RESEARCH ARTICLE:

The Continuum of Care for the Neonate: A Critical Review

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Abstract

A continuum of care is an integrated system of care that guides and monitors patients throughout their lives as they access a variety of health services. The purpose of this literature review was to identify barriers to care throughout the continuum of care that affect the services provided to neonates. A comprehensive search of electronic databases PUBMED, EBSCOhost Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE, and ScienceDirect was used to identify relevant literature. Furthermore, policy documents from organisations such as the South African National Department of Health, the South African Nursing Council, and the World Health Organisation have been sourced via websites. The review concludes that gaps exist due to a lack of neonatal care facilities, neonatal infrastructure and supplies, and staff shortages despite increased demand for neonatal care. Additionally, institutional issues and policies should be reviewed, as they may contribute to an efficient continuum of neonatal care. Moreover, training specialised healthcare workers is critical to ensuring that neonates receive quality care.

Keywords: *continuum of care; healthcare resources; neonate; neonatal morbidity; neonatal mortality*

Introduction

The continuum of care is defined in the literature as an integrated system of care that directs, monitors, evaluates and tracks patients over time and across a broad range of health services with varying degrees of intensity of care (Evashwick 1989). Kerber et al*.,* (2007) define maternal, neonatal, and child health care as a continuum spanning the lifespan, encompassing adolescence, pregnancy, childbirth, the postnatal period, and childhood, and inclusive home and community-based care, outpatient and outreach programs, and clinical services. From this vantage point, the continuum of care for a neonate can be defined as an ongoing relationship between the family, the community, and the health system. The Maternal, Newborn, and Child Health (MNCH) is composed of two major components: (i) a time component that refers to treatment continuity from conception to pregnancy, labour, postpartum, and childhood; and (ii) a place component that refers to the level of the institution where care is provided (Kerber *et al.,* 2007). A conceptual analysis of the continuum of care can classify essential components of current neonatal care practice. Gulliford *et al.* (2016) recommended that the continuum of care be an integral part of the overall healthcare system to improve and strengthen MNCH. The term 'continuum of care' refers to a process that ensures the consistency of a patient's medical care, particularly during transitions between providers or institutions. The continuum of care is viewed as a critical concept in neonatal care because it has the potential to reduce morbidity and mortality, reduce costs, and improve lifelong healthcare as a child grows into adulthood.

Worldwide, neonatal mortality remains a significant problem. Kikichi et al., (2018) conducted a cross-sectional qualitative study in Cambodia to analyse the completion rate of the continuum of care and the factors that influence it. The study discovered that excellent antenatal care, the presence of a trained birth attendant, and postoperative care were all associated with low rates of neonatal

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complications. Yeji et al., (2015) conducted a retrospective cross-sectional study among women in Ghana to determine the prevalence of and factors associated with treatment completion. According to the findings, the greatest gap in care between delivery and postnatal care, and a contributing factor to the inadequacy of the continuum of care, occurred within 48 hours of delivery. In South Africa, the continuum of care is expected to reduce maternal and infant mortality while also coordinating service delivery to avoid duplication of effort, save money, and improve new-born health outcomes. South Africa's Ministry of Health has developed a framework for maternal and child health that includes regional hospital care and categorises social determinants of health as "intersectoral elements" (Department of Health (DoH), 2018). Since the district level is at the "heart" of South Africa's efforts to improve maternity and infant care, progress along the continuum of care can largely be tracked there. On the continuum of maternal and child health care, the district encompasses the family, the community, outpatient primary care centres, maternity units, and the district hospital.

