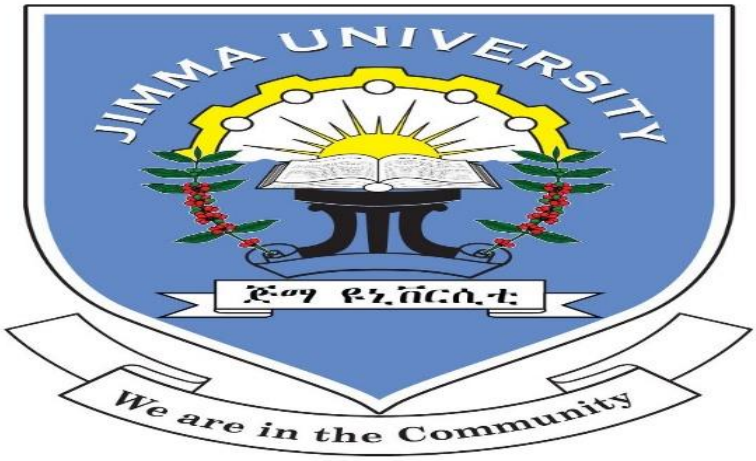

IMPLEMENTATION EVALUATION OF NEONATAL INTENSIVE CARE UNIT (NICU) SERVICE IN FITCHE GENERAL HOSPITAL, NORTH SHOA, OROMIA, CENTRAL ETHIOPIA

EVALUATION THESIS SUBMITTED TO JIMMA UNIVERSITY, INSTITUTE OF HEALTH, PUBLIC HEALTH FACULTY, DEPARTMENT OF HEALTH POLICY AND MANAGEMENT, HEALTH MONITORING AND EVALUATION UNIT FOR PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCES IN HEALTH MONITORING AND EVALUATION

PRINCIPAL EVALUATOR: YIMENGUSHAL HAILU (BSC)

JIMMA, ETHIOPIA

DECEMBER 2022

Implementation Evaluation of Neonatal Intensive Care Unit (NICU) Service in Fitche General Hospital, North Shoa, Oromia, Central Ethiopia

Declaration

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in this or another university and all the sources of materials used for the thesis have been fully acknowledged

Name Yimegnushal Hailu (BSC)

Signature  Date 02/01/2023

This thesis work has been submitted for the examination with my approvals as university

Advisors.

1. **Mr. Feyissa Tolessa (BSc, MSc in HM&E) Signature _____Date_____**
2. **Mr. Matebu Gezahegn (BSc, MSc in HM&E Signature**  **Date 02/01/2023**

Internal examiner: Berhane Megerssa (Assistant Professor, PhD Candidate)

Signature  **Date January 5, 2023**

Abstract

Background: - The Neonatal Intensive Care Unit (NICU), with trained health professionals and fully equipped lifesaving supplies. The scarcity of resources is the main bottle nick for NICU service implementation.

Objective: - To evaluate the implementation status and associated factors of NICU service in Fitche General Hospital.

Method: A Hospital-based single case study was conducted at Fitche general Hospital from Jul to Sept. 2021. Both quantitative and qualitative data collection methods were used, to assess the availability of resources, health service providers' compliance with the standard, and level of Parents' satisfaction. Quantitative data was collected using a structured questionnaire, Parents of admitted newborns were selected by convenience sampling technique. Data was entered into Epi data 4.6.0.4 and exported into SPSS Version 26 for analysis. Bi-variable & multivariable logistic regression analyses were used to identify factors associated with parent satisfaction. The key informants were select purposefully for qualitative method.

Results: 63 percent of the required resources were available for the implementation of NICU service in the study setting. The human resources and rooms have been inadequate. Health service providers' compliance with the standard national guideline was 82%. However, there was no hand washing conducted at the proper hand-washing event according to guidelines. About 66.4% of parents were satisfied with the services given to their neonates. There is no an association between sociodemographic characteristics and parental satisfaction with NICU service at Fitche General Hospital.

Conclusion: The overall implementation status of neonatal intensive care unit service was good according to preset judgment criteria. However, there is a need for improvement on human resource, additional rooms, water supply, essential drugs, medical supplies and continuous Integrated Supportive Supervision.

Keywords; Fitche General Hospital, NICU service implementation, parent satisfaction, NICU

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Acronyms and Abbreviations

CMR ------ Child Mortality Rate

Dx ------- Diagnosis

EDHS ------- Ethiopian Demographic and Health Survey

FGH--------- Fitche General Hospital

FMOH ------- Federal Ministry of Health

HEID------- Health Education& Information Dissemination

HR ---------Human Resource

HSDP ------- Health Sector Development Plan

Hx -------- History

IPC -------- Infection prevention

KMC -------- Kangaroo Mother Care

MCH -------- Maternal Child Health

NCMR ------- Neonatal Child Mortality Rate

MDG --------- Millennium Development Goal

NICU -------- Neonatal intensive care unite

NMR -------- Neonatal Mortality Rate

NN-------- Neonatal Nurse

ORHB ------ Oromia Regional Health Bureau

Rx --------- Treatment

SPSS -------- Statistical Package for the Social Sciences

VOS ------- Voluntary Organization Service

V/S -------- Vital Sign

ZHD--------- Zonal Health Department

Operational Definition

Ancillary areas: **-** space which includes the gowning area at the entrance, hand washing stations, examination area, clean area for mixing IV fluids and medications, mother's area for expression of breast milk, breastfeeding and learning mother's crafts, side laboratory (selected investigations), boiling and autoclaving, general support area and procedure room)

Availability of source of power: source of power without interruption (from electric power or generator) in all NICU rooms

Availability of tap water supply: - a functional handwashing facility in all NICU rooms

Availability: the physical presence of structural components those are required for the implementation of NICU service.

Compliance: the conformity of implemented NICU activities/services in the hospital based on the national and international standard guidelines in the course of NICU service provision through direct observation of the interaction between the HSP-Pt.-parent and review of recorded documents from January to June 2021

Charts; the standardized normal value chart, vital signs (V/S) monitoring and recording chart, feeding chart

CRC stands for Compassionate, Respectful, and Caring. In the affective dimension of empathy, it's being sensitive to other people's sadness or suffering and having a strong desire to help them with the care that, regardless of differences, supports and encourages a person's self-respect rather than undermining it, and significantly eases their pain.

Dissatisfied: Participants who scored below the mean on satisfaction questions were considered dissatisfied**.**

Guideline: is the written guide booklet/document, which is prepared at the national and international level and used to implement medical services and nursing care for neonates and their Parents who were admitted to the NICU department at Fitche general Hospital during the data collection period.

Holistic nursing care: - is the care that was given by NICU department nurses. It includes the care and services in standard nursing assessment of essential nursing care.

Implementation: - is a set of interconnected activities that lead to the success of the goal of the NICU program and it evaluated by the availability of resources, compliance of the provided services with the national & international guidelines as well as the expression of the internal feeling (satisfaction) of parents' of the admitted neonates in NICU.

Posted criteria; includes the admission criteria, discharge criteria, and isolation criteria of the NICU department in FGH during the data collection period.

Posted normal values; the Hematologic Values, and normal ECG parameters which are posted in the NICU department at FGH

Recording and reporting format; report formats, charts, cards & sheets, posted criteria, posted normal values

Registration books; admission discharge registration book in NICU department, referral registration book in liaison department, and laboratory log book which have the data from December 2l, 2013 to June 20, 2013, E.C. in FGH.

Report timeliness: submission of NICU reports to the HMIS department of Fitche general Hospital on schedule between the 21st and 22nd of the next calendar.

Satisfaction: parents' expression of internal feelings preset contentment due to getting the feeling of happiness from providing NICU service from the hospital in the angle of NICU service provision. Its level divided into two depending on the demarcation threshold formula to identify factors associated with NICU service provision. It was measured with 5-point likert scale.

Satisfied: Participants who scored the mean and above that for individual items on satisfaction questions were considered satisfied.

Sheets; according to this evaluation sheets means standardized papers which have different purposes in Pt care and treatment; Hx sheet, medication record sheet, order sheet, Neonatal daily Progress Monitoring Sheet of neonates and discharge summary sheets which are found in the NICU department at Fitche general Hospital during the data collection period.

CHAPTER ONE -INTRODUCTION

1.1. Background

A neonatal intensive care unit (NICU) is a hospital-based healthcare package for babies who require

advanced care and medical treatment due to illness or preterm birth, or who develop issues while still in the hospital within the first twenty-eight days of life. The NICU must have trained medical personnel and other support staff, as well as fully equipped life-saving supplies and the ability to monitor patients with life-threatening conditions (1,2). Worldwide, an estimated four million babies die in the first four weeks of life, accounting for two-thirds of all deaths in the first year of life and 40% of deaths among children under the age of five. The majority of newborn mortality (99%) occurs in low and middle-income nations (3,4). To reduce neonatal mortality worldwide, make a policy and set a goal to prevent unwanted and preventable neonatal mortality and morbidity also stopping neonatal deaths is an essential part of the third Sustainable Development Goal (SDG) to stop preventable child deaths (3). In order to improve newborn care and save little lives, the Ethiopian government confirmed its commitment by creating Minimum Care Packages. The country wants to reduce neonatal mortality rates from 33/1000 LB to 21/1000 LB by the year 2024/2025. The Federal Ministry of health (FMOH) recognizes and believes that, strengthening the community-based newborn care strategic initiatives. Health facilities should be equipped with the resources recommended by the minimum standard criteria of national guidelines (2,5–7, 11).

A rapid assessment conducted in Ethiopia by voluntary services overseas (VSO) revealed a clear difference in the number of neonatal deaths before and after the establishment of the NICU in some hospitals, such as Arbaminch, where neonatal mortality was 175.4 per 1000 live births compared to the national average of 37 per 1000. The lack of access to a heater, phototherapy, and respiratory support was identified as a common cause of infant death in this study. The NICU is supposed to perform these tasks, but all health professionals lacked expertise and abilities in neonatal resuscitation and newborn care. Furthermore, personnel did not report sick babies to the pediatrics section because they believed it lacked the expertise to manage them (4).

1.2. Statement of the problem

Globally, neonatal health problems are still the main issue. There was no significant decrement in NMR. Children who die within the first 28 days of birth (neonatal mortality) suffer from conditions and diseases associated with a lack of quality care at birth or skilled care and treatment immediately after birth and in the first days of life (5).

Some European countries have a shortage of human resources (9). In low and middle income countries has numerous bottlenecks in the implementation of NICU services. For example in Pakistan it is reported that there are inadequate infrastructure, a shortage of health workforce, an insufficient budget, and a lack of an appropriate payment mechanism (7) . Furthermore**,** most neonatal death in sub-Saharan Africa and the Asian region were preventable and treatable by simple intervention with NICU implementation (3). The proportion of neonatal deaths is unacceptably high, which results from easily preventable and treatable origins from quality service of NICU (10,11).

In Ethiopia there is some improvement in the reduction of neonatal mortality since the 1970s. According to EDHS 2019 report, neonatal death has shown an increment from 29 death per 1000 live birth in 2016 to 30 deaths per 1000 live birth in 2019(12). Furthermore, the recent HSTP II implies **33** deaths per 1000 live births. Currently, the risk of death among Ethiopian children throughout their first five years of life accounts 55.9% of the risk of mortality during the newborn period (13) (14). In Ethiopia neonatal mortality declined from 39 deaths per 1,000 live births in 2005 to 29 deaths per 1,000 live births in 2016 before increasing to 33 deaths per 1,000 births in 2019 (13) (14)**.** This increment is the predictor of some gaps in NICU service provision and the quality of care that gives to newborn babies (15). Similarly, Oromia has the 4th rank of the 9 regions and two town administrations with

neonatal mortality by 2019 from Ethiopia, Benishangul Gumuz, Somali, Amhara, and Oromia (55, 45, 44, and 39 deaths per 1000 live birth) (13) (14).

However, the challenges in NICU service provision include; insufficient budget, lack of adequate rooms for service delivery, shortage of skilled health care providers, lack of medical equipment and supplies, inappropriate referral linkage between health facilities (4, 5,6,11,15). However, the implementation status of NICU services at Fitche General Hospital is unknown.

1.3. Significance of the evaluation

This evaluation's findings help the managers in determining if they are on track to meet their objectives and goals.

To determine whether the allotted resources are generating the anticipated results,

A tool helps the studied facility make strategic decisions.

The findings will also helpful for HSPs to know gaps on patient caring practice and improve it according to standard guideline as well as contribute to improve clients care.

It also aids NICU service stakeholders in determining if they are satisfying the demands of service users.

For patients it will contribute for receiving quality NICU service.

It will be used as a baseline for future studies.

CHAPTER TWO: PROGRAM DESCRIPTION

2.1. Program stakeholders

Program stakeholders can be categorized as policymakers, program implementers, non-governmental organizations, and users. They are those Persons and organizations who participated in the program directly or indirectly and have an interest in the program to be evaluated and/or are interested in evaluation findings. The identification criteria of the stakeholders depend on their roles in the program implementation and program evaluation; stakeholders who have participated in the program operation (Fitche general Hospital), stakeholders who are served from the program or affected by the program (admitted neonates/Parents of admitted neonates in NICU department) and stakeholders who are intended users of the evaluation result (Fitche general Hospital, ORHB, NSHD).

The level of importance of the SHs was classified depending on their role on decision making and resource allocation; the level of importance is said to be “high” when person or group’s participation in decision making is high. When person or group’s participation in decision-making is minimal, the level of importance is said to be “medium”. When person or group’s participation in decision making is low, the level of importance is said to be “low”.

The stakeholders were identified during the Evaluability Assessment (EA) and provided information about the implementation of the NICU service. We communicated at the beginning with Fitche General Hospital, including the Chief Executive Officer and NICU head nurse, to deal with them, identify the others, and meet together and deal with all SHs about the NICU service implementation evaluation. Contact the regional health bureau by phone and email.

Table 1 Fitche General Hospital NICU Stakeholder Identification and Analysis Matrix, 2021

Stakeholder	**Role in the program**	**Interest/perspective on evaluation**	**Role in the evaluation**	**Communication/engagement strategy**	**Level of importance**
ORHB	Planning & designing the program, Requiring human resource, Provision of resources (supplies medical equipment, medical supplies and materials, Capacity building (upgrading educational level, on job training for HSP)) Facilitate clinical mentoring Integrated Supportive supervision Biannual review meeting	Primary users of evaluation result Use evaluation result for: Planning, support the service, Ensure accountability, Decision Making & Program improvement, To introduce change or develop future strategies and/or design new program.	Facilitate evaluation developing evaluation questions developing indicators	Email, phone	Medium
Fitche General Hospital	Planning and implementation of service provision Coordinate the service provision	Use the findings for: For improvement & sustainability of overall service provision by feeling gaps which observed in	Source of information, Facilitate the evaluation developing evaluation questions	Telephone Face to face, Official letter	High

	Budget allocation for materials, supplies and off duty hours work payment -Strengthen ISS Strengthen referral linkage & mentor with other health facilities	evaluation Decision making, Ensure quality of service, Ensure accountability and Use as base line data for the next evaluation	developing indicators, developing relevance matrix, Setting Judgment parameter		
Beneficiaries/service users	Proper utilization of provided service	Want to improved/quality service Confirm sustainability of the program	Data source	Face to face, Phone	Low
ZHD	Assembling the report and give/feed back Conduct Review meeting combine with other programs	Use evaluation result: For ensure accountability For program improvement & quality of service provision Identifying the gap/s and take action for service provision	Primary users of evaluation result Source of information developing evaluation questions developing indicators, Setting Judgment parameter	Face-to-face Formal letter, phone & telegram	High

2.2. Program Goal and objectives

2.2.1. Program Goal:

To reduce neonatal mortality by improved integration of management of neonatal health problems and strengthen referral linkage (5,7,13) (14).

2.2.2. Program objectives

General objective

To reduce Neonatal Mortality rate less than 11 per 1000 by 2030 (13)(14).

Specific objectives

- ✧ To increase the service provision for admission with all cases (Diagnosed) of NICU from 75% in 2020 to 95% in the year 2021 in Fitche General Hospital.
- ✧ To decrease unwanted referral cases from 17% in 2020 to 13% by the end of 2021.
- ✧ To increase the periodic Monitoring & clinical mentoring of catchment Health facilities from 33% in 2020 to 100% by the end of 2021
- ✧ Improve and enhance referral linkage between Fitche General Hospital and other health facilities in 2021 rather than 2020.
- ✧ To increase the quality of produced data and data utilization for appropriate decision-making every month in the 2021 year

2.3. Major strategies

- ✧ he expansion of NICU service provision in the continuum of care in all Hospitals for better outcomes for newborn health will take place through a collaborative activity (11). The implementation strategies will be
- ✧ Provision of adequate space/rooms for the delivery of NICU services
- ✧ Providing care and treatment services to admitted neonates in the NICU
- ✧ Allocation of continuous essential resources for NICU service implementation
- ✧ Strengthen the capacity of HSP.
- ✧ Ensure the quality-of-service delivery at Fitche General Hospital
- ✧ Strengthen the interaction between health facilities (referral linkage, clinical mentoring, and SS

2.4. Program components of NICU

Program Resources

Program Resources

Inputs used for the NICU program implementation include clean water sources, sources of power, NICU rooms, financial resources, trained healthcare providers, trained waste handlers, essential drugs, laboratory reagents, medical equipment and supplies, and logistics (guidelines, manuals, registration books, charts, different formats, and so on).

As mentioned above, it has been years since NICUs were established at Fitche hospital and it has expanded to all levels of hospitals in the country. However, merely preparing and establishing the NICU will not lead to a meaningful change. It is vital to ensure the existence of the essential

services by clearly indicating the standards of services that should be available in the unit to enable them to implement the NICU department accordingly.

