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Nursing Management in Neonate Intensive Care Unit (NICU) Hospital X Bandung

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ABSTRACT

Nursing management in the Neonate Intensive Care Unit (NICU) of Hospital X Bandung is an important aspect in providing optimal health services for infants who require intensive care. This study aims to evaluate the implementation of nursing management in the NICU, focusing on aspects of planning, organizing, directing, staffing, and supervising. The method used was descriptive qualitative analysis through observation and interviews with the nursing team and hospital management. The results showed that although nursing management functions were well implemented, there were challenges such as a lack of clarity in the organizational structure and the need to improve nurse certification. Unit performance indicators showed positive achievements, especially in handling autoextubation cases. However, the implementation of Standard Operating Procedures (SOPs) in the NICU unit still needed to be improved, as some procedures were not well documented. The conclusion of this study emphasizes the need for improvements in nursing management to improve service quality and the importance of continuous training for nurses. Recommendations include strengthening coordination between medical teams and improving SOPs in the NICU, in order to increase the effectiveness of health services for neonate patients. This study is expected to make a positive contribution to hospital managers and nursing practitioners in improving the quality of services in the NICU.

KEYWORDS *Nursing management, NICU, health services, planning, Standard Operating Procedures.*

INTRODUCTION

Kepmenkes RI Number 279/MENKES/SK/IV/2006 states that nursing services are a form of professional service which is an integral part of health services based on nursing science and skills, in the form of comprehensive bio-psycho-socio-spiritual services and aimed at individuals, families, and communities—both sick and healthy—which covers the entire process of human life. Nursing services are a guarantee of the quality of health services provided to patients, whether they are sick or in good health (Tadzong-Awasum et al., 2022). According to the Ministry of Health (2022), in order to achieve the goals and objectivity of nursing care quickly and precisely, it is necessary to

implement nursing management. Nursing management is a form of coordination and integration of nursing resources and is able to facilitate the work of *perawat pelaksana* (implementing nurses). Nurse managers should be able to implement the *POAC* nursing management process (*planning, organizing, actuating,* and *controlling*). The implementation of good nursing management can result in maximum and correct nurse performance, thus providing satisfaction for patients (Ardyansyah, 2022).

To complete the requirements of the *Magister Keperawatan* Leadership and Management Residency, students conduct residencies at Rumah X Bandung (Tambunan et al., 2025). Due to time constraints, students carry out their nursing management residency in one unit, specifically the NICU Room of Hospital X Bandung. The NICU room of RS X Bandung is a special unit for caring for newborn babies who require close supervision from medical personnel. Babies admitted to the NICU are usually born prematurely (less than 37 weeks), experience complications during delivery, or are born with health problems such as respiratory distress and low birth weight (less than 2500 grams) (Yuniati, 2022; Javaid Ahmad Mir, 2022).

Nursing care in the neonatal intensive care unit (NICU) is particularly challenging because it focuses on the management of infants who require continuous monitoring and advanced treatment to support life and development (Ahn & Lee, 2020; Bambi et al., 2021). Infants admitted to the NICU, such as premature newborns or those with complex medical conditions, are highly vulnerable and demand specialized attention from the healthcare team, particularly nurses (Gale et al., 2019). Providing optimal intensive care requires not only clinical expertise but also strong nursing leadership and effective management to ensure coordination, safety, and quality of care (Coughlin et al., 2020; Dos Santos et al., 2022). For nursing students, NICU practice involves applying managerial knowledge, reviewing collected clinical data, identifying nursing problems, and evaluating field findings (Knudsen et al., 2018). This process culminates in the preparation of a Plan of Action (POA) aimed at delivering actionable input to improve nursing services (Patel et al., 2021). Students are typically supervised by field instructors from the hospital as well as academic mentors, ensuring that both practical and theoretical competencies are integrated into NICU care delivery (Heidari et al., 2022).

The increasing complexity of neonatal care in modern healthcare settings has highlighted the critical importance of effective nursing management in NICU environments. With technological advances and evolving care protocols, there is an urgent need to evaluate current management practices to ensure optimal patient outcomes and staff efficiency. The unique challenges faced in NICU settings—including high patient acuity, emotional stress on families, and the need for specialized expertise—make effective nursing management not just beneficial but essential for quality care delivery.

While several studies have examined nursing management in various hospital settings, limited research has specifically focused on NICU management in Indonesian healthcare contexts. Previous international studies have highlighted the importance of structured management approaches in intensive care settings, but there remains a significant gap in understanding how these principles apply specifically to neonatal care in resource-constrained environments. Furthermore, most existing research has focused on individual management functions rather than providing a comprehensive assessment of all management aspects within a single NICU setting.