As neonates' immune systems are immature, they are at an increased risk of neonatal morbidity and mortality. According to the World Health Organization (WHO) (2019), approximately 6.6 million children die before reaching their fifth birthday each year, with five million of these deaths occurring during the first year of life and nearly three million occurring before the 28th day of birth, dubbed the neonatal period. The Neonatal Mortality Rate (NMR) continues to be the highest in human life, with approximately 50%-60% of these deaths occurring during the first week of life and frequently resulting from preventable causes (Hayun et al*.,* 2015). As neonates are not adults, their care cannot be inferred from adults, yet only a few services are dedicated to them. The increase in preterm births has resulted in an increased need for neonatal services throughout the continuum of care, beginning with antenatal care and continuing through the labour ward, Neonatal Intensive Care Unit (NICU), nursery, and community. Bhagwanjee and Schribante (2007) used a descriptive, non-interventional observational study to ascertain the national distribution of NICUs and beds in South Africa. Intensive Care Units (ICUs) or High Care Units (HCs) were discovered in 23% of public hospitals and 84% of private hospitals in South Africa, with the public sector serving 80% of the population. The continuum of care incorporates all neonatal care institutions, from home to community healthcare centres, and is not limited to the NICU. Darmstadt et al. (2010) sought to determine the reliability of a clinical algorithm used by Community Health Workers (CHWs) in rural Bangladesh for detecting and diagnosing infant illness. CHWs examined breastfeeding and symptoms and indicators of illness in 395 babies randomly selected from neonatal illness surveillance during postnatal days 0, 2, 5, and 8. A community hospital was referred to care for neonates with life-threatening illnesses. CHWs recognised new-borns with severe illnesses who required referral-level care with high validity. This demonstrates not only the critical nature of home-based neonatal illness and recognition but also the critical role of healthcare workers in neonatal morbidity and mortality.

This study sets out to review barriers to care throughout the continuum of care that impact the services provided to neonates. The study will identify and review gaps within the continuum of care of neonates. For this study, it becomes imperative to define key concepts:

- A neonate's continuum of care is defined as access to care provided by neonatal families, communities, neonatal outpatient and outreach services, and neonatal clinical services throughout his or her life.
- Health care resources in this review will refer to all materials, personnel, facilities, infrastructure, and supplies, including finances used for the provision of neonatal health care services.
- A neonate is a child who is less than 28 days old or a child who is less than two months old and weighs less than two kilograms (National Department of Health (NDoH) 2014).
- Neonatal mortality is the statistical rate of infant death within the first 28 days of life, expressed as the number of such deaths per 1000 live births in a particular geographic area or institution over a specified period (United Nations International Children's Emergency Fund (UNICEF) 2019).

- Morbidity in neonates is defined as the risk of death during the first 28 days of life (UNICEF 2019).

Research Methodology

The following databases were used to locate articles published between 2005 and 2018: PUBMED, EBSCOhost, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, and ScienceDirect. A comprehensive search identified 73 articles (out of 479 total) that discussed identifying gaps in the neonatal continuum of care (see figure 1). A few articles published after 2005 have been included to demonstrate the importance of classical literature and the uniqueness of the literature. The data search process was conducted using the inclusion and exclusion criteria (see Table 1), and both quantitative and qualitative publications were considered. To reach a consensus on the relevant articles, an annotated bibliography was created. The annotated bibliography included a description and analysis of the papers in the authors' own words for each reference (paraphrasing). The articles were then read in greater detail, culminating in the integration of emerging themes based on the literature's coherence. Then, for each of the theme divisions, a literature review was conducted, with the draft annotations and group-related articles serving as either supportive or contradictory references. References were included whenever possible to substantiate the evidence.

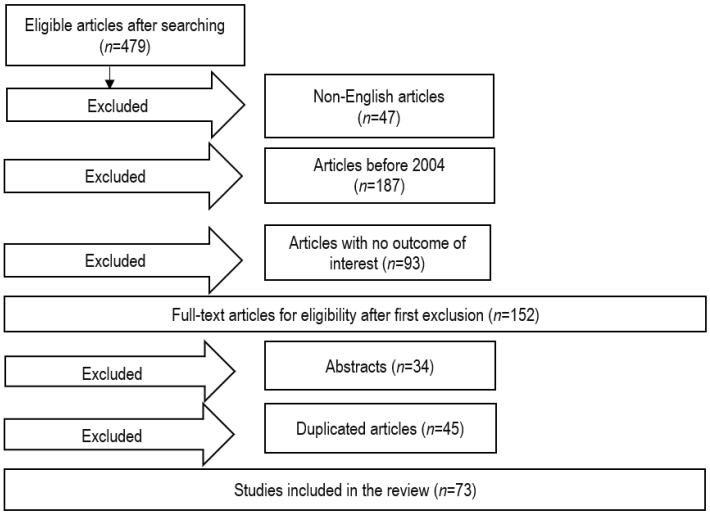

Figure 1: Flow diagram of the data collection process and applied inclusion criteria