Program Activities

Counseling and health information dissemination for the parents and families of the neonates who have been admitted to the NICU

Admit the neonates based on admission criteria, investigate their problems with history taking, physical examination, laboratory and/or imaging request and investigation, and diagnose the problems.

Give proper and continuous holistic nursing care and medical treatment

Facilitate appropriate referral linkage according to the guideline, recording all activities that have been done, and writing the report depending on their types and time.

Program Outputs

The expected output of this intervention will be the Session counseling & HID conducted, the number of parents who got & counseled, the number of parents who accept the service & utilized it, the number of neonates diagnosed with their disease, treated & provided proper nursing care, number of referral & discharged patient, number of patients who got appointment & follow-up, as well as the number of patients, who has to accept and adhere in the provided service, number of completed Charts, patient cards, Registration books, produced reports (in terms of their number, type & Session:- Monthly performance/activity report, Medical supplies used by

Requesting and Reporting Format/RRF) and inventory report completed & timely, report sent to the responsible bodies.

Program outcome

The expected outcome of this intervention will be to:

Improve knowledge, attitude and practice of HSPs

Increase parents' awareness and improve service utilization

Generate quality data.

Maintain data quality and use the produced data for appropriate decision-making. Improve the quality of services.

Improve the health status of admitted neonates.

Increase level of clients' satisfaction

Program impact: The impact of the program is reducing neonatal and child morbidity and mortality.

2.5. NICU Program Logic Mod

***Statement of the problem**: In Ethiopia NMR indicate an increment from 2016, 29 per 1000 live birth to 33 per1000 live birth in 2020 and about 55.9% of under 5 deaths within 28 days of life*

Goal: To reduce neonatal and child mortality

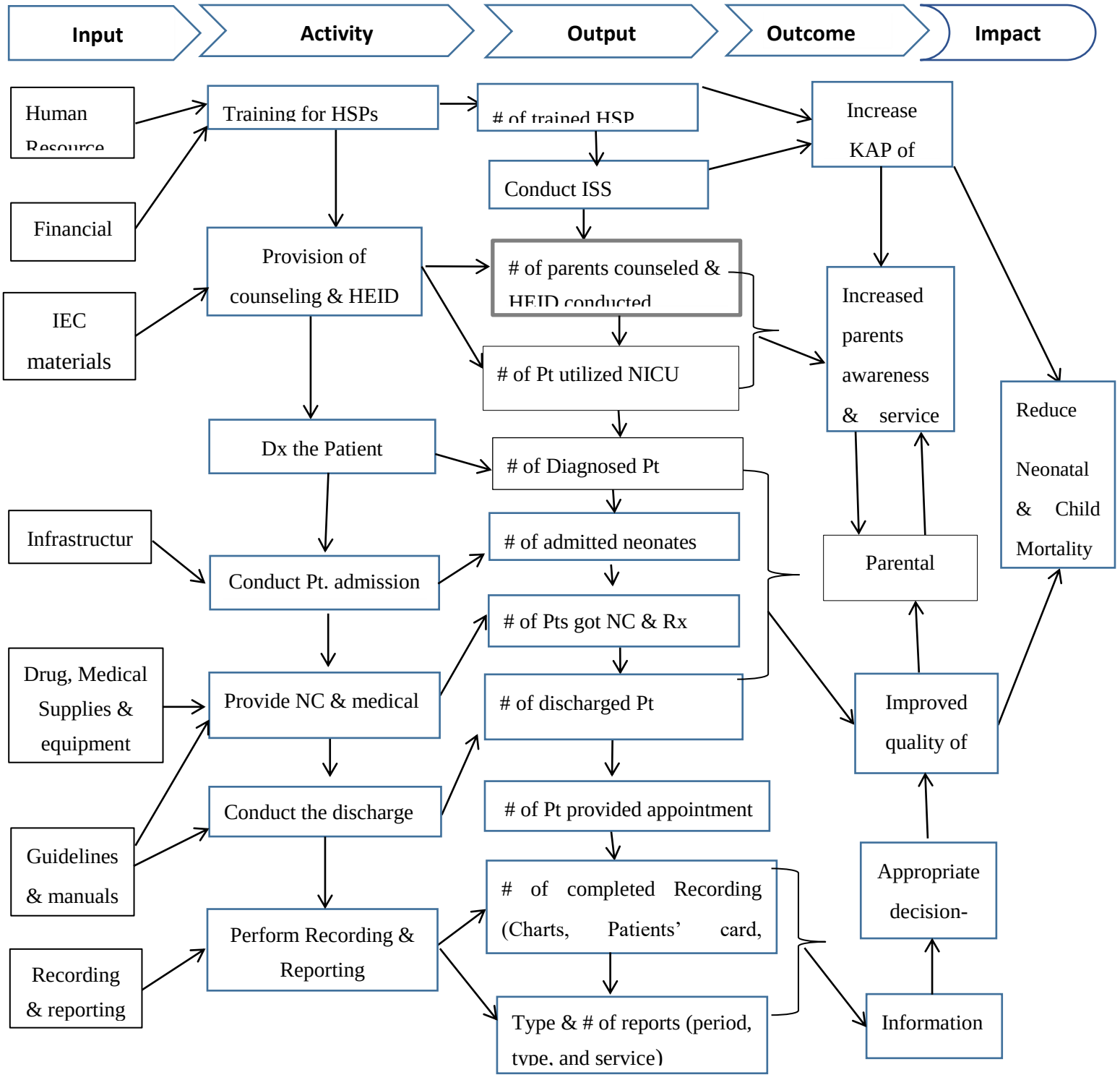

Figure 1 Logic model of NICU service implementation of Fitche general Hospital by 2021

2.6. Stages of Program Development

The NICU service provision in Ethiopia was launched in Yekatit 12 memorial Hospital (17). In 1998, the year of NICU service was started with Voluntary Service Organization (VSO) through invitation by the education sector of Ethiopia. The success of the Yirgalem NICU inspired plans to open a second NICU in Hossana with volunteer technical assistance. A few months later, Arba Minch Hospital received two more VSO volunteers who helped open the third NICU (4). The Pediatric Society (EPS) piloted the newborn corner in 100 health facilities (50 health centers and 50 Hospitals) in the country (18).

Ethiopia has made impressive progress to minimize neonatal death through achieving many of the national and global health indicators including NCM collaborated with partners and communities because of strong leadership of the Federal Ministry of Health (FMOH) by achieving MDG 4 target in 2012 for the first time to reducing U5 MR by 2/3 from its 1990. One of the components contributing factors to the reduction of NCM was the launching of NICUs in 2012 at the national and regional levels. Even though Child Survival Strategy (2005 – 2015) FMOH boringly recognizes that the under-five and neonatal mortality rates of 64 and 29 per 1,000 live births, respectively unacceptably high (19). Knowing of this Ethiopia has envisioned ending all preventable newborn and child deaths by 2035; NMR less than 11/1000 live birth and U5MR 20/1000 live births respectively. Health Sector Development Plans (HSDPs) FMOH would work with Regional Health Bureaus (RHBs) including launching and establishing NICU service previsions (1,5). Therefore, there are indications that some improvements are being made, including access to essential preventive and primary maternal and child health care services. Although neonatal health care services have been less consolidate in the past, systematic efforts have recently gained traction. Standard of neonatal health care at all levels is

now almost in process, preparedness, and readiness of the formal health care system have been in progress. In addition, Ethiopia implements different activities used to prevent neonatal death; such as establishing newborn corners and NICU in primary care units and Hospitals respectively (5). The massive health sector training of the various cadres, infrastructure and systems strengthening in the recent years are expected to contributing toward the significant new born health quality improvement (11). The NICU service provision has improved but it was not met the nationally expected goal sometimes the reduction of NMR is varying time to time (17).

The functional capabilities of facilities that provide inpatient care for newborn infants should be classified uniformly, as follows:

Level I (basic): a hospital NICU organized with personnel and equipment provide care for infants born at 35 to 37 weeks' gestation who remain physiologically stable, and stabilize newborn infants born at less than 35 weeks' gestational age.

Level II (specialty): a hospital special care nursery organized with the personnel and equipment to provide care to infants born at more than 32 weeks' gestation and weighing more than 1500gm who have physiologic immaturity.

Level III (subspecialty**)**: a hospital NICU organized with personnel and equipment to provide continuous life support and comprehensive care for extremely high-risk newborn infants (2,8). In the similar manner Fitche General Hospital (FGH) was established NICU service (Level II (specialty)) in the past 3 years ago, so, it has ready to formative evaluation.

CHAPTER THREE: LITERATURE REVIEW

3.1. Over View of Neonatal Intensive Care Unit Service

Ethiopia has achieved the reduction of neonatal mortality by focusing on the provision of care and treatment in health facilities (11). The Ethiopian government renewed its commitment by developing Minimum Care Packages for optimizing newborn care and saving little lives, with the goal of reducing under-five mortality from 59/1000 LB to 44/1000 LB, infant mortality from 47/1000 LB to 36/1000 LB, and neonatal mortality rates from 33/1000 LB to 21/1000 LB in 2024/2025. The ministry recognizes and believes that, along with strengthening the community-based newborn care strategic initiatives, these ambitious HSTP II targets will be achieved through strengthening the provision of quality care at labor and delivery, NICU and KMC at hospitals through continuous quality improvement; equipping facilities with motivated, competent, and compassionate (MCC) trained providers, medical equipment, drugs, and supplies (2).

According to the NICU implementation guideline for minimum requirements by Special Care Newborn Units (Level II) in the Ethiopian setup, the unit should have the required number of appropriately trained and qualified nurses. There should be a designated consultant pediatrician responsible for the clinical standards of the care of newborn babies. Dedicated support staff should be there to clean the nursery at least once every shift and more often, depending on the need. In addition Laboratory service should include all services that are provided by the general Hospital laboratory (11). However, as a first step, FMoH and other partners began establishing NICUs in selected federal level and university teaching hospitals. Because of the beneficial

outcome of the assessment, the program was expanded in the remaining referral and regional hospitals after it was evaluated in this hospital. This provision of neonatal care service implementation is described through the establishment of the service provision (1,2).

The implementation status of the NCU program can be evaluated depending on the structure (the availability of resources; (human resources, infrastructures, essential drugs and supplies, medical equipment, laboratory and imaging examinations, and logistics), the process of the implementation (the action of services provision), and acceptability of the desired outcome results of the program as expressed by parents' internal feeling on the implementation of the provided services (satisfaction) (20).

Availability/structural assessment

According to the study carried out in Midwestern United a Level III Neonatal Intensive Care Unit (NICU), nurses may be staffed with two or more staff members assisting one infant. However, a nurse may be able to manage numerous newborns simultaneously if they are stable and/or close to being discharged (15). A study conducted in some European countries shows a shortage of NICU nurses (9). The American Academy of Pediatrics, which developed the British staffing recommendations, suggests a nurse-to-patient ratio of more than one nurse per baby for the sickest infants and one nurse for every three to four infants for the least-risky infants (21). The study conducted in India shows that the NICU nurse-patient ratio was 1:3 (22). The study conducted in Debre Birhan referral hospital shows that, the ratio of nurses to the patient in the NICU was found to be up to 1:10, some of the basic equipment (65.2%), laboratory investigations (81%) were done and about (72.2%) medicine were available in the NICU ward as per the national (23).

The review of a survey on the quality of neonatal resuscitation in Ethiopia implies that the availability of priority medical equipment next to trained HSP with attentive care and follow-up has a major role in saving the lives of admitted newborns (24).

The availability of all laboratory services and the availability of all the necessary drugs in the pharmacy was 52% and 48%(25)**.**

Process assessment/Compliance;

It provides a plan for continuous implementation of the program and quality improvement by setting aims and building teams to achieve desired outcomes through the use of change packages (individual, multi-faceted, or complex interventions, depending on the context and needs), capacity-building, and other strategies to maximize the chances for sustainable implementation (7). The NICU is a place that is composed of different activities for sick babies who have been admitted to the NICU ward; History taking, physical examination of the baby, measuring the V/S. The NICU is a place, which used to preventing the newborn from hypothermia, hospital-acquired infection by using appropriate medical equipment and supplies, conducting different procedures as per the standard guidelines, ordering laboratory tests and/or radiography or ultrasound investigations. Additionally a managing the problems accordingly depending on their result of investigation through performing care and treatment with sterile and/ or clean procedures, nursing care, medical treatment, continuous monitoring during the time of hospital stay, giving appointments and follow up after discharge, facilitating the referral linkage, recording, and reporting. The prerequisites for performing a physical examination, nursing care, and medical treatment (protecting patients from harm and providing compassionate and respectful care), and linked with vaccination services, etc. moreover the interaction between HSP

and parents, as well as information dissemination, and communication between them, should be well-designed. The reason is that the provider should have to explain to the parents of the patients the purpose and the process of examinations as well as the services (1,7,11). According to WHO standards indicated the standard of maternal and newborn care in health facilities; Effective communication is a vital part of the expertise of care received by the patient and their family (7). The patient and/or their parent ought to receive all information regarding their care and treatment concerned altogether selections taken concerning their treatment. Effective communication between the health service provider and therefore the patient will scale back unessential anxiety and create giving birth positive expertise for the women. additionally, the privacy and confidentiality of all patients and their parent ought to be revered the least bit times, and any quiet pattern, like verbal abuse, discrimination, neglect, or denial of services, ought to be avoided (7).

HSPs should have washed their hands before and after conduct any procedure (26,27). According to the results of a study conducted at St. Paul Millennium Teaching Hospital, HSP who practiced hand washing procedures before touching the patient, after touching the patient, and always washing their hands were 60.5%, 78.9%, and 48.5%, respectively (28). The study conducted in Ghana indicated there was a problem in all referred facilities and units, especially regarding maintenance of the warm chain during transport (18).

Acceptability/Satisfaction

A Norwegian study shows that, 53.5% and 20.5% parents were dissatisfied with waiting time for card and test results, however, 76% parents were satisfied with the overall newborn intensive care units service provision (29). A study done in Debre Birehan implies that, the overall

parental satisfaction score with services given in the NICU ward was 77%(23). The study conducted towards neonatal intensive care unit services at the University of Gondar Comprehensive Specialized Hospital, the overall parental satisfaction with neonatal care services 50% (25).

The study conducted in USA shows that parental satisfaction affected by missing nursing care (10). The study done in Norway indicated that parental age and education level were affected by parental satisfaction (29). The study done at Debre Birehan referral hospital revealed that explaining procedures and medications, is associated with maternal satisfaction with services provided in the NICU department (23). The study conducted at Bahir Dar public hospitals implies that sex of parents, history of readmission, and parental involvement in decision-making were factors associated with parental satisfaction (30).

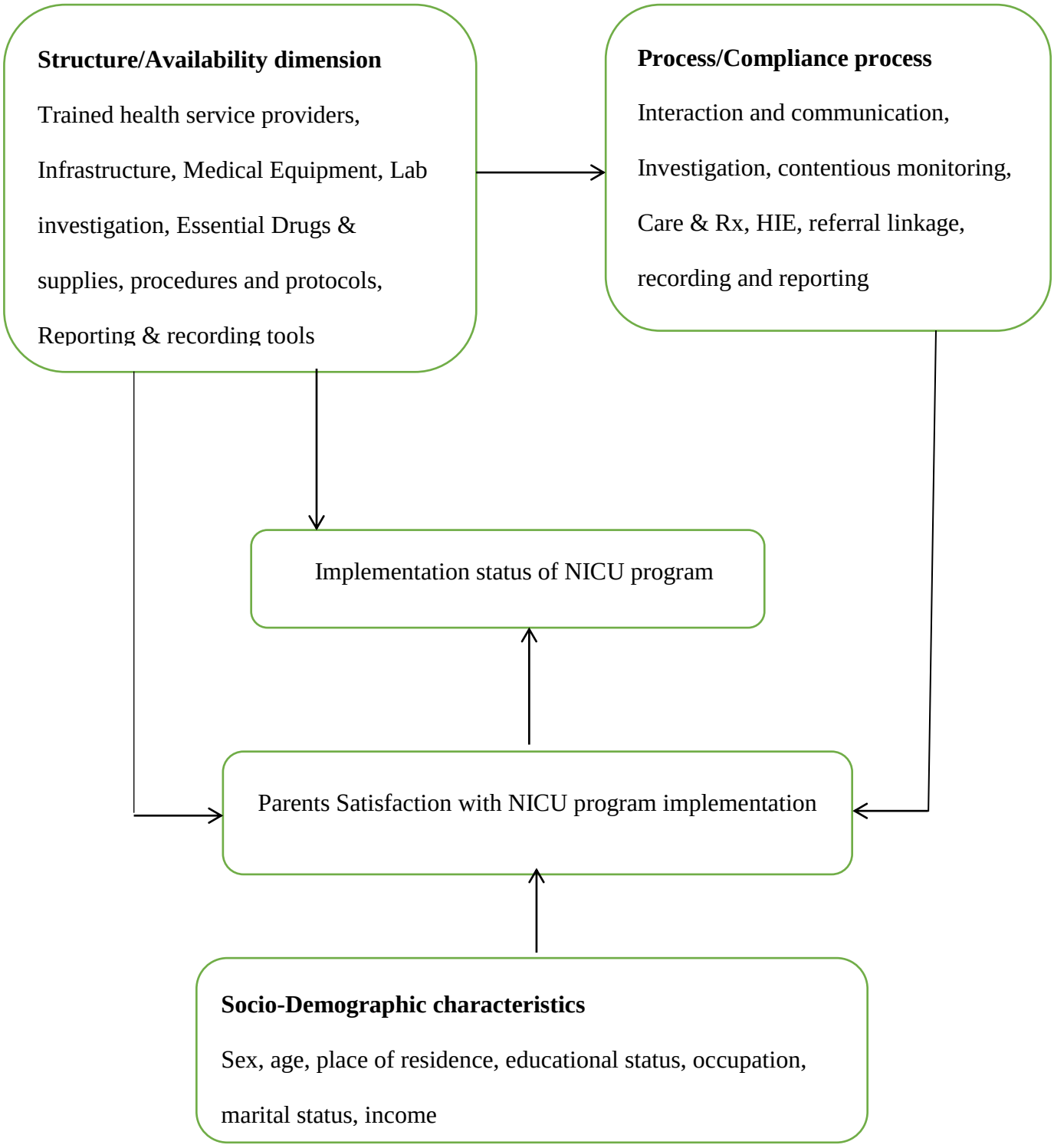

Figure 2 Conceptual framework of NICU service implementation of Fitche general Hospital by 2021

This Conceptual frame work is developed from different literature (4,6,9,18,30,31).

