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NEWBORN SURVIVAL AND HEALTH

BASICS III

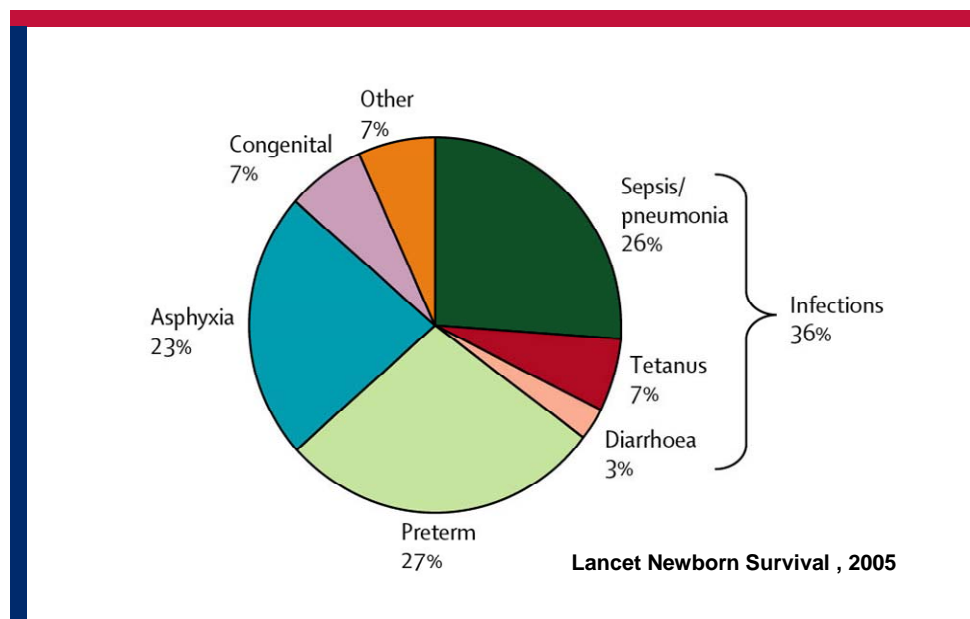
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Background

It is estimated that 4 million children die each year during the newborn period (i.e., the first four weeks of life). Some 99% of these deaths take place in developing countries, 38% (1.5 million) being in South Asia and 28% (1.1 million) in Sub-Saharan Africa (Lancet Newborn Survival Series, 2005). While numerically the total number of deaths is highest in South Asia (due to the high population density), the neonatal mortality *rate* is highest in the low resource Sub-Saharan African countries.

The key causes of death include sepsis, birth asphyxia and complications of prematurity (figure 1)



*Figure 1 Causes of Neonatal Mortality
(Lancet Newborn Survival Series, 2005)*

Updated estimations in 2008 by WHO suggest that infections are responsible for 25% of death, birth asphyxia for 23%, and complications of prematurity for 31%.

Despite such large numbers of deaths, surprisingly, newborn health did not get much attention in the public health arena until about a decade ago. The near invisibility of the newborn can be attributed to the fact that many are born at home and many die even before they are born (still births). Even where births take place at facilities, mothers and

babies are discharged early, sometimes within 2-3 hours of birth. Cultural practices tend to keep them at home in the postnatal period. Thus, many tend to stay at home and die there. Seventy-five percent of the deaths take place within the first week of life and 50% within the first 24 hours, highlighting the importance of this narrow but extremely critical early neonatal period. The high mortality in the early neonatal period may be partly responsible for the fact that, in traditional societies in developing countries, babies are named only after the first 7 – 10 days.

Initially, neonatal care was seen as the domain of a limited number of highly trained physicians and nurses in neonatal intensive care units needing high technology and specialization. In 1999, the results of the SEARCH study in Ghadchiroli, Maharashtra, India showed a remarkable fall in neonatal mortality by 62.5% resulting from a low-cost, carefully implemented operational research project providing home-based care by community health workers. Interventions included care of the baby at birth, basic resuscitation for birth asphyxia, frequent focused postnatal visits with preventive care and full treatment for sepsis.

Global Technical Leadership

Activities to support newborn health were initiated by USAID/BASICS II around 1999. This report will highlight activities carried out during the last ten years. In the initial stages, much of the work was at global and regional level, reviewing and understanding existing evidence, carrying out advocacy, seeking funds and planning activities at country level.

Products were developed with partners or technical inputs were provided to partners at global level for tools to support program implementation and for advocacy to focus attention on key issues.

BASICS II (1999 - 2004)

- Tools to support program implementation
- Selected Annotated Bibliography (PAHO),
- Components of Essential Newborn Care (ENC)
- Safeguarding investment in PMTCT with quality ENC
- Birth Attendants with Relevance to the Newborn

BASICS III (2004 – 2009):

- Adaptation of tools to support MNH programs
- E-Learning module on Neonatal Infections
- Guidelines for Feeding the Low Birthweight Infant (WHO)
- Home to hospital continuum of care (ACCESS)
- Home based care (ACNM, ACCESS)
- Community Mobilization (ACCESS, CORE), and
- “Helping Babies Breathe” a simplified training tool for resuscitation (AAP, WHO)

The importance of partnerships was recognized early with the establishment of the global Healthy Newborn Partnership (HNP) in December 2000, an interagency group of a number of partners whose vision included:

- Promoting attention and action to improve newborn health and survival.
- Providing a forum for information exchange on programmatic, research, training, and communication issues related to newborn care.

HNP worked in close collaboration with the Partnership for Safe Motherhood and Newborn Health and the Child Survival Partnership to support a continuum of care from pregnancy, through the newborn period and childhood. HNP functioned through its working groups established in (a) advocacy, (b) country-level implementation, (c) technical materials and training, and (d) monitoring and evaluation and research. The importance of integrated activities led to the world’s three leading maternal, newborn and child health alliances joining forces in September 2005 to form the Partnership for Maternal, Newborn and Child Health.

Regional Activities

BASICS was active with partners such as USAID, WHO, UNICEF, Save the Children/Saving Newborn Lives, ACCESS, URC/HAI, and Catalyst in all three regions as noted below. Activities and products focused on advocacy and establishment of guidelines, strategies and action plans to promote newborn health in the three regions noted below with the key products/activities/approaches.

