

1.MotherNewBorNews (Quarterly newsletter of MotherNewBorNet)

Fundamentals of postpartum care

The postpartum period, or puerperium, starts an hour after the delivery of the placenta and includes the following six weeks. The postpartum period covers a critical transitional time for a woman, her newborn and her family, on a physiological, emotional and social level. The woman and newborn need special attention during this period because of the fact that the majority of maternal and infant deaths and morbidities occur during this time. During the postpartum period family members and health service providers need to respond to the following special needs of mother and newborn:

<p>During the postpartum period a woman needs:</p> <ul style="list-style-type: none"> a) Information/counseling on: <ul style="list-style-type: none"> - Care of the baby and breastfeeding - What happens with and in their bodies - including signs of possible problems - Self care - hygiene and healing - Sexual life - Return to fertility and contraception - Nutrition b) Support from <ul style="list-style-type: none"> - Health care providers - Partner and family - emotional and psychological c) Health care for suspected or manifested complications d) Time to care for the baby including maternity leave e) Help with domestic tasks f) Social reintegration into her family and community g) Protection from abuse and violence 	<p>During the postpartum period a newborn needs:</p> <ul style="list-style-type: none"> a) Easy access to the mother b) Appropriate feeding c) Adequate environmental temperature d) A safe environment e) Parental care f) Cleanliness g) Observation of body signs by somebody who cares and can take action if necessary h) Access to health care for suspected or manifested complications i) Nurturing, cuddling, stimulation j) Protection from: <ul style="list-style-type: none"> - Disease, - Harmful practices, - Abuse and violence k) Acceptance of gender, appearance, size l) Recognition by the state (vital registration system)
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[Source: Adapted from the World Health Organization, postpartum care for mother and newborn: report of a technical working group, 1998]

During the postpartum period both the mother and newborn are vulnerable to a wide range of health problems. Maternal health problems during postpartum period include: postpartum hemorrhage, puerperal infection, eclampsia, urinary tract infections, urine retention, urine incontinence, fistula, and prolapsed uterus. Many women also experience pain in the perineum and vulva for several weeks, especially if there was tissue damage due to vaginal delivery or an episiotomy during the second stage of labor. Psychological problems e.g. depression in the postpartum period are also not uncommon. Due to increased energy cost of pregnancy and lactation, many women suffer from protein-energy malnutrition during the postpartum period. The three main vitamin or mineral nutritional deficiencies among the women during this period are iodine deficiency disorders, vitamin A deficiency and iron deficiency anemia. Finally, global data show that only three to eight percent of postpartum women want another birth within two years, and that 40 percent of women who say they want to use a contraceptive method in the first year after birth are not doing so.

The newborn's health and well-being can also be affected by a variety of conditions. The three most common causes of death and disability of newborns in the first 28 days of life include infections (sepsis/pneumonia, tetanus, and diarrhea), prematurity and birth asphyxia. Congenital anomalies and birth trauma, to a smaller extent, also lead to mortality. A large proportion of neonatal deaths occur among preterm and low birth weight babies since they are more prone to hypothermia, more likely to succumb to infection and jaundice, more often need to be resuscitated, and are more difficult to feed.

Unfortunately it has been documented that health services have paid little attention to postpartum care for mother and newborn during this critical period. In actual fact the traditional time for the first postpartum visit for mother and baby is at six weeks; a time when there is no longer very much danger of maternal or infant death and a great unmet need for family planning information and services. Evidence from several research and interventions suggest that early postpartum care is a crucial component of the continuum of care for mother and newborn, and can ensure their survival and well-being. The postpartum period represents an important time to address women's unmet needs for family planning to achieve their desired birth spacing intervals.