CHAPTER FOUR: EVALUATION QUESTIONS AND OBJECTIVES

4.1. Evaluation questions

- ✧ Are the required resources to carry out the NICU service available in Fitche General Hospital
    - If yes how? If not, why?
- ✧ Are the NICU services implemented according to the standard guidelines at Fitche General Hospital?
    - If yes how? If not, why?
- ✧ Are the parents satisfied with NICU services at Fitche General Hospital?
    - If yes, how If not, why?
- ✧ What are the factors associated with parents' satisfaction towards NICU service in Fitche general Hospital?

4.2. Evaluation objectives

General objective

To evaluate the implementation statuses of NICU services and identify the determinant of implementation in Fitche General Hospital, North Shoa, Oromia, 2021.

Specific objectives

- ✧ To evaluate availability of resources required to provide NICU service in Fitche General Hospital, North Shoa, Oromia, 2021.
- ✧ To evaluate compliance of implementation of service provision with the standard national guideline in Fitche General Hospital, North Shoa, Oromia 2021.

- ✧ To assess parent's satisfaction with the implementation of NICU service provision in Fitche General Hospital, North Shoa, Oromia 2021.
- ✧ To determine factors associated with parents' satisfaction on NICU service provision in Fitche General Hospital, North Shoa, Oromia, 2021.

CHAPTER FIVE: EVALUATION METHODS

5.1. Study area

The study was conducted at NICU in Fitche General Hospital, which is found in Fitche Town, North Shoa Zone, and Oromia Region. Fitche is major town of North Shoa Zone and 114 KM far from Addis Ababa to North. Fiche has a latitude and longitude of 9°48′N 38°44′E and an elevation between 2,738 and 2,782 meters above sea level. It is located with Girar Jarso Districts in all directions, the surface area of Fitche town is 3225 hectare Based on the 2007 national census conducted by the Central Statistical Agency of Ethiopia Fitche General Hospital is the one from two general Hospitals in the Zone followed by Kuyu General Hospital and three primary Hospitals giving the service for North Shoa Zone community. The catchment population of Fitche General Hospital is 1,690,403, of this 50.07% were male and 49.03% were female. The Hospital serves 10 districts as catchment of 13 districts and one town administration in the Zone. Fitche General Hospital was established in 1993 E.C. and it has 27 departments; the Hospital has 123 beds and 166 HSP with different professionals as well as 139 supportive staff. The NICU service delivery in Fitche Hospital was established since February, 2018. The neonatal ward is reported to be able to accommodate as many as 14 patients. Average count is 500-600 annual admissions. Above 85 % of admissions are from health centers and other Hospitals in the zone. The NICU service at Fitche general Hospital is covered by one pediatrician, one general practitioner, and 7 nurses, of this 2 being NICU nurse. Currently, the unit is one of the NICUs in the country (32).

5.2. Evaluation period

The evaluabilIty assessment was done from January 11-17, 2021 and an evaluation was conducted from July to September 2021.

5.3. Evaluation Approach

Formative evaluation approaches was used because it focuses on Program improvement or strengthen **the implementation of a program** by assessing program components (inputs, activities, outputs, as well as immediate outcome/parental satisfaction on NICU implementation status.

5.4. Study design

Facility based single case study design using both quantitative and qualitative data collection method was conducted to evaluate NICU program implementation. It helps to get rich information because this design used for deep understanding of detailed explanation of context of the service through gathering the data multi directionally to answer why and how evaluation questions (33).

5.5. Focus of evaluation and dimension

5.5.1. Focus of evaluation

The focus of evaluation on the process of NICU program in which it provides information about the resource to be used; activities to be accomplished and expected output and also considers immediate outcome like satisfaction in NICU program implementation.

5.5.2. Evaluation dimension

- ✧ Availability of NICU Program resources
- ✧ Compliance with NICU program national guideline
- ✧ Satisfaction of parents toward NICU program

In this evaluation the structure was assessed with the availability dimension, process by compliance dimension and the immediate outcome of the service with satisfaction. The availability dimension was used to evaluate availability of the important resources which used to implement NICU service in the study setting. It includes trained human resources, infrastructure, essential medical equipment and supplies, essential drugs, laboratory tests and logistics. The compliance dimension was used to assess the provided services met with preset standard of the national guideline. It was assessed with program document review and direct observation of the interaction between client-HSP-Parents as well as health facility compliance with standard guideline in delivering NICU services. This evaluation looks for perceived satisfaction of Parents of the admitted neonate on the availability of resources and services, the interaction between care providers-patient and parent as well as provided services, it also used to identify opportunities for service improvement.

5.6 Indicators and variables

5.6.1. Indicators

Indicator's development

Indicators were adapted from different national and international guide lines and literatures (5,16,22,34,35). Then after key stakeholders were negotiated on listed indicators, ORHB child

health coordinator, CEO of FGH, NICU department head, NICU staffs and zonal HDMCH coordinator made their prioritizing and weighing.

Availability indicators

Twelve indicators measured availability of resources for NICU service implementation as follows:

- ✧ Number of trained health service provider available in NICU department
- ✧ Number of required rooms available in the NICU department
- ✧ Number of required beds available in NICU rooms
- ✧ Availability source of electric power in NICU department
- ✧ Availability of tap water supply in NICU department
- ✧ Proportion of essential medical equipment available in NICU department
- ✧ Proportion of laboratory tests available for admitted neonates without interruption for the past 6 consecutive months in NICU department
- ✧ Proportion of essential drugs with no stock out for the past 6 consecutive months in NICU department
- ✧ Number of guide lines placed in NICU department
- ✧ Number of NICU registration books avail in NICU department
- ✧ Number of IEC materials available in NICU department
- ✧ Number of recording and reporting format in the department

Compliance indicators

Thirteen indicators measured compliance with regard NICU program guideline

- ✧ Proportion of patients communicating by easily understood language

- ✧ Proportion of patients for whom V/S was measured and recorded
- ✧ Proportion of patients who were weighed and recorded their body weight
- ✧ Number of parents who received counseling
- ✧ Proportion of patients who received their care and treatment following the WHO hand washing event
- ✧ Proportion of patients whose essential nursing care was documented on their card
- ✧ Proportion of patient their identification information recorded on the admission discharge register
- ✧ Proportion of patients whose admission diagnosis was documented on the admission discharge register
- ✧ Proportion of patient their discharge status was recorded on the admission discharge registration book in NICU
- ✧ Proportion of patients who got appointments for follow up within 7 days of discharge
- ✧ Proportion of completed reports submitted to HMIS department
- ✧ Proportion of timeline reports submitted to HMIS department
- ✧ Number of integrated supportive supervision received by NICU

Satisfaction indicators

There are 12 indicators will measure satisfaction of parents' with regard to NICU program.

- ✧ Proportion of parents satisfied with adequacy of bed in NICU department
- ✧ Proportion of parents satisfied with cleanness of bed in NICU department
- ✧ Proportion of parents satisfied with Cleanliness of the service room in NICU department
- ✧ Proportion of parents satisfied with adequate ventilation in NICU department.

- ✧ Proportion of parents satisfied with the clear information given by the NICU department
- ✧ Proportion of parents satisfied with the consent and permission before some procedures in NICU department
- ✧ Proportion of parents satisfied with availability of ordered laboratory test in the Hospital
- ✧ Proportion of parents satisfied with availability of ordered medication in the hospital
- ✧ Proportion of parents satisfied with availability of HSPs in the NICU
- ✧ Proportion of parents satisfied with their neonate's get care and Rx in NICU
- ✧ Proportion of parents satisfied with consequence of treatments
- ✧ Proportion of parents satisfied with the cleanness of shower and toilet

5.6.2. Variables

Dependent variable

Parental satisfaction

Independent variables

Socio-Demographic characteristics:

Sex of the parents, age of the parents, place of residence, educational status, occupation, marital status, income

5.7. Population and sampling

5.7.1. Source population

Quantitative

- ✧ All Parents whose neonates were admitted in NICU at Fitche General Hospital,
- ✧ All NICU service-related documents
- ✧ All health service providers

Qualitative

- ✧ All key informants (health service provider who were working in NICU, Fitche general Hospital CEO, Child Health Coordinator of NShHD. and ORHB Child health coordinator) at Fitche general Hospital.

5.7.2. Study population

Quantitative

Parents with admitted neonates in NICU Department during data collection period,

NICU service-related documents and Neonates who were admitted in NICU ward

Qualitative

Selected health service provider who had working in NICU department including NICU department head, NICU staff nurse/physician, Hospital CEO, Pharmacy department head, Child Health Coordinator of North Shoa Health Department and ORHB Child health coordinator

5.7.3. Study unit and unit of analysis

Study Units: - admitted neonates in NICU, Parents of admitted neonates in NICU Department, all KI and NICU related documents.

Unit of analysis: - Parents of admitted neonates in NICU Department, health service provider who have work in NICU department (NICU department head, nurse/physician), CEO, pharmacy head, laboratory head, ZHD child health focal person, ORHB child health focal person, are primary unit of analysis.

Fitche General Hospital is final unit of analysis

5.7.4. Sample size determination

Sample size for exit interview

The sample size determined by using single population proportion formula, with a 95% confidence interval, 5% degree of freedom and by considering P = (0.77). Since there was a study done on NICU at Debre Birhan referral Hospital and the overall service delivery, the satisfaction of parents was 77% (23). So, P = 0.77 was taken to calculate the parent's satisfaction Prevalence (P) level of satisfaction 0.77 standard normal distribution value at 95% confidence level of $Z\alpha/2$ = 1.96 and margin of error (d) = 5%.

$$n = \frac{Z\alpha/2^2 * p(1-p)}{d^2}$$

Assumptions

n= Sample size estimation of single population proportion

α= critical value at 95% CI (1.96)

P= Percentage of patients satisfied with NICU services at previous study (77%)

d = Marginal error/Degree of precision= 5% (0.05)

N = the average numbers of patient flow to Fitche General Hospital within two consecutive quarters were 155.

N_f = the final sample size,

Sample size n calculated was = $\frac{(1.96)^2 * 0.77(1-0.77)}{0.05^2}$

$$n = \frac{3.8416 * 0.77(1-0.77)}{0.0025} = \frac{3.8416 * 0.1771}{0.0025} = \frac{0.6804}{0.0025} = \underline{272}$$

Then, two quarters data on NICU service users in Fitche General Hospital was indicated that in average 155 neonates use NICU services. Since the source population is less than 10,000, we have adjusted our sample size by using a population correction formula. Then after, we get our n and also determine our N final

Therefore

$$N_f = \frac{n}{1+n/N} = \frac{272}{1+272/155} = \frac{272}{1+1.75} = \frac{272}{275} = 98.9 \sim \underline{99}$$

Then: N_f is equal 99, assume 5% no respondent rate which is equal to 5, and the end sample size for exit interview is 104.

Sample size determination for direct observation: there were a total of five sessions and 20 observations of health service provider-patient-parents' interactions five session (4 observations per session) (36). It recommends 3-5 observations per session.

Document review: there were Six months of NICU registers and reports from January 28 to June, 27, 2021 were reviewed due to scarcity of resource.

Resource Inventory: A resource inventory was conducted for HR, infrastructure, medical equipment and supplies, imaging and laboratory service as well as logistic**.**

Key informant interview:- we have seven selected key informants: the heads of the NICU, laboratory, and pharmacy departments, the CEO of FGH, the ZHD MCH coordinator, and the Oromia regional health bureau child health coordinator (who have rich information about the NICU as well as a minimum of six-month work experience in the NICU were purposively selected by nomination).

5.7.5. Sampling procedures/techniques

Quantitative data assessed for parental satisfaction by exit interview, resource inventory, document review, and direct observation. Data collectors collected the exit interview, resource inventory, and document review. The principal investigator conducted the direct observation (interaction between HSP-patient and parents) and KII. The qualitative approach entails conducting key informant interviews to investigate possible explanations for the provided service and triangulating with quantitative data. Informed consent conducted prior to data collection (for all type of data collection methods).

Exit interviews

We employed a convenient sampling technique. Parents whose neonates admitted to the NICU interviewed successively during all working a daytime. In this way, the calculated samples achieved within the time boundary. Parents exit interviews at discharge from the NICU ward. It conducted after each participant discharge from the NICU while they exit from service. Separate place was set for interview to protect the privacy of the client. Using structured questionnaires following the consecutive sampling procedure during the study period (July to September 2021).

Document review

All the past two-quarter NICU related documents were reviewed by using a document review checklist adapted from NICU registers, guidelines and national HMIS report format from January to June, 2021.

Resources Availability

The availability of resources and their condition of use in the NICU was counted by the data collector with the NICU department head.

Observation

Observation conducted while the health service provider provided care and treatment for the patient. The time of observation was during the daytime and working hours and conducted by the principal investigator. None participatory direct-observation was conducted by the principal evaluator, to evaluate the interaction between HSP-Patient-Parents in relation to standard guidelines. It conducted while HSP assessed the patient and provided nursing care and treatment. The participants selected continuously for each observation, in every observation session, the

observer keep the distance to the observation site, and removed the first three and the last three observations to minimize hawthorn effect.

Key Informant Interview

The key informants selected with a purposively sampling technique. The selection criterion was Key Informants who have at list 6 month working experience as well as the reach and depth information about the NICU service they have. The purpose of conducting KII with the NICU stakeholder is to gain detailed information about service provision. The KIs are heads of the NICU, laboratory, and pharmacy departments, the CEO of FGH, the ZHD MCH coordinator, and the Oromia Regional Health Bureau Child Health coordinator to gather information on program management, challenges facing the delivery of services, and potential solutions. The key topics discussed include NICU program implementation difficulties, resource allocation and management systems, and the SH perspective. The principal evaluator was captured the audio and filed note. It conducted at the end of the other data collection for the purpose of to get information on the gap that identified.

5.7.6. Inclusion and Exclusion

All parents and their admitted neonates were included. However, A parent who had been interviewed at discharge and admitted for the second time, Parents whose admitted neonate's treatment outcome was death, Parents who have difficulty speaking or who are very seriously ill, as well as parents who have admitted their neonate and stayed less than 72 hours in the NICU department, were excluded.

Document review

All NICU program related documents (such as admission discharge registration book, Pt. card) during data collection period were included but otherwise not included.

Observation:

All neonates who were admitted in NICU and they had never observed and were selected in observation sessions during the data collection period were included. However, neonates who had not selected in observation sessions during the data collection period excluded.

Key informant interview

All key informants who were identified by the nomination of NICU implementer and other stakeholders who have more than six month working experience and have deep information about the NICU program were included and Key informants who have not willing to provide information for the data collector during the data collection period were excluded.

5.8. Data Collection

5.8.1. Development of Data Collection Tools

A structured, and semi-structured tool were developed by reviewing NICU national guidelines, national CRC training manual, SARA WHO 2013, WHO hand hygiene technical reference manual, hospital infection prevention and control guideline, UCLA. Using Key Informants Key Informants, Child Protection Rapid Assessment Tool. 2012).

Exit interviews

Exist interview questionnaire; structure questionnaire developed by referring different literatures and guidelines. The tool used to assess the perception and level of satisfaction of Parents on the provided NICU service implementation (11,22,23)(37). It was pretested in a

similar setting at Kuyu General Hospital with a 5% sample size to ensure their applicability in the local context. The reliability test Cornbrash's Alpha done by SPSS to be measuring the internal consistency between items and get result 0.785, in acceptable range. The English version of the questionnaire translated into the local language, which is Afaan Oromoo, and again translated back to English by experts who were fluent in both languages and clinicians to check its consistency.

Document Review templet:- structured checklist was developed by reviewing registration, patient charts, and national guidelines (1,11). The tool contains general information of the patient, admission discharge, care and treatment, appointment and follow-up.

Resources Availability checklist

we used structured resource inventory checklist adapted from SARA WHO 2013, national NICU guidelines (1,2,11,38). The tool was assessing the NICU service resources like; (HR, infrastructures, essential drugs and medical supplies, medical equipment and logistics, services (laboratory and imaging).

Observation checklist: the structured observation checklist was used to assess the compliance of HSP developed from national and international guidelines (1,2,16,26,27,39). It used to assess the compliance of the health service provider while delivering NICU services and resources were available.

Key Informant Interview: The semi-structured questionnaire was developed from different guidelines (2,11,40).

5.8.2. Data Collectors and Data Collection Field Work

There are four data collectors and one supervisor who have first-degree health professionals (NICU Nurses/BSC Nurses/BSC Midwives), who read and speak fluently with the local language and have experience in previous data collection were recruited from outside of the studied facility for the purpose of reducing bias and maximizing the quality of data. The principal evaluator is provided one day training for data collectors and the supervisor prior to data collection about objective of the evaluation, ethical issues while communicating with respondents, the way to using data collection instruments, and techniques of supervision.

The data collected through:

Resource inventory: The resource counted by using an inventory checklist, observation, and communication with the NICU department head, pharmacy department head, and laboratory department head.

An inventory of resources was conducted, and the listed resource standards were cross-checked against a developed checklist.

Direct observation: the observation was conducted during the admission of the neonate to NICU department, while providing services to the neonates and at the time of discharge. Principal evaluator was conduct direct observation after received consent from care givers and HSP.

