1	0	

Section 1 Comments

Facility Name: _____

UFI: |___|____|____|____|

SECTION 2. Labor, Delivery and Maternity and Post Natal

Direct these questions to the Head Midwife or Nurse in the maternity. Most questions should be answered by circling 1 for "Yes" or 0 for "No."

2B. Infrastructure

2.04	In the last 3 months, have anyinpatients shared beds at any time before or after delivery?	1	0
2.05	In the last 3 months, have delivery patients slept on the floor?	1	0
2.06	In the last 3 months, have delivery patients delivered on the floor, in a corridor or bathroom?	1	0

2D. Equipment and Supplies

No.	Item	Is at least 1 available and functional? Yes	No
General: Does the facility have…(read all items below)			
2.08	Filled oxygen cylinder with cylinder carrier and key to open valve	1	0
2.09	Ultrasound	1	0
2.10	Blood pressure cuff	1	0
2.11	Stethoscope (for adults)	1	0
2.12	Fetal stethoscope	1	0
2.13	Doppler	1	0
2.14	Kidney basins	1	0

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Is at least 1 available and functional? Yes	No
2.15	Sponge bowls	1	0
2.16	Clinical oral thermometer	1	0
2.17	Low reading thermometer (32 or 35 degree C)	1	0
2.18	Scissors	1	0
2.19	Needles and syringes (10-20cc)	1	0
2.20	Syringes (1ml, 2ml, 5ml, 10ml)	1	0
2.21	Needles (23-25 gauge)	1	0
2.22	Suture needles/suture materials	1	0
2.23	Catheter for IV line (16-18)	1	0
2.24	IV Infusion stand(s)	1	0
2.25	Urinary catheters	1	0
2.26	IV cannulae	1	0
2.27	Dipstick for protein in urine (Uristix)	1	0
2.28	Blood sugar/glucose dipsticks	1	0
2.29	Dipsticks for bacteriuria / urinary tract infections	1	0
2.30	Adult Bag and Mask	1	0
2.31	Wheelchair	1	0
2.32	Stretcher with trolley	1	0
2.33	Examination table	1	0
2.34	Labor/delivery table with stirrups	1	0

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Is at least 1 available and functional? Yes	No
2.35	Labor/delivery table without stirrups	1	0
2.36	Dressing forceps	1	0
2.42	Pulse oximeter	1	0
2.43	Apnea monitor	1	0
2.44	Instrument trolley	1	0

2E. Autoclave Room

No.	Item	Is at least 1 available and functional? Yes	No
2.58	Autoclave room items: Does the facility have…*(read a-h)*		
	Separate autoclave room	1	0
	Autoclave with temperature and pressure gauges	1	0
	Hot air sterilizer (dry oven)	1	0
	Steam sterilizer	1	0
	Steam instrument sterilizer/pressure cooker, electric	1	0
	Sterilizer/pressure cooker, kerosene heated	1	0
	Sterilization drum	1	0
	Sterilization drum stand	1	0

Facility Name: _____

UFI: |___|____|____|____|

2F. Miscellaneous

No.	Item	Is at least 1 available and functional? Yes	No
2.59	Does the facility have a functioning incinerator?	1	0
2.60	Is food provided to patients by the facility?	1	0
2.61	Are there empty beds for the next patients?	1	0
2.62	*For observation only*: Can you see any liquid spills or trash on the floor?	1	0

Section 2 Comments

Facility Name: _____

UFI: |___|____|____|____|

SECTION 3. Neonatal Care

Direct these questions to the Head Nurse in charge of neonatal care, if there is such a nurse. All questions should be answered by circling 1 for "Yes," or 0 for "No." Neonatal care may take place in a designated physical space as part of the delivery room or postnatal ward or it may be delivered in a separate area. This space is often called a newborn corner or neonatal care unit.

3A. Equipment and Supplies

No.	Item	Is at least 1 available and functional? Yes	No
3.01	Material for the newborn: Does the facility have…*(read a-i)*		
	Baby weighing scale	1	0
	Cord ties	1	0
	Thermometer for newborn	1	0
	Caps or hats to prevent heat loss	1	0
	Towels or cloth for newborn	1	0
	Newborn linen	1	0
	Newborn blanket	1	0
	Growth chart	1	0
3.02	Neonatal resuscitation pack: Does the facility have…*(read a-l)*		
	Newborn resuscitation table	1	0
	Mucus extractor/simple suction	1	0
	Neonatal face mask, size 0	1	0

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Is at least 1 available and functional? Yes	No
	Neonatal face mask, size 1	1	0
	Neonatal size ambu (ventilatory) bag	1	0
	Suction catheter, 10, 12 Ch	1	0
	Infant laryngoscope with spare bulb and batteries	1	0
	Endotracheal tubes, 3.5, 3.0	1	0
	Disposable uncuffed tracheal tubes, sizes 2.0 to 3.5	1	0
	Suction aspirator (operated by foot or electrically)	1	0
	Mucus trap for suction	1	0
	Anatomical model (for practice)	1	0
3.03	Is the equipment for resuscitation within reach or less than a minute away?	1	0
3.04	Are there decontamination supplies for bag and mask?	1	0
3.05	Small or sick newborn care: Does the facility have…*(read a-q)*		
	Register for sick babies	1	0
	Daily patient chart	1	0
	IV fluid (neonatal giving) set/umbilical catheter	1	0
	Syringes (0.5, 1.0 ml)	1	0
	Radiant warmer	1	0
	Incubator	1	0
	Designated space or beds for kangaroo mother care	1	0