This study represents the first comprehensive evaluation of nursing management functions in a NICU setting within the Indonesian healthcare context, specifically examining the integration of planning, organizing, directing, staffing, and supervising functions. The research introduces a novel approach by combining traditional management assessment with contemporary quality indicators and patient safety metrics, providing a holistic view of management effectiveness in neonatal intensive care.

The primary goal of this study is to ensure students gain a thorough understanding of management principles and develop essential skills to operate a Neonatal Intensive Care Unit (NICU) based on theoretical knowledge acquired during lectures, which they can then apply in real-world settings. Specifically, the research aims to help students comprehend the scope of NICU management activities, evaluate nursing services using the *4M* approach (*Man, Material, Machine, Method*), and identify and analyze existing problems within the NICU environment. Additionally, students are expected to propose alternative solutions to these challenges and provide actionable insights for healthcare professionals working in the unit, as well as offer recommendations to enhance the structure of future residency programs.

Beyond academic development, this research holds significant practical benefits, particularly in improving the quality of neonatal care by delivering evidence-based recommendations for refining nursing management practices. The findings will serve as a valuable resource for hospital administrators, nursing managers, and frontline staff, equipping them with practical strategies to optimize NICU operations. By addressing key challenges and proposing effective solutions, the study aims to enhance overall efficiency and patient outcomes in neonatal care units, ensuring that healthcare providers are better prepared to manage complex situations.

The implications of this research extend far beyond the immediate hospital environment, potentially shaping policy development for neonatal care standards across Indonesian healthcare institutions. By contributing to the broader body of knowledge on nursing management in specialized care settings, the study could influence best practices and operational guidelines nationwide. This wider impact underscores the importance of the research, as it not only addresses current gaps in NICU management but also lays the groundwork for systemic improvements in neonatal healthcare

delivery.

The Nursing Management Residency will be conducted over a three-month period, from October to December 2024, providing students with hands-on experience in NICU operations while simultaneously generating actionable insights for healthcare improvement. This structured timeframe ensures a focused and intensive exploration of management challenges and solutions, allowing participants to apply their learning in a real clinical setting while contributing to meaningful advancements in neonatal care practices. The residency's duration strikes a balance between thorough investigation and practical implementation, maximizing its potential impact.

RESEARCH METHOD

This study utilized a descriptive qualitative approach to thoroughly assess nursing management functions in the NICU of Hospital X Bandung, aiming to examine current practices and identify areas for improvement. The methodology was carefully structured to gather detailed insights into the organizational dynamics of the unit, ensuring a nuanced understanding that quantitative methods alone could not achieve. By focusing on real-world operations, the research provided a contextual evaluation of how management functions are implemented in a high-stakes clinical environment.

The research was conducted over three months (October to December 2024) in the hospital's 4-bed NICU, which specializes in critical neonatal care. Data collection involved multiple methods, including structured observations of daily management activities—such as shift transitions and patient rounds—as well as in-depth interviews with key personnel, including head nurses, charge nurses, and administrative staff. Additionally, a thorough review of policies, staffing schedules, and performance records was conducted to supplement observational and interview data, ensuring a comprehensive assessment of management practices.

Participants in the study included all 13 NICU nurses, two support staff members, and relevant administrative personnel, allowing for a holistic view of operations. Thematic analysis was applied to categorize data according to the core management functions—planning, organizing, directing, staffing, and supervising—while a *SWOT* analysis was used to identify strengths, weaknesses, opportunities, and threats within the existing system. Validated tools such as observation checklists, interview guides, and document analysis templates were employed to maintain consistency and reliability in data collection.

Ethical approval was obtained from the hospital's *Komite Etik* (ethics committee), and all participants provided informed consent, ensuring compliance with research integrity standards. By combining these methods, the study not only captured the complexities of NICU management but also laid the groundwork for practical recommendations to enhance efficiency and care quality in similar specialized units. The findings are expected to contribute valuable insights for both hospital

administrators and nursing leaders seeking to optimize neonatal care delivery.

RESULT AND DISCUSSION

NICU Assessment Results of RS X Bandung

NICU Planning Function

Planning is a process that defines the goals to be achieved in an organization, develops strategies in achieving organizational goals and develops work activity plans in an organization (Ida Matul Khoriyah, 2020). Hospital X Bandung's vision is to serve as an instrument of divine love in promoting holistic health, guided by its mission to develop spiritual, ethical, and professional human resources while delivering science-based, quality healthcare. The institution emphasizes appropriate health technology and promotes healthy living, operating under the philosophy of "Serve with Love" and the motto "We care, God heals," reflecting its faith-based approach to medical service.