Document review: the NICU registers patient cards and reports reviewed by data collectors from January 28-June 27, 2021.it was conducted with in data collection period (July to September 2021.

Exit interview: it was conducted after each neonate received NICU service in NICU department and exit.

5.9. Data management and analysis

5.9.1. Data quality management

Prior to data collecting training was given to the data collectors, and supervisor.

During data collection field questionnaire was checked for completeness and consistency of information by the supervisor on daily basis and typing error was manually edited. Supervision and technical support for data collectors was done. The collected data was carefully cleaned for consistency and completeness by the supervisors and rechecked by the principal investigator. For observation, removed the first three and the last three observations to minimize hawthorn effect.

5.9.2. Data Processing and Analysis

Quantitative data obtained from exit interviews was exported from Epi Data version 4.6.0.2 to SPSS version 26 software for analysis. It was rated by 13 items each having 5-points likert scale from strongly disagrees to strongly agree (1-5). For socio-demographic factors, descriptive analyses such as frequency, mean, and standard deviation were calculated. For a level of satisfaction from the 5-point Likert scale of 13 items using their mean score we dichotomized the level of satisfaction as satisfied and dissatisfied for individual components/items; individuals who scored above the mean value were categorized as satisfied and otherwise categorized as dissatisfied. To identify the overall satisfaction of parents for assessing the relationship between satisfaction and the dependent variable, use the demarcation threshold formula $(\text{total highst score} + \text{total lowest score} \div 2) + \text{total lowest score}$

$65 - 13 \div 2 + 13 = 39$ scoring above-cut point 39 as satisfied and below that as dissatisfied (41)**.**

Logistic regression analysis employed to show the relationship between independent variables for parental satisfaction on provided service. The desired outcome satisfied was labeled as dependent variable. Bivariate logistic regression and multiple logistic regression analysis was used to identify candidates for multiple analysis; the variable with a P-value<0.25 was subjected to multivariable analysis. Multiple logistic regression was conducted to identify significant association between independent variables satisfaction of parents with a p-value <0.05. The model fitness was checked using the Hosmer and Lemshow test, Whereas, qualitative data from the KI in-depth interview was analyzed and focused on the main thematic areas of availability and compliance by being recorded by audio supported by field notes, transcribed, translated, coded, categorized, and analyzed by the principal evaluator for thematic analysis. After data analysis, the results were triangulated with quantitative data. Finally, the quantitative data was presented by table and figure, whereas the qualitative data was described in narrative form using text.

5.10. Matrix of judgment and analysis

The matrix of judgment is a set of evaluation dimensions that are weighted based on their relevance to the program. Detailed indicators that are used to measure the performance of NICU services were listed and weighted in each dimension. Based on the evaluation parameters and criteria established with stakeholders, the cumulative weight acquired from each dimension of the evaluation was used to judge the program's performance.

The selection of indicators conducted by the combination of nominal and multi-vote with their value for each dimension depending on the needs of the stakeholders. The relevance to other literature and in relation to national guidelines, as well as the judging criteria for the

implementation of the NICU program was set on previous research findings and by analyzing the situation and understanding the program operation on the ground (the combination of empirical and rational approaches).

The parameters of the indicators with their evaluation dimensions scores proposed by stakeholders of the NICU program were set prior to the evaluation (during evaluability assessment) as follows: The average score of the three dimensions was set at greater than or equal to 85%, successfully implemented; 75-84.99%, partially implemented; 65-74.99%, fairly implemented; and less than 64.99%, not successfully implemented.

5.11. Ethical Consideration

Ethical approval was obtained from Jimma University, Institutional Review Board (IRB). A letter of permission was obtained from Jimma University Faculty of Public Health department of health policy and management (Ref. No.HPM490/13). The purpose of the study was explained to all study participants about the information needed and written informed consent was obtained to collect data and communicate the findings through publication. The responses of participants were confidential and anonymous. Separate place was set for interview to protect the privacy of the client. Because of COVID-19, each respondent gets a facemask from their interviewer, which they wear soon before the interview and keeps their distance during the interview.

5.12. Evaluation dissemination plan

After presentation and approval of the final evaluation findings by Jimma University, The result of the evaluation will be disseminated to the stakeholders primarily identified and engaged.

Ways of dissemination; it will be

- Presentation to Fitche general Hospital and its stakeholders
- Stakeholders will receive a written report of the findings.
- Publication of the evaluation findings for the public at national and international level.

CHAPTER SIX: RESULT

The implementation status of NICU service in Fitche hospital was assessed by three dimensions; availability of resources, the compliance of HSPs with the national guideline and parental satisfaction with the provided NICU service.

6.1. Availability of resources

The availability of resources has the main role in the implementation of the NICU service. The availability of resources in the NICU ward was assessed by twelve categories; inventory of human resources, rooms, beds, source of electric power, tap water supply, essential drugs & supplies, medical equipment, ordered laboratory tests, guide lines, registration books, IEC materials, recording and reporting formats as follows:

The finding of this study shows that among the recommended for NICU, only nine (33.3%) trained health service providers (TSPs) were found in the study setting. Of those, one (100%) pediatrician, 2 (33.3%) NICU specialty nurses, 1 (50%) general practitioner, and 5 (27.8%) staff nurses who have on-job training in NICU at all.

Table 2 Resources inventory judgment matrix for the implementation evaluation of NICU service in Fitche General Hospital by 2021

Availability of resources	Required (R)	Observed (O)	Agreed weight (AW)	Finding O*Aw/R	Achievement O*100/R	Judgement parameter
Proportion of THSPs in NICU	*27*	*9*	*22*	*7.3*	33.3	≥85%: Excellent
Number of NICU rooms	10	6	8.5	*5.1*	60	
Number of bed in NICU	24	14	6.5	*3.8*	58.3	
Proportion of source of electric	2	2	3	*3*	100	

power						75-84.99%: Very good 65-74.99%: Good **<65%: poor (need major improvement)**
Proportion of tap water supply in NICU	6	2	1	*0.33*	33.3	
Proportion of essential medical equipment available in NICU	90	48	20	*10. 7*	64.1	
Proportion of ordered laboratory tests available for admitted neonates	18	15	18	*15*	80.5	
Proportion of essential drugs & supplies available for NICU	13	8	14	*8.6*	61.5	
Number of guide lines placed in NICU	2	1	1	*0.5*	50	
Number of NICU registration books avail in NICU	2	2	2.25	*2.25*	100	
Number of IEC materials available in NICU	2	0	1.25	*0*	0	
Number of recording and reporting format placed in the NICU	14	14	2.5	*2.5*	100	
Over all availability of resources			100	59.1		

A mid 24-year-old female key informant said, "…*Oromia Regional Health Bureau was assigned few HSPs every year, but there are only a few trained health service providers in the department and a high turnover of them due to work overload as well as poor handling of health service providers by the hospital administration. e.g., off-duty payments is not paid on time.*

Regarding the NICU rooms, the ancillary areas, step-down area/recovery room, KMC room, toilet and bathroom for parents is not found. Water supply for hand washing was only 33.3%. However, the expected source of power existed without interruption: a backup generator and phone were discovered in the study setting (table 3)

The thirties year old KI *"…The rooms were not sufficient, because of the hospital was established before the implementation of NICU service in addition to this some of the rooms have not handwashing facilities due to absence of maintaining of sinks…"*

Concerning essential medical equipment over all 64.1% was available and functional for the past six months since the study period. The Sphygmomanometer (neonate, electronic), Autoclave/steam and Laundry washer are not avail at all according to the standard national NICU guideline (table 3).

A mid-twenty-year-old KI said that, *"The NICU department doesn't have an autoclave or steam sterilizer, but it uses sterilizers from the gynecology or pediatric departments; we ask many times the administrative bodies of the hospital but they not care about the provision of service, similarly about its quality as well."*

Concerning laboratory tests and imaging services, 80.6% were available. Blood film, ESR, reticulocyte count, blood group and Rh, blood chemistry, Gram stain, urine analysis, stool examination, and X-ray (imaging) services were available without interruption. Most (83.3%) of the CBC, blood morphology, serum electrolytes, and culture and sensitivity of any fluid were available. The VDRL, CSF, and ultrasound examinations were 50%, 50%, and 16.7% conducted with in the past 6 months respectively. In the study setting, bleeding time and coagulating time were not conducted at all during the data collection period *(table 3).*

Some essential drugs like Azithromycin, Cephalexin, Sulphamethoxazole +Trimthoprim has interruption from two to five months from pharmacy of the study setting. The overall availability of essential drugs and medical supplies was 61.5% in the hospital pharmacy of the study setting, as shown below in (table 3)

A 39-year-old key informant said, *"…* there is shortage of some drugs in *our hospital, but this problem is not only a problem in our setting but also country-wide and it is beyond our capacity…"*

Concerning the availability of logistics, all admission and discharge registration books, referral linkage registration books, charts, cards, sheets, posted criteria, and reporting formats have existed. However, IPC guidelines and IEC materials were not available at all in the study setting, as shown in table 3.

The overall availability of resources for NUCU service provision in the study setting is 64.6%; according to the preset judgment parameter, it is categorize as not successfully implemented, and it needs major improvement (table 3).

6.2. Compliance dimension

The compliance dimension was evaluated by observing the interaction between the patient-parent-HSP' using direct observation and document review.

Twenty client-HSPs interactions were observed. Twenty (100%) patients' vital signs measured and recorded on their charts. HSPs greeting and communicate by easily understanding language with 18 (90%) of parents. 15 (75%) of parents received counseling and information about their neonate, and none of the patients whose care and treatment procedures did not follow the WHO handwashing events (Table 4).

Table 3 Observation of client-HSPs interaction during implementation evaluation of NICU service at Fitche General Hospital by 2021

Indicators	Expected	Achieved	%

Proportion of patients communicating by easily	20	18	90
understood language Proportion of patients for whom V/S was measured and recorded	20	20	100
Proportion of patients who were weighed and recorded their body weight	20	20	100
Number of parents who received counseling	20	15	75
Proportion of patients who received their care and treatment following the WHO hand washing event	20	0	0

The documents of the past two quarters (January to June 2021) were reviewed from admission discharge registration book, patient's cards (folders), liaison (referral) registration book, laboratory logbook, pharmacy department documents, and HMIS reports were shown. In the past 2 quarters, there were 317 newborns admitted to the NICU department in Fitche General Hospital. Of 317 admitted neonates in the NICU, the recorded patient identification information at admission, patient status at discharge were recorded on the admission discharge register, and care that were given by the nurse were recorded for 314 (99%), 298 (94%), and 282 (89%), respectively. Yet none of the external supportive supervision was conducted within the past six months (Table 5)

Table 4 Document review from patient cards and registration books of NICU service implementation in Fitche General Hospital, North Shoa, Oromia, by 2021

Activities	Expected	Achieved	%
Proportion of patients whose essential nursing care was documented on their card	317	314	99
Proportion of patient their identification information recorded on the admission discharge register	317	299	94.3
Proportion of patients whose admission diagnosis was documented on the admission discharge register	317	282	89
Proportion of patient their discharge status was recorded on the admission discharge registration book in NICU	317	298	94
Proportion of patients who got appointments for follow up within 7 days of discharge	268	252	94
Proportion of completed reports submitted to HMIS department	6	6	100
Proportion of timeline reports submitted to HMIS department	6	6	100
Number of integrated supportive supervision received by NICU	2	0	0

Late twenty years old male KI *"we have high work overload is present. However, as NICU nurses, we made an effort to document and maintain all of our activities in the patient folder. In addition to this, we have done inventory reports, supply reports (RRF), and activity reports with their schedules*."

The mid-twenty-year-old female KI said, "*Due to the pandemic of COVID-19, we have not received*

ISS from the external body and have not mentored our satellite health facilities in the last 6 months.

Table 5 ***Analysis and judgment matrix of compliance dimension for implementation evaluation of NICU service at Fitche general Hospital by 2021***

Indicators	Required (R)	Observed (**O**)	Agreed weight (Wt)	Finding Wt*O/R	Achievement (O/R*100)	Judgement parameter
Proportion of patients greeting and communicating by easily understood language	20	18	14	12.6	90	≥85%: Excellent **75-84.99%: Very good** 65-74.99%: Good <65%: poor
proportion of patients measure and record their V/S	20	20	14	14	100	
Number of neonates whose body weight was measured	20	20	12	12	100	
Number of parents who received counseling and information dissemination	20	15	11	8.3	75	
proportion of patients who received their care and treatment by HSPs following the WHO hand-washing event	20	0	10	0	0	
Proportion of patient their identification information recorded on the admission discharge register	317	314	5	4.95	99.1	
Proportion of patients whose admission diagnosis was documented on the admission discharge register.	317	299	5	4.72	94.3	
Proportion of patients whose essential nursing care was documented on their card	317	282	6	5.34	89	
Proportion of patient their discharge status was recorded on the admission discharge	317	298	6	5.64	94	

registration book in NICU						
Proportion of patients who got appointments for follow up within 7 days of discharge	256	251	6	5.9	98	
Proportion of completed reports submitted to HMIS department	6	6	4	4	100	
Proportion of timeline reports submitted to HMIS department	6	6	4	4	100	
Number of integrated supportive supervision received by NICU	2	0	3	0	0	
Over all compliance			100	81.5		

6.3. Socio-Demographic characteristics of respondents

All (104) of the study participants were participated in this study, the response rate is 100%. The majority of respondents were females (83.7%), and around half (54.8%) of them were more than 35 years old, with a mean age of 35.26±9.68 years. The majority (81.7%) of respondents were mothers of the patients, and 25 (24%) of them could not read and write, while, 32(30.8%) of them had completed tertiary education. More than half (66.3%) of respondents were married, and 60 (57.7%) of them were urban by residence. Twenty-seven (26%) of them were farmers, while six (5.8%) were students. Regarding respondents' monthly income 26(25%) had monthly income of less than one thousand Ethiopian birr, 51(49%) of them had greater than three-thousand birr per month (table 7).

Table 6 Socio-demographic characteristics of parents at NICU in Fitche general hospital, North Shoa, 2021.

Characteristics of parents	**Variables**	**Frequency (n=104)**	**Percent (%)**
Sex	Female	87	83.7
	Male	17	16.3
Age of care taker	<25	17	16.3
	25-34	30	28.8
	≥35	57	54.8
Relationship of patient with care taker	Mother	85	81.7
	Father	5	4.8
	Kin	9	8.7
	Other	5	4.8
Educational level of care taker	unable to read and write	25	24.0
	primary school	28	27
	secondary school	19	18.3
	Tertiary school	32	30.8
marital status of the care taker	Married	69	66.3
	Divorced	12	11.5

	Widowed	10	9.6
	not married	13	12.5
Place of residence of care takers	Urban	60	57.7
	Rural	44	42.3
Current occupation of care takers	Farmer	27	26.0
	Merchant	14	13.5
	Employee	23	22.1
Occupation	Farmer	27	26.0
	Merchant	14	13.5
	Employee	37	35.6
	Caretakers who haven't occupation	22	21.2
Monthly income of parents	<1000 ETB	26	25.0
	1000-2000 ETB	18	17.3
	2000-3000 ETB	9	8.7
	>3000 ETB	51	49.0

6.4. Respondents' satisfaction on service provided

Regarding the satisfaction dimension, we tried to done descriptive statistics the (frequency, percentages, mean and standard deviation) level of care givers 'satisfaction towards the 12 indicators of the satisfaction by using the five-point Likert scale. We dichotomized the satisfaction as satisfied and dissatisfied. Individuals who scored above the mean value were categorizing as satisfied and otherwise categorized as dissatisfied.

The findings of our study revealed that the majority of 97 (93.3%) of parents were either satisfied or very satisfied with the availability of providers in the department. 93 (89.4%) of parents were either satisfied or very satisfied with consequence of treatment 91 (87%) of parents were satisfied or very satisfied with the care and treatment of the neonate. 78 (75 %) with the mean 3.88 and ±.855 SD of parents were satisfied with the provision of clear information from health service providers. 65 (62.5%) with the mean 3.65 and ±1.050 SD of parents were satisfied with the consent and permission

before procedures in the NICU department. 71(68.3%) with the mean 3.11±1.173 SD of parents were satisfied with well-ventilated rooms in the NICU department. Less than half (40.4%) with the mean 2.61 and ±1.535 SD of parents were satisfied with the availability of ordered medication in the hospital. All parents were dissatisfied with the functionality of the shower and toilet in the NICU ward **(table 8).**

Table 7: Level of parents' satisfaction in each satisfaction-measuring variable of NICU service provided in Fitche General Hospital in 2021

Satisfaction items	Very dissatisfied n (%)	Dissatisfied n (%)	Neutral n (%)	Satisfied n (%)	Very satisfied n (%)	Mean	SD
Adequacy of bed in NICU department	2 (1.9)	9 (8.7)	3 (2.9)	28 (26.9)	62 (59.6)	4.34	±1.020
Cleanness of bed in NICU department	2 (1.9)	8 (7.7)	7 (6.7)	49 (47.1)	38 (36.5)	4.09	±.956
Cleanliness of the rooms in the NICU department	1 (1.0)	7 (6.7)	9 (8.7)	53 (51)	34 (32.7)	4.08	±.878
Well ventilation of the NICU department	9 (8.7)	24 (23.1)	33 (31.7)	23 (22.1)	15 (14.4)	3.11	±1.173
Health service providers provided clear information NICU department	1(1)	7 (6.7)	18 (17.3)	56 (53)	22 (21.2)	3.87	±.855
Consent and permission before some procedures in NICU department	2(1.9)	16 (15.4)	21 (20.2)	42 (40.4)	23 (22.1)	3.65	±1.050
Availability of ordered laboratory service in the Hospital	0(0.0)	9(8.7)	7(6.7)	32 (30.8)	56 (53.8)	4.30	±.934
Availability of ordered medication in the hospital	33(31.7)	29(27.9)	10 (9.6)	10 (9.6)	22 (21.2)	2.61	±1.535
Availability of HSPs in the department	0(0.0)	2(1.9)	5(4.8)	52(50)	45(43.3)	4.35	±.665

Neonate’s get care and Rx	0(0.0)	6(5.8)	7(6.7)	55 (52.9)	36 (34.6)	4.16	±.790
Consequence of treatments	4 (3.8)	4 (3.8)	3 (2.9)	48 (46.2)	45 (43.3)	4.21	±.962
Cleanness of shower and toilet	103 (99.0)	1 (1.0%)	0 (0.0)	0 (0.0)	0 (0.0)	1.01	±.098

The level of satisfaction classified in to two categories; satisfied above a specified cut point and dissatisfied below the cut point. This point calculated by using the demarcation thresh hold formula: $[(Total\ highst\ score - Total\ lowest\ score)/2] + Total\ \ lowest\ score. [65 - 13/2] + 13 = 39$ Scoring above-cut point 39 as satisfied and below that as dissatisfied (41).

