Accessibility and Effectiveness in Newborn Referral System in Lucknow

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ABSTRACT

The current study's goals were to evaluate how the newborn referral system contributes to reduce infant morbidity and death by guaranteeing prompt and adequate medical treatment. The study employed a mixed-method approach, combining qualitative information from caregivers and medical professionals with quantitative data from hospital records. The study was carried out in the Government and private hospitals situated in Uttar Pradesh. Over the course of a year, this prospective observational research was carried out. There were 1000 referred babies that were recruited in the research overall.

The findings indicated that low birth weight (30%), infections and sepsis (20%), jaundice (10%), respiratory distress (35%) and birth traumas (5%), accounted for the bulk of infant referrals. The results show that although there are referral systems in place, their effectiveness is severely hampered by deficiencies in communication, infrastructure and transportation. In order to improve the results of infant referrals, this study suggests legislative changes and infrastructure improvements. The study's findings will be useful in evaluating its advantages, disadvantages and possible areas for development.

Keywords: *Community Health Workers, Low Birth Weight, Mortality, Neonatal healthcare, Referral pathways.*

1. INTRODUCTION

One of the factors that determines a country's degree of wellbeing is its level of health, which is also a crucial human requirement. One of the major global healthcare objectives is to improve the health of mothers and children. This is due to the fact that mothers and children are very significant members of society. Additionally, this aligns with the Sustainable Development Goals (SDG) of the United Nations. The SDGs include mother and child health as part of its mission to "ensure healthy lives and promote well-being for all at all ages."(UNSD, 2019)

The first 28 days of life are a crucial period for a newborn, requiring careful monitoring to prevent and manage health complications. In an emergency, prompt medical attention can save lives during this time. An effective referral system that guarantees timely transfer to a suitable medical institution when necessary is one of the most important components of neonatal care (UNICEF DATA, 2018). A referral is the procedure by which a healthcare professional asks a higher-level or better-equipped facility for help in managing a case that they are unable to handle because they lack the necessary resources, such as medications, equipment, or experience, according to the World Health Organization (WHO). By reducing hazards and increasing survival rates, this organized approach helps guarantee that babies receive the proper treatment at the appropriate time. The four main components of a referral system are the initiating facility, receiving facility, health system and supervision and capacity building. Referral care facilities must, first and foremost, be physically accessible. The availability of referral services, the qualifications of the referral staff to deliver high-quality treatment, the reasonable cost of the services and the easy access to the required drugs, supplies and equipment are other requirements. In India, newborn death is still a significant public health issue and Uttar Pradesh has one of the worst rates. To guarantee that severely sick babies receive timely medical attention, an efficient referral system is necessary.

Primary, secondary and tertiary healthcare facilities that work together are part of the referral system. Neonatal survival rates are jeopardized by insufficient pre-referral stabilization, ineffective transportation and a shortage of skilled staff. The Ministry of Health and Family Welfare (MOHFW) has started a number of programs, such as the Janani Suraksha Yojana (JSY). a crucial initiative that has caused institutional deliveries to soar. The program benefits almost one crore women per

year and JSY spends more than 1600 crores yearly. However, according to the Indian Council of Medical Research's (ICMR) annual statistical report of national statistical data, if we compare the trend of infant mortality over a decade with that of newborn mortality over a decade, the authors can clearly see that the trend of newborn mortality over a decade is not as much lower than that of infant mortality and the trend of ENM (Early Neonatal Mortality) over a decade is also static.

The India Newborn Action Plan (INAP), which aims to attain a single-digit neonatal mortality rate (NMR) by 2030, is a pipe dream due to the inadequate perinatal care provided by the current newborn care and referral systems. It could be because we prioritize facility-based newborn care, which offers both emergency and necessary newborn care at the Newborn Care Corner (NBCC), Newborn Stabilizing Unit (NBSU), Special Newborn Care Unit (SNCU) at District Hospital and Medical College levels. The study's findings will eventually contribute to increased infant survival rates, decreased healthcare inequities and enhanced effectiveness in Uttar Pradesh's and comparable healthcare systems.