Asia Regional Initiative

- Regional Strategy for Newborn Health (with WHO)
- “MotherNewborNet” – a network for sharing of experiences, tools and newsletters. Topics included postpartum care, birth asphyxia, key activities to support maternal and newborn health (MAMAN), community case management (CCM) and kangaroo mother care (KMC)

Africa Regional Activities

- Advocacy to promote newborn health through participation in regional meetings and workshops such as those related to the Child Survival Forum, African Road Map, PMNCH
- “Opportunities for Africa’s Newborns” - an advocacy document linking newborn health with existing programs

LAC Regional Activities

- Establishment of the LAC Newborn Health Alliance to support the region
- Development of a Regional Strategy and Plan of Action for Newborn Health
- Innovative expansion by BASICS to support country programs for prevention and treatment of infection, a leading cause of mortality, through the regional umbrella

Although neonatal mortality is lower in the LAC region, there is great variability in the countries, with the NMR being as high as 31/1,000 live births (Haiti), and as low as 5/1,000 live births (Cuba and Chile). In addition, while there is in general an inverse correlation between NMR and skilled birth attendance, there are exceptions, as in the Dominican Republic, where despite 98% of the deliveries taking place in facilities with skilled birth attendants, the NMR continues to be high at 22/1,000 live births. The 3 main causes of newborn deaths are similar to the global scenario, but there is a trend of prematurity contributing to increased percentage of deaths.

It was in this context that The Latin America and Caribbean Newborn Health Alliance was established, commencing initially in 2004 as an Interagency Working Group for Newborn Health including a number of partners (USAID, PAHO/WHO, URC/HCI, BASICS, Save the Children/SNL, ACCESS, and the CORE Group).

In order to obtain relevant background information, a regional situational analysis was carried out. Based on this and partner inputs, the Newborn Health Regional Strategy was drafted and discussed, with facilitation from BASICS in a workshop in Guatemala in February, 2006, with the participation of 16 countries. The Strategy was finalized and formalized as a resolution by PAHO’s Directive Council in September 2006. Subsequently, a Regional Plan of Action for Newborn Health was developed and after inputs from countries at a meeting in Paraguay in August 2007, it was approved as a resolution by PAHO’s Directive Council in September of 2008.

The strategic objectives of the LAC Regional Action Plan are to:

1. Create an enabling environment for the promotion of peri-neonatal health
2. Strengthen health systems to improve access to maternal, newborn, and child health services
3. Promote community-based interventions
4. Develop and strengthen monitoring and evaluation systems

The Alliance partners have facilitated in-country workshops to present the Regional Strategy and Action Plan and to give technical assistance for the strengthening of national plans to promote newborn health. BASICS co-facilitated workshops in El Salvador and the Dominican Republic.

BASICS also coordinated development of a list of newborn indicators for adaptation as needed by countries and provided technical inputs to the Alliance website being developed for information exchange.

Support at Country Level

The major focus for BASICS has been country level technical support. Programmatic experiences commenced in one district in Senegal and expanded not only within the country but also to varying extents into 13 other countries in the three regions (Senegal, Madagascar, DR Congo, Rwanda, Mali, Swaziland, India, Timor Leste, Cambodia, Dominican Republic, Honduras, El Salvador and Bolivia).

Technical Components - Essential Newborn Care Package

The main package implemented was Essential Newborn Care. The package included primarily the two sets of components noted below.

1. Components in the (a). Pre-pregnancy period related to girls and women, (b.) Maternal components that influence the baby primarily related to the antenatal period and delivery and postpartum period and (c.) Baby components related to the birth and postnatal period.
2. Components related (a) Prevention and (b) Treatment focusing on elements related to the key causes of mortality.

The key components promoted in the various country programs are shown in Table 1

Table 1 Component of Essential Newborn Care Promoted/Implemented in Countries	
<i>Components in all countries</i>	<i>Components in selected countries</i>
<p><i>Antenatal Period</i></p> <ul style="list-style-type: none"> • ANC (at least 4 visits) • Tetanus toxoid • Iron & folate • Iodized salt • Birth preparedness • Delivery with skilled birth attendants • Counseling for early and exclusive breastfeeding • Identification and careseeking/referral for maternal danger signs <p><i>Birth and Postnatal Period</i></p> <ul style="list-style-type: none"> • Clean delivery practices, • EPNC (Essential Preventive Newborn Care) <ul style="list-style-type: none"> – Hygiene including hand washing – Temperature maintenance – Cord & eye care – Breastfeeding – Extra care for low birth weight babies including KMC – Identification and referral for danger signs • Early focused postnatal contact/visit within 2-3 days and preferably near end of 1st and later between 4 – 6 weeks 	<ul style="list-style-type: none"> • Promotion of IPT and ITNs for prevention of malaria during the antenatal period in Senegal, DR Congo, Madagascar and Swaziland • Integration of other selected components of MNCH and Nutrition <ul style="list-style-type: none"> ○ Nutrition and primary immunization (India) ○ MNH, FP, PMTCT - Swaziland ○ AMTSL, postpartum/postnatal care of the mother and baby – DR Congo ○ IMCI. HIV and family planning - Rwanda • Resuscitation for birth asphyxia Senegal, DRC, Madagascar, Mali, El Salvador (in BASICS II) • Treatment of sepsis <ul style="list-style-type: none"> ○ Full treatment – Dominican Republic, El Salvador ○ Partial T/T - 1st dose antibiotics + referral - Senegal, DRC, Madagascar, Mali, Honduras

Implementation Strategies

- *Advocacy*
Advocacy was an important element that was consistently provided at all levels. Initially the focus was on newborn health in general but later more focused on key elements and strategies that were not only feasible but likely to have better public health impact.
- *Early Planning for Scale / Sustainability*
This was supported by strategic planning that included collaboration with partners. In all countries partners were involved and, in some, task forces, working groups and even national committees were formed. This not only helped develop consensus but also was an investment for subsequent expansion and sustainability. Programmatic activities were linked with and built on existing programs and human resources to promote acceptability, expansion and sustainability.
- *Continuum of Care*
Three continuums of care were considered important and promoted, namely: (a) Pregnancy – delivery – postnatal period (ideally the pre-pregnancy period too should be included); (b) Home to hospital care; and (c) preventive and curative care.
- *Levels and Health Workers Targeted*
The key areas targeted were policy and strategy issues at national/regional levels, facility level care, community interventions and links between them. The health workers at facility level included existing skilled health workers such as doctors, nurses and midwives. Many countries also had less qualified workers working at both the peripheral facilities and community such as matrons in Africa, auxiliary nurse midwives and Lady Health Visitors and Auxiliary Nurse Midwives in India.

There was usually only one health worker attending deliveries at the peripheral health centers, usually the nurse/midwife. In all training programs, health workers were encouraged to identify and train another suitable person, even if less qualified, to provide assistance at birth, especially where the mother, baby or both had problems. In all countries, links between facility and community were also promoted. Where in some countries such as Senegal there were already established links in the form of committees with members from both health centers and the community leaders, this link was further facilitated or strengthened.