The overall parental satisfaction on implementation status of NICU in FGH scored 71.2%, which was Very good and it needs improvement depending as presetting judgement criteria.

Table8: Satisfaction categories for each satisfaction-measuring variable of NICU services provided at Fitche General Hospital in 2021.

Satisfaction variables	Satisfaction category	
	Satisfied frequency (%)	Dissatisfied frequency (%)
Proportion of parents satisfied with the adequacy of bed in NICU department	90(86.5)	14(13.5)
Proportion of parents satisfied with the Cleanness of bed in NICU department	87(83.7)	17(16.3)
Proportion of parents satisfied with the Cleanliness of the rooms in the NICU department	87(83.7)	17(16.3)
Proportion of parents satisfied with the Well ventilation of the NICU department	71(68.3)	33(32)
Proportion of parents satisfied with the Health service providers provided clear information NICU department	78(75)	26(25)
Proportion of parents satisfied with the Consent and permission before some procedures in NICU department	65(62.5)	39(37.5)
Proportion of parents satisfied with the availability of ordered laboratory service in the Hospital	88(84.6)	16(15.4)
Proportion of parents satisfied with the availability of ordered medication in the hospital	42(40.4)	62(59.6)
Proportion of parents satisfied with the availability of service providers in the department	97(93.3)	7(6.7)

Proportion of parents satisfied with the availability Are you satisfied with the care and treatment of the neonate?	91(87.5)	13(12.5)
Proportion of parents satisfied with the consequence of treatments.	93(89.4)	11(10.6)
Proportion of parents satisfied with the cleanliness of shower and toilet	0	0

Tab*le9: Summary of satisfaction sub-dimensions indicator performance in Fitche general hospital 2021*

Indicators	Required (R)	Observed (O)	Agreed Weight (Wt)	Finding Wt.*O/R	Achievement (O/R*100)	Judgment parameter
Proportion of parents satisfied with adequacy of bed in NICU department	**104**	**90**	12	10.4	86.5	≥85%: Excellent
Proportion of parents satisfied with cleanness of bed in NICU department	104	87	11	9.2	83.7	75-84.99%: very good
Proportion of parents satisfied with Cleanliness of the service room in NICU department	104	87	8	6.7	83.7	75-84.99%: very good
Proportion of parents satisfied with well ventilation rooms in the NICU department	104	71	8	5.5	68.3	65-74.99%: good
Proportion of parents satisfied with given clear information NICU department	104	78	8	6	75	75-84.99% = very good
Proportion of parents satisfied with the consent and permission before some procedures in NICU department	104	65	9	5.6	62.5	≤64.99%: poor
Proportion of parents satisfied with availability	104	88	9	7.6	84.6	75-84.99%; very

of laboratory service in the Hospital						good
Proportion of parents satisfied with availability of ordered medication in the hospital	104	42	9	3.6	40.4	≤64.99%: poor
Proportion of parents satisfied with availability of service providers health service providers)in the NICU	104	97	8	7.5	93.3	≥85%: Excellent
Proportion of parents satisfied with neonate's get care and Rx in NICU	104	91	7	6.1	87.5	≥85%: Excellent
Proportion of parents satisfied with consequence of treatments	104	93	9	8	89.4	≥85%: Excellent
Proportion of parents satisfied with the cleanness and functionality of shower and toilet	104	0	2	0	0	≤64.99%: poor
>85% (Excellent), **75% - 84.99%; Very good(needs improvement**), 65% - 74.99%; good(needs urgent improvement), ≤64.99%; poor(Needs urgent and major improvement)			100	76.2		**75% - 84.99%; Very good(needs improvement)**

6.5. Factors associated with parents' satisfaction

To assess factors that affect parents' satisfaction with NICU service. The candidate variable is identifying through bivariate logistic regression and multiple logistic regression. However, none of sociodemographic characteristics has an association with parental satisfaction with provided NICU service at FGH (table 11**).**

Table 10. Multiple logistic regression analysis of factors that associate parents' satisfaction on the overall NICU service implementation in Fitche general hospital, by 2021

Variables	Category	Satisfaction status		AOR (95% CI)
		Satisfied	Dissatisfied	
Sex	Male	11(10.6)	6(5.7)	0.32 (0.09–1.05)
	Female	40(38.5)	47(45.2)	1
Marital status	Married	39(37.5)	30(28.9)	0.63 (0.29–1.35
	Divorced	4(3.8)	8(7.7)	2.64 (1.16–6.02)
	Widowed	3(2.9)	7(6.7)	0.32 (0.09–1.05)
	Not married	5(4.9)	8(7.7)	1
Place of residence	Urban	26(25)	34(32.7)	0.63 (0.29–1.35
	Rural	25(24)	19(18.3)	1
Age of parents 1	<25	14	3	3.90 (1.41–10.74)
	25-34	29	1	3.07 (0.62–15.11)
	≥35	51	6	1
Average monthly income	<1000 ETB	10(9.7)	16(15.4)	1.29 (0.41–4.12)
	1001-2000 ETB	13(12.5)	5(4.9)	4.6 (3.31–9.78)
	2001-3000 ETB	6(5.8)	3(2.9)	8.8 (2.19–15.78
	>3000 ETB	22(21.2)	29(27.9)	1

Relationship with the Pt	Mother	40(38.5)	45(43.3)	1 .2 (0.97–6.27)
	Father	2(1.9)	3(2.9)	2.00 (0.97–5.17)
	Kin	9(8.6)	5(4.9)	1
Occupation	Farmer	25(24)	2(1.92)	0.86(0.43–6.43)
	Merchant	12(11.5)	2(1.92)	0.58 (0.24–1. 94)
	Employee	39(37.5)	2(1.92)	0.55 (0.42–1.34)
	Caretakers who haven't occupation	18(17.3)	4(3.85)	1

AOR: Adjusted odds ratio**, CI:** Confidence interval

The implementation status of NICU service provision was assessed by three dimensions and thirty-seven indicators; availability of resources, HSPs compliance with standard guidelines and parental satisfaction with provision NICU service in the studied setting.

Table11. Summary of judgment parameter for implementation evaluation of NICU service in Fitche general hospital North Shoa, 2021

Dimension/Indicators	**Sum of indicators (#)**	**Value given(V)**	**Observed value (O)**	**Score (O/V*100)**	**Judgment Parameters**
Availability	12	40	25.84	64.6	**Good (needs urgent improvement**
Compliance	13	38	30.97	81.5	
Satisfaction	12	22	16.76	76.2	
Total	37	100	**73.57**		
Over all NICU serves implementation status				**74.1%**	
≥85%; Excellent, 75% - 84.99%; Very good(needs improvement), 65% - 74.99%; **good(needs urgent improvement)**, ≤64.99%; poor(Needs urgent and major improvement)					

CHAPTER SEVEN: DISCUSSION

This evaluation was conducted to evaluate the implementation status of NICU at FGH hospital by assessing the structure (resources) to provide NICU service, the process (compliance of HSP with standard guidelines), and the outcome (acceptability/satisfaction of parents with provided NICU service.

The studied facility has totally 10 (27%) trained human resources during the study period. Of those there were only nine (32.3%) nurses available with a nurse-to-patient ratio of 1:12. this finding is contrary to the national NICU guideline (11). The national NICU guideline implies that NICUs at general hospitals should have a minimum of 31 NICU staff members. The number of nurses is 24 (77.4%) of the total NICU staff (1:3 nurse-to-patient ratio). The possible justification for this difference might be due to shortage of resources. This finding is unlike with the study conducted at Debre Birhan Referral Hospital (DBRH), and Jimma University Medical Center (JUMC), which showed that the nurses-to-patient ratio 1:8 and 1:4 respectively (23,31). This difference might be due to difference in the level of NICUs (hospitals).

FGH is equipped with 60.9% infrastructure according to national NICU guideline. The study setting has not KMC room, a recovery room, an ancillary area, enough hand washing facility and a functional toilet and a bathroom for clients. This finding is contrary with national guideline. The national guideline recommends a level II NICU should have maternal waiting room, a nursing station, KMC, a step-down area, an ancillary area, enough hand washing facility and a functional toilet, a bathroom for clients and HSPs separately additionally source of power without interruption (11). This finding is similar to the study done at DBRH, yet different from the study conducted at Dessie Referral Hospital (23,42). This difference might be due to different level of the hospitals.

In the study setting there are about 17 of 20 types of essential, desirable, and consumable medical equipment. Of those, some medical equipment are less than the required number and some of them are not avail at all. The finding of this evaluation is contradicted with national guideline (8). National NICU guideline is implies that the minimum number of required essential medical equipment should be equipped for all types 0f NICU. However, The overall essential medical equipment is 64.1%.

This evaluation finding is in line with the studies conducted at Debre Birhan referral DBRH, JUMC, and Shenen Gibe Hospital, 65.2%, 65.13 %, and 62.2 %, respectively (23,43). This similarity might be due to the way it is utilized or handled, due to achieving and guiding with a minimum requirement of national NICU guidelines, and the economic status of the country to fulfill all needed equipment (11).

None of the HSPs did wash their hands according to the WHO hand washing event protocol, the hand hygiene technical reference manual and the IPC guideline. This is contrary to national and international guidelines.. This guidelines recommended that HSPs should wash their hands within all hand washing events (26,27). This finding is similar to the study conducted in Hiwot Fana Specialized University Hospital; it revealed that hand hygiene actions were observed with overall compliance only 18% of hand hygiene event compliance with the WHO hand hygiene events (44). This might be due to scarcity of resources or it might be due to less commitment of HSPs for hand washing practice.

Parents' satisfaction with newborn care is increasingly acknowledged as a crucial indicator of clients' experiences (30). It is used to assess gaps in hospitals and health care providers and to suggest ways to improve service delivery.

Our study showed that the majority of the parents, 91 (87.5%), were satisfied with the care and treatment given to the neonates in the NICU. This is in line with the study conducted at B/Dar 83.8

(30). It is higher than a study conducted at Addis Ababa public hospitals (67%), Gondar University comprehensive hospital (GUCH), DBRH and JUMC, 54%, 51.5% and 48.9% respectively (25,31,45). This difference might be due to the best efforts made in FGH and might be due to the time difference.

The finding of this study revealed that 62 (59.6%) of parents were dissatisfied with the availability of prescribed medication in the hospital pharmacy; This evaluation finding is higher than the studies done at B/Dar and JUMC, 29.5% and 29.8% (30,31), this finding is similar to that of the study conducted at UGCH, which was 48% (25). However, it is low in contrast with the study conducted at Debre Birhan referral hospital, where the caregiver satisfaction score was 89.4% (23). This difference may be due to the scarcity resource.

The evaluation suggests that all (104) participants were not satisfied with the cleanliness of the toilet and bathroom. This might be due to the absence of toilet and bathroom for clients separate from health service providers in the NICU in the study setting. The overall parental satisfaction score of FGH is 76.2%. This finding is comparable with the studies conducted at DBRH, 77% (23). This might be due to the similarity in socio-economic status, cultural or infrastructural factors. The finding of this study is higher than from those of studies conducted at Jima (57%), B/Dar (55%) and Gondar (50%) (25,30,31). This may occur because of the Ethiopian government's present focus on mother and child health in the continuing initiative to overhaul the health sector (13)(14). or it might be due to the way of analysis.

The findings of this evaluation indicate that none of the socio-demographic characteristics are associated with satisfaction with the implementation of NICU services in the study setting. However, some literature has an association with socio-demographic characteristics such as sex, relationship with the admitted neonate, income, educational status, and place of residence (23,31,46). This might be due to the difference in the method of analysis.

Strength and limitations of the evaluation

Strength of the evaluation

This case study design could detect the implementation status of NICU program and the causal relationship between parents' satisfaction on provision of NICU services and associating factors at Fitche general hospital.

We were to obtain precise and comprehensive results by employing both qualitative and quantitative methods triangulation.

Limitation of the evaluation

The findings of this study might be subjected to social desirability bias because the respondents were interviewed in the hospital compound. To minimize this, we interviewed the respondents in a separate room after they were discharged from the service provider.

The hawthorn effect, which could have happened during the direct observation of the interactions between clients and HSP, was a potential drawback of this evaluation. To minimize this, we omitted the first two and the last two observations.

CHAPTER – EIGHT: CONCLUSION AND RECOMMENDATIONS

8.1. Conclusion

Shortage of availability of resources (trained health service providers, insufficient rooms, scarcity of medical equipment, interruption of essential drugs, and no sufficient tap water supply for handwashing). Trained health service providers did not follow the WHO guidelines for hand-washing events. The NICU had not received ISS from an external body. No one of the parents is satisfied with the cleanliness of the toilet and bathrooms. In the study setting, none of the sociodemographic characteristics were associated with satisfaction with NICU services. The overall implementation status of NICU services in Fitche general hospital was judged to be good, but it needs urgent improvement depending on predetermined judgment criteria.

8.2. Recommendations:

- ✧ **Heath Service Providers**

- ✓ have to give health education and information dissemination to all parents
- ✓ Should wash their hands according to WHO hand washing events.

- ✧ **Fitche general hospital**

- ✓ Should create favorable conditions for available HSPs and recruit support staff,
- ✓ Should finish the building blocks of NICU Should fulfill the required medical equipment either by asking the support from the Stakeholders or buying by the hospital itself
- ✓ Should discuss with influential SHs and adjust allocated resources for a specific purpose to improve the interruption of continuous supply of laboratory reagents and essential drugs.
- ✓ Should fulfill the required water supply for hand washing facilities by renewing or installing new ones.

- ✓ Should fulfill the required IEC materials

✧ **Zonal health department**

- ✓ should support the hospital on finishing the building blocks of NICU,
- ✓ should support the hospital by fulfilling the required medical equipment and supplies through search and ask Stakeholders (donners),
- ✓ should discuss with influential SHs and adjust allocated resources for a specific purpose to improve the interruption of continuous supply of laboratory reagents and essential drugs,
- ✓ should facilitate on job training and review meeting,
- ✓ should conduct regular continuous monitoring and evaluation,

✧ **Oromia Regional Health Bureau**

- ✓ Should recruit trained HSPs.
- ✓ Should support the hospital by building the rooms.
- ✓ Should support by providing the required medical equipment.
- ✓ Should support by facilitating the way to get providing the required essential drugs and supplies should conduct continuous supportive supervision.

CHAPTER-NINE: META-EVALUATION

Summative Meta-Evaluation conducted by using four program evaluation standards (Utility, feasibility, propriety and accuracy). The tool was adapted from Daniel L. Stafflebeam(47). The overall status of the evaluation was measured 74%, which is very good according to the standards criteria.

Utility: To ensure the utility of the evaluation the evaluator was conduct stakeholder analysis, clear value judgments were set, a report was prepared based on the evaluation question, and conclusion and recommendation were set. This standard was scored 75% with the Very good category based on the judgment parameter under the strength of the evaluation's provisions for utility.

Feasibility: This standard was measured by 12 checkpoints, among those 9 of them were scored yes/met, which was scored 75% based on the judgment parameter. The procedures for this evaluation were practical and did not cause any disruption to those involved in the evaluation since the information needed was obtained without any harm. Among the activities, a term of reference was developed, there was no over-planned budget allocation and used that affected cost-effectiveness, recruiting and training qualified data collectors and different positions of various interest groups were anticipated so that their co-operation could be obtained.

Propriety: it is about protecting and respecting the rights of the subject studied. The evaluation was conducted after approval and legally written letters from the Institutional Review Board (IRB) of Jimma University and Fitche General Hospital. Informed consent was taken for participation from all participants by written consent prior to data collection, and activities for ensuring the confidentiality

of collected data were practiced. It was measured by three sub-standards and scored 75%, with the very good category under the strength of the evaluator provisions for propriety.

Accuracy: To maintain this standard, a review of appropriate NICU program documents was done and a discussion with stakeholders to understand the program was held during the evaluability assessment. Scientific methods were followed during data collection, analysis, and presentation techniques. Mixed methods of data collection were employed and triangulated to reach a valid conclusion by program inventory of resources, document review, and observation during service provision, and in-depth interviews of care providers and key informants. It scored 71% points, with a very good category under the strength of the evaluator provisions for accuracy.

