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Strategies that Reduced Neonatal Mortality and Created a Neonatology Unit in a Low Resource Setting, Limbe-Cameroon

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ABSTRACT

The Multiple Cluster Indicator /Demographic and Health Survey (DHS-MICS) of Cameroon in 2018 reported a neonatal mortality rate of 28 % from 33% in 1991, indicating a slight decrease of 15% [1]. In Cameroon, studies have been carried out in hospitals of a similar category on the causes and determinants of neonatal mortality [2,3], but at the Limbe Regional hospital no study could be carried out, because the was no neonatology unit in this 3rd level hospital in my country to provide good health care services for the newborns and contribute to the national data of the Country. After identifying these major public health deficits in my local setting, goals were set with the aim of improving health care services to the community, strengthening the health care system of the hospital and reduced neonatal mortality to achieve the third sustainable development goal (SDG) relating to the reduction of under-five mortality by 2030. In this challenging environment in 2016, determined to do things right with the purpose of reducing neonatal mortality, it unconsciously brought out intervention skills of advocacy, team building in simplicity and humility because some of the staff were older than me, coaching, networking, monitoring, and evaluating the implemented standard operating procedures (SOP) that were set in place. This good intention to foster positive change to the community, the health care system of this hospital and improve on the National DHS-MICS data has trained staff, built, equipped the neonatology service, and reduced neonatal mortality to 16% in the year 2022 in the Limbe Regional hospital, compared to the National data which revealed a neonatal mortality rate of 26.3% in the same year. 'The man who moves the mountain begins by carrying small stones.

Keywords

Neonatal mortality, Neonatology unit, Infant, Newborn care.

Background

Neonatal mortality according to the World Health Organization is the death of a liveborn infants that occurs within the first 28 completed days of life. The first month of life is the most vulnerable period for child survival, with 2.4 million newborns dying in 2020 [4]. More than 98% of these deaths occur in developing countries with 27 deaths per 1000 live births [5], where access to health care is poor [6]. In 2020, neonatal mortality rate for Cameroon was 26.2 deaths per 1,000 live births [7] and precisely in the Buea health district in 2020 was 45.5% with 86% occurring within the first 24 hours [8]. A child born in a developing nation is 14 times more likely than a child born in a developed nation to die within the first 28 days life [4]. With these available statistics in mind, I had to work as the pediatrician of this 3rd level hospital in my country, without any neonatology service. The improvised service was a room with 10 baby cuts and 2 incubators for the preterm babies all in one single room with direct assess for both the staff and the community. This was not the right structure for a neonatology service as this structural design favoured cross infections. I also had to treat babies with human resource who had very little background knowledge on essential new born care and difficulties to handle the manipulation and administration of some drugs commonly used in the neonatology service. Couple with this, the was very limited technical resource (2incubators, no radiant warmer, no kangaroo chairs, no structure for KMC, no working offices, etc.) and above all, I had to monitor, evaluate the services we offered to these babies and generate data on neonatal

pathologies and neonatal mortality from the hospital records. This was going to be very challenging without an equipped neonatology unit, without trained staff and without fixed standard operating procedures, thus I took up the personal challenge to do better for the Cameroonian child, the community, and the health system in my semi-urban setting.

Challenges

A lot of research has been carried out in other regions of the country with respect to the prevalence and determinants of neonatal mortality, but in my local setting such research was not carried out. I was faced with two principal difficulties. First, I had no appropriate health care department and system put in place to manage most of the newborn complications (neonatal sepsis, prematurity, asphyxia, congenital abnormalities etc.). Structurally, the was no precise neonatology service and its sub-specialties (premature unit, neonatal infectious unit, KMC unit) and technically no staff had received training on any of this aspect except for 1 of them out of 10 nurses. Secondly, we could not save and generate data from this hospital setting, because a well-defined documentation system had not been defined by the hospital administration and precisely the neonatology unit. The was available untrained human resource with the zeal to learn and perform better, they were sick newborns coming into the hospital each day and the administration provided registers to collect data and they monitored to see results with little or nothing to work with, but positive clinical results were produced from the little we had. The paucity of data on the trend and determinants of neonatal mortality in our setting was alarming, though we used the global neonatal mortality rate of 28 per 1000 live births as a starting point. To achieve the third sustainable development goal (SDG) relating to the reduction of under-five mortality by 2030, it was of utmost importance that we analysis the trend of neonatal mortality in our context and evaluate factors that have greatly influenced neonatal mortality in our setting. It is from these results, that simple preventive strategies can be developed to reduce neonatal mortality.