Research Objectives

1. To evaluate Community Health Workers' contribution to the neonatal referral system.

2. To evaluate how the referral system may enhance the health outcomes for newborns.

3. To make suggestions for improving the referral facility in order to lower neonatal mortality.

2. REVIEW OF LITERATURE

The majority of developing nations lack adequate power sources and have inadequate telecommunications infrastructure. According to certain research, there are issues with network infrastructure, including inadequate mobile network coverage, particularly in more remote locations, and a dearth of communication infrastructure and dedicated phone lines (Austin et al., 2015). The absence of pre-referral contacts between initiating and receiving facilities is a result of these obstacles. In 2004, home visits by Anganwadi Workers (AWWs) were added to the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) program. The CHWs have been instrumental in lowering the number of newborn fatalities by promoting health via a variety of initiatives and programs. Community Health Workers (CHWs) face a number of obstacles when it comes to enabling infant referrals, despite their noteworthy contributions. These include inadequate resources, cultural hurdles, geographic limitations and a lack of training and supervision. For example, in rural Bangladesh, transportation hurdles are a major obstacle for CHWs when referring neonates to medical facilities, according to the research conducted by Rahman et al. (2016). The beneficial effects of CHWs in infant referral systems have been shown in several research.

For instance, CHWs helped with prompt referrals for neonates with problems, which decreased neonatal death rates, according to a research conducted in Kenya by Okeyo et al. (2018). In a similar vein, Gilmore et al. (2013) reviewed the efficacy of CHWs in recognizing neonatal danger indicators and guaranteeing timely referral to medical institutions. Gupta et al. (2019) assert that CHWs significantly influence the use of healthcare services, especially those related to maternal and child health (MCH). By connecting the community with the health systems, they bridged the gap, which resulted in more people using medical facilities, including for the care of newborns.

3. MATERIALS AND METHODS

The goal of the current study was to identify the factors that predict the outcome of referred newborns brought directly or referred from smaller hospitals in the area, as well as the causes of neonatal mortality and morbidity that contribute to the high bed occupancy in the referral center. The basis of this investigation was the referral center's high extramural neonatal death rate and notable bed occupancy. A mixed-method approach was used to perform cross-sectional research. For a year, information was gathered from primary healthcare centers (PHCs), community health centers (CHCs) and both public and commercial hospitals in Lucknow.

Maternal prenatal visits, delivery location (home, Primary Health Center, Community Health Center, District Hospital, Private Hospital), delivery personnel (doctor, nurse, female health worker, trained birth assistant, or other), written reasons for referral, pre-referral treatment, referral indication and mode of transportation (ambulance or self-arranged) were all evaluated. The baby's clinical state was evaluated upon arrival at the SNCU and it was determined that emergency resuscitation was required. Newborns will be evaluated for maturity, clinical condition, risk factors, individual morbidity and their prognosis in terms of a successful discharge following initial stabilization. Newborns whose parents refused to participate in the research were not allowed to participate. Microsoft Excel was used to assemble the data. Statistical techniques were used to analyze the data. The study lasted for a year.

4. RESULTS AND DISCUSSION

Newborns whose parents refused to participate in the research were not allowed to participate. Microsoft Excel was used to assemble the data. Statistical techniques were used to analyze the data. The study lasted for a year. Result of referred newborns from district hospitals/SNCUs, urban health centers (UHCs), community health centers (CHCs), primary health centers (PHCs) and self-referrals showed statistically significant differences in duration of stay of less than 1 day in the

expired group and more than 7 days in the survived group. This could be because most referred newborns were referred in dire circumstances and typically expired within 1 day in the referral facility.

A p-value of 0.10 indicates that the results for the duration of stay of the survivor and expired group for newborns referred from private hospitals were statistically not significant. This could be because private hospitals stabilize the baby prior to referral and adhere to referral guidelines more closely than government hospitals. With a p-value of 0.001, the current study demonstrated a statistically significant difference in the outcomes of babies referred from district hospitals/SNCUs against CHC, which lacks the infrastructure necessary to care for newborns.

The most common referral reason is respiratory distress, followed by infections & Sepsis, Jaundice, birth injuries and low birth weight (Fig.1).
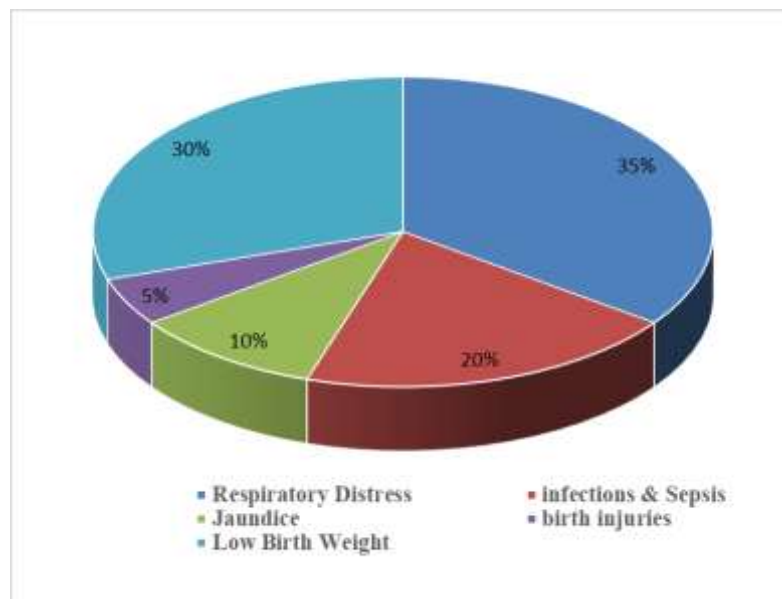