Therefore, postpartum care should be based on the needs and health problems outlined above, and should incorporate all the essential elements required for the health and well-being of the mother and her newborn, and should be provided in an integrated fashion. As most of the babies in developing countries are born in the community, initial postpartum care should be attempted at the household level. Skilled care during delivery and early identification of postpartum problems of mothers and newborns through community-based

integrated postpartum care can reduce the incidence of death and disability of both mothers and newborns. The World Health Organization (WHO) suggested the following broad lines of care that can be offered at each point of contact during the postpartum period (table below). WHO also acknowledged the fact that addressing the needs of all women and newborns through improving access to health care during the postpartum period is more important than a rigid but unfeasible visiting schedule. The visit between 6-12 hours may not be possible by community health workers (HCW) but can be provided by skilled birth attendant. Additional visits may be required e.g. for low birth weight (LBW) infants and mothers having complications of childbirth.

Key elements of postpartum care

Care for:	Elements of postpartum care at different times			
	6-12 hours	3-6 days	6 weeks	6 months
Baby	Breathing Warmth Feeding Cord Immunization	Feeding Infection Routine tests	Weight Feeding Immunization	Development Weaning
Mother	Blood loss Pain Blood pressure Warning signs Advice	Breast care Temperature Infection Lochia Mood Information on return to fertility	Recovery Anaemia Contraception	General health Contraception Continuing morbidity

[Source: Adapted from the World Health Organization, postpartum care for mother and newborn: report of a technical working group, 1998]

What is integrated community based postpartum care?

Integrated, community-based postpartum programs are defined as those which include some or all of the following components: provision of maternal and newborn care; monitoring for maternal and newborn postpartum complications and illnesses and managing or referring them, counseling of women and family members, i.e. mothers-in-law and husbands, on signs of complications associated with delivery or danger signs for postpartum mothers and neonates and where and how to access care; counseling families on the health and other benefits of waiting at least two years before trying to become pregnant again; provision of family planning including the lactational amenorrhea method (LAM) and other appropriate modern methods for birth spacing; stabilize/manage or refer cases detected during the visits; breastfeeding counseling and support; nutrition counseling for mother and infant; linkage to immunization services; counseling on or referral for subsequent morbidities, such as anemia, fistulas, prolapsed uterus, infections, and postpartum depression.

Each developing country will have to determine the actual configuration of their community-based postpartum care package given the lack of uniformity in the skill level of service providers, use of services, resources, and infrastructures, socio-cultural context, among countries and even within countries. While developing or integrating postpartum care programs, policymakers and program managers will need to:

- Determine the barriers to and facilitators of community-based postpartum care and the ways to address them;
- Identify pregnant and just-delivered women who do not use formal health care services, and consider how to reach them, especially in the first week after delivery;
- Consider the components of community-based postpartum care to integrate and how to phase integration;
- Determine the community-based postpartum care visit schedule and the mode of delivery of postpartum care;
- Examine appropriate incentives to motivate staff to provide community-based postpartum care services;
- Identify mechanisms for the supervision of community-based postpartum care;
- Determine the required skill-level of CHWs to deliver community-based postpartum care and explore ways to establish linkage with traditional birth attendant (TBA) and facility-based providers;
- Assess whether training materials on community-based postpartum care are congruent with the current global evidence, cultural context and knowledge and skill needs of CHWs;
- Consider the best timing to provide certain types of care and counseling (e.g. information on the health consequences of too early or too closely spaced births);
- Assess the communication strategy to be used for community-based postpartum care, and how to involve men, grandparents, family members and friends in support networks;
- Determine the costs of different components of community-based postpartum care

More than likely, most countries have a postpartum care policy either at the facility or home. The postpartum care policy needs to make sure that women and newborns are the focus of attention of providers immediately after delivery and periodically throughout the first week and thereafter to ensure their survival and continued good health. Operational policies and guidelines should also set forth the appropriate self and family care practices and positive health behaviors that the CHWs and community leaders should encourage, e.g., adequate rest, nutrition, exclusive breastfeeding as appropriate, hand washing etc. Therefore, there is also need to provide a solid infrastructure for the provision of a service which is comprehensive, culturally sensitive and which responds to the needs of childbearing women and their families in specific geographic and cultural contexts. Elements of this infrastructure include policy, provision of services and care, tool development, training and human resource issues, health protection and promotion, and research.