Table 1: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
English language articles	Non-English articles
Articles published from 2005	Abstracts were excluded
Qualitative and quantitative articles that are relevant to the purpose of the study	Articles published before 2004

The Health Service Framework

The findings of the reviews are presented within the conceptual framework developed by van Olmen et al., (2010), the Health Service Framework (HSF) where each concept has been explained below. This framework is composed of several components, including the context with its population and values, the health care system with its resources, leadership, and governance, and service delivery with its outcomes and goals. The HSF (Figure 2) was created to conduct analyses of all types of health services at the national, provincial, and local levels. The HSF's primary objective is to examine how

health systems are organised and operated at the national, meso-, and micro-levels, with an emphasis on values and principles as outcomes and goals. The HSF defines ten components as central to and constitutive of any health system. The arrows in the framework denote a reciprocal and interconnected relationship between the elements. The context may affect any part of the HSF because it encircles it. The population is extensive, as it encompasses all facets of the HSF. Neonates are considered the population because they should have access to all facilities within the continuum of care or context defined in the HSF. The neonate's health care should be patient-centred, and no single expert can meet all of the needs. The patient, the healthcare provider, and the health system should all have a multifaceted perspective on care continuity (van Olmen et al., 2010).

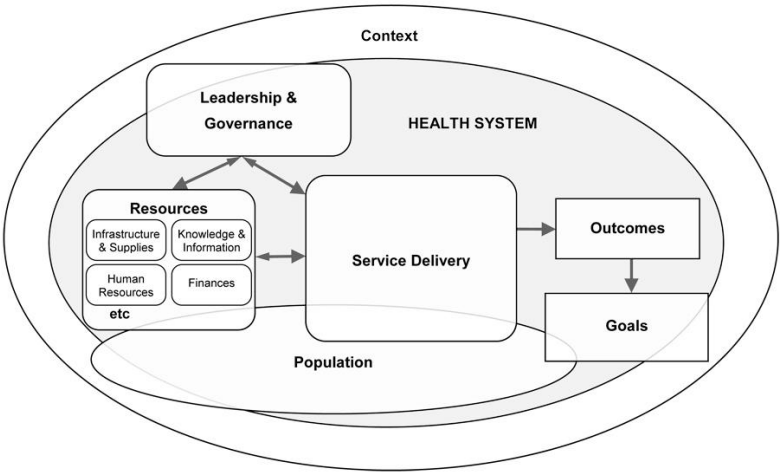

Figure 2: The HS framework in its generic form (van Olmen et al., 2010)

Context

Context refers to the structural and situational factors that shape and influence the healthcare system (van Olmen et al., 2010). Along with the policy, the context entails continuous reaction to and adaptation to social, economic, technological, cultural, political, regulatory, and environmental events and shifts. Concerns about policy structure are included, but they are ineffective. At the global level, the Sustainable Development Goals (SDGs) have had an impact, and the Perinatal Education Programme (PEP) has been implemented at the national level to facilitate the neonatal continuum of care. Access to high-quality healthcare is a fundamental human right, and SDG-3 aims to ensure healthy lives and promote well-being for people of all ages, with a particular emphasis on the neonatal age group, which has the highest death rate among humans (UNICEF 2015). All the SDGs are universally applicable to all countries, including developed countries. Therefore, improved quality of care is essential for enriching healthcare and re-establishing the patient's, staff members', and public's confidence and trust in the healthcare system. District Clinical Specialist Teams were established in 2012 to assist with the implementation of interventions aimed at reducing maternal, neonatal, and child mortality in 52 districts across the country. Obstetricians, paediatricians, family physicians, midwives, paediatric nurses, and primary health nurses comprise the teams. While not all teams are fully constituted, the maternal (obstetrician and midwife) and paediatric (paediatric nurse and paediatrician) dyads are steadily but gradually improving the quality of care provided across the continuum (Maternal Death Surveillance and Response (MDSR) 2016). The National Neonatal Co-ordinating Committee (NNCC) was established in 2013 as a forum within the NDoH to coordinate and monitor neonatal care improvements in South Africa.