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Annex I. Meta evaluation

Meta evaluation standards			
Measurements	To meet the requirements of Utility, evaluations should:	Yes	No
U1	*Stakeholder Identification*		
	Clearly identify the evaluation client	X	
	Engage leadership figures to identify other stakeholders	X	
	Consult potential stakeholders to identify their information needs	X	
	Use stakeholders to identify other stakeholders	X	
	With the client, rank stakeholders for relative importance	X	
	Arrange to involve stakeholders throughout the evaluation	X	
	Keep the evaluation open to serve newly identified stakeholders		X
	Address stakeholders' evaluation needs	X	
	Serve an appropriate range of individual stakeholders	X	
	Serve an appropriate range of stakeholder organizations	X	
Judgment	9-10=Excellent, 7-8, = very good, 5-6 good, 3-4= fair, 0-2= poor	9	1
U2	Evaluator Credibility		
	Engage evaluators who can address stakeholders' concerns	X	
	Engage competent evaluators	X	
	Engage evaluators whom the stakeholders trust		X
	Engage evaluators who are appropriately responsive to issues of gender, socioeconomic status, race, and language and cultural differences	X	
	Assure that the evaluation plan responds to key stakeholders' concerns	X	
	Help stakeholders understand the evaluation plan	X	
	Give stakeholders information on the evaluation plan's technical quality and practicality	X	
	Attend appropriately to stakeholders' criticisms and suggestions		X
	Stay abreast of social and political forces	X	

	Keep interested parties informed about the evaluation's progress		
Judgment	9-10=Excellent, 7-8, = very good, 5-6 good, 3-4= fair, 0-2= poor	8	2
U3	Information Scope and Selection		
	Understand the client's most important evaluation requirements	X	
	Interview stakeholders to determine their different perspectives	X	
	Assure that evaluator and client negotiate pertinent audiences, questions, and required information	X	
	Assign priority to the most important stakeholders	X	
	Assign priority to the most important questions	X	
	Allow flexibility for adding questions during the evaluation		X
	Obtain sufficient information to address the stakeholders' most important evaluation questions	X	
	Obtain sufficient information to assess the program's merit		X
	Obtain sufficient information to assess the program's worth		X
	Allocate the evaluation effort in accordance with the priorities assigned to the needed information	X	
Judgment	9-10=Excellent, 7-8, = very good, 5-6 good, 3-4= fair, 0-2= poor	7	3
U4	Values Identification		
	Consider alternative sources of values for interpreting evaluation findings	X	
	Provide a clear, defensible basis for value judgments	X	
	Determine the appropriate party(s) to make the evaluation interpretations		X
	Identify pertinent societal needs		X
	Identify pertinent customer needs		X
	Reference pertinent laws		X
	Reference, as appropriate, the relevant institutional mission		X
	Reference the program's goals	X	
	Take into account the stakeholders' values	X	
	As appropriate, present alternative interpretations based on conflicting but	X	

	credible value bases		
Judgment	9-10=Excellent, 7-8, = very good, 5-6 good, 3-4= fair, 0-2= poor	5	5
U5	Report Clarity		
	Clearly report the essential information	X	
	Issue brief, simple, and direct reports	X	
	Focus reports on contracted questions	X	
	Describe the program and its context	X	
	Describe the evaluation's purposes, procedures, and findings	X	
	Support conclusions and recommendations	X	
	Avoid reporting technical jargon	X	
	Report in the language(s) of stakeholders		X
	Provide an executive summary	X	
	Provide a technical report	X	
Judgment	9-10=Excellent, 7-8, = very good, 5-6 good, 3-4= fair, 0-2= poor	9	1
U6	Report Timeliness and Dissemination		
	Make timely interim reports to intended users		X
	Deliver the final report when it is needed	X	
	Have timely exchanges with the program's policy board		X
	Have timely exchanges with the program's staff	X	
	Have timely exchanges with the program's customers	X	
	Have timely exchanges with the public media		X
	Have timely exchanges with the full range of right-to-know audiences		X
	Employ effective media for reaching and informing the different audiences		X
	Keep the presentations appropriately brief	X	
	Use examples to help audiences relate the findings to practical situations	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	9	1
	Evaluation Impact		

U7			
	Maintain contact with audience	X	
	Involve stakeholders throughout the evaluation	X	
	Encourage and support stakeholders' use of the findings	X	
	Show stakeholders how they might use the findings in their work	X	
	Forecast and address potential uses of findings	X	
	Provide interim reports		X
	Make sure that reports are open, frank, and concrete	X	
	Supplement written reports with ongoing oral communication	X	
	Conduct feedback workshops to go over and apply findings		X
	Make arrangements to provide follow-up assistance in interpreting and applying the findings		X
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	7	3

	Scoring the Evaluation for Utility	Strength of the Evaluation's for Utility
	Number of Excellent ratings (0-7) 2x 4 = 8 Number of Very Good ratings (0-7) 3x 3=9 Number of Good ratings (0-7) 2x 2 =4 Number of Fair ratings (0-7) 0x 1 =0 Total Score = 21	26 (93%) to 28: Excellent 19 (68%) to 25: Very Good 14 (50%) to 18: Good 7 (25%) to 13: Fair 0 (0%) to 5: Poor 21÷28 =0.75x 100 = 75%

To meet the requirements of Feasibility, evaluations should:

F1	Practical Procedures		
	Tailor methods and instruments to information requirements	X	
	Minimize disruption	X	
	Minimize the data burden	X	
	Appoint competent staff	X	
	Train staff	X	
	Choose procedures that the staff are qualified to carry out	X	

	Choose procedures in light of known constraints	X	
	Make a realistic schedule	X	
	Engage locals to help conduct the evaluation		X
	As appropriate, make evaluation procedures a part of routine events	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	9	1
F2	Political Viability		
	Anticipate different positions of different interest groups	X	
	Avert or counteract attempts to bias or misapply the findings	X	
	Foster cooperation	X	
	Involve stakeholders throughout the evaluation	X	
	Agree on editorial and dissemination authority		X
	Issue interim reports		X
	Report divergent views	X	
	Report to right-to-know audiences	X	
	Employee a firm public contract		X
	Terminate any corrupted evaluation		X
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	6	4
F3	Cost Effectiveness		
	Be efficient	X	
	Make use of in-kind services	X	
	Produce information worth the investment	X	
	Inform decisions	X	
	Foster program improvement		X
	Provide accountability information	X	
	Generate new insights		X
	Help spread effective practices		X
	Minimize disruptions	X	
	Minimize time demands on program personnel	X	

Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	7	3
	Scoring the Evaluation for Feasibility	Strength of the Evaluation's for Feasibility	
	Number of Excellent ratings (0-3) 1x 4 = 4 Number of Very Good ratings (0-3) 1x 3=3 Number of Good ratings (0-3) 1x 2 =2 Number of Fair ratings (0-3) 0x 1 = Total Score = 9	11 (93%) to 12: Excellent 8 (68%) to 10: Very Good 6 (50%) to 7: Good 3 (25%) to 5: Fair 0 (0%) to 2: Poor **9 ÷12 =0.75x 100 = 75%**	
	To meet the requirements of Propriety, evaluations should		
P1	Service Orientation		
	Assess needs of the program's customers	X	
	Assess program outcomes against targeted customers' assessed needs	X	
	Help assure that the full range of rightful program beneficiaries are served	X	
	Promote excellent service	X	
	Make the evaluation's service orientation clear to stakeholders	X	
	Identify program strengths to build on		X
	Identify program weaknesses to correct	X	
	Give interim feedback for program improvement	X	
	Expose harmful practices	X	
	Inform all right-to-know audiences of the program's positive and negative outcomes	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	9	1
P2	Formal Agreements *Reach advance written agreements on:*		
	Evaluation purpose and questions	X	
	Audiences		X

	Evaluation reports		X
	Editing		X
	Release of reports		X
	Evaluation procedures and schedule		X
	Confidentiality/anonymity of data	X	
	Evaluation staff	X	
	Meta evaluation	X	
	Evaluation resources	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	5	5
P3	Rights of Human Subjects		
	Make clear to stakeholders that the evaluation will respect and protect the rights of human subjects	X	
	Clarify intended uses of the evaluation	X	
	Keep stakeholders informed	X	
	Follow due process	X	
	Uphold civil rights	X	
	Understand participant values	X	
	Respect diversity	X	
	Follow protocol	X	
	Honor confidentiality/anonymity agreements	X	
	Do no harm	X	
Judgment	9-10 = Excellent 7-8 = Very Good 5-6 = Good 3-4 = Fair 0-2 = Poor	10	0
P4	Human Interactions		
	Consistently relate to all stakeholders in a professional manner	X	
	Maintain effective communication with stakeholders	X	
	Follow the institution's protocol	X	
	Minimize disruption	X	
	Honor participants' privacy rights	X	

	Honor time commitments	X	
	Be alert to and address participants' concerns about the evaluation	X	
	Be sensitive to participants' diversity of values and cultural differences	X	
	Be even-handed in addressing different stakeholders	X	
	Do not ignore or help cover up any participants incompetence, unethical behavior, fraud, waste, or abuse	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	10	0
P5	Complete and Fair Assessment		
	Assess and report the program's strengths	X	
	Assess and report the program's weaknesses	X	
	Report on intended outcomes	X	
	Report on unintended outcomes		X
	Give a thorough account of the evaluation's process	X	
	As appropriate, show how the program's strengths could be used to overcome its weaknesses		X
	Have the draft report reviewed	X	
	Appropriately address criticisms of the draft report	X	
	Acknowledge the final report's limitations	X	
	Estimate and report the effects of the evaluation's limitations on the overall judgment of the program	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	8	2
P6	Disclosure of findings		
	Define the right-to-know audiences	X	
	Establish a contractual basis for complying with right-to-know requirements		X
	Inform the audiences of the evaluation's purposes and projected reports	X	
	Report all findings in writing	X	
	Report relevant points of view of both supporters and critics of the program		X
	Report balanced, informed conclusions and recommendations	X	
	Show the basis for the conclusions and recommendations	X	

	Disclose the evaluation's limitations	X	
	In reporting, adhere strictly to a code of directness, openness, and completeness	X	
	Assure that reports reach their audiences	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	8	2
P7	Conflict of Interest		
	Identify potential conflicts of interest early in the evaluation	X	
	Provide written, contractual safeguards against identified conflicts of interest		X
	Engage multiple evaluators		X
	Maintain evaluation records for independent review	X	
	As appropriate, engage independent parties to assess the evaluation for its susceptibility or corruption by conflicts of interest		X
	When appropriate, release evaluation procedures, data, and reports for public review	X	
	Contract with the funding authority rather than the funded program		X
	Have internal evaluators report directly to the chief executive officer		X
	Report equitably to all right-to-know audiences		X
	Engage uniquely qualified persons to participate in the evaluation, even if they have a potential conflict of interest; but take steps to counteract the conflict	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	4	6
P8	Fiscal Responsibility		
	Specify and budget for expense items in advance	X	
	Keep the budget sufficiently flexible to permit appropriate reallocations to strengthen the evaluation	X	
	Obtain appropriate approval for needed budgetary modifications	X	
	Assign responsibility for managing the evaluation finances		X
	Maintain accurate records of sources of funding and expenditures	X	

	Maintain adequate personnel records concerning job allocations and time spent on the job	X	
	Employ comparison shopping for evaluation materials	X	
	Employ comparison contract bidding		X
	Be frugal in expending evaluation resources	X	
	As appropriate, include an expenditure summary as part of the public evaluation report	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	8	2

Scoring the Evaluation for Propriety	Strength of the Evaluation's for Propriety
Number of Excellent ratings (0-8) 3x 4 = 12	30 (93%) to 32: Excellent
Number of Very Good ratings (0-8) 3x 3 = 9	22 (68%) to 29: Very Good
Number of Good ratings (0-8) 1x 2 =2	16 (50%) to 21: Good
Number of Fair ratings (0-8) 1x 1 =1	8 (25%) to 15: Fair
Total Score = 24	0 (0%) to 7: Poor
	24 ÷32 =0.75x 100 = 75%

	To meet the requirements of Accuracy, evaluations should:		
A1	Program Documentation		
	Collect descriptions of the intended program from various written sources	X	
	Collect descriptions of the intended program from the client and various stakeholders	X	
	Describe how the program was intended to function	X	
	Maintain records from various sources of how the program operated	X	
	As feasible, engage independent observers to describe the program's actual operations		X
	Describe how the program actually functioned	X	
	Analyze discrepancies between the various descriptions of how the program was intended to function	X	
	Analyze discrepancies between how the program was intended to operate and how it actually operated	X	

	Ask the client and various stakeholders to assess the accuracy of recorded descriptions of both the intended and the actual program	X	
	Produce a technical report that documents the program's operations	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	9	1
A2	Context Analysis		
	Use multiple sources of information to describe the program's context	X	
	Describe the context's technical, social, political, organizational, and economic features		X
	Maintain a log of unusual circumstances		X
	Record instances in which individuals or groups intentionally or otherwise interfered with the program		X
	Record instances in which individuals or groups intentionally or otherwise gave special assistance to the program		X
	Analyze how the program's context is similar to or different from contexts where the program might be adopted	X	
	Report those contextual influences that appeared to significantly influence the program and that might be of interest to potential adopters		X
	Estimate effects of context on program outcome		X
	Identify and describe any critical competitors to this program that functioned at the same time and in the program's environment		X
	Describe how people in the program's general area perceived the program's existence, importance, and quality	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	3	7
A3	Described Purposes and Procedures		
	At the evaluation's outset, record the client's purposes for the evaluation	X	
	Monitor and describe stakeholders' intended uses of evaluation findings		X
	Monitor and describe how the evaluation's purposes stay the same or change over time		X
	Identify and assess points of agreement and disagreement among		X

	stakeholders regarding the evaluation's purposes		
	As appropriate, update evaluation procedures to accommodate changes in the evaluation's purposes	X	
	Record the actual evaluation procedures, as implemented	X	
	When interpreting findings, take into account the different stakeholders' intended uses of the evaluation	X	
	When interpreting findings, take into account the extent to which the intended procedures were effectively executed	X	
	Describe the evaluation's purposes and procedures in the summary and full-length evaluation reports	X	
	As feasible, engage independent evaluators to monitor and evaluate the evaluation's purposes and procedures		X
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	6	4
A4	Defensible Information Sources		
	Obtain information from a variety of sources	X	
	Use pertinent, previously collected information once validated	X	
	As appropriate, employ a variety of data collection methods	X	
	Document and report information sources	X	
	Document, justify, and report the criteria and methods used to select information sources	X	
	For each source, define the population	X	
	For each population, as appropriate, define any employed sample	X	
	Document, justify, and report the means used to obtain information from each source	X	
	Include data collection instruments in a technical appendix to the evaluation report	X	
	Document and report any biasing features in the obtained information		X
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	9	1
A5	Valid Information		

	Focus the evaluation on key questions	X	
	As appropriate, employ multiple measures to address each question	X	
	Provide a detailed description of the constructs and behaviors about which information will be acquired	X	
	Assess and report what type of information each employed procedure acquires	X	
	Train and calibrate the data collectors	X	
	Document and report the data collection conditions and process	X	
	Document how information from each procedure was scored, analyzed, and interpreted	X	
	Report and justify inferences singly and in combination		X
	Assess and report the comprehensiveness of the information provided by the procedures as a set-in relation to the information needed to answer the set of evaluation questions	X	
	Establish meaningful categories of information by identifying regular and recurrent themes in information collected using qualitative assessment procedures	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	9	1
A6	Reliable Information		
	Identify and justify the type(s) and extent of reliability claim		X
	For each employed data collection device, specify the unit of analysis	X	
	As feasible, choose measuring devices that in the past have shown acceptable levels of reliability for their intended us	X	
	In reporting reliability of an instrument, assess and report the factors that influenced the reliability, including the characteristics of the examinees, the data collection conditions, and the evaluator's biases	X	
	Check and report the consistency of scoring, categorization, and coding	X	
	Train and calibrate scorers and analysts to produce consistent results	X	
	Pilot test new instruments in order to identify and control sources of error	X	
	As appropriate, engage and check the consistency between multiple observers	X	
	Acknowledge reliability problems in the final report	X	

	Estimate and report the effects of unreliability in the data on the overall judgment of the program		X
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	8	2
A7	Systematic Information		
	Establish protocols for quality control of the evaluation information		X
	Train the evaluation staff to adhere to the data protocols	X	
	Systematically check the accuracy of scoring and coding	X	
	When feasible, use multiple evaluators and check the consistency of their work		X
	Verify data entry	X	
	Proofread and verify data tables generated from computer output or other means	X	
	Systematize and control storage of the evaluation information	X	
	Define who will have access to the evaluation information	X	
	Strictly control access to the evaluation information according to established protocols	X	
	Have data providers verify the data they submitted	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	8	2
A8	Analysis of Quantitative Information		
	Begin by conducting preliminary exploratory analyses to assure the data's correctness and to gain a greater understanding of the data	X	
	Choose procedures appropriate for the evaluation questions and nature of the data	X	
	For each procedure specify how its key assumptions are being met		X
	Report limitations of each analytic procedure, including failure to meet assumptions		X
	Employ multiple analytic procedures to check on consistency and	X	

	replicability of findings		
	Examine variability as well as central tendencies	X	
	Identify and examine outliers and verify their correctness	X	
	Identify and analyze statistical interactions Assess statistical significance and practical significance	X	
	Assess statistical significance and practical significance	X	
	Use visual displays to clarify the presentation and interpretation of statistical results	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	8	2
A9	Analysis of Qualitative Information		
	Focus on key questions	X	
	Define the boundaries of information to be used	X	
	Obtain information keyed to the important evaluation questions	X	
	Verify the accuracy of findings by obtaining confirmatory evidence from multiple sources, including stakeholders	X	
	Choose analytic procedures and methods of summarization that are appropriate to the evaluation questions and employed qualitative information	X	
	Derive a set of categories that is sufficient to document, illuminate, and respond to the evaluation questions	X	
	Test the derived categories for reliability and validity		X
	Classify the obtained information into the validated analysis categories	X	
	Derive conclusions and recommendations and demonstrate their meaningfulness	X	
	Report limitations of the referenced information, analyses, and inference	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	9	1
A10	Justified Conclusions		
	Focus conclusions directly on the evaluation questions	X	

	Accurately reflect the evaluation procedures and findings	X	
	Limit conclusions to the applicable time periods, contexts, purposes, and activities		X
	Cite the information that supports each conclusion	X	
	Identify and report the program's side effects Report plausible alternative explanations of the findings		X
	Report plausible alternative explanations of the findings	X	
	Explain why rival explanations were rejected		X
	Warn against making common misinterpretations		X
	Obtain and address the results of a prerelease review of the draft evaluation report	X	
	Report the evaluation's limitation	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	6	4
A11	Impartial Reporting		
	Engage the client to determine steps to ensure fair, impartial reports	X	
	Establish appropriate editorial authority		X
	Determine right-to-know audiences		X
	Establish and follow appropriate plans for releasing findings to all right-to-know audiences		X
	Safeguard reports from deliberate or inadvertent distortions	X	
	Report perspectives of all stakeholder groups	X	
	Report alternative plausible conclusions		X
	Obtain outside audits of reports	X	
	Describe steps taken to control bias	X	
	Participate in public presentations of the findings to help guard against and correct distortions by other interested parties	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	6	4
A12	Meta-evaluation		

	Designate or define the standards to be used in judging the evaluation	X	
	Assign someone responsibility for documenting and assessing the evaluation process and products		X
	Employ both formative and summative meta-evaluation		X
	Budget appropriately and sufficiently for conducting the meta-evaluation		X
	Record the full range of information needed to judge the evaluation against the stipulated standards	X	
	As feasible, contract for an independent meta-evaluation		X
	Determine and record which audiences will receive the meta-evaluation report		X
	Evaluate the instrumentation, data collection, data handling, coding, and analysis against the relevant standards	X	
	Evaluate the evaluation's involvement of and communication of findings to stakeholders against the relevant standards	X	
	Maintain a record of all meta evaluation steps, information, and analyses	X	
Judgment	9-10 = Excellent, 7-8 = Very Good, 5-6 = Good, 3-4 = Fair, 0-2 = Poor	5	5

Scoring the Evaluation for Accuracy	**Strength of the Evaluation's for Accuracy**
Number of Excellent ratings (0-12) 4x 4 = 16	45 (93%) to 48: Excellent
Number of V. Good ratings (0-12) 3x 3 = 9	33 (68%) to 44: Very Good
Number of Good ratings (0-12) 4x 2 =8	24 (50%) to 32: Good
Number of Fair ratings (0-12) 1x 1 =1	12 (25%) to 23: Fair
Total Score = 34	0 (0%) to 11: Poor
	34 ÷48 =0.71 x 100 = 71%

Strength of the Evaluations

Utility = 75% Very good, Feasibility = 75% Very good, Propriety = 75% Very good

Accuracy=71% Very good, Overall, Strength of the Evaluation is 74% which is very good.