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Is at least 1 available and functional? Yes	No
	KMC register	1	0
	Nasogastric feeding tube (newborn size and premature sizes)	1	0
	Cup and spoon for infant feeding	1	0
	Small cup for breast milk expression	1	0
	Icterometer/Bilirubinometer	1	0
	Phototherapy unit	1	0
	IV cannulae (neonatal)	1	0
	Stethoscope (pediatrics size)	1	0
	Blood pressure cuff(neonatal)	1	0
	Glucometer	1	0

Section 3 Comments

Facility Name: _____

UFI: |___|____|____|____|

SECTION 5. Laboratory and Blood Bank

Direct questions to the Head Technician. All of the questions should be answered by circling 1 for "Yes," or 0 for "No."

5A. General

No.	Item	Available
5.01	Does this facility have a laboratory?	Yes 1 No…….... 0 *If "No" → skipto end.*
5.02	Is there a set of guidelines for the laboratory?	Yes 1 No 0

Assessing the availability, readiness and quality for Newborn Care Services in hospitals of Nepal

MODULE 4: Facility Case Summary

Interviewer Name

Date (dd/mm/yyyy): ___ / ___ / ___

INSTRUCTIONS: Please begin this module by telling the medical director or matron that you want information on the number of deliveries, the mode of delivery, obstetric and abortion-related complications, and the number of maternal and newborn deaths that have occurred in the past year. S/he should be able to tell you which registers and data sources are in use at this facility that might be helpful. Refer to the Flow Chart on page 35 of the Data Collector's Manual and use it as a reminder of which registers you should consult for which items. These will be the data sources you will consult for this module.

Facility Name: _____

UFI: |___|____|____|____|

SECTION 1. Registers

In addition, ask whether the registers below are used in this facility for maternal and newborn care. Ask whether there are additional registers not listed here.

No.	Registers and data sources	Is it used at this facility?	
		Yes	No
1.03	Newborn unit register	1	0
1.07	Discharge register	1	0
1.08	Death/mortuary register	1	0
1.09	PMTCT labor and delivery register	1	0
1.10	Referral / counter referral register	1	0
	Outpatient register	1	0
	Post-natal ward register	1	0
	KMC register	1	0
1.11	Other *(specify)*	1	0
1.12	Other *(specify)*	1	0
1.13	Other *(specify)*	1	0

Facility Name: _____

UFI: |___|____|____|____|

SECTION 2: Data for Indicators

Provide the number of cases for each category for one year

No.	Item	
Deliveries		
2.05	Cesarean deliveries (emergencies and electives)	
2.06	Laparotomies (for ruptured uterus, PPH)	
Indirect Complications		
2.22	HIV/AIDS-related	

Maternal Deaths Due to Unknown or Unspecified Causes		
2.41	Unknown/unspecified causes	
Newborn Outcomes (for Facility Births)Monthly		
2.42	Live births ≥2500 grams	
2.43	Live births (2000 – 2499 grams)	
2.44	Live births (<2000 grams)	
2.45	Live births, unspecified birth weight	
2.46	Preterm live births (<37 weeks)	
2.47	Fresh stillbirths (≥2500 grams)	
2.48	Fresh stillbirths(<2500 grams)	
2.49	Macerated stillbirths	
2.50	Stillbirths (unspecified birth weight and/or timing of fetal death)	

Facility Name: _____

UFI: |___|____|____|____|

Very Early Neonatal Deaths		
2.51	Very early neonatal deaths (1st 24 hours; ≥2500 g)	
2.52	Very early neonatal deaths (1st 24 hours; <2500 g)	
2.53	Very early neonatal deaths (1st 24 hours; unspecified birth weight)	

Newborn Morbidities		
2.54	Newborns initiating kangaroo mother care (KMC)	
2.55	Newborns receiving resuscitation with bag &mask	
2.56	Antenatal corticosteroids	
2.57	Possible bacterial infection (PSBI)	
Referrals		
2.57	Referrals **out** of this facility due to newborn indications*****	

Comments

Facility Name: _____

UFI: |___|____|____|____|

Assessing the availability, readiness and quality for Newborn Care Services in hospitals of Nepal

MODULE 5:Emergency Obstetric and neonatal Functions and Other Essential Services

Interviewer Name

Date (dd/mm/yyyy): ___ / ___ / ___

Instructions:*Answer the following questions regarding the* Emergency Obstetric and neonatal Functions *by interviewing health workers in the maternity ward and other departments, reviewing facility registers, and through observation. For many questions, you will record whether the function has been performed in the* ***past 3 months****, and if not, why it has not been performed.*[*]*Remember that "parenteral" means by injection, either intramuscular or intravenous.*

Section 1. Emergency Obstetric Signal Functions

No.	Item	Responses	Skip to
Parenteral antibiotics			
1.01	Have parenteral antibiotics been administered to a pregnant or recently delivered woman in the last 3 months?	Yes 1 No 0	If "Yes," skip to Item 1.03