Population

The population is involved in the healthcare system in a variety of ways, including as patients or customers, but also as citizens with certain rights and responsibilities, funders, and even providers of care. The population studied in this literature review is neonates less than 28 days of age or weighing less than two kilograms (NDoH 2014). This makes neonates a vulnerable group of beings

with distinct anatomical, physiological, and emotional characteristics, given their inability to communicate their needs verbally. Neonates and infants are particularly susceptible to heat loss due to their heads being proportionately larger than their bodies and their metabolic rates increase. As a result, it is critical to monitor and maintain the temperature of the neonate and infant. Neonatal temperature ranges are restricted, and thermoregulatory mechanisms are easily overloaded, particularly in preterm and low-birth-weight infants (Lunze and Hamer 2012). Mothers, guardians, and nurses should be aware of this and always keep neonates warm. Lunze et al*.,* (2013) conducted a systematic review of the global epidemiological situation regarding newborn hypothermia. Hypothermia affects 59% of newborns born in hospitals (prevalence ranges from 32% to 85%) and at home (prevalence ranges from 11% to 92%). As a result, neonatal survival continues to be compromised by the absence of thermal protection.

While hypothermia is not a direct cause of death, it is a risk factor for severe neonatal infections, preterm death, and asphyxia. All of these are avoidable causes of neonatal death. A neonate's basal metabolic rate is significantly higher than that of an adult, resulting in increased oxygen and other metabolite intakes. As a result, the neonate's respiratory and heart rates are significantly higher than those of an adult. Preterm birth increases a child's risk of dying from other causes, most notably newborn infections. Each year, one million people die because of preterm birth complications, with preterm birth accounting for more than half of all neonatal deaths (Blencowe et al., 2013). Sepsis and other infectious diseases were responsible for 29% of neonatal mortality (Laxminarayan and Bhutta 2016). Parents are their children's primary source of comfort, and as such, they can recognise subtle changes in their children, regardless of their age. Consequently, parental concerns must be addressed, and parents should be present at the bedside whenever possible. Reduced neonatal mortality is vital, not only because the proportion of under-five deaths occurring during this period is increasing despite a general decline in under-five mortality, but also because the health interventions necessary to address the major causes of neonatal death are distinct from those necessary to address other under-five deaths (WHO 2018). Each year, approximately 15 million preterm infants are born, and the number is growing. According to Lui et al., (2016), preterm delivery complications are the leading cause of death among children under the age of five, accounting for nearly one million deaths in 2015. As a result, ensuring a seamless transition within the neonatal continuum of care is critical and must be strengthened.

Values and principles

Personal and societal moral standards, as well as societal values and principles, are defined by an individual's values and principles. The South African Constitution, Section 27 guarantees everyone the right to healthcare and imposes a duty on the government to gradually realise these rights. Everyone has a right to health care, including reproductive health care, adequate food and water, and social security, which includes assistance if they or their dependents are unable to support themselves. To ensure that each of these rights is increasingly realised, the State must take reasonable legislative and other measures within its available resources. For instance, the provision of high-quality health care is frequently guided by the healthcare worker's values and the health system's principles. The Bill of Rights, which protects the rights of all citizens and upholds democratic principles such as human dignity, equality, and freedom, is a cornerstone of the South African democracy (Bill of Rights 1996). This includes a neonate, who has the right to an unharmed, pain-free, and happy life. Provision of high-quality care throughout the neonatal care continuum increases the value of life and may help to reduce neonatal morbidity, which remains high among extremely preterm infants (Stensvold et al*.,* 2017).

The Batho Pele principles seek to improve the quality and accessibility of government services by increasing efficiency and accountability to all individuals who receive goods and services from the government. South Africa is also a country that is culturally, racially, and linguistically diverse, as well as socioeconomically diverse. It is the world's most economically unequal country, with over 55.5% of the population subsisting on less than R992 per month per person (StatsSA 2018). Mmusi-Phetoe (2016) conducted a qualitative study to ascertain and define the socioeconomic factors

associated with maternal and infant mortality in South Africa. The findings established that poverty contributed to the susceptibility of mothers and newborns to illness and death.