Annex II. Consent form and Data collection tools

Consent form for department heads and all service providers who have participated as source of data in this evaluation at Fitche general Hospital

My name is_____ and I come from Jimma University. I am conducting of the evaluation on the topic of "implementation evaluation of the Neonatal Intensive Care Unit service in Fitche general Hospital" The purpose of the evaluation is to identify the gaps and indicate ways of improving the implementation status of NICU services. Therefore, I would like to ask you to provide some information about the provided service. The information you will provide will be handled in a confidential manner and will not be share with any one with your identity. Your information will be sharing only the evaluation team members and we will ensure any information we include in our reports does not include your identity you are the source. The information you will provide is very important and will help the facility to improve the implementation status of NICU service. The process is not taking more than 20 to 30 minutes. I will take note and make records of information gather from you. However, you have the right to refused to participate in any time decide to not continue.

Do you have any question or unclear thing about what I have just said?

Are you willing to participate in the study?

Thank you,

If you will have willing to participate in the study, please put your permission

Signature **Date**

Respondent _____ _____

Investigator _____ _____

Data collection tools

Facility inventory check list prepared to assess availability of structural/physical components (infrastructure, NICU Staff, Medical Equipment, Drug, activities, Supplies and Materials (Guideline, Charts, recording & reporting formats) required to provide implementation of Neonatal Intensive Care Unit service at Fitche General Hospital, in the year 2021.

Name of the Hospital Fitche General Hospital, North Shoa Zone, Oromia Region

Data collection tools for availability of resources

Inventory check list

Name of the Hospital Fitche General Hospital, North Shoa Zone, Oromia, Region

S.NO	Availability of human resource		Required in # (R)	Observed in (O)	Agreed weight (AW)	Finding O*Aw/R	Achievement O*100/R
1	Number of nurses in the NICU	NICU Nurses (BSC on NICU nurse)	6		2.25		
		Nurses who have got the on-job training for NICU	18		6.75		
	Total Nurses		***24***		***9***		
2	Number of GP in the NICU		2		4		
3	Number of a Pediatrician in the NICU		1		5		
	Total HSP		***27***				
	Number supporting	Cleaner	3		3		

	staff assigned for NICU	Guard	1		1		
All NICU staff			***31***		***22***		

Nb hjjjj

S. No	**Availability of infrastructures**	**Required in # (R)**	**Observed in # (O)**	**Agreed weight (AW)**	Finding O*Aw/R	**Achievement O*100/R**
1	NICU room	2		1		
2	step-down area/recovery room	1		1		
3	KMC room	1		1		
4	Maternal waiting room?	1		1		
5	Nursing station	1		1		
6	Ancillary area (including procedure room)	1		1		
7	functional toilet and bathroom for Parents	1		1		
8	functional toilet and bathroom for HSP	1		1		
9	Storeroom	1		0.5		
10	Bed	24		1		
11	Proportion of tap water supply in NICU department**(2)**	6		1		
12	Availability of source of power in NICU department (electric & solar/generator)	2		1		
13	availability of functional phone	1		0.5		
			Total	12		

Jmhhk,j

Medical equipment & supplies	Required in # (R)	Observed in # (O)	Agreed weight (AW)	Finding O*Wt./R	Achievement (%)
Open care system: radiant warmer, fixed height, with trolley, drawers, O2-bottles	6		1		

Bubble CPAP	6		1		
Incubator	4		1		
Phototherapy unit, single head, high intensity	5		1		
Resuscitator, hand-operated, neonate, 250 ml	2		1		
Pump, suction, foot-operated	2		1		
Thermometer, clinical,	12		1		
Scale, baby, electronic, 10 kg <5g>	4		1		
Pulse oximeter, bedside, neonatal	6		1		
Stethoscope, binaural, neonate	12		1		
Sphygmomanometer, neonate, electronic	6		1		
Umbilical catheter *(Ec)	4		1		
Exchange transfusion set*(Ec)	4		1		
Nasal prong, oxygen tube *(Ec)	4		1		
Tape, measure, vinyl-coated, 1.5m	2		1		
Irradiance meter for phototherapy units *(D)	2		1		
Monitor, vital sign, NIBP, HR,SpO2, ECG, RR, Temp *(D)(3	6		1		
X-Ray, mobile*(D)	1		1		
Autoclave, steam, bench top, 20L, electrical*(D)	1		1		
Laundry washer dryer, combo, 5kg	1		1		
Essential medical equipment			20		

Mnb mmhj

Laboratory and imaging services	**Required (R)**	**Observed (O)**	**Agreed weight (AWt.)**	**Finding O*AWt. /R**	**Achievement O*100/R**
CBC (WBC & Diff, RBC, Hgb,	6		1		

HCT Platelet count)					
Blood Morphology	6		1		
Blood Film	6		1		
Bleeding time & Coagulating time	6		1		
ESR	6		1		
Reticulocyte count	6		1		
Blood group& Rh	6		1		
VDRL	6		1		
Blood Chemistry,	6		1		
Serum electrolytes	6		1		
HBsAg	6		1		
CSF	6		1		
Gram stain	6		1		
Urine analysis,	6		1		
Stool exam	6		1		
Culture and sensitivity of any fluid	6		1		
X-Ray (Chest, skull, plain abdomen, contrast, bones)	6		1		
Ultrasound	6		1		
Laboratory & imaging service			18		

Mhg mj

Essential drugs	Required in Month(R)	Observed (O)	Agreed Weight (AWt.)	Finding O*AWt/R	Achievement O*100/R
Amoxicillin	6		1.077		
Amoxicillin + Clavulanic Acid	6		1.077		
Ampicillin	6		1.077		
Cloxacillin	6		1.077		

Cephalexin 5	6		1.077		
Cefazolin 3	6		1.077		
Azithromycin 2	6		1.077		
Clarithromycin	6		1.077		
Sulphamethoxazole +Trimethoprim	6		1.077		
Nitrofurantoin 4	6		1.077		
Gentamicin	6		1.077		
Metronidazole	6		1.077		
Medical supplies	6		1.077		
		Essential drugs	14		

Service provider's Signature _____, Date _____

Name **Signature** **Date**

Data Collector _____, _____, _____

Supervisor _____, _____, _____

II. Data collection tools for Observation (Compliance)

Good morning / Afternoon my name is _____, I am Second year Student in MSc program by Health monitoring and evaluation Department from Jimma university. I am conducting the evaluation of quality of Neonatal intensive care unit service and this evaluation will help to identify where the gap and the challenges related to the service provision as well as it will be the input to improve quality of service provision.

If you have given permission to participate/observe the care and treatment, which gives for your baby/babies or who can give care and the interaction between yours and health professionals I need it and I am so happy. It is important for you to understand neither you are not participating in this study nor did not participate your kid has a right to get any service which gives in the Hospital. If you choose to participate in this study you need to know that you may refuse my observation at any time/stage without giving any explanation and also there is no payment or reward for the participation in this study. The information that is gathered from the interview will be kept strictly confidential.

If you want to ask questions for clarification about the study later on you can contact me_____ by phone number 0911708751. May I have a permission to proceed to the observation? Circle Yes/No 1. If yes, thank you and put your consent below 2. If no, can you describe the reason why not?

A. I am not comfortable B. I did not explain my reason C. I have disinterested from exposed my kid for another person D. Other specify

I certify that I read/read to me and understand the statement above agreed to participate in the interview

Signature _____ Date _____ completion date for the cheek list _____

Time session begin _____ finishing time_____

Name of Hospital _____

Akkam bultan/ooltan? Maqaan koo _____ jedhama. Univarsitii Jimmatti, Muummee barnoota "Health monitoring and Evaluation"tti Barattuu Digirii 2^{ffaa} waggaa lammaffaa yemmuun ta'u qo'annoo madaallii tajaajila "qulquina tajaajiila kutaa hordoffi fii yaalii daa'imman kichuu irratti

kennamu" gaggeessaa kanan jiru yoo ta'u, Qo'annoon madaallin kun tilmaama rakkowwa tajaajila wajjin wal- qabatee dhufuufii essarraa akka maddan kan qoratuufii qulqultinni tajaajila kennamuu akka fooya'u galtee kan ta'uudha. kanaf,

Hordoffii/yaala mucaa keessanif ykn Daa'ima siin gargaaraa jirtanif godhamu irrati hirmaadhee hordoffi daa'imaaf taasifamu ilaaluu/hordofuu nan barbaada waan ta'eef yoo fedhii keessan ta'e akkan ilaalu naaf heyyama. Yoo fedhii hin qabaannefii qorannoo kana irratti hin hirmannes daaimni keessan tajaajla argachu qabu/kennamuufii qabu hunda daaimni keessan argachuuf mirga qaba/adda jalaa hin citu.

Hordoffii kana irratti akkan hirmaadhu yoo heyyamamaa/tuu taatan naan hirmaadha. Yoo fedha keessan hin taane yeroo kamuu hordofficha addaan akka citu goochuu nidandeechu. Odeeffannoo asitti ilaale hundi icitidhan eegama.

Qoranno kana irratti hirmaachuu keessaniin kafaltiin siniif kaffalamu hin jiru. Waan ifa isiniif hintaanee yoo jirate dhuma rratti gaafachuu yoo barbadda lakk bilbilaa _____bilbiltanii gaafachuu nidandeechu.

Qo'annoo kana irratti akkan hirmaadhu naaf heyyamtanii jirtuu? Deebiin kessan eyyeni yoo ta'e

Galatoomaa! Waliigaltee kanarratti mallatteessaa

Mallatoo_____ Guyyaa _____

Lakkii tajaajila daa'ima kootif kennamu irratti akka hirmaattu hin heyyamu yoo jettan sababiin kessan maali?

A. Sababa koo sitti himuuf yeroo hin qabu B. Sababa koo ibsuun barbaachisaa miti

B. Daa’ima koo namni biraa akka ilaalu hin barbaadu D. Sababni biraa yoo jiratee yaaibsamu

Guyyaa gucnii dawwannaa itti guuttame Guyyaa/Ji’a/Bara

Sa’aa daawwiin itti jalqabame _____

Sa’aa daawwiin itti xumurame _____

Maqaa dhabbata fayyaa Hospitaala Fiichee

Maqaa nama gucicha guutee_____

Data collection tools for Exit interview (satisfaction)

Good morning / Afternoon my name is _____, I am Second year Student in MSc program by Health monitoring and evaluation Department from Jimma university. I am conducting the evaluation of implementation evaluation of Neonatal intensive care unit service and this evaluation will help to identify where the gap and the challenges related to the service provision as well as it will be the input to improve quality of service provision.

If you have given permission to participate/observe the care and treatment which gives for your baby/babies or who can give care and the interaction between yours and health professionals I need it and I am so happy. It is important for you to understand neither you are participating in this study nor did not participate your kid has a right to get any service which gives in the Hospital. If you choose to participate in this study you need to know that you may refuse my observation at any time/stage without giving any explanation and also there is no payment or reward for the participation in this study. The information that is gathered from the interview will be kept strictly confidential.

If you want to ask questions for clarification about the study later on you can contact me by phone number 0911708751. May I have a permission to proceed to the observation? Circle Yes/No

1. If yes, thank you and put your consent below 2. If no, can you describe the reason why not? A. I am not comfortable B. I did not explain my reason C. I have disinterested from exposed my kid for another person D. Other specify

I certify that I read/read to me and understand the statement above agreed to participate in the interview

Signature _____ Date _____ Completion date for the cheek list _____

Time session begin _____ finishing time_____

Name of Hospital _____

Socio-demographic part

Maternal information	
Sex	1. Male 2. Female
Age	_____
Relationship of parent with patient	1. Mother 2. Father 3. Sister 4. Brother 5. Kin 6. Other
Educational level of care taker	1. Unable to read &write 2. Able to read and write 3. Primary school 4. Secondary school 5. tertiary school
Marital status of the care taker	1. Married 2. Divorced 3. Widowed 4. Not married
Place of residence of parents	1. Urban 2. Rural
Current occupation of parents	1. Farmer 2. Merchant 3. Governmental 4. Daily laborer 5. House wife 6. Student 7. Other
Monthly income of care taker	_____
Neonatal related information	
Place of birth of patient	1. Health center 2. Hospital 3. At home 4. On the travel 5. Other 6. unknown
Length of stay in the Hospital	1. Less than two weeks 2. More than two weeks

For Parents

Please tell how to feel about the following and respond using the following statements Very satisfied, satisfied, neutral, dissatisfied, very satisfied

For data collectors

Please put (X) for every answer which answered by the parent in the provided box.

Variables	Very satisfied (5)	Satisfied (4)	Neutral (3)	Dissatisfied (4)	Very dissatisfied (5)
Are you satisfied with the adequacy of neonatal bed in NICU?					
Are you satisfied with the cleanness of neonatal bed in NICU department?					
Are you satisfied with the cleanliness of NICU department?					
Are you satisfied with well ventilation in NICU department?					
Are you satisfied with clear information given by the NICU stuff?					
Are you satisfied with the consent and permission before procedures?					
Are you satisfied with the ordered investigation that they availed (laboratory/imaging services)?					
Are you satisfied with the availability of ordered medication in the Hospital?					
Are you satisfied with availability of service provider with 24 hours per week?					
Are you Satisfied with the consequence of treatments of your baby's?					
Are you satisfied with care and treatment of the patient?					
Are you satisfied with the cleanness of Bathroom and toilet room in NICU?					

Akkam bultan/akkamooltan? Maqaan koo _____ jedhama. Maqaan miiltoo kootii Yimmanyusha Hayiluuti. Univarsitii Jimmatti, Muummee barnoota “Health Program Monitoring and Evaluation” tti Barattuu Digirii 2ffaa waggaa lammaffaa yemmuu ta’u qo’annoo madaallii tajaajila fayyaa “Madaallii haala adeemsa kenniinsa tajaajilaa, hordoffii, kunuunsa fii yaalii daa’imman kichuu kutaa deddebii fii cisicha irratti kennamu” gaggeessaa kan jirru yoo ta’u, Qo’annoon madaallin kun qaawwa, rakkoowwaniifii hanqinaale kenniinsa tajaajila kutaa kanaa jiru adda baasuun tooftaa ittin hanqinaaleef rakkowwan itti foyya’an agarsiisuu fi haalli kenninsa fi qulqulina tajaajila fayyaa kuticha akka fooya’uuf galtee kan ta’udha. kanaaf isinis qaama qo’annoo kana akka taatan siin gaafadha.

Haaluma kanaan tajaajila waliigala kutaa kanatii daa’ima kessaniif/daa’ima isiin kunuunsitaniif kenname ilaalchisee sadarka itti quufinsaa kessan haala gaaffif deebiitiin akka natti himtan isiin affera. Qo’anno kanarratti kan hirmaattan fedhii keessaniin qofa yoo ta’u, waan qo’annoo kana irratti hirmaattaniif fayidaan addaa argattan kan hin jirreefi deebiin/yaadnii isiin naaf laattan hiccitiidhan qabame tajaajila qo’anno kanaatif qofa kan ooluufi qaama biroof dabarfamee kan hin kennamene ta’uu isaa fii kenninsa tajaajilaa daa’ima kessanii irratti gonkuma kan dhiibbaa hin finne ta’u isaa sinifan mirkaneessa. Gaafif deebii qo’annoo kana erga jalqabdanii booda hanga dhumaatti xumuruuf yoo fedhii dhabdan battalumatti dhaabuu nidandeechu.