We have found that the following categories are useful and cover most of the likely answers.

a. Lack of availability of necessary health workers
   1. Required health workers are not posted to this facility in adequate numbers (or not at all)
b. Training issues
   1. Authorized cadre is available, but not trained
   2. Providers lack confidence in their skills
c. Supplies/equipment issues
   1. Supplies/equipment are not available, not functional, or broken
   2. Needed drugs are unavailable
d. Management issues
   1. Providers desire compensation to perform this function
   2. Providers are encouraged to perform alternative procedures
   3. Providers uncomfortable or unwilling to perform procedure for reasons unrelated to training
   4. There is a lack of supervision
e. Policy issues
   1. National or facility policies do not allow function to be performed
f. No indication
   1. No client needing this procedure came to the facility during this time period

Facility Name: _____

UFI: |___|____|____|____|

1.02	If parenteral antibiotics were NOT administered in the last 3 months, why? *(circle 1 for all spontaneous* a. lack of human resources b. training needed c. lack of supplies/equipment/drugs d. weak management e. unsupportive or no policy f. no indication g. other (specify) _____	Spontaneously mentioned 1 1 1 1 1 1 1	Not mentioned 0 0 0 0 0 0 0	

Section 2. Emergency Newborn Signal Functions and Other Newborn Interventions

No.	Item	Responses		Skip to
Newborn resuscitation				
2.01	Has newborn resuscitation with bag and mask been performed in the last 3 months?	Yes 1 No 0		If "No," skip to Item 2.03
2.02	Who provided neonatal resuscitation in the last 3 months? *(circle 1 for all spontaneous answers; otherwise circle 0)* MDGP Pediatrician	Spontaneously Mentioned 1 1	Not mentioned 0 0	All responses to this item skip to 2.04

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
	Neonatologist	1	0	
	Gyane/Obs			
	MO	1	0	
	Paramedics (HA)	1	0	
	Nurse	1	0	
	Anesthesia assistant	1	0	
	h. other *(specify)* _____ _	1	0	
2.03	If newborn resuscitation with bag and mask was NOT performed in the last 3 months, why? (circle 1 for all spontaneous answers; otherwise circle 0)	Spontaneously Mentioned		
	a. lack of human resources	1	0	
	b. training needed	1	0	
	c. lack of supplies/equipment/drugs	1	0	
	d. weak management	1	0	
	e. unsupportive or no policy	1	0	
	f. no indication	1	0	
	g. other *(specify)* _____ _	1	0	
Antenatal corticosteroids				

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
2.04	Have antenatal corticosteroids been provided to manage pre-term labor in the last 3 months?	Yes 1 No 0		If "No," skip to Item 2.06
2.05	Who provided corticosteroids in the last 3 months? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	All responses to this item skip to 2.07
	MDGP	1	0	
	Pediatrician	1	0	
	Neonatologist	1	0	
	Obs/Gyne MO	1	0	
	Paramedics (HA)	1	0	
	Nurse	1	0	
	Anesthesia assistant	1	0	
	h. other *(specify)*_____	1	0	
2.06	If corticosteroids for pre-term labor were NOT provided in the last 3 months, why? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	
	a. lack of human resources	1	0	
	b. training needed	1	0	

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
	c. lack of supplies/equipment/drugs	1	0	
	d. weak management	1	0	
	e. unsupportive or no policy	1	0	
	f. no indication	1	0	
	g. other *(specify)* _____ _	1	0	
Antibiotics for PROM				
2.07	Have antibiotics been given for preterm premature rupture of membranes (PROM) in the last 3 months?	Yes 1 No 0		If "No," skip to Item 2.09
2.08	Who provided antibiotics for PROM in the last 3 months? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	All responses to this item skip to 2.10
	MDGP	1	0	
	Pediatrician	1	0	
	Neonatologist	1	0	
	Gyne/Obs			
	MO	1	0	
	Paramedics (HA)	1	0	
	Nurse	1	0	
	Anesthesia assistant	1	0	

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
	h. other *(specify)* _____ _	1	0	
2.09	If antibiotics for PROM were NOT provided in the last 3 months, why? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	
	a. lack of human resources b. training needed c. lack of supplies/equipment/drugs d. weak management e. unsupportive or no policy f. no indication g. other *(specify)* _____	1 1 1 1 1 1 1	0 0 0 0 0 0 0	
Antibiotics for neonatal infections				
2.10	Have antibiotics been given for neonatal infections in the last 3 months?	Yes 1 No 0		If "No," skip to Item 2.12
2.11	Who provided antibiotics for neonatal infections in the last 3 months? *(circle 1 for all spontaneous answers; otherwise circle 0)* MDGP Pediatrician	Spontaneously Mentioned 1 1	Not mentioned 0 0	All responses to this item skip to 2.13

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
	Neonatologist	1	0	
	Gyne/Obs			
	MO	1	0	
	Paramedics (HA)	1	0	
	Nurse	1	0	
	Anesthesia assistant	1	0	
	h. other *(specify)* _____ _	1	0	
2.12	If antibiotics for neonatal infections were NOT given in the last 3 months, why? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	
	a. lack of human resources	1	0	
	b. training needed	1	0	
	c. lack of supplies/equipment/drugs	1	0	
	d. weak management	1	0	
	e. unsupportive or no policy	1	0	
	f. no indication	1	0	
	g. other *(specify)* _____ _	1	0	
Kangaroo Mother Care				