Leadership and governance

Leadership and governance characteristics include policy direction for the entire HS, coordination between participants, regulation of multiple functions, levels, and actors within the system, optimal resource allocation, and accountability to all stakeholders. Effective leadership is a critical component of healthcare systems, serving a variety of functions that contribute to an organisation's efficacy and efficiency. The NDoH has taken several steps to reduce infant mortality as a result of strong ministerial political commitment. Two examples include the appointment of a Neonatal Care Improvement Advisor in 2013 and the subsequent establishment of the National Neonatal Coordinating Committee (NNCC), which provided a forum within the NDoH for coordinating and supervising advancements in neonatal care in South Africa (Rhoda et al*.,* 2018). The National Neonatal Implementation Plan, Every New-born Action Plan, and the Essential Steps in the Management of Obstetric Emergencies (ESMOE) are just a few of these initiatives. The implementation of these programs necessitated long-term leadership, which must approach service improvement as a continuous process that must continue throughout the service's life. As a result, the extent to which these programs are successfully implemented will be determined by skilled leadership and the willingness of all actors to rise to the challenges. Within HSF, a primary focus is on strengthening leadership and governance, as leadership practices have an impact on employee engagement and teamwork, which has ramifications for patient care.

Resources

The HSF manages finances, human resources, infrastructure, and supplies, as well as expertise and information. Services must be available to ensure that new-borns receive health care throughout their lives.

Finance

At the end of 2017/2018, healthcare accounted for 8.8% of South Africa's Gross Domestic Product (GDP). This is approximately R175 billion. At least 13.5% of this budget is allocated to health programs, but the allocation for provincial health systems under the Medium-Term Expenditure Framework (MTEF) shows no signs of growth. Effective leadership and sound governance are critical to the success of projects, provided that the competent team demonstrates flexibility, negotiation, adaptation, and excitement. On the other hand, the government is urged to safeguard essential programs and services that benefit children, thereby lowering the infant and child mortality rate. Inability to implement the programmes has a significant impact on neonates' morbidity and mortality, as they are unable to receive necessary services to aid in recovery within the continuum of care. Rispel et al., (2016) published a study on poor governance and the detrimental effect of corruption on health care provision and delivery. They analysed print media coverage using a variety of research methodologies and data sources, including reports from the South African Auditor-General, semi-structured interviews with health sector informants, and a content analysis of audit reports. According to the findings, 63% of print media reports on corruption concern the public health sector. This can be viewed as a significant issue within the South African health sector, as it affects the delivery of care to those in need.

Human resources

Human resources refer to all actors involved in health, including lay people, community actors, and expert patients. Only about a quarter of ICU nurses in South Africa are professionally trained as intensive care nurses (de Beer et al*.,* 2011). As a result of this significant shortage, NICUs rely on registered nurses, experienced nurses, and newly qualified nurses to provide care. These nurses are still expected to provide advanced nursing care that results in positive patient outcomes. There are currently no approved Neonatal Intensive Care Nursing or Neonatal Care Nursing courses available

in South Africa, which means that providing quality intensive care for neonates faces significant challenges due to a nursing shortage. Advanced Midwives, on the other hand, incorporate neonatology into their practice, but their primary focus is on the mother. Specialist midwife training places a greater emphasis on pregnancy and childbirth than on neonatal care. There is a need for a neonatal nurse specialist who is not limited to the treatment of healthy newborns but rather works across the neonatal spectrum of care, if possible. These include critical care nursing, midwifery, primary health care, emergency nursing, and home care, to cover all facets of neonatal care (SANC 2015).

Horwood et al., (2019) conducted three cross-sectional surveys at the start, middle, and end of the three-year intervention period. A trained midwife collected data on the availability of trained staff, medications, equipment, infant care processes, perinatal mortality audits, neonatal unit staff capabilities, and record-keeping quality using several checklists. At the midpoint and endpoint, health workers' knowledge was assessed. The intervention resulted in quantifiable improvements in the contribution to newborn care. This demonstrates the critical need for skilled and trained neonatal nurses, as the leading cause of neonatal death is preventable. Improved care quality is crucial for enriching healthcare and re-establishing patient and staff confidence in the public and health care systems. Citizens of many African countries frequently avoid hospital care due to a perceived lack of quality (Kayongo et al., 2006). Moundzika-Kibimba and Nakwa (2018) conducted a prospective descriptive study in a neonatal unit to determine the neonatal mortality rate (NMR), the leading causes of infant death, and the presence of preventable health variables. Three hundred and eighty new-borns were admitted to Leratong Hospital over four months, with 46 of them dying. Staff shortages were found to be responsible for 63% of deaths.