- *Health System Strengthening*

Since newborn health had a clinical component of care, health system strengthening was felt to be important and the level targeted in the programs included the sub-district facilities (health centers and posts). Mere presence of skilled birth attendants was not sufficient as they were found to have inadequate and inappropriate knowledge and competence especially in newborn health reflecting the status of existing pre-service education. Elements addressed in the health system included development of suitable tools, competency based training, improving quality of care further through supportive supervision and supply of selected basic equipment and supplies, notably for resuscitation for birth asphyxia.

Tools were developed and refined and updated as the programs were rolled out in the various countries resulting in the generic USAID/BASICS/POPPHI MNH tool kit.

- Tools for health facilities
 - Reference guide (with job aids and algorithms)
 - Facilitator's guide
 - Participant guide
 - Check-lists for learning and supervision
 - PowerPoint presentations for training sessions
 - Job-Aids
- Tools for community workers
 - Guide for Trainers of Community Health Workers
 - A set of counseling cards

Click the titles below to access the USAID/BASICS/POPPHI MNH Essential Newborn Care Toolkit.

Community-level tools

- A Guide for Training Community Health Workers/Volunteers to Provide Maternal and Newborn Health Messages
- Counseling Cards on Maternal and Neonatal Health for Community Health Workers

Facility-level tools

- Integrated Maternal and Newborn Care Basics Skills Course: Facilitator's Guide
- Integrated Maternal and Newborn Care Basics Skills Course: Reference Manual
- Integrated Maternal and Newborn Care Basics Skills Course: Technical Presentations
- Integrated Maternal and Newborn Care Basics Skills Course: Participant's Notebook

Checklists

- Integrated Maternal and Newborn Care Basic Skills Course: Clinical Logbook with Learning and Evaluation Checklists
- Integrated Maternal and Newborn Care: Supervisory and Evaluation Checklists

Monitoring and Evaluation Tools

- USAID/BASICS/POPPHI Newborn Indicator Profiles
- *Cahier d'Activités de la Matrone* /Community Birth Attendant Activity Notebook (French only)
- Questionnaire : *enquête LQAS santé maternelle et nouveau-né* / Questionnaire for Maternal and Newborn Health Assessments using LQAS (French only)
- Delivery Room Register
- General Clinic and Sick Child Register
- Postnatal Visit Register

Job aids and checklists that could be used for learning as well as evaluation/supervision were found to be among the most useful. Presentations covering elements on practical elements and those most important for promoting competence were found to be most important. Both tools and strategies could be adapted to suit local country requirements.

In most countries a national level training of trainers (TOT) was carried out in collaboration with the MOH and key partners. In special situations trainers and experts from different countries were brought together in a country in order to promote regional exchange of ideas and south-to-south collaboration as was carried out in Mali when trainers came in from Senegal, DR Congo and Madagascar. Advantages of this process included a better understanding of standard guidelines and adaptations that could be later adapted to suit individual countries, improved perception of problem, exchange of ideas and experiences and a greater consensus on implementation tools and strategies.

In all these TOTs, university teachers from schools of medicine, nursing and midwifery were included to promote improvement in the pre-service curriculum. Training extended to more peripheral levels through a cascade system. To avoid some of the challenges of the latter, selected trainers participated at all levels to ensure improved quality of training. In general, most training programs aimed to achieve a competency of at least 80% in the various skills identified such as care of the baby at birth, AMTSL, resuscitation, postnatal care of the baby including systematic examination of the baby and counseling of the mother/family using counseling cards. A special challenge was noted in all training courses in getting adequate numbers of cases of birth asphyxia to permit hands on training for the participants. Competence was therefore achieved through practice and evaluation on training mannequins that permitted assessment of adequate chest elevation through ventilation with a bag and mask.

Supply of selected basic equipment and supplies, notably for training in resuscitation and Active Management of the Third Stage of Labor (where applicable) and for implementing resuscitation (where required), was achieved initially by BASICS and later through leverage of support through partners, such as UNICEF and implementing organizations.

Improved quality of care was further promoted through facilitation of supportive supervision. This was one of the most challenging components of program implementation but was critical in improving quality of care, training alone not being adequate. Supervision was achieved through individual visits to health centers/ health worker and also through group supervision collecting the facility or community health workers together at a peripheral health center. It was frequently noted that the competence fell slightly at the first supervision as

noted in an example from Madagascar related to the competence for resuscitation for birth asphyxia. (Fig 2). This was felt to be due to delay in some centers in receiving the necessary equipment and there being inadequate numbers of cases of birth asphyxia for adequate practice and for evaluation at the time of supervision. It was thus found to be extremely useful to have the training mannequins during supervision, not only for evaluation but to permit facility health workers to have additional practice during these visits.

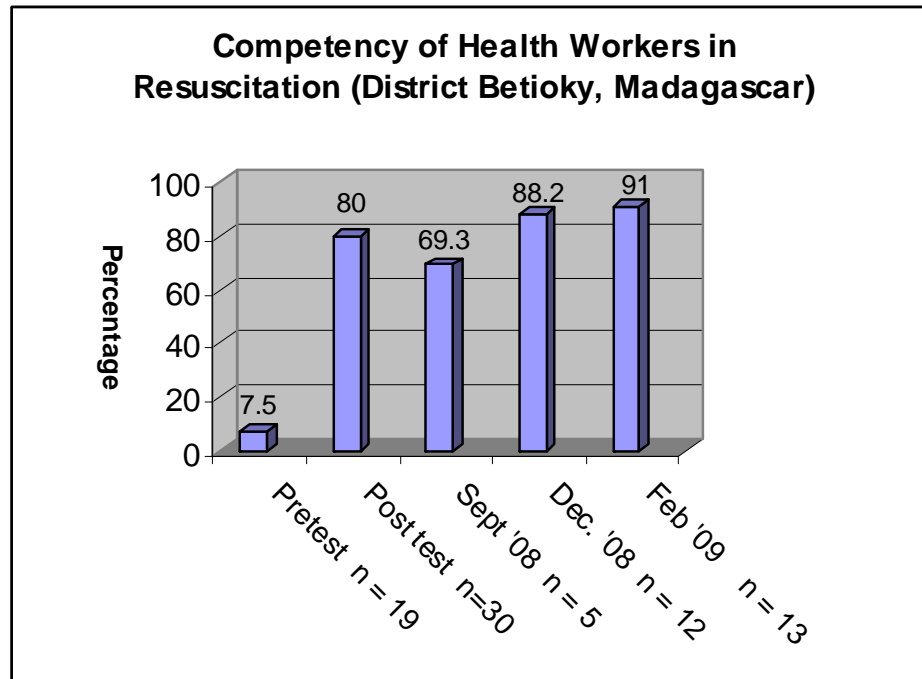


Figure 2: Changes in competency of facility health workers in resuscitation with training and supportive supervisions in Sept '08, Dec '08, and Feb '09 (scores expressed as percentage of actions carried out correctly from a pre-defined set of tasks outlined in an evaluation checklist)