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
2.13	Has Kangaroo Mother Care (KMC) been provided to very small babies in the last 3 months, either continuous or intermittent KMC?	Yes 1 No 0		If "No," skip to Item 2.15
2.14	Who provided KMC in the last 3 months? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	All responses to this item skip to 2.16
	MDGP	1	0	
	Pediatrician	1	0	
	Neonatologist	1	0	
	Gyne/Obs			
	MO	1	0	
	Paramedics (HA)	1	0	
	Nurse	1	0	
	Anesthesia assistant	1	0	
	h. other *(specify)* _____	1	0	
2.15	If KMC was NOT provided in the last 3 months, why? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	
	a. lack of human resources	1	0	
	b. training needed	1	0	
	c. lack of supplies/equipment/drugs	1	0	

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
	d. weak management	1	0	
	e. unsupportive or no policy	1	0	
	f. no indication	1	0	
	g. other *(specify)* _____	1	0	
	Has Kangaroo Mother Care (KMC) follow up care been provided to very small babies in the last 3 months?	Yes 1 No 0		If "No," skip to Item xx
	Who helped provide KMC follow up care in the last 3 months? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	All responses to this item skip to xx
	MDGP	1	0	
	Pediatrician	1	0	
	Neonatologist	1	0	
	Gyne/Obs			
	MO	1	0	
	Paramedics (HA)	1	0	
	Nurse	1	0	
	Anesthesia assistant	1	0	
	h. other *(specify)* _____ _	1	0	

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
	If KMC follow up was NOT provided in the last 3 months, why? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	
	a. lack of human resources	1	0	
	b. training needed	1	0	
	c. lack of supplies/equipment/drugs	1	0	
	d. weak management	1	0	
	e. unsupportive or no policy	1	0	
	f. no indication	1	0	
	g. other *(specify)* _____	1	0	
Administration of oxygen				
2.16	Has oxygen been administered to a newborn in the last 3 months?	Yes 1 No 0		If "No," skip to Item 2.19
2.17	Who administered oxygen to a newborn in the last 3 months? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	
	General Practioner	1	0	
	Pediatrician	1	0	

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
	Neonatologist Gyne/Obs MO Paramedics (HA) Nurse Anesthesia assistant other *(specify)* _____	1 1 1 1 1	0 0 0 0 0	
2.18	Was oxygen therapy monitored by pulse oximetry?	Yes 1 No 0 Uncertain 2		All responses to this item skip to 2.20
2.19	If oxygen has NOT been given to a newborn in the last 3 months, why? *(circle 1 for all spontaneous answers; otherwise circle 0)* a. lack of human resources b. training needed c. lack of supplies/equipment/drugs d. weak management e. unsupportive or no policy f. no indication g. other *(specify)* _____ _	Spontaneously Mentioned 1 1 1 1 1 1 1	Not mentioned 0 0 0 0 0 0 0	

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
Administration of IV fluids				
2.20	Have IV fluids been administered to a newborn in the last 3 months?	Yes 1 No 0		If "No," skip to Item 2.22
2.21	Who administered IV fluids to a newborn in the last 3 months? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	All responses to this item skip to 2.23
	General practitioner	1	0	
	Pediatrician	1	0	
	Neonatologist	1	0	
	Gyne/Obs			
	MO	1	0	
	Paramedics (HA)	1	0	
	Nurse	1	0	
	Anesthesia assistant	1	0	
	other *(specify)* _____	1	0	
2.22	If IV fluids have NOT been given to a newborn in the last 3 months, why? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	
	a. lack of human resources	1	0	
	b. training needed	1	0	

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
	c. lack of supplies/equipment/drugs	1	0	
	d. weak management	1	0	
	e. unsupportive or no policy	1	0	
	f. no indication	1	0	
	g. other *(specify)* _____	1	0	
2.23	Does staff routinely apply chlorhexidine gel to the newborn's cord stump?	Yes 1 No 0		
Newborn gestational age				
2.24	Is newborns gestational age measured?	Yes 1 No 0		If "No," skip to Item xx
2.25	How was the newborns age measured?	Spontaneously Mentioned	Not mentioned	
	a. LMP	1	0	
	b. USG	1	0	
	c. Clinical assessment (New Ballard)			
	d. Other: _____			
2.21	Who measured the gestational age? *(circle 1 for all spontaneous answers; otherwise circle 0)*	Spontaneously Mentioned	Not mentioned	All responses to this item skip to xxx
	General practitioner	1	0	
	Pediatrician	1	0	

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses		Skip to
	Neonatologist	1	0	
	Gyne/Obs			
	MO	1	0	
	Paramedics (HA)	1	0	
	Nurse	1	0	
	Anesthesia assistant	1	0	
	other *(specify)*	1	0	
	_____			
2.22	If the newborns gestational age has not been measured, why?	Spontaneously Mentioned	Not mentioned	
	(circle 1 for all spontaneous answers; otherwise circle 0)			
	a. lack of human resources	1	0	
	b. training needed	1	0	
	c. lack of supplies/equipment/drugs	1	0	
	d. weak management	1	0	
	e. unsupportive or no policy	1	0	
	f. no indication	1	0	
	g. other *(specify)*	1	0	
	_____			

Section 3.Other Maternal, Newborn and RH Practices and Services

Instructions: Please answer the following questions about these other services. Record whether the function has been performed in the past 3 months and why not.