Infrastructure and supplies

Developing a health system infrastructure entail ensuring that adequate health facilities and supplies, including drug availability, are located within easy reach of the populace. There are numerous dedicated Intensive Treatment Units (ICUs) in South Africa, but only a few specialise in paediatric or neonatal care. South Africa is a middle-income country with limited health resources and an acute shortage of NICU beds. Ellard et al., (2016) conducted a pre- and post-examination of maternal and neonatal health indicators, as well as a survey of rural Tanzanian health facilities, in 2015. The survey's objective was to determine the impact of the training program Appropriate Technologies for Maternal and Perinatal Survival in Sub-Saharan Africa (ETATMBA) on maternal and neonatal health outcomes. The Enhancing Human Resources and ETATMBA use training event drew 36 participants from rural Tanzania regions, including 19 assistant medical officers, one senior clinical officer, and sixteen nurse-midwives/nurses. The trainees returned to health facilities throughout the country in the hope of putting their newly acquired skills and knowledge to use. The findings indicate that increased knowledge, practical skills, and clinical leadership may all have a beneficial effect on health outcomes. Regardless of the benefits of training, infrastructure, such as health facilities, was required to facilitate it.

Due to South Africa's growing population, establishing a newborn health system will require ensuring that sufficient healthcare facilities are accessible to the public. Healthcare facilities, including neonatal supplies and equipment, should be well-equipped and maintained. If physical access is an issue, either new facilities must be constructed, or existing facilities' access must be improved. Due to South Africa's middle-income status and limited health resources, care for severely underweight newborns is rationed, and many are not given mechanical ventilation. For example, infants weighing less than 900g were not routinely given intermittent positive pressure ventilation (IPPV) at Charlotte Maxeke Johannesburg Academic Hospital due to the risk of a poor outcome, prolonged ventilation, and significant resource utilisation (Mphaphuli and Ballot 2016). The availability of resources, such as transportation services, effective communication with other facilities, and a seamless transition to neonatal transfer, are critical components of the continuum of care and should be strengthened. Healthcare services from antenatal care to the labour ward,

nursery, and community should therefore be integrated rather than provided in isolation, as this will have a critical impact on the health and well-being of a neonate throughout the continuum of care.

Knowledge and skills

To train and guide healthcare professionals in the care of a critically ill neonate, strategies such as short courses and the National Core Standards have been implemented. Since midwives and neonatal nurses are the primary caregivers, it is critical to have an adequate number of well-trained midwives and neonatal nurses. The Perinatal Education Program (PEP) was established as a result. PEP is a free online healthcare course. It is an innovative method of perinatal care. It is primarily used in underserved and under-resourced communities. Rundare and Goodman (2015) evaluated the efficacy of perinatal training in a single maternity facility in the Western Cape. They used programme records and the results of a questionnaire to assess midwives' knowledge and skills in a quasi-experimental design. The research surveyed 42 midwives in total. The hospital modified the self-study method for the program to include group facilitation, which resulted in increased knowledge, skills, and group work.

A Neonatal Experiential Learning Site (NELS) was established in KwaZulu-Natal to help improve neonatal care standards (Davidge 2013). This programme was coordinated on a full-time basis and offered in two locations. The programme included a two-week block of consolidated learning, as well as outreach and teaching support. After the programme, staff morale had improved, hospital awareness of the importance of improving neonatal care had increased, communication and collaboration between physicians and nurses had improved, and treatment quality had improved (Davidge 2013). Additionally, a shortage of qualified neonatal nurses and accredited neonatal care courses in South Africa impedes the provision of high-quality neonatal nursing throughout the continuum of care. Horwood et al., (2019) conducted three sequential cross-sectional surveys at the study's baseline, midpoint, and endpoint in 39 district hospitals. At the start of the project, the knowledge of health care workers was assessed. Throughout the project, health workers were trained, and the results improved at the midpoint and endpoint. This study concluded that neonatal nurses with specialised training would improve neonatal outcomes across the continuum of care.