Group supervision was found to have the following advantages:

- More health workers were reached in a shorter period
- Health workers helped and motivated each other
- It offered an opportunity for fruitful exchanges of experiences on problems encountered in practice and identification and development of possible solutions
- Supervisors could provide suggestions for improvement to the group as a whole and have useful discussions and feedback

- It was particularly useful for demonstrating/evaluating skills related to care of cases that are not frequently encountered in these peripheral centers such as birth asphyxia (5.51% in district hospitals and 5.33% in health centers) sick newborns (4.47% of all sick children < 5 yr in district hospitals and 6.72% of all sick children < 5 yr in health centers). These data are related to the site evaluated in Betioky, Madagascar. In some areas as in Rwanda, the numbers of sick newborns brought to the peripheral health centers were even lower (< 1% of all sick children < 5 yr)

- At the same time, there were, of course, a number of advantages in visiting the individual sites to evaluate the exact existing situation at a particular center. Hence a combination of group supervision with periodic visits to sites as feasible was useful. In larger centers and hospitals, internal supervision through appropriate supervisors was equally important.
- *Community based interventions*
Two major types of interventions were available, the more basic being primarily a behavior change component with BCC and community mobilization strategies promoting to families preventive care of the mother and baby, identification of danger signs and appropriate care-seeking. The alternative was a more comprehensive approach adding treatment of problems prioritizing management of sepsis with administration of antibiotics, including injectable gentamycin ranging from administration of the first dose before referral to the full 10-day treatment. The most comprehensive approach was the SEARCH model (Bang et al, Lancet 1999). Discussions with ministries of health and partners revealed that countries where BASICS provided support were primarily interested in initiating only the first basic model promoting behavior change. This was achieved by improving capacity of the community health workers/volunteers to promote healthy family behaviors. Training again laid emphasis on competency using counseling cards and promoted having groups small enough for “hands on” training; including small group work, role play and group discussions.
- *Monitoring and Evaluation*
This was yet another challenging part of program implementation. Most of the countries did not have an efficient system for collection of information through the available peripheral centers registers to get adequate information related to maternal and neonatal health especially the baby components. Tools were developed and shared with country MOHs and implementing organizations including a list of USAID newborn health indicators, data required to be collected in registers, questionnaires to collect information on maternal/family knowledge and behaviors, including both large surveys and short questionnaires. However, one of the greatest challenges was that many of the indicators were not yet part of the countries’ national HMIS systems.

This report will present illustrative experiences from country programs with special aspects.

- An example of the roll out of a program (Senegal)
- Integration of essential newborn care with special components of maternal and child health, and nutrition (India, , Swaziland, DR Congo and Rwanda)
- Innovative approaches - distance learning under a regional umbrella enhancing routine programmatic activities (Dominican Republic, El Salvador and Honduras)

Example of the Roll-out of a Country Program - Senegal

The Senegal programs supporting newborn health were unique in that they included the very first one started in the BASICS project and then expanded steadily over the years in USAID and non-USAID districts. They included activities facilitated by BASICS and those that were carried out independently by other partners indicating the benefits an intense initial phase of advocacy and technical support through BASICS not only to implementing sites but also to a large number of partners through a National Committee on Newborn Health established very early in the roll out.

Phase I – The Early Implementation Phase

The program was initiated within part of one district (Kebemer, within the region of Louga in Senegal) and overseen by a technical sub-group of the National Committee on Newborn Health facilitated by BASICS. It covered a population of 142,000 and included both facility (promotion of antenatal care, clean delivery practices, essential newborn care, basic resuscitation for birth asphyxia and identification of sepsis, and first dose of antibiotics before referral), and community level components noted above. Tools, planning and implementation of programmatic activities were carried out in consensus with technical sub-committees mostly in the manner highlighted above under implementation strategies.

In the first phase, a total of 342 persons were trained in the intervention, including 13 national and regional level core trainers, 64 facility level workers (22 regional hospital technical staff, 23 nurses and midwives and 19 matrones) and 265 community level workers (46 matrones in birthing huts or 'cases', 137 CHWs or relais, and 82 TBAs).. Although TBAs were included in the initial training, the post evaluation results were poorer in this group than among other community health workers. Because of the shortage of time in the contractual period and based on directives from the MOH, follow-up supervision was restricted to the other CHWs (relais) and matrons of the birthing huts.

As basic supplies were essential for improved quality of care, in collaboration with UNICEF, BASICS also provided selected essential delivery room equipment for each of the sites, including locally-constructed “warming tables” with overhead bulbs to keep the baby warm during care such as resuscitation, self inflating infant ventilatory bags (240 – 500 ml) with masks (sizes 1 and 0 for normal and preterm/low birth weight newborns), suction tubes of sizes suitable for the newborn, suction machines (electrical for the health centers and foot operated varieties for the health center and 5 posts).

Ongoing supportive supervision and monitoring and evaluation of the knowledge and skills of health workers at facility and community level were carried applying the LQAS method. Within 18 months of implementation, clear improvements were registered, such as in the quality of care provided in delivery rooms and for postnatal care. Supervisory visits laid emphasis was on evaluating both knowledge and skills/competency using pre-defined composite checklists of key tasks for the activity assessed through direct observation or simulation. The results were expressed as mean percentages of total possible scores achieved by the health workers in the defined sets of tasks. Some illustrative examples are presented here. The first evaluation for *skills* was carried out through LQAS in Aug '03 (Fig.3), 6 months of completion of training during which period the checklists were being finalized as this was the first program. The improvements were more obvious after Feb '04 with continued use of the checklists, supply of specific feedback and support and were noted both in skilled and less skilled attendants ('matrones'). For example, skilled attendants such as nurses and midwives became more competent at managing activities such as, postnatal care, care of the sick infant and resuscitation.

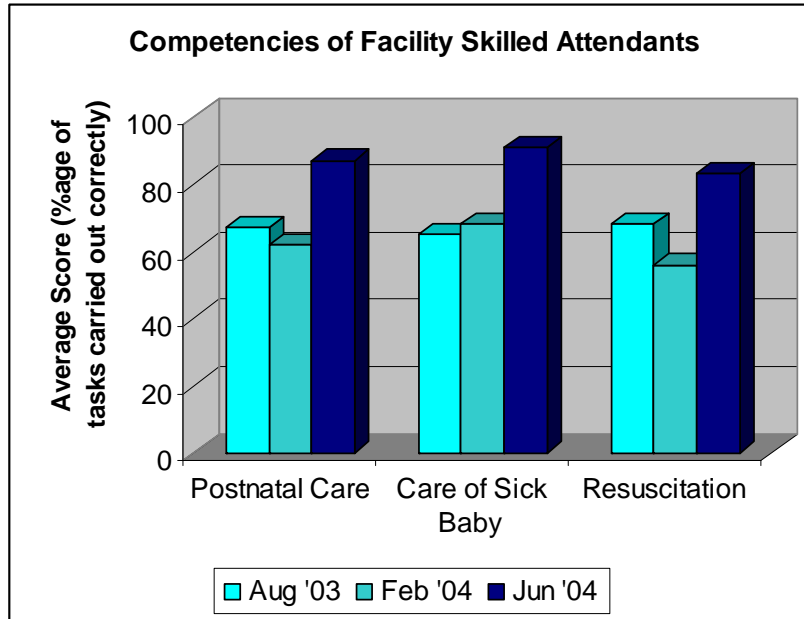


Fig 3 Improvement in knowledge and competence of skilled health workers with on-site follow-up and supervision (From Feb 2004 onward checklists with key tasks and appropriate feedback were applied)

Availability of functioning equipment and supplies increased from 57% to 100% and application of principles of prevention of infection in the delivery room from 50% - 96%.