The hospital cultivates a strong organizational culture built on teamwork, positive interactions through trust and respect, and proactive service with courtesy and integrity. Staff are encouraged to maintain healthy lifestyles through balanced nutrition, exercise, and spiritual well-being, reinforcing the institution's commitment to comprehensive care that addresses both physical and emotional needs while prioritizing patient-centered service with warmth and professionalism.

The Nursing Department of Hospital X Bandung aspires to be the premier choice for nursing services in the region, guided by its vision of excellence and its mission rooted in divine compassion. Committed to delivering prompt, accurate, and compassionate care, the department focuses on maintaining highly skilled and ethically-driven nursing staff while adhering to professional standards and codes of conduct. Through continuous training and a patient-centered approach, it upholds its motto "We care, God heals," ensuring quality healthcare that blends professional expertise with spiritual values.

Daily plan of the Rookie / Responsible

Based on an interview with the head of the NICU room. The daily plan makes a service schedule together with the Assistant Head of the Room (Karu) and the Nurse in Charge (PPJ) for the division of tasks for each shift adjusted to the patient's condition.

Planning Function Problems

Based on the results of interviews and observations, no problems were found in the planning function in the NICU room of X Bandung Hospital.

Organizing Function

The organizing function is an activity such as division of tasks, coordination, and supervision directed towards achieving organizational goals, points of view, perspectives that individuals use to see their organization and its environment (Siti Ulvana Riyani, 2020).

Organization of Client Care

Client care in the NICU unit of RS X Bandung uses the Primary Nursing method modified per shift. In its implementation, nurses who have not been certified are supervised and guided by PPJ and by PPs who have been certified.

Unit Performance Indicators

Performance indicators are quantitative and qualitative measures that describe the level of achievement of a target or goal that has been set (Syafina, 2020). NICU Unit Performance Indicators in 2024 regarding Autoectubation Events. It was found that the achievement results in September were 2.94 / ml, there were 2 incidents of auto-extubation in patients admitted to the NICU unit. This achievement did not reach the target set. The formula used is Numerator / Denominator x 1000 miles, where the Numerator is the number of auto extubation events and the denominator is the number of days the patient wears an ETT, and the inclusion criteria are all intubated patients. Based on the achievements in September, the follow-up plan that the unit will do is to convey the results of the achievement of KPIs to all staff involved, conduct briefings to all staff about preventing autoextubation, *informed consent* to families for the use of restraints.

Service Schedule Arrangement

The monthly duty schedule in the NICU of RS X Bandung is prepared by the Rook and approved by the Head of Nursing. The schedule that holds the patient is determined by the Nurse in charge.

a. Morning Shift (3 nurses) consists of 1 nurse in charge and 2 implementing nurses and 1 worker.
b. Afternoon Shift (3 nurses) consists of 1 nurse in charge and 2 executive nurses.
c. Night Shift (3 nurses) consists of 1 nurse in charge and 2 implementing nurses and 1 worker.

Staffing: Number, Education Level, Career Ladder, Length of Service

Table 1. Staffing

No.	Initials	Pend	Lvl Kptn	Duties	Training	Length of Service (yrs)
1	Nurse V	M.Kep	PK4	Karu	Hyperci	14 th
2	Nurse J	Ners	PK4	Assistant/CI	NICU	18 th
3	Nurse F	Nurse	PK3	PPJ	PICU	22 th
4	Nurse K	Nurse	PK3	PPJ	NICU	30 th
5	Nurse R	Ners	PK3	PPJ	PICU	15 th
6	Nurse I	Nurse	PK3	PPJ	NICU	15 th
7	FC Nurse	Ners	PK4	PPJ	NICU	18 th
8	Nurse C	Ners	PK4	PP	BHD	13 th
9	Nurse L	Ners	PK3	PP	BHD	11 th
10	Nurse Y	Ners	PK3	PP	BHD	10 th

No.	Initials	Pend	Lvl Kptn	Duties	Training	Length of Service (yrs)
11	Nurse H	Ners	PK2	PP	Hyperci	11 th
12	Nurse D	Ners	PK2	PP	NICU	5 th
13	Nurse G	Ners	PK3	PP	BHD1	9 th
14	EP	SMA	-	Worker	BHD	20 th
15	EL	SMA	-	Pekarya	BHD	12 years old

The total workforce in the NICU of RS X Bandung has 1 Rookie, 1 Assistant Rookie, 6 Executive Nurses, 5 PPJ, 2 Workers, so a total of 15 people.