Shifting postpartum interventions to the first 24 hours and the first week: crucial for maternal and newborn survival

Evidence indicates that the postpartum period is the most critical time for both maternal and neonatal survival. More than four million babies die in the first 28 days following birth and almost 75 percent of these deaths occur within seven days of birth with the majority happening within the first 24 hours following birth (Figure-1). About 61 percent of maternal deaths occur in the postpartum period and most of these deaths take place immediately after delivery and during the first week of postpartum period (Figure-2).

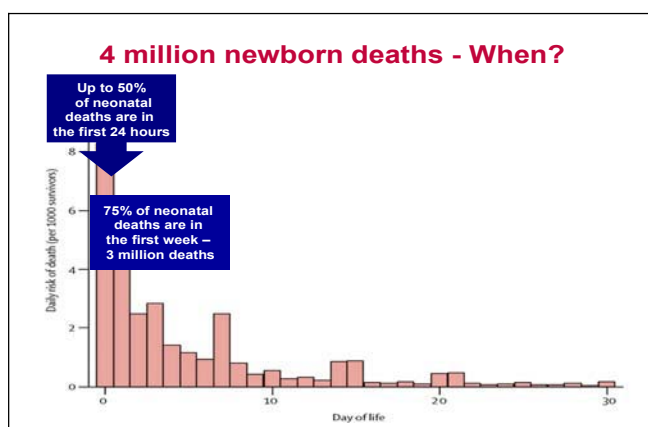


Figure-1 [Source: The Lancet, Neonatal series, March 2005]

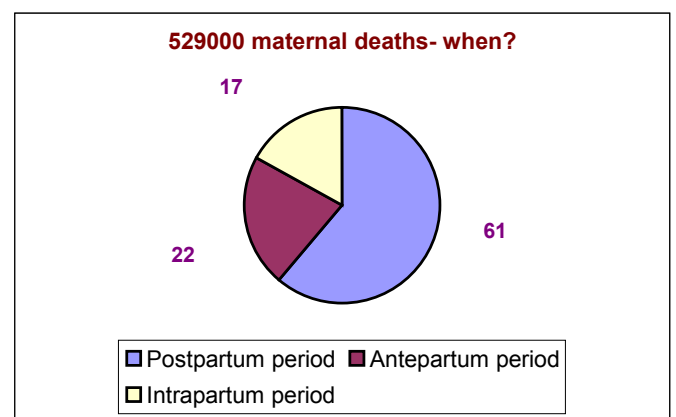


Figure-2 [Source: The World Health Organization, 1998]

Despite the evidence of effectiveness of postpartum care to prevent maternal and infant deaths, it remains the most neglected component in maternal and infant care. If we shift our programmatic concentration to ensure effective care to mother and newborn within the first 24 hours and up to the first week, this could be – along with having functional emergency obstetrics services (EmOC) and essential newborn care (ENC) available and utilized – the most strategic means of reducing maternal and neonatal mortality. From the recent evidence of analysis of causes and timings of maternal and newborn deaths, it has also become clear that the first 24 hours of postpartum period is the most critical period for maternal and newborn care. Women regardless of where they deliver – at home or in an institution – and their newborns need to be closely monitored for the first 24 hours. Those who deliver in an institution should remain for observation for the first 24 hours period while those who deliver at home need to ensure that the birth attendant provides close monitoring for the first 24 hours for signs of any complications in the mother and the newborn. During this critical 24-hour period, the birth attendant needs to monitor and take appropriate action, according to his/her skill level, for the following signs of serious complications in the mother and newborns:

Maternal signs:

- Hemorrhage; atonic uterus; retained placenta; tears/lacerations of perineum
- Signs of shock: cool, clammy skin; loss of consciousness; decrease in urine output; decreased blood pressure (systolic blood pressure less than 90 mmHg); and/or pulse 110 beats per minute or more
- Convulsions (may be preceded by severe headache /visual disturbance)

Neonatal signs:

- Birth asphyxia or labored breathing; convulsions; hypothermia; jaundice; poor sucking; very low birth weight

The following week is next in importance for postpartum care. During this period the health care providers must look for signs of infection in mother and newborns such as:

Maternal signs:

- Foul smelling vaginal discharge; high fever/chills; hemorrhage; convulsions

Neonatal signs:

- Hypothermia/ blue skin; fever; redness or infection of cord; little or no feeding; skin pustules, lethargy; rapid breathing, chest in-drawing with or without grunting or gasping; persistent vomiting; abdominal distension; convulsion; other signs of infection, signs of tetanus e.g., stoppage of sucking, rigidity

The postpartum period is also very important for providing advice to the mother and family on preventing unplanned pregnancies, effective breastfeeding practices, importance of fully immunizing the newborn and nutritional care of mother and baby during this period. Therefore, when we design a maternal and child health intervention, it is essential that we include the provision of postpartum care during the first 24 hours and the first week. In many societies men are often the primary decision makers of women's and children's health care, but remain poorly informed about women's and children's health. To improve the health of mothers and children it is also essential to involve men in the care of their partners and children. This can be done by improving knowledge of the partners on postpartum and other health care issues, and by facilitating communication on health care issues between the partners.

Common practices during postpartum Care: useful, effective and harmful

A lot of health care practices by health care providers are common during postpartum period. A technical working group of the World Health Organization categorized these practices under four broad areas depending on the usefulness, effectiveness, and harmfulness of these practices (The World Health Organization, postpartum care for mother and newborn: report of a technical working group, 1998). These categories include:

- A. Practices, which are demonstrably useful and should be encouraged**
- B. Practices for which insufficient evidence exists to support a clear recommendation and which should be used with caution while further research clarifies the issue**
- C. Practices, which are frequently used inappropriately**
- D. Practices, which are clearly harmful or ineffective and should be eliminated**

Practices included in each category are given below:

Category-A: Practices, which are demonstrably useful and should be encouraged

- Careful supervision of urine production of the woman 8-12 hours postpartum
- Regular inspection of the perineum during the first week postpartum
- Strict hygienic measures in the care of infants and mothers by all caregivers
- Rooming-in throughout the hospital stay of mother and baby, also at night
- Psychosocial support of caregivers for postpartum women/couples
- Distinguishing healthy low birth weight infants from those at risk
- (Daily) observation of the infant during the first week of life
- Strict hygiene in the care of the umbilical cord and the cord stump
- Measures to prevent hypothermia of the baby, immediately after birth
- Eye prophylaxis with silver nitrate or tetracycline ointment in all those situations where close daily observation of the infant cannot be guaranteed
- Persons with a herpetic lesion on the lip or genitals should avoid contact with newborn infants, or take the utmost hygienic measures
- Early skin-to-skin contact of mother and baby, within 1 hour of birth, and early suckling of the baby
- Support of the mother in correct positioning of the baby at the breast
- In malaria-endemic areas sleep under an insecticide treated net (ITN)
- Informing all pregnant and postpartum women about the benefits and management of breastfeeding and its relationship on her return to fertility
- Informing all pregnant and postpartum women about all contraceptive choices in the postpartum period and providing her with the contraceptive of her choice
- Reinforcing that non-hormonal methods (Lactational Amenorrhoea Method, barrier methods and intrauterine device) are the best options for lactating mothers
- Initiating progesterone-only methods after 6 weeks postpartum to breastfeeding women, if this is the woman's choice
- Advising against the use of combined oral contraceptives in breastfeeding women in the first 6 months after birth, or until weaning, whichever comes first
- Introduction of an intrauterine device (IUD) either in the immediate (<2 days) postpartum or after 4-6 weeks, if this is the method chosen
- Performing surgical sterilization in the postpartum period (female and male) is a medically appropriate option, if this is the free informed choice of the woman/couple