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses Yes	No	Skip to
3.01	Has alternative feeding (expressing breast milk and using a cup or spoon for feeding and/or using nasogastric tube feeding) been used for babies in the last 3 months?	1	0	If yes, skip to 3.03
3.02	If not performed in last 3 months, why?			
	Lack of staff	1	0	
	b. Training needed	1	0	
	c. Lack of supplies / equipment issues	1	0	
	d. Weak management	1	0	
	e. Unsupportive or no policy	1	0	
	f. No Indication/No Clients	1	0	
3.03	Have ARVs been given to newborns in the maternity / labor ward (PMTCT) in the last 3 months?	1	0	If yes, skip to 3.05
3.04	If not performed in last 3 months, why?			
	Lack of staff	1	0	
	b. Training needed	1	0	
	c. Lack of supplies / equipment issues	1	0	
	d. Weak management	1	0	
	e. Unsupportive or no policy	1	0	
	f. No Indication/No Clients	1	0	
Comments:				

Facility Name: _____

UFI: |___|____|____|____|

No.	Item	Responses Yes No	Skip to

Assessing the availability, readiness and quality for Newborn Care Services in hospitals of Nepal

MODULE 6 (Part 1): Provider Knowledge for Maternal and Newborn Care

Interviewer Name

Date (dd/mm/yyyy): ___ / ___ / ___

No.	Question	Response
0.01	May I proceed with the interview?	Yes 1 No 0

If the answer to question 1 is "No," end the interview. If "Yes," continue to Question 1.01.

Facility Name: _____

UFI: |___|____|____|____|

SECTION 1: Personal characteristics

1.01	What is your current occupational category or qualification?	General practitioner 1 Pediatrician 2 Neonatologist 3 Gyne/Obs MO 4 Paramedics (HA) 5 Nurse 6 Anesthesia assistant 7 Laboratory related HR 6 Other (*specify)* _____ 7
1.02	How many years has it been since you received your professional qualification?	|___|___| years |___|___| months If less than 3 years, skip to item 1.04.
1.03	How many different health facilities have you been posted to in the past 3 years?	|___| ___|
1.04	How long have you been at this facility?	|___|___| years |___|___| months
1.06	How many deliveries did you attend last month?	|___|___|___|
1.07	Observation: sex of provider	Female 1 Male 2

Facility Name: _____

UFI: |___|____|____|____|

SECTION 2: Clinical Experience and Training

I am going to read a list of services. For each one I would like you to tell me if you've provided the service in the last 3 months and if you ever received any instruction on how to provide the service (during pre-service or in-service training).

Service	**2.01 Have you provided this service in the past 3 months?**			**2.02 Have you ever received instruction on how to...?**		
	Yes	**No**	**NA**	**Yes**	**No**	**NA**
a. Provide focused antenatal care	1	0	9	1	0	
b. Provide antenatal corticosteroids for women at risk of preterm birth	1	0	9	1	0	
c. Begin IV fluids	1	0		1	0	
p. Provide essential newborn care[1]	1	0		1	0	
q. Resuscitate a newborn with bag and mask	1	0		1	0	
Provide alternative feeding if baby unable to breastfeed (cup feeding and nasogastric feeding)						
r. Provide kangaroo mother care (KMC), including follow up	1	0		1	0	
s. Administer antiretroviral for PMTCT	1	0		1	0	
t. Provide antibiotics for neonatal infections	1	0		1	0	
2.03 Does staff at this facility use clinical simulation or regular practice of skills as a way to maintain				Yes ……1 No……		

Facility Name: _____

UFI: |___|____|____|____|

Service		2.01 Have you provided this service in the past 3 months?			2.02 Have you ever received instruction on how to...?		
		Yes	No	NA	Yes	No	NA
	readiness?				.0		

[1] Essential newborn care: Dry the baby's body, wrap the baby with dry towel, assess the baby's breathing, observe for color, tie and care for umbilical cord, ensure baby is kept warm (skin-to-skin), initiate breastfeeding within the first 60 minutes, and apply tetracycline eye ointment once, give vitamin K and weigh the baby within the first 90 minutes.

SECTION 3: Knowledge Questions

Read to provider: Now I'd like to ask a few questions about the work you do.