Materials

Table 2. Equipment

No.	Name	Quantity	Status	PM Check	Description
1.	Ventilator	5			
2	Life line trolley (complete)	1			
3.	Bed	5			
4.	Incubator	7			2 spare
5.	Radiant warmer	2			
7.	Blood pressure monitor	5			
8.	Pulse Oxymetry	5			
9.	Infusion Pump	7			
10	Syringe Pump	6			
12.	Phototherapy unit	2			
13.	Oxygen	Central			
14.	Suction Unit	Central			
15,	CPAP	4			
16	Linen	Available			
17.	Infant defibrillator	Available			
18	Blood gas analyzer	Available			Join ICU
20.	IV set	Available			
21.	New born resuscitation tray	1			
22.	Capnography	Not available			
23.	Glucometer	1			
24.	Bilirubinometer	-			
25.	Medicine Refrigerator	1			
26.	Breast milk refrigerator	1			

Table 3. Physical Facilities

No	Name	Condition		Description
		Good	Repair	
1.	Space	√		
2.	Location			Far from the Delivery Room (VK) and OK
3.	Floor	√		

No	Name	Condition	Description
4.	Ventilation	√	
5.	Lighting	√	
6.	Room temperature and humidity	√	
7.	Handling and social contact	√	
8.	Communication system	√	
9.	Electrical Outlets	√	
10.	Baby care area	Not yet available	
11.	Hand washing and Gowning room	√	
12.	Examination area	Not yet available	
13.	Mother room	Not yet available	
14,	Holding Room (utility)	√	
15.	Counseling room	Not yet available	
16.	Staff room	√	
17.	Nurses Station	√	

Table 4. Nursing Care and Nursing Service

No.	Name	Status	Description
1	Baby assessment	Implemented	Form in emr, done when new patient nicu
2	Monitoring physiological data	Implemented	
3	Safety Measure	Implemented	
4	Respiratory Support	Available	
5	Thermoregulation	Available	
6	Protection from Infection	Available	
7	Nutrition	Available	
8	Drug administration	Available	
9	Development outcome	Available	NICU work program 2024
10	Mother-infant relationship facilities	Available	
11	Discharge planning and home care	Available	Homecare not yet available
12	Protocol for indication of NICU admission	Available	
13	Grade of neonatal care protocol	Not yet available	
14	Transport of sick neonates	Available	

Table 5. Types of SOPs that exist in R.NICU RS X Bandung

No.	SOP Title	No. SOP
	1.Basic Life Support (Neonate Resuscitation)	028/2.3/I/2023
	2.Ventilation Support with BMV	029/2.3/I/2023
	3Tracheostomy Care	030/2.3/I/2023
	3.Pediatric Cardiopulmonary Resuscitation	031/2.3/I/2023
	4.Early Detection of Nutritional Status	032/2.3/I/2023
	5.Lactation Counseling	033/2.3/I/2023
	6.Neonate phototherapy administration	034/2.3/I/2023
	7.Orogastric tube insertion	035/2.3/I/2023
	8.Giving storytelling therapy	036/2.3/I/2023
	9.Measurement of abdominal circumference	037/2.3/I/2023
	10Head circumference measurement	038/2.3/I/2023
	11.Measurement of upper arm circumference	039/2.3/I/2023
	12.Body length measurement	040/2.3/I/2023
	13.Body weighing	041/2.3/I/2023
	14.Oxytocin massage	042/2.3/I/2023

No.	SOP Title	No. SOP
16.	Lactation promotion	043/2.3/I/2023
17.	Early detection of stunting	044/2.3/I/2023
18.	Palliative Care in Children	045/2.3/I/2023
19.	Umbilical cord care	046/2.3/I/2023
20.	Baby massage	047/2.3/I/2023
21.	Kangaroo method nursing	048/2.3/I/2023
22.	Caring for a baby in an incubator	049/2.3/I/2023
23.	Complementary feeding (MP-ASI) education	050/2.3/I/2023
24.	Bowel noise monitoring	051/2.3/I/2023
25.	Intra-cranial elevation monitoring	052/2.3/I/2023
26.	Early Detection of Emotional Mental Health in Children	053/2.3/I/2023
27.	HIV/AIDS Early Detection Education for infants and children	054/2.3/I/2023
28.	Infant care education	055/2.3/I/2023
29.	Antopometric monitoring in infants and children	056/2.3/I/2023
30.	Provision of developmental care in neonates	057/2.3/I/2023
31.	Complementary feeding (MP-ASI)	058/2.3/I/2023
32.	Provision of play therapy	059/2.3/I/2023
33.	Neonate transportation	060/2.3/I/2023
34.	Airway suctioning	061/2.3/I/2023
35.	Mechanical Ventilation Setup	062/2.3/I/2023
36.	Installing Intravenous Access	063/2.3/I/2023
37.	Endotracheal intubation	028/2.3/I/2023
38.	Extubation	009/2.3/I/2023

Problems Related to the Organizing Function

Based on interviews and observations, the problems found related to the organizing function include:

1. Organizational structure that is not clear
2. The Head of the NICU room doubles as the Head of Critical Care (ICU, ICCU, High Care, NICU, PICU) workload, potential roles are less effective in the NICU room.
3. There are still nurses who have not been certified and nurses perform nursing care not according to specialization (NICU and PICU patients who treat only nurses who specialize in NICU, no one specializes in PICU).
4. SOPs that are still integrated with the PICU Unit (Clarity of operational standards required in each unit)
5. SOP completeness is still lacking (Procedures that are often carried out but there is no SOP)

Briefing Function

Effective direction in nursing involves guiding staff performance toward organizational goals through leadership, communication, supervision, and motivation (Marquis & Huston, 2017; Eva Riyani, 2023). In the NICU of Hospital X Bandung, shift handovers utilize the SBAR method for nurse-to-nurse communication and TBAK for doctor interactions, though pre-conference and post-conference sessions are notably

absent. Motivation is provided by unit leaders during handovers or meetings, while supervision follows SOP guidelines with quarterly written assessments, demonstrating a structured yet adaptable approach to staff management.

Task delegation occurs both verbally and in writing, with formal documentation shared via WhatsApp groups, ensuring clear communication channels. However, challenges persist in the directing function, particularly the lack of pre-conference and post-conference activities, which could enhance team coordination and reflective practice. While operational processes like handovers and supervision are well-established, addressing these gaps could further strengthen leadership effectiveness and staff engagement in the unit.

Staffing Function

The role of nurse managers is very important in the staffing function, namely in planning, recruiting staff, organizing shift schedules, reducing work pressure, strengthening the allocation and management of Human Resources (HR) during the pandemic (Herlina, 2023).

Client Characteristics

Table 6. Entry Criteria according to their level

(Guidelines for Hospital X Bandung)

No	LEVEL III (Neonatal Intensive Care)	LEVEL II (Special care)	LEVEL 1
1	Respiratory Distress	LBW 1500-2500 gr	LBW 1.7-2.5 kg
2	Moderate-severe asphyxia	Maternal gestational age ≤ 35 weeks	Maternal gestational age 35-37 weeks
3	Trauma at birth (severe)-subaponeurotic hemorrhage, fracture, intra cranial hemorrhage	Birth weight >4kg	Neonatal jaundice
4	Heart disease, congenital, heart failure, SVT, arrhythmia	Small for gestational age babies ie <10thcentile	G6PD deficiency
5	Hypotension, shock	Respiratory distress with FiO2<40%	Maternal chorioamnionitis with temperature >38ºC or leaking liquoe 18 hrs
6	Need Resuscitation and inotropic therapy	Meconium below cords during resuscitation	Meconium below cords during resuscitation with no respiratory distress or hyperinflated chest
7	Disseminated Intravascular Coagulation (DIC)	Rhesus or ABO incompatibility	Asymptomatic infant from mother with DM
8	Immediate post-op surgical patients	Mild asphyxia or Apgar Score <7 within 5'	Asymptomatic infants at risk of sepsis who need antibiotics
9	Need for morphine infusion	Sepsis and congenital infection	Social issueseg abandoned baby, single parent
10	Necrotising enterolitis (NEC) (grade 2 and 3)	Symptomatic infant of diabetic mothers	HIV or VDRL positive mothers
11	Hydrips foetalis	Hypoglycaemia (<2.6mmol/L)	Maternal thyrotoxicossis
12	Neonatal seizures	Seizures	

No	LEVEL III (Neonatal Intensive Care)	LEVEL II (Special care)	LEVEL 1
13	Multiple or major congenital anomalies	Mother drug addict	
14	Low birth weight infant <1.5kg	Multiple or serious congenital anomalies	
15	Persistent metabolic acidosis	Infants with surgery that does not require intensive care	
16	Recurrent hypoglycaemia	Ill-appearing condition (lethargy, poor feeding, vomiting)	
17		Significant birth trauma	

The following are the criteria for discharge from the NICU:
The patient is independent of cardiovascular, gastrointestinal, respiratory, neurological functions, and has no infection. Babies born with very low birth weight (VLBW) or low birth weight (LBW), are in the high-risk group of children. Most LBW babies are discharged with a weight that has reached ≥2.5 kg. The following are the criteria for discharge from the NICU:

1. The baby has gained weight, it does not have to reach a certain weight, but there must be an increase in weight.
2. The baby can suck the food given. Especially if the baby can suck the breast milk strongly.
3. The mother has a good understanding that her baby should be monitored for development, especially when transitioning from breast milk.
4. The baby can maintain a normal temperature, can adapt well to its environment.