Regarding the community workers, with repeated supportive supervision, focusing specifically on the counseling cards used by the community health workers, a steady improvement was observed. By April 2004, at least 80% of community health providers (relais and matrones) were able to counsel mothers about

- Individual elements of preventive prenatal care (including the importance of going to ANC, taking iron, ITP, sleeping under a impregnated mosquito net, eating an appropriate diet, taking rest and using iodized salt)
- Other aspects of care during pregnancy and after delivery
- Birth preparedness including preparation of the delivery kit (soap, at least 5 clean cloths, cotton ties and a clean new blade), setting aside some money for facility based delivery and/ or in case of emergency, and identification of transport
- Key elements of essential newborn care (temperature maintenance, cord care, early and exclusive breast feeding on demand, complying with early postnatal visits and identification and care seeking for danger signs).

A household survey indicated that facility deliveries increased during the intervention period from 47% to 63%. Postnatal visits in the first and second weeks increased. In the early phase the visits in the first week were primarily between 3 – 7 days as decided by the Ministry of health. Between July 2003 to July 2004, the percentage of mothers who came for the first visit between 3 – 7 days increased from 3% to 37% and those who came for a visit in the second week between 7 – 11 days just of the “baptême” ceremony increased from 20% to 43%.

Pre- and post- intervention household surveys showed a significant improvement in the knowledge and practices of the mothers. The most common sources of information cited by mothers were interpersonal communication received through matrons and community health workers (relais) and through mass media. Illustrative examples of changes included increase in the practice of immediate drying of the baby at birth from 54% to 73% and wrapping the body including the head from 85% to 90.7%. The numbers who delayed bathing the baby by at least 6 hours increased from 20% to 53%. Early initiation of breastfeeding rose from 60% to 78%. Babies who did not receive pre-lacteal feeds increased from 39% to 71%. The percentage of mothers who could cite at least three danger signs in the newborn rose from 18.4% to 58.4%

Phase 2 – Expansion into other USAID Districts

a.) Programs Facilitated by BASICS

Based on validation of the results from the Kébémér early implementation activity at a national workshop, activities were expanded by the MOH and the USAID Mission to 9 other districts in Mbour, Ziguinchor, Bignona and Oussouye, covering a population of nearly 1,000,000 with BASICS facilitating the NGO’s CCF Canah and Africare. Study tours were organized to permit members from the NGOs, locally-elected officials, and health workers to visit Kébémér to observe its functioning.

In this second phase, 8 health centers, 132 health posts and 7 private health centers/posts were included and a total of 853 health workers were trained in essential newborn care. These included 290 skilled attendants in health centers and health posts completed in December 2005 and 207 matrones at health posts and 356 relais completed in April 2006. BASICS’ additional contribution to the expansion phase of this multi-partner effort included procurement of equipment and supplies for resuscitation as noted in the pilot site at the health centers and posts, as well as establishing standards for the organization of a “newborn corner” in delivery rooms. Equipment was supplied by BASICS with some support from UNICEF in 148 facilities including 2 regional hospitals, 8 health centers and 130 health posts.. Equipment included 148 infant ventilatory bags with masks for resuscitation of term and preterm infants, suction machines (17 electrical for health centers and 124 manually operated for health centers and posts) and 48 baby

weighing scales. In addition, 6 manikins were supplied to the regions for trainees to practice care including resuscitation.

During this phase the Ministry of Health with the bilateral, MSH, introduced an integrated supervision system for all health issues for which BASICS supplied the necessary elements for newborn health. However, this integrated strategy took time to be developed and did not take place in the expansion sites during the implementation phase. As processes were being developed for the integrated approach, it was also not possible to initiate a separate more focused supervision for newborn health. In addition, although specific tools were available for monitoring and evaluation and changes suggested for information to be recorded in facility registers relating more specifically to the baby, they could not be implemented as desired due to a strike of the health staff during this period.

Due to challenges noted above and the shortage of time available, a limited rapid evaluation was carried out. Selected aspects of the knowledge of facility health workers were evaluated through questionnaires. In addition, knowledge and *skills* of nurses, midwives and matrons on two activities, care of the baby at birth and at the post partum visit and selected operational/logistical components were also evaluated using pre-defined checklists described earlier. The evaluation was carried out in Mbour and in the pilot, Kebemer in order to note changes about 2 years after facilitation by BASICS had been terminated. Due to inadequate funds, no further support or interaction took place between the staff of BASICS and Kebemer between June 2004 and August 2006 when the repeat evaluation was carried out. Earlier assessment results were not available for Mbour due to the absence of the supervisory visits that would have evaluated staff's competence. The latter was not possible as the Ministry of Health were in the process of developing a new revised integrated supervisory tool and approach.

The competence of the staff evaluated in Mbour (88% for care at birth and 74% in postnatal care) in August '06 showed that they were better than the initial status in Kebemer (61% and 62% respectively) after training at the end of the early implementation phase in June '04 before more intense supervision took place. This was even though the period of training of the facility health workers had been decreased in the expansion areas from 8 to 6 days and supervision had not been carried out at all. It is felt that this might have been due to the focused use of job aids and checklists during training that were developed from the supportive supervisory check lists from the pilot site that laid emphasis early in capacity building on key areas of *competence* expected from the health workers.

With advocacy and counseling for the need for early post partum/postnatal visits, there was also an increase by 25% in the percentage of women who came for follow-up as early as **within 3 days** after birth in the expansion district as compared to the control area. It may be pointed out here that this is a difficult goal to achieve as culturally

mothers tend to stay in the home especially in the first week until the ceremony of 'baptême' and, many for longer periods up to 4 – 6 weeks. The first visit was earlier than in the pilot (Kebemer) where based on the MOH requirement the it was between 3 – 7 days

The additional evaluation in Kebemer of health workers' competence without additional outside support for a little more than 2 years showed some decrease but there was still a fairly good retention of skills despite the fact that there were changes in the health workers including the head of the center, due to transfer to other sites with new incumbents coming in (Table 2).