- Where the acceptability, feasibility, affordability, sustainability and safety (AFASS) of replacement feeding (breast milk substitute) cannot be assured, advising HIV infected mothers to practice exclusive breastfeeding and that mixed feeding will put her baby at greater risk of infection
- Measures should be taken to protect the caregiver against contact with contaminated blood, by safe handling and disposal of sharp instruments, and by protective clothing where appropriate
- BCG immunization of all infants as soon after birth as possible, in populations at high risk of tuberculosis infection
- Vaccination of infants against poliomyelitis and hepatitis B soon after birth
- Vaccination of infants against diphtheria, pertussis and tetanus (DPT) to begin 6 weeks after birth
- Rh-prophylaxis in Rh-negative women who gave birth to a Rh-positive infant
- Rubella vaccination postpartum in women known to be rubella negative
- Supplementation of lactating woman with protein and energy if the woman herself suffers from malnutrition or if the population of the region has a high prevalence of malnutrition
- Giving lactating mothers 200 000 IU of vitamin A orally (in capsules) in endemically vitamin A deficient regions where fortification of food products is not feasible, but only once, in the first month after delivery
- Giving children <1 year of age 200 mg (1 capsule) of lipiodol orally, or 240 mg injected, in regions where iodination of food products is not yet feasible,
- Late clamping of the umbilical cord
- Measuring the hemoglobin (Hb) of the woman in the first week after delivery and 6 weeks after delivery, and prescription of iron if necessary. Alternative: prescription of iron to all postpartum women
- Daily assessment of the condition of mother and baby in the first week postpartum
- Combined advice on breastfeeding and contraception in the first week postpartum, and integrated counseling on both subjects in the first months

Category B: Practices for which insufficient evidence exists to support a clear recommendation and which should be used with caution while further research clarifies the issue

- Antibiotics in the early phase of puerperal mastitis
- Routine administration of vitamin K to all healthy newborns or to all newborns that will be breastfed

Category C: Practices, which are frequently used inappropriately

- Introduction of milk supplements to breastfed infants
- Prescription of combined oral contraceptives to breastfeeding women from 6 weeks to 6 months postpartum
- Postpartum sterilization in women who have not been adequately counseled
- HIV testing without pretest counseling and without informed consent

Category D: Practices, which are clearly harmful or ineffective and should be eliminated

- Routine use of oral ergometrine for newly-delivered women
- "Rooming-out" system of baby care in a hospital or maternity clinic
- Hormonal treatment of postpartum depression
- Phototherapy for neonatal jaundice in healthy term infants on the third or later days after birth, for bilirubin values <300 mol/l
- Restricted mother-infant contact after birth
- Providing breastfed infants bottle supplements with water, glucose or formula while breastfeeding is becoming established
- Limiting suckling time to 10 minutes on each breast or any other arbitrary period
- Restricting the frequency of breastfeeds to once in 3 hours, or to any other arbitrary period
- Giving free formula samples, bottles and teats to breastfeeding women
- Giving artificial teats and pacifiers to breastfed infants
- Lactation inhibition by oestrogen or bromocriptine
- Prescription of hormonal contraceptives during the first 6 weeks postpartum to breastfeeding mothers
- Separate counseling of the woman on breastfeeding and on contraception

Increasing access to quality postnatal care: findings from PNC project in Nepal by Neena Khadka

Postnatal care (PNC) services for the mother and newborn are practically non-existent in Nepal, a country with very high neonatal and maternal mortality. Most mothers and newborns do not make initial contact with the formal health system until the newborn is brought to a health provider at six weeks post-delivery for the first immunizations. This contact is too late to prevent the majority of maternal and neonatal deaths. Although

establishing contact between post-partum mothers, newborns, and trained health care workers presents a huge logistical and health service delivery challenge, it is an essential and crucial step if neonatal and maternal death rates are to be reduced. The most obvious challenge is how to deliver this care since most mothers in Nepal deliver at home and then remain in seclusion there for the first two to four weeks post-delivery. Trained government health care workers are generally reluctant to make home visits to examine postpartum mothers and newborns for a variety of reasons.