BOR

The NICU unit of RS X Bandung has 4 active beds, with a target BOR in 2024 of 75%. The following is the BOR of the NICU unit of RS X Bandung for the period January - October 2024 with an average of 86%.

Problems Related to Staffing Function

Based on the group analysis, the problems found related to the staffing function include: The number of personnel when combined NICU and PICU labor needs are still lacking 1 person

Supervision Function

Supervision involves monitoring organizational activities to assess goal achievement and identify implementation challenges (Ardyansyah, 2022). In the NICU of Hospital X Bandung, key indicators showed strong performance: 100% accuracy in patient identification and bracelet use (color-coded by gender), zero incidents of phlebitis or falls, and high compliance rates in hand hygiene (92%), PPE usage (100%), and waste management (100%). However, an environmental audit revealed an 89%

compliance rate due to leaking and moldy ceilings, while medication error monitoring showed no incidents during October 2024.

The unit utilizes electronic medical records (EMR) with SOAPIE documentation, and all staff have completed EMR training. Despite these operational strengths, supervision identified persistent infrastructure issues, particularly the ceiling leaks and mold growth, which remain as notable challenges affecting the unit's environmental standards. This finding highlights the need for facility maintenance improvements alongside the otherwise effective nursing practices and documentation systems.

SWOT Analysis of R. NICU RS X Bandung

Table 7. SWOT Analysis of NICU Planning Function of RS X Bandung

Strength (internal factor)			
	Weight	**Score**	**Weight X Score**
1. Vision and Mission oriented towards Spiritual Values and Holistic Services	0.3	3	0.9
2. Focus on Professional HR Development	0.4	3	1.2
3. Implementation of Information Systems and Appropriate Technology	0.3	3	0.9
Total	**1**		**3**
Weakness (Internal)			
Total	**0**		**0**
Opportunities (External)			
1. Spiritual Program Development	0.4	3	1.2
2. Technology Infrastructure Improvement	0.3	3	0.9
3. Professional Training Program Development	0.3	3	0.9
Total	**1**		**3**
Threats (External)			
1. Health Policy Change	0.4	3	1.2
2. Healthcare Competition	0.6	2	1.2
Total	**1**		**2.4**

Table 8. Planning function IE analysis

SWOT	Total Score Weight
Internal Factors	
a. Strength	3
b. Weakness	0
Difference between Strength and weakness	**3**
External Factors	
a. Opportunity	3
b. Threats	2.4
Difference between Opportunity and Threats	**0.6**
Coordinate point (X:Y)	**3: 0.6**

Table 9. SWOT Analysis of the Organizing Function of the NICU of RS X Bandung

Strengths (Internal factors)			
	Weight	**Score**	**Weight X Score**
1. Client Organization	0.3	3	0.9
2. Qualified personnel	0.2	3	0.6
4. Material completeness	0.2	2	0.4
Total	**1**		**2.8**

	Weaknesses (Internal Factors)			
1.	Organizational Structure	0.3	2	0.6
2.	Completeness of SOP	0.3	2	0.6
3.	SOP to join PICU	0.2	2	0.4
4.	There are still nurse roles that are not in accordance with specialization	0.2	2	0.4
	Total	**1**		**2.0**
	Opportunity (External)			
1.	Improved Training	0.3	3	0.9
2.	Addition and organization of SOPs according to the NICU	0.4	3	1.2
4.	Technological innovation (material and machine)	0.3	2	0.6
	Total	**1**		**2.7**
	Threats (External)			
1.	Limited resources	0.3	3	0.9
2.	High Level of Stress on staff	0.2	2	0.4
3.	Policy Change	0.2	3	0.6
4.	Rapid Technology Change	0.3	2	0.6
	Total	**1**		**2.5**

Table 10. IE Analysis of Organization Function

SWOT	**Total Score Weight**
Internal Factors	
a. Strength	2.8
b. Weakness	2.0
Difference between Strength and weakness	**0.8**
External Factors	
a. Opportunity	2.7
b. Threats	2.5
Difference between Opportunity and Threats	**0.2**
Coordinate point (X:Y)	**0.8: 0.2**

Table 11. SWOT Analysis of NICU Briefing Function of RS X Bandung

	Strength/Strength (internal factor)			
		Weight	**Score**	**Weight X Score**
1.	Structured passing	0.3	3	0.9
2.	Motivation to nurses	0.2	3	0.6
3.	Effective supervision	0.3	3	0.9
4.	Task delegation	0.2	3	0.6
	Total	1		**3**
	Weaknesses (Internal)			
1.	Pre and Post conference	1	2	2
	Total	1		**2**
	Opportunity (External)			
1.	Motivation program development	0.3	3	0.9
2.	Supervision program development	0.3	3	0.9
3.	Improvement in delegation skills	0.2	3	0.6
4.	Operant system development	0.2	3	0.6
	Total	**1**		3
	Threats (External)			
1.	High workload stress	0.3	3	0.9
2.	Inconsistency in direction	0.3	2	0.6