Table 2 Changes in staff competence at Kebemer 2 years after additional outside support/facilitation was terminated		
Competence*	June 2004	August 2006
Care at birth	91	80
Postnatal care	87	77
Infection prevention	96	93
Care of the sick baby	91	81
* Percentage of tasks in a pre-defined checklist that were carried out correctly		

Some additional coverage information is summarized for these two major phases in Table 3.

Table 3 Coverage with Activities for Promoting Newborn Health (Senegal) in the First Two Phases				
Kebemer	2	1	218,592	142404
Mbour	4	4	529,509	529,509
Ziguinchor	1	1	195,141	195,141
Bignona	3	3	231,452	231,452
Oussouye	1	1	36,786	36,786
Total	11	10	1,211,480	1,135,292

NOTE:

- 1.) Total number of departments (districts) in Senegal = 63 (BASICS covered 10)
- 2.) Total population in Senegal = 11,000,000 (BASICS covered 10.3% of the population with activities for newborn health)
- 3.) Through advocacy and involvement in the National Committee on Newborn Health, promoted adoption of similar activities by UNICEF and UNFPA covering two regions, Tambacounda (with 9 districts) and Kolda (with 4 districts)
- 4.) BASICS has also provided technical support in collaboration with UNICEF, African Development Bank and Belgium Cooperation for newborn health in the *non-USAID* region of Faticke covering all its 6 districts.
- 5.) The bilateral, Intrahealth/USAID will provide support for newborn health in all 27 districts of 5 regions, Thies, Louga, Kaolack, Ziguinchor and Kolda.

b.) Activities Supported by other Partners

Based on the USAID/BASICS experiences, UNICEF, UNFPA, ADB assisted MOH to train regional pools of trainers in 5 regions in collaboration with the Dakar University (pediatric department) as well 50 community health workers to offer essential newborn care at 25 health huts in 4 districts.

Newborn care also became a key component of the new strategy of the USAID Mission who planned that the subsequent bilateral program should expand this service into every district in the USAID focus region, at the facility and community levels.

Phase 3 – Nationwide Expansion

a.) Expansion in the USAID districts (2006 – 2011)

Activities promoting ENC are being expanded in all MOH facilities in 22 districts in 5 regions and in 239 Community Health Huts, staffed by matrons and other community workers through the bilateral project of USAID/INTRAHEALTH.

b.) Additional Expansion in non-USAID districts (2007 – 2009)

- Activities were facilitated by BASICS in all MOH facilities in 7 districts of Fatick region.
- UNFPA, UNICEF, ADB are assisting MOH to introduce ENC package in Dakar, Tambacounda, Kolda, Kedougou, Matam, Fatick, Diourbel

Neonatal Health Integrated with Special Components

While neonatal activities were never implemented as a vertical program and were always integrated with at least maternal components, four examples will be reported where links were with *additional* special components including nutrition and primary immunization, HIV/AIDS-PMTCT and family planning, active management of the third stage (AMTSL) and postnatal care, and IMCI.

Starting at Scale with Integration with Nutrition and Primary Immunization (India)

Technical support was provided to CARE India to implement this program, Integrated Nutrition and Health Project II (INHP II) which was unique in that besides being integrated with nutrition and primary immunization, it was planned and commenced *at scale* in India covering a population of about 100 million in 78 districts in 9 states. It aimed at strengthening information, training and supervision systems and building capacities and BCC strategies within existing state programs. Home visits were made by government community workers (auxiliary nurse midwives and Anganwadi workers) and volunteers focusing on late pregnancy and early postnatal period and covering the family along with the mother. Supervisors were taken from the government run Integrated Child Development Scheme (ICDS). Besides basic essential newborn care, extra care for the low birth weight babies was promoted and supplemented by BCC and community-based monitoring. Because of the large numbers covered in 9 states, there was variability in the changes noted in the states, Some of the changes noted included the following: increased numbers of birth attendants were washing their hands; more mothers were visited by community volunteers on the day of delivery, did not apply anything on the cord, practiced early exclusive breastfeeding and delayed the first bath

for three days. Families who received home visits were more likely to show improved behavior related to the care of the baby such as cord care and breastfeeding.

Integration with HIV/AIDS-PMTCT and Family Planning (Swaziland)

Selected aspects of maternal and newborn health with a focus on postpartum care were integrated with HIV/AIDS and family planning. Based on the MOH requirements, activities targeted facilities that catered to 76% of births. The program promoted a postnatal visit at one week which with advocacy from BASICS was changed to an earlier visit *within the first three days*. Three hospitals and four health centers in the two most populated regions were included covering, about 18,000 deliveries/year. Some 132 health skilled workers were trained including a core group of trainers and supervisors, midwives and nurses with orientation session for other physicians and national trainers of CHWs.

The project led to improvement in the early postnatal visits within 3 days, and second visits as recommended by the MOH in 4-6 weeks. There was improvement in care, in counseling of mothers and in breastfeeding. While initially only 30% of women were breastfeeding, even among HIV- women, the program did increase breastfeeding to 70% among HIV+ and 83% among HIV- women. Cotrimoxazole prophylaxis increased in mother by 18% and baby by 24%. Family planning activities also improved, not only by more providers determining the mother's method of choice (increase by 50%), but ensuring that they received it (increase by 42%). The program demonstrated that it was possible to integrate such activities and care for the mother/baby dyad as an entity. One of the important components was improvement in the quality of care provided by the health workers evaluated through pre-defined supervisory checklists. This type of integration is important to ensure that the cost and efforts expended in PMTCT services are safeguarded by ensuring that the mother and baby do not die of more common entities such as infections.

Integration of Essential Newborn Care with AMTSL and Early Postpartum Care (DR Congo)

In DR Congo, USAID/BASICS commenced advocacy efforts to focus attention on the pressing need to address neonatal mortality that had increased from 37/ 100 live births in 2002 to 42 in 2007 (DHS). The USAID Mission, the Ministry of Health and the bilateral (AXxes) then planned to implement activities to promote newborn health. In addition, because of the high maternal mortality ratio, it was decided to link activities to promote newborn health with active management of the third stage of labor (AMTSL) with a focus on the postpartum/postnatal period which is the most neglected phase in the pregnancy, delivery and postnatal continuum of care. BASICS linked with POPPHI to provide technical support for these activities.