Fig. 1: Distribution of Referral Reasons

The majority of newborn referrals were due to respiratory distress (35%), low birth weight (30%), Infections & sepsis (20%), Jaundice (10%) and birth injuries (5%) as shown in figure 1. Community Health Workers were crucial in detecting and sending babies to medical institutions, according to a quantitative examination of referral data. Newborns with problems including respiratory distress, sepsis and low birth weight accounted for the bulk of referrals. However, issues including poor follow-up, transportation delays and restricted access to crucial infant care services were noted. The study's results also shown that most referrals lead to successful treatment, demonstrating the potential efficacy of community health workers in enhancing the health of newborns by making timely and suitable recommendations.

Furthermore, 35% of referrals depended on private transportation, which frequently resulted in delays, while only 65% used government ambulances (such as the 108 and 102 services). Additionally, it was noted throughout the study that the majority of CHCs and PHCs lacked newborn resuscitation equipment, which prevented stabilization before to transfer. Additionally, families, particularly those from remote areas faced logistical and financial challenges.

The creation of SNCUs has improved newborn care and survival, but on the one hand, the referral system is disorganized and unstructured and on the other hand, the receiving facility is overcrowded with referred newborns, jeopardizing the newborn care there. It is also surprising to see how many beds the referring and referral SNCUs have. Referring facilities must realize that while sending an ill infant to a higher center for proper care is vital, stabilizing them before transfer is crucial to maximizing the referral's benefits.

Due to a lack of prioritizing, triage and logistical considerations, as well as unequal bed occupancy at different hospitals, the results of referred newborns are poorer than those of intramurals, which is reflected in this study. As we have already stated, this imbalance in bed occupancy results in both overuse of facilities at the receiving institutions and underuse of those that are highly equipped with medical equipment and personnel.

The Lucknow newborn referral system has a number of inefficiencies, according to the report. Effective care delivery is hampered by pragmatic problems such insufficient pre-referral stabilization, a lack of specialized newborn transport and inadequate communication systems, even in the face of defined referral channels. Improving neonatal survival rates requires a referral system that is well-organized and sufficiently resourced.

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5. CONCLUSION

Newborns that were referred for a problem that was sought and treated at the referral institutions should be eligible for down referral; if stabilized, they should be sent back to the original referring hospitals. Level 1, Level 2 and Level 3 infant care facilities should be properly coordinated as part of a closed-loop system. Depending on the kind of care they offer, infant care facilities are divided into Level 1, Level 2, and Level 3, Basic Newborn Care (Well-Baby Nursery), Specialty Newborn Care (Special Care Nursery) and Neonatal Intensive Care Unit (NICU), respectively. Prioritization and triage with referring facilities prior to referral are necessary to free up the facility from unreasonable referrals. Referrals should only be made for ill newborns who are unmanageable at the referring facility.

Even though the current system for newborn care has improved neonatal outcomes, institutional births and transport facilities, infant transport is still difficult, thus the referral system and logistical elements like communication and stabilization prior to transport need to be strengthened. The referral system needs to resemble a closed-loop circle, with provisions for the referral facility to be referred back to the referring institution for additional management once stabilization and the condition for which the referral was requested had been addressed. In order to declutter the receiving facility, this down referral idea need to be a crucial component of the referral system. As frontline healthcare practitioners in underprivileged communities, CHWs are essential to the current infant referral system. However, a number of issues, such as insufficient training, a lack of resources and structural impediments, restrict their efficacy. Comprehensive training, encouraging monitoring and integration into the official healthcare system are necessary to strengthen the role of CHWs in infant care. Furthermore, enhancing the availability and caliber of infant healthcare services requires cooperation with other stakeholders and community involvement.

CHWs can maintain their critical role in lowering neonatal mortality and enhancing health outcomes in environments with limited resources by tackling these issues. Our study highlighted the function of CHWs in the neonatal referral system, emphasizing their significance in recognizing and addressing a range of health issues. This study offers insightful information on the function of CHWs in the newborn referral system, emphasizing the necessity of focused interventions to increase their capability and assist them in delivering critical medical care to infants and their families.

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