Service delivery

Service delivery refers to the distribution of basic resources on which individuals rely, such as water and electricity, housing, and even healthcare. As a result, services cannot be productive without effective resource allocation and administration. The system's leadership role is critical to the successful governance of these functions. The arrows in the framework demonstrate how the components are complementary and interconnected, and how the population pervades every part of the structure, demonstrating its ubiquity. For instance, even if supplies are scarce, the healthcare worker will retain the knowledge and skills necessary to provide quality care. Service delivery requires managerial and organisational attention to produce outputs that result in outcomes. The availability and management of resources, particularly qualified personnel, as well as their organisation, influence the service delivery options. Basic neonatal services will include communication with other facilities regarding the neonate's transfer or referral, as well as access to a health facility following a patient's discharge (Purdy et al., 2015).

Inadequate or incorrect labour management, as well as insufficient neonatal resuscitation, were all factors in asphyxia-related deaths that could have been avoided. This demonstrates the critical nature of nurses and physicians receiving basic newborn resuscitation training. The majority of newborns respond rapidly and completely to effective resuscitation. Neonates who do not respond to cardiopulmonary resuscitation within 10 minutes have a poor prognosis, with a slim chance of surviving without significant disability. The use of 100% oxygen has been associated with poorer outcomes than the use of room air; room air resuscitation is more appropriate. Early detection and treatment of the most common causes of brain injury, as well as excellent and early strong serious

care, are critical for avoiding or minimising persistent brain damage in smothered newborns (Antonucci et al*.,* 2015).

Outcomes

Socioeconomic status and access to health care have a significant impact on the health outcome. Quality has an impact on the acceptability of care and, consequently, on access (Levesque et al*.,* 2013). Additionally, it determines the final coverage of effective therapies by evaluating care outcomes. When developing the framework, it is critical to consider the impact of various factors both inside and outside the system. The outcome encapsulates all of healthcare's effects on patients or populations, including changes in health, behaviour, or information, as well as patient satisfaction and health-related quality of life. Given that the primary goal of healthcare is to improve patients' health, outcomes can be viewed as the most important quality indicator. The review of the literature was conducted to identify gaps and systemic challenges that must be addressed to ensure neonatal health service access and quality across the continuum of care. Iqbal et al., (2019) used secondary data from the Pakistan Demographic and Health Survey (PHDS) to identify various factors influencing the continuation of receiving continuum of treatment in Pakistan between 2006 and 2012. The findings revealed a lack of continuity of care among women in Pakistan, necessitating the development and implementation of specialised interventions.

Goals

When objectives are met, goals will naturally fall into place. The ultimate goal is to ensure that high-quality care results in improved health and that mothers and guardians, regardless of their socioeconomic status, have social and financial protection through access to health care at all levels of the continuum of care (WHO 2018). According to Ballot et al., (2015), children admitted to a centralised, dedicated paediatric ICU had a higher survival rate than those admitted to general or shared ICUs, even in developing countries. Children admitted to general intensive care units in other African countries die at a significantly higher rate than children admitted to intensive care units in the United States. Children admitted to a general ICU had a mortality rate of between 36% and 40%, but the PICU mortality rate at the Red Cross War Memorial Children's Hospital in Cape Town decreased from 10% in 2006 to 9% in 2010 (Argent et al*.,* 2014). This demonstrates the importance of neonates being cared for exclusively in neonatal-specific facilities throughout the continuum of care.

Conclusion

The primary issue is that while there is a strong emphasis on outcomes such as neonatal mortality reduction, there should be a greater emphasis on contributing factors such as the continuum of care, which includes infrastructure, human resource skills, leadership, and governance. Additional research is required that focuses on the processes involved in achieving the desired outcomes, such as universal coverage for neonates across all facets of the healthcare system. Infrastructure must be provided to ensure a seamless transition within the continuum of care, nursing staff must be increased as the population grows, and knowledge must be increased through an accredited course. Given the significant impact that failure to implement the programmes has on neonatal morbidity and mortality, the goal is to establish an effective continuum of care that strengthens the connection between the home, the first-level facility, and the hospital, ensuring that appropriate care is available and provided at each location. With an increased rate of adolescent pregnancy, attendance at antenatal clinics should be encouraged to help prevent infants from being born with low birth weight. Until systemic issues regarding infrastructure, resources, supplies, leadership, and governance are addressed, achieving an efficient and effective continuum of neonatal care will be difficult. Perhaps a study of a neonate's transition through the continuum of care should be considered.

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