Intervention

After identifying these difficulties, I began by educating the personnel I had to work with, on the importance of having a precise unit to cater for the newborn. I also enlightened them on the different components of newborn care (essential newborn care components, kangaroo mother care for the preterm, neonatal intensive care, promotion and preventive strategies for newborn), so that they could show their various areas of interest with respect to the different components of neonatal care, in order to do distribution of labour. This was a very challenging team building process for me, because, I had to change ideas and ideologies by clinically proving what I was talking about to make majority of the personnel align to the vision. So, we began in service trainings amongst ourselves before beckoning on funders to promote and facilitate training of staff. First, I demonstrated interest for training and improvement of skill courses to the regional delegation of public health for the Southwest Region, precisely the department of maternal and infant welfare. This was to inform my government through the regional delegation, that our health facility should also be considered for regional and national trainings of nurses and doctors with respect to newborn care. UNICEF (United Nation Children's Fund) was the main funder of most training sessions after they showed interest to a proposal that was forwarded to them with respect to training staff on essential newborn care, neonatal resuscitation, hospital and community follow up of KMC with the aim of reducing neonatal mortality. A few other trainings were organized at the district level with government funding. Appeal letters were also sent to some pharmaceutical companies to assist us with continuous learning and improvement of skill trainings with manikins. So once an opportunity was available, a nurse or two were sent for training, with the goal of training the other staffs when they return. At this point the role of advocacy and networking was sometimes frustrating because some bosses taught you just wanted to waste funds. It was only after monthly statistics revealed that, fewer babies died at the end of each month and they died from inevitable causes, like very extreme prematurity which can hardly survive in our setting or from very complicated malformations. Once the personnel were comfortable and apt to carry out the necessary interventions, receive a newborn and act promptly and correctly, work became easier and lighter for us despite the improvised unit. This was easy to obtain with a pace-setting and coaching style of leadership. Added to these, specialized skills were orientated to the right places for efficiency and productivity. Coupled with this first step, the archive system of the hospital improved, information of each patient was recorded in his/her personal file and this file could be used for the same patient, if patient came back to the hospital for another visit, because a code was attributed to each patient. From this improvement of the archives, in house assessments and data collection could be carried out. Gradually over time, it was observed that, the number of newborns the hospital was receiving per month had increased from about 20 to 40 new borns per month. With respect to neonatal mortality, in 2016, our region was bottom on the list with the highest neonatal mortality rate, but by the year 2018, the region became fourth to the last position with respect to neonatal mortality. This was an indicator to prove that neonatal mortality was reducing.

From these in house assessment and national demographic data obtained, the then Director of the hospital and the then regional delegate of public health, became very interested in newborn care programs. It is at this point that a letter asking for the authorization to build a neonatology service for the hospital using funds generated through Performance-Based Financing (PBF) was drafted and forwarded to the ministry of public health. The was some delay before the authorization was signed, but while the hospital waited for the authorization, work continued and our little efforts attracted universal bodies like United Nations International Children's Emergency Fund (UNICEF), who began paying particular attention to the things we were doing and decided to partner with the hospital by providing almost all the incubators, kangaroo chairs, kangaroo bags we have in the unit presently. They have also been very keen on continuity in training a lot of staff in the region on danger signs of the newborn and management of the preterm infant. UNICEF also sponsored the project kangaroo mother care in the community after we trained some elderly

women in different communities to help us follow up and monitor the growth and wellbeing of our preterm babies after discharge from the hospital. After receiving the letter from the minister to construct the neonatology service, construction began in the year 2020 but with a different director and regional delegate who had just been appointed. Inspiration on the plan of construction was drawn from other bigger neonatology units in the capital of our country, allocating sections for the preterm below 1500g, above 1500g, term newborns below 7days, a room for continuous KMC and an allocated area for mothers to stay. The site for construction was chosen and the finance needed for the project was available, because funds were generated gradually over the years from the then PBF program. So, everything been available, the building was finally completed in January 2021. This unit has not just brought comfort to both the patients and staff, but has greatly improved newborn care offered by the health system of my region (10 functional incubators, capacity of 10 for early onset neonatal infections and a capacity of 12 for late onset neonatal infections). It is also one of the principal sites of newborn care research in the region, with a survival rate of preterm babies of 69.2% [9] and present mortality rate of 16% [10] below the estimated national rate of 26.3%.

Lesson Learnt

A true leader bears the weight of his/her vision, both your hierarchy and subordinates lean on you. You automatically become a manager, you do the planning, organize, direct, and control the implementation of all that must be done to see the realization of the vision. You cannot be exempted from the monitoring and evaluation of whatever is been done, because these are the facts that will encourage you to continue and convince others to keep following you in this vision of yours.

Irrespective of all the styles of leadership, a good leader will apply the right style of leadership were applicable and will not impose a particular style of leadership all the time. 'When it is obvious that the goals cannot be achieved, don't adjust the goals, adjust the action steps'.

Conclusion

The results of this 7year journey attracted national appreciation by the Minister of Public Health in Cameroon, in April 2023 with a letter of government acknowledgement and appreciation when he inaugurated the newly built neonatology unit.

This journey over the past 7years has been a very challenging one to me, in terms of my personality and professionalism, but it has been very fulfilling to me. The experience has built a sense of discipline, focus and determination. If I am no longer the paediatrician of the Limbe Regional Hospital, Southwest region, Cameroon, I know the is a place for a little newborn to be save and that is service to humanity from my little efforts. A lot must still be done, but something has begun with the aim of improving health care services to the community, strengthening the health care system of the hospital and reducing neonatal mortality towards achieving the third sustainable development goal (SDG) relating to the reduction of under-five mortality by 2030. 'A journey of a thousand miles begins with one step'.

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