Saving Newborn Lives (SNL), a Gates funded Save the Children US initiative, designed and field tested a pilot project to improve the access of mothers and newborns to basic postnatal care of acceptable quality. The strategy formulated by SNL centered on home-based care delivered through a process that built on established, traditional roles of community health workers in the provision of postnatal care services.

Description of PNC project

The PNC project was initiated in five village development committees of Kailali district in the Far Western part of Nepal. The population of the project catchment area was 63,782 with the number of women aged 15-49 years being 14,031. The number of live births estimated per year was 2,234 with a monthly birth rate of 186 babies.

The project was designed as a feasibility study to determine if community-level health care volunteers can provide basic postnatal care of good quality to mothers and newborns in Nepal. The project also wanted to determine whether this care is acceptable to both providers and clients and achieves reasonable coverage among the population. As such, the PNC project was not designed to be completely sustainable nor scalable in its tested form. The central strategy of the project was to train and support community-based health care volunteers to provide post-delivery care to post-partum mothers and newborns. The caregivers were trained on basic examinations of post-partum mothers and newborns in their homes at key intervals in the postnatal period, recognition of danger signs and referral of clients to health facilities. This strategy had been adopted to reach mothers and newborns that are traditionally confined to their homes for the first several weeks post-delivery for cultural reasons.

The goal of the project was to decrease maternal and newborn mortality and severe morbidity in the project area by increasing the coverage and improving the quality of home-based postnatal care services for mothers and newborns. This goal was to be achieved through increased utilization of basic postnatal services by mothers and newborns, increased identification and referral of post-partum women and newborns with health problems to health care facilities, and provision of quality home based postnatal care for mothers and newborns.

The PNC Project began in early 2003 and continued until September 2004. PNC caregivers were selected based on fixed criteria and trained to provide home-based postnatal care to mothers and newborns. The inputs were relatively simple: five Auxiliary Nurse Midwives (ANMs) were recruited by the project to train, supervise, monitor and provide on-the-job PNC skill reinforcement to a group of 103 PNC caregivers. PNC caregivers were trained for three days on the following topics: timing of home visits for PNC, recognition of danger signs in postnatal mothers and newborns, and skills regarding how to counsel and examine postnatal mothers and newborns. The PNC caregivers were given a basic set of management and instructional materials that included pictorial job aids that guided the examination, and referral slips to track referrals made.

The PNC Project began its activities by instituting a system of pregnancy identification in communities. This was accomplished through the mobilization of mothers' groups, community members, TBAs, and Female Community Health Volunteers (FCHVs) to identify pregnant women and encourage them to register with the ANMs. PNC caregivers were encouraged to conduct 3 post-delivery visits to all households, where births took place; the first within 72 hours of delivery, the second between 4-6 days post-delivery and the third between 7-28 days post-delivery. The contents of each visit included a physical examination, and counseling of mother on maternal and newborn topics using a pictorial job aid. PNC caregivers were also trained to identify danger signs in the mothers or newborns, and to refer clients to a government health facility if necessary. PNC caregivers also encouraged mothers to take post-partum iron and Vitamin A as per government policy. The supervision by ANMs was sometimes accomplished through joint home visits and sometimes in monthly meetings with the PNC caregivers. Each ANM supervised from 18 to 21 PNC caregivers and generally met each PNC caregiver individually in the field at least once in every two months.