3.	Limited supervision time	0.2	2	0.4
4.	Lack of support in delegation	0.2	3	0.6
	Total	**1**		**2.5**

Table 12. IE Analysis of Briefing Function

SWOT	Total Score Weight
Internal Factors	
a. Strength	3
b. Weakness	2
Difference between Strength and weakness	**1**
External Factors	
a. Opportunity	3
b. Threats	2.5
Difference between Opportunity and Threats	**0.5**
Coordinate point (X:Y)	**1: 0.5**

Table 13. SWOT Analysis of NICU Staffing Function of RS X Bandung

Strength/Strength (Internal Factor)				
		Weight	**Score**	**Weight X Score**
1.	Understanding Patient characteristics	0.3	3	0.9
2.	BOR measurement	0.3	4	1.2
3.	According to manpower and workload	0.2	3	0.6
4	Standard amount of manpower	0.2	3	0.6
	Total	1		**3.3**
Weaknesses (Internal)				
1.	Combination of NICU and PICU nurses	0.3	3	0.9
2.	Limited staffing arrangements for special client characteristics	0.4	3	0.9
3.	BOR variability	0.3	2	0.6
	Total	1		**2.4**
Opportunity (External)				
1.	Development of the number of personnel based on the BOR of each unit (NICU, PICU)	0.3	3	0.9
2.	Improved qualification of nursing staff	0.4	3	1.2
3.	Utilization of technology for optimal staffing	0.3	2	0.6
	Total	**1**		**2.7**
Threats (External)				
1.	Limited skilled human resources	0.2	2	0.4
2.	High and unpredictable BOR	0.2	2	0.4
3.	High levels of nurse stress and burnout	0.3	2	0.6
4.	Limited budget for additional staffing	0.3	3	0.9
	Total	**1**		**2.3**

Table 14. IE Analysis of Staffing Function

SWOT	Total Score Weight
Internal Factors	
a. Strength	3.3
b. Weakness	2.4
Difference between Strength and weakness	**0.9**
External Factors	
a. Opportunity	2.7
b. Threats	2.3

Difference between Opportunity and Threats	**0.4**
Coordinate point (X:Y)	**0.9: 0.4**

Table 15. SWOT Analysis of NICU Supervision Function of Hospital X Bandung

Strength/Strength (internal factor)				
		Weight	**Score**	**Weight X Score**
1.	Accuracy of Patient Identification and Safety Procedures	0.4	3	1.2
2.	Prevention of Clinical Incidents	0.3	3	0.9
3.	Compiled Nursing Documentation	0.3	3	0.9
	Total	1		**3**
Weaknesses (Internal)				
1.	Leaky and moldy ceiling	1	2	2
	Total	1		**2.0**
Opportunity (External)				
1.	Training Program Development and Procedure Compliance	0.4	3	1.2
2.	Use of Technology for Documentation and Monitoring	0.3	3	1.2
4.	Standardization and Updating of Security Procedures	0.3	3	0.9
	Total	**1**		**3.3**
Threats (External)				
1.	Clinical Incident Risk	0.2	2	0.4
2.	Constraints in Manual Documentation	0.2	2	0.4
3.	Non-Compliance with Security Procedures	0.3	3	0.9
4.	Insufficient Budget for Surveillance Technology	0.3	3	0.9
	Total	1		**2.6**

Table 16. IE Analysis of Supervision Function

SWOT	**Total Score Weight**
Internal Factors	
a. Strength	3
b. Weakness	2
Difference between Strength and weakness	**1.0**
External Factors	
a. Opportunity	3.3
b. Threats	2.6
Difference between Opportunity and Threats	**0.7**
Coordinate point (X:Y)	**1.0: 0.7**