Key program components comprised the following:

1. Maternal care during pregnancy, delivery and the post- partum period in the peripheral health facilities with emphasis on the active management of the third stage of labor (AMTSL) and early post partum care
2. Essential newborn care (ENC) in the peripheral health facilities including resuscitation for birth asphyxia, early postnatal care, treatment of minor infections and administration of the 1st dose of antibiotics for major infections prior to referral
3. Promotion of essential preventive care for the mother and the newborn at the community level with identification of danger signs and appropriate care-seeking

Competency based training ensured that the health workers were able to perform at least 80% of the tasks in the evaluation checklists. The key implementation strategies are highlighted in Table 4.

Table 4. Implementation Strategies in DR Congo		
S. No.	Activities	Period
1.	Advocacy	
2.	Development of a Working Group (Task Force) with partners such as the MOH, USAID, AXxes WHO, UNICEF	Task Force established in Oct. 2007
3.	Development/adaptation of tools for training, supervision and monitoring and evaluation	Feb – July 2008
4.	Procurement and supply of equipment for AMTSL (training) and neonatal resuscitation (for training and implementation in 43 health zones)	October 2007 – July 2008
5.	Training of trainers (29 National, 97 Provincial, 95 health zone)	July – December, 2008
6.	Training of 498 facility health workers at health centers	Jan – May 2009
7.	Training of 60 community health volunteers	Jan – May 2009
8.	Supervision and monitoring and evaluation	Plans developed by Mar 2009 – transitioned to AXxes and MCHIP for continued implementation

Challenges noted that needed to be considered and dealt with in the implementation process included the following:

- Facility health registers lacked information on essential newborn care (ENC) and AMTSL. For this reason, constant advocacy is required to promote their inclusion in the national health information system (indicators, registers and other tools).
- Supervision by centrally-based teams is more difficult and less frequent given the long distances, the inaccessibility of health zones and air travel problems in potential conflict areas. Increased involvement of teams at the provincial (regional) level may be more helpful. In addition, both provincial and health zone supervisors need to take ownership of such programs.
- Procurement and subsequent distribution to sites of equipment took a long time and hence this must be taken into account in planning programs.
- Supervision to improve quality of service is one of the most difficult parts of program implementation. It required strong advocacy and motivation of trained supervisors. Group supervision helped, among others, to save time and money. However, where feasible visit to individual sites to check the functioning of local sites was also considered to be very important.
- There is a need to lay increased emphasis on community-based interventions in order to obtain improved results. This was particularly important for the post partum mother and the baby who culturally tend to remain home.

Integration of Early Newborn Care with IMCI (Rwanda)

In coordinated partnership with MOH, WHO, UNICEF, USAID bilateral Twubakane project, EGPAF, EIP, Intrahealth/Capacity project, GTZ, JHPIEGO/ACCESS, Save the Children, Cooperation Suisse, the early newborn period (first 7 days) was integrated with pediatric HIV, birth spacing and conventional IMCI

Based on the MOH requirements, a separate algorithm was developed for the period of the first 7 days. Capacity building included training of 50 trainers and supervisors. 950 providers were trained from September 2006 to May 2009. Through a competency based training approach including classroom sessions, exercises, role plays, video sessions, demonstrations, and clinical practice, 97% of districts (29/30) were covered with at least 2 providers trained in each health center.

Although one of every three deaths in children under the age of five years took place in the newborn period, few sick newborns were brought to health centers. For example, review of sick children under the age five years treated in health centers in two districts showed that 97% were between 2 months – 5 years, 2.4% between 1 week – 2 months and only 0.06% were less than 1 week. Besides poor access and lack of motivation in some cases, reasons for this included the community perception that illnesses

particularly in the early newborn period were caused by mystical causes requiring talismans, the support of religious leaders and traditional healers rather than care by medical and nursing professionals. Lack of adequate numbers of cases in peripheral centers may also lead to poorer development and faster loss of the necessary competence to provide appropriate care for the sick babies. Innovative methods using videos and practical checklists are required to retain knowledge and skills. IMCI courses are also still centralized, being organized in the capital, tend to be long (12 days) and are costly (about \$1000 per participant).

Integrating an early newborn component with IMNCI appears to be a promising approach but should have a feasible training program with supervision for quality of care, be linked with good quality facility based care for the mother and baby at birth and have a strong community based communication component to promote healthy behaviors, identification of danger signs and appropriate care seeking. Decentralization of some of the capacity building and supervision processes with continued support from the center may help to improve the situation.

Innovative Technologies to Support Country Newborn Care Programs: LAC Region (Dominican Republic, El Salvador, and Honduras)

As an opportunity to address one of the main causes of neonatal deaths in LAC, BASICS supported the implementation of a strategy to improve the quality of prevention and treatment of newborn sepsis at the facility level (El Salvador and Dominican Republic) and in the community (Honduras).

The intervention applied selected elements of the quality improvement and collaborative strategies of URC/HCI, such as:

- Identification of common objectives
- Selection of common indicators
- Identification and implementation of local solutions
- Sharing of results and lessons learned between hospitals/NGOs and countries

A distance learning network using the Elluminate software, facilitated by the CORE Group, was created to connect the country teams and BASICS HQ for technical updates and regional sharing of results and experiences every 4-8 weeks.

Local technical support was provided by full time in-country coordinators assisted by local experts (MOH, USAID, PAHO, UNICEF, bilaterals, NGOs) and BASICS HQ technical staff. In-country quality improvement teams were established including, at facility level, hospital administrative and technical staff such as directors,

pediatricians/neonatologists, obstetricians/gynecologists and nurses and, at the community level, technical staff of the participating NGOs.

The technical content of the intervention focused on the following elements:

- At facility level
 - Emphasis on levels 1 & 2 (primary and intermediary care), with priority for babies above 1500 g and those not needing intensive care
 - Involvement of experts from higher levels of care (level 3)
 - Emphasis on good functioning infection control committees and rational use of antibiotics

- At community level
 - Prevention of infection as a part of preventive aspects of ENC
 - Identification of minor and major infections determined through danger signs and care-seeking/referral
 - Where feasible, treatment of minor infections and first dose of antibiotics for major infections (sepsis) before referral

The initiation of the intervention included the analysis of the presence and adequacy of national protocols/guidelines based on best practices, the establishment of common goals, the development of a baseline on the situation of newborn infections and their management, the identification of the gaps and challenges, and the definition of common indicators for continuous monitoring of the changes. Solutions were implemented in order of priority: (1) first those that could be implemented locally with own resources, (2) second those that required external resources, and (3) finally those that required more long term plans.

Four regional hospitals participated in the intervention in the Dominican Republic, and 7 regional hospitals in El Salvador. A situation analysis was carried out using newborn services evaluation tool drafted by PAHO and BASICS, and the following areas for intervention were identified through consensus.