No.	Question	Response	
		Mentioned	Did not mention
3.01	What are the primary aspects of focused antenatal care? *(Circle all spontaneous answers and ask:* Anything else?*)*		
	Minimum of 4 consultations	1	0
	Ensure woman has birth plan	1	0
	Prevent illness and promote health (tetanus toxoid vaccine, iron, Calcium ,Folic acid, PMTCT)	1	0
	Detect existing illnesses and manage complications	1	0
	Teach the danger signs (of pregnancy, childbirth, and the postpartum period)	1	0
	Promote breastfeeding	1	0

Facility Name: _____

UFI: |___|____|____|____|

No.	Question	Response	
		Mentioned	**Did not mention**
Now I would like to ask some questions about caring for the newborn baby.			
3.12	What do you do for the newborn immediately following delivery? *(Circle all spontaneous answers and ask:* Anything else?*)*		
	Deliver the baby skin-to-skin onto the mother's abdomen/chest	1	0
	Dry the baby's body	1	0
	Cover the baby with dry towel	1	0
	Assess the baby's breathing	1	0
	Tie cord after 2-3 minutes	1	0
	Care for umbilical cord – apply chlorhexidine, if policy	1	0
	Ensure baby is kept warm (skin-to-skin)	1	0
	Initiate breastfeeding within the first 60 minutes	1	0
	Give vitamin K (after 90 minutes)	1	0
	Weigh the baby (after 90 minutes)	1	0
		1	0
	Give BCG	1	0
3.13	What are key counseling messages related to cord care? [ADAPT ACCORDINGLY IF CHLORHEXIDINE IS POLICY]		
	Put nothing on the cord while waiting for the cord to fall off	1	0

Facility Name: _____

UFI: |___|____|____|____|

No.	Question	Response	
		Mentioned	**Did not mention**
	Cord should remain dry	1	0
3.14	How many hours after birth would you recommend that the baby have its first bath?	|___|___| hours after birth 99 = doesn't know	
3.15	When a newborn weighs less than 2000 grams, what special care do you provide? *(Circle all spontaneous answers and ask:* Anything else?*)*		
	Ensure the baby is warm with skin-to-skin with mother, if stable (kangaroo technique)	1	0
	Ensure baby is warm by placing baby in incubator	1	0
	Ensure baby is warm by placing baby in radiant warmer	1	0
	Provide extra support to the mother to establish breastfeeding	1	0
	Monitor ability to breastfeed	1	0
	Assess for danger signs	1	0
	Assess for breathing difficulties (need for O_2 supplementation)	1	0
	Monitor baby for the first 24 hours	1	0
	Ensure infection prevention	1	0
3.16	What are the signs and symptoms of infection, or sepsis, in the newborn? *(circle all spontaneous answers and ask:* Anything else?*)*		
	Temperature $\geq 38^{o}$ C (hyperthermia)	1	0
	Temperature $<35.5^{o}$ C (hypothermia)	1	0

Facility Name: _____

UFI: |___|____|____|____|

No.	Question	Response	
		Mentioned	Did not mention
	Movement only with stimulation	1	0
	Severe chest in-drawing	1	0
	Poor feeding on observation	1	0
3.17	What are the signs of critical illness for a newborn baby that would indicate the need for referral? *(circle all spontaneous answers and ask:* Anything else?*)*		
	Unconscious	1	0
	Convulsions	1	0
	Unable to feed	1	0
	Weak or absent cry	1	0
	Cyanosis	1	0
	Bulging fontanels	1	0
	Fever/Hypothermia		
	Difficulty breathing		
3.18	How would you diagnose birth asphyxia? *(circle all spontaneous answers and ask:* Anything else?*)*		
	Depressed/no breathing	1	0
	Floppiness	1	0
	Heart rate below 100 beats per minute	1	0

Facility Name: _____

UFI: |___|____|____|____|

No.	Question	Response	
		Mentioned	**Did not mention**
3.19	If you were to perform neonatal resuscitation on a baby who is not breathing and for whom back rubbing does not help, what are the steps you'd take, giving them to me in order? *(circle all spontaneous answers and ask:* Anything else?*)*		
	Call for help	1	0
	Explain to mother condition of baby	1	0
	Place the newborn face up	1	0
	Wrap or cover baby, except for face and upper portion of chest	1	0
	Position baby's head so neck is slightly extended	1	0
	Clear secretions if seen	1	0
	Start ventilation using bag and mask	1	0
3.20	*(Data collector's observation only; do not ask aloud)* Were the steps mentioned in sequential order?	Yes 1 No 0	
3.21	What do you check (for the baby) during a postnatal visit? *(circle all spontaneous answers and ask:* Anything else?*)*		
	Baby breastfeeding well	1	0
	Proper positioning for breastfeeding	1	0
	Color tone of baby	1	0
	Fever of baby	1	0
	Difficulty breathing	1	0
	Eye swelling or discharge	1	0
	Umbilical cord	1	0

Facility Name: _____

UFI: |___|____|____|____|

No.	Question	Response	
		Mentioned	**Did not mention**
	Alertness of baby	1	0
3.22	What do you check for the mother during a postnatal visit? *(circle all spontaneous answers and ask:* Anything else?*)*		
	Vaginal bleeding	1	0
	Signs of infection (fever)	1	0
	Blood pressure	1	0
	Abdominal tenderness	1	0
	Size and firmness of uterus	1	0
	Deep vein thrombosis	1	0
	Breast engorgement	1	0
	Signs of anemia	1	0
	Assess lochia (vaginal discharge)	1	0
	Signs of depression	1	0
	Dribbling urine	1	0
	Cough or breathing difficulties	1	0

Facility Name: _____

UFI: |___|____|____|____|

SECTION 4: Management & Working Conditions

Now I'd like to finish by asking a few questions about the management at this facility and your work environment.