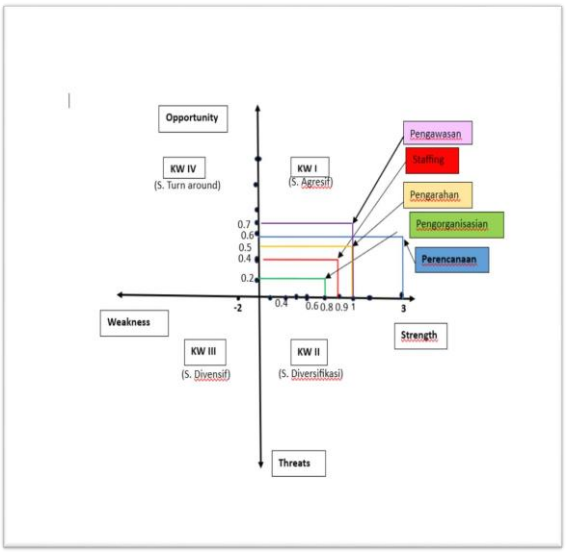

Figure 1. Quadrant Matrix SWOT Analysis R. NICU RS X Bandung

Table 17. Problem List

No.	Organizing Problem	
1	Organizational Structure	Method
2	Uncertified nurses	
3	There are still roles that do not match the specialization on duty	Method
4	Head of NICU room concurrently Head of Critical Care (ICU, ICCU, HCU, NICU, PICU)	Man
5	SOP that is combined with PICU (unclear NICU SOP)	Method
6	Completeness of SOP standards is still lacking (Procedures that are often carried out have no SOPs)	Method
	Briefing Problem	
1.	Pre conference and post conference have not been carried out in the NICU unit.	Method
	Staffing problem	
2.	The number of personnel combined NICU and PICU still lacks 1 person	Man
	Supervision Problem	
1.	Ceiling leaking and moldy	Material

Problem Prioritization

Table 18. To determine the priority of problems using the CARL Method

No.	Organizing Problem	C	A	R	L	CxAxRxL	Priority
1.	Organizational Structure (Method)	2	3	2	4	48	III
2.	Uncertified nurses (Man)	2	2	2	3	24	V
3	There are still roles that do not match the specialization on duty (Method)	2	2	2	2	16	VI
4	Head of NICU concurrently Head of Critical Care (ICU, ICCU, HCU, NICU, PICU) (Man)	3	2	2	3	36	IV
5.a	SOP combined with PICU (unclear NICU SOP) (Method)	4	3	3	4	144	I
5.b	Completeness of SOP standards is still lacking	4	3	3	4	144	I

	(Procedures that are often carried out have no SOP) (Method)						
	Briefing Issues						
1.	Pre conference and post conference have not been implemented in the NICU unit (Method)	3	2	2	2	24	V
	Staffing Issues						
2.	The number of staff combined NICU and PICU still lacks 1 person (Man)	2	2	2	2	16	VI
	Supervision Issues						
1.	Ceiling leaking and moldy (Material)	3	3	3	3	81	II

C: Capability **A**: Accessibility **R**: Readiness
L: Leverage

Score Description: Very Small (1): Small (2): Moderate (3): Large (4): Very large (5)
Total C x A x R x L
Prioritization: Taken from the highest score to be the first priority problem that needs to be resolved.

Table 19. POA Standard Operating Procedure Problem (Priority I)

NO.	Planning	TARGETS and GOALS	TIME	PJ	PLACE	SUCCESS INDICATORS
1.	Grouping NICU and PICU SOPs	SOPs according to the needs of the NICU unit	1 day	Team Kel. 4	R. NICU	SOPs are in accordance with the needs of R. NICU
2.	Added SOP NICU Patient Admission Referring patients to other hospitals Transferring the patient from the NICU to the treatment room Patient died in the NICU Intubating and extubating the patient Ventilator preparation Hemodynamic monitoring installation and maintenance Use and maintenance of infusion pump, syringe pump Arterial blood collection/use of BGA device Preparation for umbilical catheter insertion Hypoglycemia treatment PICC insertion	Completeness of SOP required by NICU Service quality standards Avoid mistakes in performing procedures As a guideline and legal basis Guidelines to anticipate unexpected situations or circumstances as well as a reference for carrying out work.	3 weeks	NICU Nurse Team appointed authorized doctor in charge		All procedures performed in the NICU already have SOPs.
3.	Socialization of the new SOP	Understood by all staff involved		NICU Team	R. NICU	

4.	Periodic audit of SOP implementation	Assessment for compliance to implement SOPs correctly	NICU CARDS	R. NICU
5.	Periodic evaluation and revision	To ensure the SOP is still suitable for use	NICU CARDS	R. NICU

CONCLUSION

Based on the *SWOT* analysis, the NICU unit of Hospital X Bandung is positioned in Quadrant I (*strength–opportunity*), indicating that the unit possesses strong internal capabilities while simultaneously having significant opportunities from the external environment, although certain areas for improvement remain. Key findings include the existence of *SOP* documents that are not fully aligned with NICU-specific procedures—currently merged with *PICU* unit *SOPs*—as well as several clinical processes that lack standardized operating procedures.

The study demonstrates that while nursing management functions are generally well-implemented, strategic enhancements are needed in *SOP* standardization, clarification of the organizational structure, and maintenance of physical infrastructure. These improvements are essential to further optimize the quality of patient care and increase staff effectiveness in the NICU setting.

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