Ibsa hanga ammatti siniif godhameef wantii ifa isiinii hin taane yoo jirate gaafachuu nidandechu. Yaada dabalata yoo barbaaddan ammoo lakk. Bilbila 0911708751 irratti bilbiluun miltoo koo/yimmanyushal Hailuu irraa yaada gahaa argachuu nidandeechuu.

Qo’annoo kana irratti hirmaachuf fedhii qabdu? Deebiin kessan eyyeni yoo ta’e, Galatoomaa! Waliigaltee kanarratti mallatteessaa Mallatoo_____ Guyyaa _____

Lakkii hirmaachuu hin yoo jettan sababa kessan nati himuu nidandeechu?

A. Sababa koo sitti himuuf yeroo hin qabu B. Sababa koo ibsuun barbaachisaa miti

A. Daa'ima koo namni biraa akka ilaalu hin barbaadu D. Sababni biraa yoo jiratee yaaibsamu

Guyyaa gucnii kun itti guuttame Guyyaa/Ji'a/Bara ___ ___ ___

Sa'aa daawwiin itti jalqabame_____ Sa'aa daawwiin itti xumuramee_____

Maqaa dhabbata fayyaa Hospitaala waliigalaa Fiichee Maqaa nama gucicha guutee_____

Maqaa too'ataa_____ mallattoo _____ guyyaa _____

Maatii da'imman dhukkubsataniitif

Tajaajila kutaa kanaa ilaalchisee waan sinitti dhagahamee haala armaan gadiitti natti himaa Baayy'een ittii quufe, Itti quufe, Giddu-galeessa, itti hin quufne, Baayy'een ittii hin quufne.

Ragaa sassabaaf/sassabduuf ; Lakoofsa deebii kunuunsituun/kunuunsaan daa'ima siif deebise keessatti mallattoo (X) kaa'i.

Gaafilee himaatan qo’annoo deebisaniif deebii isaa iddoo barbaachisoo gabatee keessatti mallattoo X(□) kaa’

Gaafilee	Baayy’een ittii quufe	Itti quufe	Giddu-galeessa	itti hin quufne	Baayy’een ittii hin quufne
Walgahiinsa sire kutaa daa’imman kichuu ciisanii itti yaalamanitti itti quufinsa qabduu?Walgahiinsa sire kutaa daa’imman kichuu ciisanii itti yaalamanitti itti quufinsa qabduu?					
Qulqulina siree kutaa daa’imman kichuu ciisanii itti yaalamanitti itti quufinsa qabduu?					
Qulqulina kutaa daa’imman kichuun ciisanii itti yaalamanitti ittii quufinsa qabduu?					
Ulfina Ogeeyyiin fayyaa kutaa cisicha daa’imman kichuu isinii kennaniifi yaada keessan kabajaniin itti quufinsa qabduu?					
Deebii Ogeeyyiin fayyaa kutaa cisicha daa’imman kichuu gama kamiiu isinii kennaniti itti quufinsa qabduu?					
Heyyamummaa fii waliigaltee tajaajila kamiyyuu dura gootanitti itti quufinsa qabduu?					
Tajaajila qo’annoo laboratorii daa’ima kessanii ajajamee hospitaala kessatti argachuu kessanitti itti quufinsa qabduu?					
Qoricha/dawwaa daa’ima keessanii ajajame hospitaala keessa argachuu					

kessaniin itti quufinsa qabduu?					
Ogeeyiin fayyaa yeroo hunda sa'aa 24/G/7 kutaa ciisicha daa'mman kichuu kessatti argamuu isaanitiin itti quufinsa qabduu?					
Hordoffii kutaa ciisicha daa'mman kichuu kessatti daa'ima kessaniif godhamutti itti quufinsi kessan maal fakkata?					
Kunuunsafii yaalii daa'ima kessaniif godhametti itti quufinsi kessan hammami?					
Jijjirama fayyaa daa'ima kessaniiti quuftanii jirtu?					
Nyaata Hospitalli isiinii dhiyeesutti gammaddee jirtaa?					

Key informant interview

Introduction and Consent

Good morning / Afternoon My name is Yimegnushal Hailu, I am here from Jimma university, health monitoring and Evaluation department to conduct Evaluation research of implementation of neonatal intensive care unit (NICU) service provision as partial fulfillment for the requirement of Masters in Health monitoring and Evaluation. The purpose of the interview is to collect information on your experience at this NICU department. The information obtained from you will be used to identify the challenges and gaps related to service provision as well as to indicate the ways of improve the implementation of NICU service provision. The interview will take approximately 25 to 30 minutes. All the information obtained from you will be kept confidential. Your participation in the study is completely voluntary. You may withdraw your consent and discontinue participation at any time or you have the right not to answer any question that you do not want to. However, I hope you will participate in the survey since your views are important.

Do you want to ask me anything about the survey?

May I begin the interview now? Circle one from the two 1. Yes 2. No

If your answer is yes, sign your consent. If your answer is no, thank you and finished

Signature of interviewee_____ Date ____/____ /

NICU department health service provider

Questionnaire ID: _____ Interviewer's Name, _____Name of health facility _____

Date of Interview: _____ Time interview started _____Time interview ended:

General information question	Gender	Age of the respondent in year	Level of education	Profession of the respondent	What is your total working experience in profession?	What is your working experience in NICU department?
Response						

1. How long do you provide services to the NICU department? Year/month
2. How do keep the cleanliness of the NICU department? Who is cleaning the NICU? When and how was it cleaned?
3. Are there needs of special/on job training for NICU department? How many of the NICU staff were got it? If yes, is there any standard guideline and logistic for its implementation? If no why? 1. Yes 2. No
4. Are there enough supplies, equipment's and logistics according to the standard? How to solve it? What is your and NICU staff responsibilities to handle them appropriately?
5. Is there regular morning review session/review the performance of NICU service implementation status? How to explain it?
6. How to explain human resource according to the standard (HSP & supportive staff) in your department?
7. What should be done to improve the implementation status and quality service provision of NICU?
8. How did you assess the client feeling in the NICU service? What is the mechanism to ensure the quality of care in the NICU department?

KII NICU department head nurses

General information question	Gender	Age of the respondent in year	Level of education	Profession of the respondent	What is your total working experience in profession?	What is your working experience in NICU department?	What is your working experience in this position/responsibility?
Response							

1. Can you explain the implementation status of NICU in this facility? What type of the NICU?
2. What is the capacity of NICU/the maximum number of neonates and their parents that can stay here at one time? How many newborns are admitted per month?
3. Tell me about your work/responsibility in the NICU department/what is your day-to-day work like/what role do you play in managing NICU?

4. Are there the availability of personnel, premises, products and procedures for NICU service implementation according to the standard? If yes how to describe it? If no why?
5. Are there the provided services and procedures in this department fulfill the standard NICU guide line? If yes h ow? If no why?
6. Did your department use the information from performance monitoring result to proper and appropriate decision making/as the input of quality service provision? If yes how? if no why?
7. How do you describe the support received from others (ORHB, ZHD Other leading Hospitals, NGOs or the community for implementation of NICU service as well as external supportive supervision?
8. What are the challenges and factors faced to NICU service implementation? What else needs to be done to overcome the challenges?

Do you have any other suggestions that you would like to share? Please?

Thank you very much for your participation

1. Did Fitche general hospitals' administrative team support, monitor, and evaluate the service provision of NICU in this hospital? If yes how? If not, why?
2. What about internal supportive supervision and methods of performance monitoring as well as the assessment of health service providers in the NICU department? How often? And who will do it?
3. Has Fitche general hospital's administrative team scheduled a review meeting with NICU department staff about service delivery? If yes how to run? If not, why?
4. In your opinion, do you think the NICU is providing optimal care? How to explain it?
5. Is there any mechanism of knowing health service provider and client satisfaction about NICU service implementation? If yes describe the way to assess their feeling.
6. Did your Hospital use the information from performance monitoring result to proper and appropriate decision making/as the input of quality service provision? If yes how? If not why?
7. Are there determinants in your Hospital's NICU service implementation? If yes how to describe and the ways to solve them?

Key informant interview with Hospital CEO

General information	Gender	Age of the respondent in year	Level of education	Profession of the respondent	How long your total working experience	How long in current position	How long to working in this office
Response							

1. Did Fitche Hospitals' administrative team support, monitor and evaluate the service prevision of NICU in this Hospital? If yes how? If no why?
2. What about internal supportive supervision and method of performance monitoring as well as the assessment of health service provider in the NICU department? How often? And who will do it?
3. Have Fitche Hospitals' administrative team scheduled review meeting with NICU department staffs about service delivery? If yes how to ran? If no why? __
4. In your opinion, do you think the NICU is providing optimal care? How to explain it?
5. Is there any mechanism of knowing health service provider and client satisfaction about NICU service implementation? If yes describe the way to assess their feeling.
6. Did your Hospital use the information from performance monitoring result to proper and appropriate decision making/as the input of quality service provision? If yes how? if no why?
7. Are there determinants in your Hospital's NICU service implementation? If yes how to describe and the ways to solve them?

Thank you for your participation!

Key informant interview with Hospital *ORHB*

General information question	Gender	Age of the respondent in year	Level of literacy	Profession of the respondent	How long your total working experience	How long in current position	How long to working in this office
Response							

1. What effect you know on neonatal mortality and morbidity after NICU service implementation start in Fitche general Hospital?

2. Are you thinking NICU service implementation was succeed in Fitche general Hospital? If yes how it describe/measure? If no why?

3. In your opinion, do you think the NICU service implementation in Fitche general Hospital is provided that optimal care? If yes, how to explain it? If no why?

4. Did ORHB (your department) has schedule for regular supportive supervision for Fitche general Hospital NICU and implement the planed supervision depending on the regular schedule? If yes how often if no why?

5. Do you regularly review the performance of NICU service implementation with Fitche general Hospital? and use the information get from the performance for decision making? If yes how? If no why?

6. Are their challenges and factors faced to NICU service implementation in Fitche general Hospital? If yes, how to explained and resolve it?

Do you have any other suggestions that you would like to share? Please?

Thank you very much for your participation

*Key informant interview with program coordinator at **ZHD***

General information	Gender	Age of the respondent in year	Level of literacy	Profession of the respondent	How long your total working experience	How long in current position	How long to working in this office
Response							

1. How long to start NICU service implementation in Fitche general Hospital? _____

2. Did you perceive there is any difference on neonatal death before and after NICU service implementation in Fitche general Hospital (North Shoa zone health)? How could you explain it? _____

3. Do you believe Fitche general Hospital NICU service provision has implemented according to the national guideline If yes how to express it? If no why? _____

4. Did you state about method of performance monitoring to NICU service implementation and supportive supervision from your department to Fitche general Hospital? If yes, how implement it? If no why? _____

5. What are potential obstacles to sustaining the successes of NICU service provision? How to resolve it?

_____

Annex II. Information and judgment matrix for analysis

Information matrix of analysis for availability resources in the evaluation of implementation evaluation of NICU service in Fitche General Hospital by 2021

Evaluation question & Dimension	Indicator	Source of Data	Data collection method	Data collection tools
Are the needed resources for NICU program available? If yes how? If not why? Availability dimension	# Of trained health service provider available in NICU department	NICU Staffs	Interview & Resource inventory	Resource inventory
	Availability of NICU guide line and Availability of infection prevention (IP) guideline in the department	Program document	Observation	Observation check list
	# Of rooms in the NICU department	NICU Staffs	Observation & interview	Interview check list
	# Of beds in NICU rooms	NICU Staffs	Observation	Observation check list
	Proportion of medical equipment available in NICU department	Program Document	Document review	Document review check list
	Proportion of essential drugs for NICU service provision	Program Document	Document review	Document review check list

	Proportion of laboratory tests available for admitted neonates	Program Document	Document review	Document review check list
	Number of charts available in NICU department	NICU staff	Observation	Observation checklist
	Number of IEC materials avail in NICU department	Program document	Observation	Observation checklist
	Number of hand washing facility available in NICU rooms	NICU staff	Observation	Observation checklist
	Availability electric city/source of power in NICU department	NICU staff	Observation	Observation checklist
	Number of registration book avail in NICU department	Program document	Observation	observation checklist
	Number of recording & reporting formats available in NICU department	Program document	Observation	observation checklist

Table ___ information matrix of analysis for compliance of the standard in the evaluation of implementation evaluation of NICU service in Fitche General Hospital by 2021

Evaluation question and dimension	Indicator	Numerator	Denominator	Source of data	Data collection methods	Data collection tools
Did the NICU service carry out according to the standard guideline in Fitche General Hospital? If yes, how? If no, why?	Proportion of parents who are communicated by their own local language or easily understandable language.	Number of parents who communicated by their own local language or easily understandable language with HSPs	Total number of HSP–Parent interaction observed	HSPs & Parents	Direct observation	Observation check list
	proportion of patients measure and recorded their V/S	Number of Pts their V/S measured & recorded were received compassionate and respect full care.	Total number of observed neonates	HSPs, Parents & patients	Direct observation	Observation check list
	Number of neonates whose body weight was measured	Number of admitted neonates their body wt. was weighing and	Total number of observed neonates	Patient card(folder)	Observation check list	Observation & document review check

	recorded at admission.				list
Number of parents who received counseling and information dissemination as per the standard	Number of Parents who were received counseling & HEI as per the standard	Total number of HSP–Parent interaction observed	HSPs & Parents	Direct observation	Observation check list
proportion of patients who received their care and treatment following the WHO hand-washing event	Number of Patient their care and Rx implement followed as standard guideline	Total number of HSP-Pt interaction observed	HSPs & Pts	Direct observation	Observation check list
Proportion of patient their identification information recorded on the admission discharge register	Number of Patients identification information recorded on the admission discharge register	Total number of Patient who are admitted with in the past six months	program documents	record review	recored review check list
Proportion of patients whose admission diagnosis was	Number of admitted Patients and recorded their Dx	Total number of Patient who are admitted with in	program documents	record review	record review check list

documented on the admission discharge register.		the past six months			
Proportion of patients whose essential nursing care was documented on their card	Number of patients which get essential NC and documented in their folder	Total number of Patient who are admitted with in the past six months	program documents	record review	record review check list
Proportion of patient their discharge status was recorded on the admission discharge registration book in NICU	Number of patients their discharge status was recorded on admission discharge registration book	Total number of Patient who are admitted with in the past six months	program documents	record review	record review check list
Proportion of patients who got appointments for follow up within 7 days of discharge	Number of patients who received appointment within 7 days of discharge	Total number of Patient who are admitted with in the past six months	program documents	record review	record review check list
Proportion of	Number of completed HMIS reports submitted	Compiled HMIS report within the	program	record	record review

	completed reports submitted to HMIS department	to the HMIS dpt.	last six months	documents	review	check list
	Proportion of timeline reports submitted to HMIS department	Number of timeliness HMIS reports submitted to the HMIS dpt.	Total number of compiled HMIS report within the last six months	program documents	record review	record review check list
	Number of integrated supportive supervision received by NICU	Number of integrated supportive supervision received by NICU	Total number of conducted integrated supportive supervision with in the last six months	program documents	record review	record review check list

Table ___ information matrix for Parents' satisfaction in the evaluation of implementation evaluation of NICU service in Fitche General Hospital by 2021

Evaluation question and dimension	**Indicator**	**Numerator**	**Denominator**	**Source of data**	**Data collection methods**	**Data collection tools**
Are parents	Proportion of Parents satisfied	# Of Parents who	Total number of	Parents of	Exit	Structured

satisfied with NICU service provided? If yes how, If no, why?	with the adequacy of neonatal bed in NICU	satisfied with the adequacy of neonatal bed in NICU	interviewed Parents	the admitted neonates'	interview	questionnaire
	Proportion of Parents satisfied with the cleanness of neonatal bed in NICU department	# Of Parents who satisfied with the cleanness of bed in NICU	Total number of Parents interviewed	Parents	Exit interview	Structured questionnaire
	Proportion of Parents satisfied with the cleanliness of NICU department	# Of Parents who satisfied with the cleanliness of NICU department	Total number of Parents interviewed	Parents	Exit interview	Structured questionnaire
	Proportion of Parents satisfied with well ventilation health service provider in NICU department	# Of Parents who are satisfied with well ventilation of NICU department	Total number of Parents interviewed	Parents	Exit interview	Structured questionnaire
	Proportion of Parents satisfied with provided clear information from NICU department stuff	# Of Parents who satisfied with the staff's response any Information about their admitted child	Total number of Parents interviewed	Parents	Exit interview	Structured questionnaire
	Proportion of Parents satisfied with the consent and permission before procedures	# Of Parents who satisfied with the consent and permission before	Total number of Parents interviewed	Parents	Exit interview	Structured questionnaire

		procedures				
	Proportion of Parents satisfied with the availability of ordered investigation that they received (lab & imaging)	# Of Parents who satisfied with the ordered investigation (lab & imaging)	Total number of Parents interviewed	Parents	Exit interview	Structured questionnaire
	Proportion of Parents satisfied with the availability of ordered medication in the Hospital	# Of Parents who satisfied with the availability of ordered medication	Total number of Parents interviewed	Parents	Exit interview	Structured questionnaire
	Proportion of Parents satisfied with the availability of HSPs with 24 hours per week	# Of Parents who satisfied with the availability of service provider with 24 hours/week	Total number of Parents interviewed	Parents	Exit interview	Structured questionnaire
	Proportion of Parents satisfied with the adequate care and Rx of their child	# Of Parents who satisfied with the adequate care and Rx of their neonate/s	Total number of Parents interviewed	Parents	Exit interview	Structured questionnaire
	Proportion of Parents Satisfied by the consequence of their baby's	# Of Parents who satisfied with by their	Total number of Parents	Parents	Exit interview	Structured questionnaire

		baby's progress	interviewed			
	Proportion of Parents satisfied with cleanness of bath room and toilet	# Of Parents who Satisfied with cleanness of shower and toilet	Total number of Parents interviewed	Parents	Exit interview	Structured questionnaire