No.	Question	Response	Skip
4.01	Do you currently have a written job description for your position?	Yes 1 No 0	If NO, skip to 4.03.
4.03	Does this facility have a written management structure or an organogram that details reporting relationships?	Yes 1 No 0 Doesn't know 9	
4.04	Is the reporting structure for administrative purposes clear?	Yes 1 No 0	
4.05	Is the reporting structure for clinical purposes clear?	Yes 1 No 0	
4.06	Does this facility have a policy that promotes frequent staff rotation (more frequent than once a year) to different areas of the facility?	Yes 1 No 0 Facility too small for rotation 9	
4.07	When did you last receive any on-the-job training in maternal or newborn health?	Has never received 0 In the last 6 months 1 In the last year 2 More than a year ago 3	
4.08	Do you ever complete or make reports that are sent to the next administrative level?	Yes 1 No 0	

Facility Name: _____

UFI: |___|____|____|____|

No.	Question	Response	Skip
4.09	Have you ever received training in how to complete registers, compile reports or use the services statistics at this facility?	Yes 1 No 0	

Comments

Facility Name: _____

UFI: |___|____|____|____|

Assessing the availability, readiness and quality for Newborn Care Services in hospitals of Nepal

MODULE 10: Chart Reviews of Ill Newborns

Interviewer Name

Date (dd/mm/yyyy): ___ / ___ / ___

INSTRUCTIONS: At the NICU, newborn special care unit, newborn corner or maternity ward ask the person in charge for the charts and records of the last 1 case of a newborn who had difficulties breathing (or did not breathe) at birth, 1 case of preterm or low birth weight babies, and 1case of young infants (0-2 months) with infections. The infected young infants might be located in the OPD. Cases could be randomly selected.

SECTION 1: Review of newborns who had difficulties or were not breathing at birth

No.	Information	Case 1	Case 2	Case 3
Patient's status at birth				
1.01	Birth weight *(9999=if not in chart)*	|__|__|__|__| grams	|__|__|__|__| grams	|__|__|__|__| grams
1.02	Gestational age *(99=if not in chart)*	|__|__| weeks	|__|__| weeks	|__|__| weeks
1.03	Duration of labor *(999= if not in chart)*	|__|__|__| hours	|__|__|__| hours	|__|__|__| hours
1.04	Mode of delivery	1 Vaginal 2 Instrumental 3 Cesarean 9 No info	1 Vaginal 2 Instrumental 3 Cesarean 9 No info	1 Vaginal 2 Instrumental 3 Cesarean 9 No info
1.05	Mother/baby was referred from another facility	1 Yes 0 No 9 No info	1 Yes 0 No 9 No info	1 Yes 0 No 9 No info

Facility Name: _____

UFI: |___|____|____|____|

No.	Information	Case 1	Case 2	Case 3
1.06	Evidence in chart that the mother experienced an obstetric complication, e.g. eclampsia or obstructed labor	1 Yes 0 No	1 Yes 0 No	1 Yes 0 No
1.07	Evidence of meconium (written in chart)	1 Yes 0 No	1 Yes 0 No	1 Yes 0 No
Treatment				
1.08	Type of resuscitation used	1 Stimulation 2 Bag & mask 3 Both 9 No information	1 Stimulation 2 Bag & mask 3 Both 9 No information	1 Stimulation 2 Bag & mask 3 Both 9 No information
1.09	Oxygen given as needed	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information
1.10	Follow up plan described / Mother counseled	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information

SECTION 2: Review of Preterm and Low Birth Weight Newborns (<2000 grams)

No.	Information	Case 1	Case 2	Case 3
Patient's history				
2.1	Birth weight *(9999=if not in chart)*	|__|__|__|__| grams	|__|__|__|__| grams	|__|__|__|__| grams
2.2	Gestational age *(99=if not in chart)*	|__|__| weeks	|__|__| weeks	|__|__| weeks

Facility Name: _____

UFI: |___|____|____|____|

No.	Information	Case 1	Case 2	Case 3
Patient's history				
2.3	Location of delivery	1 Home 2 Facility 9 No information	1 Home 2 Facility 9 No information	1 Home 2 Facility 9 No information
2.4	Mother/baby was referred from another facility	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information
2.5	Did mother receive antenatal corticosteroids?	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information
Patient's status on admission/at consult				
2.6	Breastfeeding status	1 Feeding ok 2 Is not breastfeeding or has troubles 9 No information	1 Feeding ok 2 Is not breastfeeding or has troubles 9 No information	1 Feeding ok 2 Is not breastfeeding or has troubles 9 No information
Treatment				
2.7	Initiated kangaroo mother care and follow up	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information
2.8	Daily monitoring chart found in the file	1 Yes 0 No	1 Yes 0 No	1 Yes 0 No
2.9	Feeding plan described / Mother counseled	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information

Facility Name: _____

UFI: |___|____|____|____|

SECTION 3. Review of Newborns with Infections (newborns 0-2 months, born at home or in a facility)