Monitoring and evaluation of the Project

A baseline 30-cluster survey of mothers, and infants less than one year of age was conducted in the PNC project area. Mid-term household survey using Lot Quality Assurance Sampling (LQAS) techniques were conducted twice during the project period, while an end line household survey of mothers, and infants less than six months of age was conducted at the end of the project. Qualitative information was also collected using key peer informant monitoring techniques and standard group interviews.

Findings from the project

The end-line survey results revealed that 51 percent of post-partum mothers and 44 percent of newborns in the PNC project area received care from PNC caregivers at some time within 6 days of birth. This finding represents relatively high coverage for a newly introduced service. There was a substantial baseline to end-line increase in mothers' utilization of postnatal care services during the first three days and 4-6 days post-delivery. Most of the increases resulted from services provided by the PNC caregivers trained by the project. Ninety-eight percent of mothers, who received PNC services during the first three days post-delivery were seen at home. Baseline data for newborns' utilization of care are not available but end-line utilization levels are similar to those reported for mothers. Mothers' and newborns' use of facility-based PNC services experienced more modest increases: the percent of mothers and newborns visiting facilities for a postnatal checkup at six weeks post-delivery increased from 4 to 15 percent and 0 to 12 percent respectively. Most of these visits were to sub-health posts – the most peripheral health institute in the government health delivery system. The majority of mothers who did not make such a visit reported that they felt it was unnecessary.

Levels of recognition of problems by PNC caregivers in both newborns and mothers and subsequent referrals were impressively high at end-line though these indicators were not measured at baseline. While these results should be interpreted with caution because of the small sample size, they represent a breakthrough in linking health problems in the postnatal period with facility-based treatment. Among mothers seen by a PNC caregiver who reported reproductive health (RH) problems during the postnatal period, PNC caregivers identified 86 percent of the problems and referred all the mothers with problems. Among newborns seen by a PNC caregiver whose mother reported that they experienced a health problem during the first six weeks post-delivery, PNC caregivers identified 93 percent of the problems and referred 86 percent of the newborns with problems. Yet the system of pictorial referral slips introduced by the PNC project did not achieve its intended purpose as a source of information for health facility providers. Slips were often not filled in by the PNC caregiver (many of whom are illiterate) or were also lost by the clients. Besides, when slips were presented to facility-based providers, they were often disregarded. Among mothers with RH problems, referred by PNC caregivers, 67 percent actually sought care. Among newborns with health problems, referred by PNC caregivers, care was sought for 92 percent. PNC caregivers not only examined mothers and newborns, but also advised mothers to take postpartum iron and Vitamin A. The purchase and use iron tablets and vitamin A capsules by mothers increased dramatically over the duration of the project.

The most direct measure of the quality of care provided by PNC caregivers draws from the observation checklists that were filled in by their supervisors. ANMs used these checklists to determine the extent to which PNC caregivers performed key tasks outlined on the pictorial job aids. The indicator of quality monitored by PNC project is percent of observations in which PNC caregiver performed at least 90 percent of the items on the checklist. It was determined that this standard was reached in 85 percent of observed examinations of mothers and 55 percent of observed examinations of newborns. The lower level of this indicator for newborns is in part due to the nature of health services for newborns in Nepal. Newborn care is a relatively new area of care for service providers and supervisors and competency is less easily acquired. The other indicator of quality of care was PNC caregivers' use of job aids as reported by mothers. Ninety percent of mothers who received services from PNC caregivers reported that their provider used the job aid.