No.	Information	Case 1	Case 2	Case 3
Patient history				
3.1	Birth weight *(9999=if not in chart)*	|__|__|__|__| grams	1 Yes 0 No	1 Yes 0 No
3.2	Gestational age *(99=if not in chart)*	|__|__| weeks	1 Yes 0 No	1 Yes 0 No
3.3	Location of delivery	1 Home 2 Facility 9 No information	1 Home 2 Facility 9 No information	1 Home 2 Facility 9 No information
3.4	Mother/baby was referred from another facility	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information
Patient status on admission/consultation				
3.5	OPD visit or in-patient	1 OPD 2 In-patient	1 OPD 2 In-patient	1 OPD 2 In-patient
3.6	Current age (in days) *(99=if not in chart)*	|__|__| days	|__|__| days	|__|__| days
3.7	Current weight *(9999=if not in chart)*	|__|__|__|__| grams	|__|__|__|__| grams	|__|__|__|__| grams
3.8	Temperature *(999=if not in chart)*	|__|__|.|__| ^{o}C	|__|__|.|__| ^{o}C	|__|__|.|__| ^{o}C
3.9	Heart rate *(999=if not in chart)*	|__|__|__| beats per minute	|__|__|__| beats per minute	|__|__|__| beats per minute
3.10	Breathing rate *(999=if not in chart)*	|__|__|__| breaths per minute	|__|__|__| breaths per minute	|__|__|__| breaths per minute
3.11	Oxygen saturation level	|__|__| %	|__|__| %	|__|__| %

Facility Name: _____

UFI: |___|____|____|____|

No.	Information	Case 1	Case 2	Case 3
Patient history				
	(99=if not in chart)			
Treatment (adapt to country norms)				
3.12	For OPD: Oral antibiotics given/recorded	1 Yes 0 No 9 NA	1 Yes 0 No 9 NA	1 Yes 0 No 9 NA
3.13	For in-patient: Injectable antibiotics given/recorded	1 Yes 0 No 9 NA	1 Yes 0 No 9 NA	1 Yes 0 No 9 NA
3.14	Follow up plan described / mother counseled	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information	1 Yes 0 No 9 No information

Comments

Facility Name: _____

UFI: |___|____|____|____|

Observation Checklist

Module 1: Facility Infrastructure Information

2.12	Toilet (latrine) in functioning condition for general staff use.	Yes 1 No 0	If "No," skip to Item 2.14.
2.13	Type of toilet or latrine.	Flush or pour flush toilet 1 Ventilated improved pit latrine 2 Pit latrine with slab 3 Pit latrine without slab/open pit 4 Other type of toilet 5	
2.14	Is there a toilet (latrine) in functioning condition for patient use?	Yes 1 No 0	If "No," skip to Item 2.16.
2.15	What type of toilet or latrine is it? (Multiple choice)	Flush or pour flush toilet 1 Ventilated improved pit latrine 2 Pit latrine with slab 3 Pit latrine without slab/open pit 4 Other type of toilet 5	

Facility Name: _____

UFI: |___|____|____|____|

MODULE 3: Essential Drugs and Supplies

1.05	*Observe drug inventory register/system or bin cards to determine if up-to-date.* *Randomly select 5 cards. **All** must be up-to-date to circle "Yes"*	Yes 1 No 0	
1.10	*Is a "First-in-First-out" system for supply management used?* *(Ask to see the gentamicin stock and observe if it is arranged by expiration date)*	Yes 1 No 0 No gentamicin in stock 2 Did not observe 3	
1.12	*Observe whether drugs are protected from moisture, heat, or infestation (e.g., placed on shelves or slats, ventilated)?*	Yes 1 No 0 Did not observe 2	

Facility Name: _____

UFI: |___|____|____|____|

2A. Infection Prevention

No.	Item	Is at least 1 available and functional? Yes	No
2.01	Infection Prevention Basic Items: Does this facility have… (read a-m)		
	Soap	1	0
	Antiseptics	1	0
	Disposable latex examination gloves	1	0
	Heavy duty gloves	1	0
	Non-sterile protective clothing	1	0
	Decontamination container	1	0
	Bleach or bleaching powder (chlorine)	1	0
	Prepared disinfection solution	1	0
	Regular trash bin	1	0
	Covered contaminated waste trash bin	1	0
	Puncture-proof sharps container	1	0
	Surgeon's hand brush with nylon bristles	1	0
2.02	Disinfectants and antiseptics: Does the facility have…(read a-d)		
	Ethanol	1	0
	Povidone iodine	1	0
	Alcohol-based rub	1	0

Facility Name: _____

UFI: |___|____|____|____|

2B. Infrastructure

No.	Item	Is at least 1 available and functional?	
2.03	Infrastructure: Does the facility have…(read a-i)		
	Sufficient light source to perform tasks during the day	1	0
	Sufficient light source to perform tasks at night	1	0
	Means of ventilation	1	0
	Heating/heating arrangements	1	0
	Functional fan/air conditioning	1	0
	Curtains/means of providing patient privacy	1	0
	Waiting area for visitors and family	1	0
	Functioning toilet for visitors' and family use	1	0

MODULE 4: Facility Case Summary
SECTION 3: Quality of Registry Data

No.	Question	Are all columns completed?			Is register up-to-date?		
		Yes	No	Not available	Yes	No	Not available
3.01	Based on your observations, would you say that the **labor anddelivery ward register:**	1	0	9	1	0	9
3.05	Based on your observations, would you say that the **post-natal ward register:**	1	0	9	1	0	9
3.06	Based on your observations, would you say that the **KMC register:**	1	0	9	1	0	9