Qualitative survey revealed that PNC caregivers were widely accepted in their new roles by community members and appeared to have made the transition from basic service provider (i.e., their role prior to the PNC project) to a health worker who educates, identifies and solves problems, and provides important services for maternal and newborn survival and well-being. Mothers expressed high levels of satisfaction with the care that the PNC caregivers provided. The PNC caregivers had similar positive impressions of their new role but also saw it as extra work for which they are uncompensated. While PNC caregivers perceived that the first two PNC visits (during the first week post-delivery) were important, they felt that the third PNC visit was unnecessary and a burden. Families had expressed concern over some elements of the PNC visit including the examination of genitalia of mothers. Community-level awareness of the need for PNC was low and caste barriers governed the acceptability of who should provide PNC.

Conclusion

The PNC project at Kailali, Nepal, has shown that it is feasible for trained volunteers to provide effective home-based postnatal care of reasonable quality and coverage. The project has also shown high rates of identification of health problems and referral for both the mother and the newborns, though these results should be interpreted with caution given the low sample size of mothers and newborns with health problems.

Recommendations

The recommendations below are intended to guide future programmatic efforts to improve the access of mothers and newborns to quality postnatal care:

- The PNC pilot project package needs to be scaled using existing health system capacities that emphasize the potential for scalability
- The timing, content and quality of PNC services needs to be further understood and standardized
- Community-based PNC caregivers should receive case supervision that reinforces their skills, hones their ability for effective referrals and establishes and strengthens links between PNC caregivers and sub-health post providers.
- Community mobilization should be a component of the strategy for future models of PNC provision to raise community-level awareness of the need for PNC, support volunteer practice, and enable care-seeking.

Developing indicators for monitoring progress towards maternal and newborn survival

Monitoring and evaluation is an integral component of health projects. Yet measuring progress across projects in different settings on the basis of monitoring and evaluation data has been difficult. The absence of a common set of indicators applicable for all the projects is one reason for this difficulty. Maternal and newborn health programs also share these problems. During the inception of MotherNewBorNet, it was discussed among the members that a common set of indicators to monitor progress towards maternal and newborn survival is a timely need. Some or all of these indicators could be included in the projects being implemented by the members, along with other monitoring and evaluation indicators specific to the projects. These indicators can also help to identify programmatic and progress gaps, and provide a common understanding of the progress of maternal and newborn health projects across different regions.

To develop a common set of indicators, information on suitable indicators was collected from projects implemented by the members of MotherNewBorNet. Existing recommendations, methodological guidelines for developing valid and reliable indicators, and a compendium of indicators of maternal and child health were also reviewed. An initial set of 21 indicators developed was circulated among the members of MotherNewBorNet including policy makers, public health experts, program managers, and academicians. The members were requested to select core indicators they consider most suitable to monitor progress of their projects. After a debate and discussion, the following list of indicators was proposed for the maternal and newborn health projects across different regions. The members of MotherNewBorNet will work in future to add equity indicators to this list.

Service Indicators:

1. Percentage of pregnant mothers who received antenatal care (at least three times) by a trained Health Care Worker (HCW)* during the last pregnancy
2. Percentage of mothers whose last childbirth was attended by a skilled birth attendant
3. Percentage of mothers who received tetanus toxoid vaccine in their last pregnancy
4. Percentage of mothers who received care within three days postpartum, by a trained HCW
5. Percentage of newborn who received care within three days after birth, by a trained HCW
6. Percentage of births in facilities that received active management of the third stage of labor to prevent postpartum hemorrhage

Knowledge indicator:

7. Percentage of mothers who know at least two maternal danger signs
8. Percentage of mothers who know at least two newborn danger signs

Behavior indicator:

9. Percentage of births with new or sterile blade or equipment for cutting the cord
10. Percentage of babies who were breastfed within 1 hour after delivery
11. Percentage of babies who had been dried and wrapped immediately after birth
12. Percentage of women using family planning (any modern methods) at six weeks postpartum
13. Percentage of caretakers seeking care from skilled care providers for sick newborns

Impact indicator:

14. Neonatal mortality rate

* HCW includes skilled birth attendants and trained community health workers

This newsletter was developed through active participation of members of **MotherNewBorNet**

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