El Salvador:

1. Hand washing
2. Revision of national newborn sepsis treatment guidelines

Dominican Republic:

1. Clean/Sterile delivery practices
2. Hand washing
3. Elaboration of guidelines for prevention and management of newborn sepsis

In *Honduras*, 5 NGOs participated in the strategy in the first year, and 4 more joined during the second year; this increased the population coverage by 5 times to a total of 650,000. These NGOs worked with different delivery platforms, such as through TBAs, various cadres of CHWs (for nutrition, CCM, etc), and community mobilization groups. BASICS promoted the coordination of activities among the 9 NGOs to implement a standardized newborn health module with selected maternal health elements.

A baseline KAP survey showed, for example, that 16% of the mothers applied harmful substances on the cord (cooking oil, chicken fat, etc), only 11% of women attended postpartum visits in the first week after the delivery; CHWs had weak counseling skills on elements of ENC and identification of danger signs in the newborn; and only 50% of TBAs applied all the elements of preventive ENC at birth. Therefore, the intervention chosen by the NGOs consisted on strengthening the technical capacity of NGOs to improve knowledge and skills of CHWs, TBAs and community groups of volunteer mothers.

Recognition by the MOH of activities of the NGOs with the technical support from BASIS resulted in these organizations being asked to participate in the Committee of the National Strategy for Accelerating the Reduction of Maternal and Newborn Mortality (RAMNI in Spanish). The group has been requested to draft a national strategy for improving community based newborn care in Honduras.

Results

At the community level in Honduras, some of the participating NGOs showed an important and sustained increase in the proportion of newborns that were evaluated within 3 days of birth in the community as shown in figure 4.

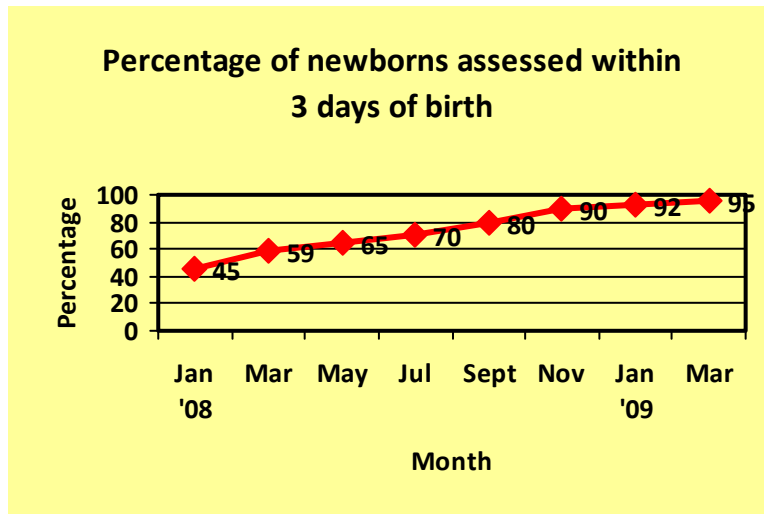


Figure 4. Proportion of all Newborns in the Community evaluated within 3 days of birth – Christian Children’s Fund- January 2008 to April 2009

20% (66/338) of the babies evaluated during the time period represented in the graph were referred for danger signs to the facility. Three of the infants died, representing a case fatality ratio of 4.5%.

At *facility level* (in Dominican Republic and El Salvador) there was an increase in observed hand washing by staff before examining a newborn by 13% in El Salvador, and by 39% in the Dominican Republic 6 months after the commencement of the intervention.

A very important improvement was also noted in delivery practices in the DR such as use of *sterile* linen and cutting the cord with a *sterile* instrument a year after initiation of the program as shown in figure 5.

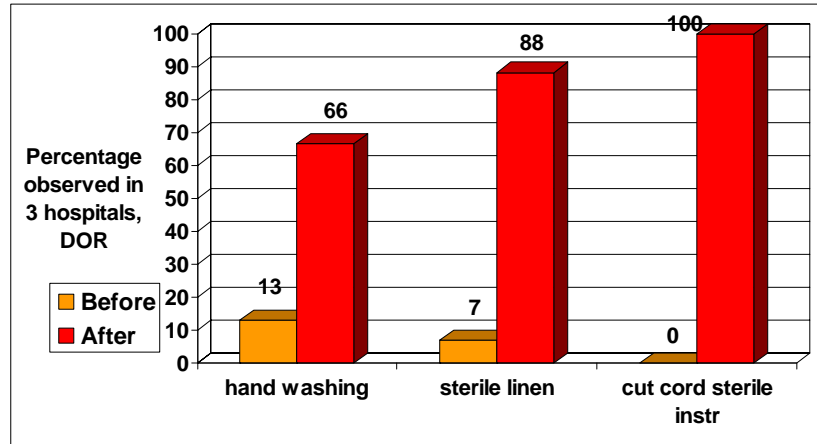


Figure 5: Clean/sterile delivery practices in 3 hospitals in the Dominican Republic.

As a result of the increased awareness of the staff on issues of prevention of infection in hospitals in both countries, other improvements were progressively instituted constituting a package of changes that had a greater impact. Some of the added elements were single use of sterilized rubber bulbs for aspiration of secretions in newborn infants where required as in some cases of birth asphyxia, sterilization of linen for the nursery and promotion of hand washing and breastfeeding for mothers in “waiting huts” when mothers came in late pregnancy before the onset of labor. The last element was extremely important in the DR as the latest DHS (2007) showed that only 20% of newborn are exclusively breastfed.

These changes resulted reduction in the proportion of admissions due to suspected cases of nosocomial newborn infections to the nursery by 30% in 2 hospitals in the DR, and by 16% in 2 hospitals in El Salvador a year after the commencement of the intervention.

Lessons Learned and Recommendations

Advocacy and Planning

Advocacy was essential at all levels and needed to be on-going at strategic intervals. In planning programs, linking with partners and having a working group or task force was very useful. In some countries a National Committee on Newborn health was established. Having a focus in this new area was helpful in defining more clearly the key components and strategic activities that could then get integrated into other technical components as required. In addition, this method assisted in transmitting these components to all interested partners even those who were not initially directly involved in implementation of the program. It helped to promote subsequent expansion and sustainability in the country; and was useful in leveraging additional support for programs such as procurement of equipment and supplies.

Advantages and Challenges of Integration

Newborn health has never been considered as a vertical program. By its dependent link with the mother, the mother- baby-dyad needed to be closely integrated. In addition, the essential newborn care package was integrated advantageously with other areas.

The main **advantages** of this link or integration included the following

- 1.) It was more acceptable to MOH's, organizations and the communities that preferred integrated activities/programs.
- 2.) Funds could be shared between the various technical areas.
- 3.) In certain areas, time management and fund allocation were more efficient with combined training, supervision and monitoring and evaluation
- 4.) It linked together the benefits of services provided by individual areas. For example, IMNCI covering HIV offered increased quality of care for newborn and young infants including those exposed to HIV. In fact, HIV positive infants were more likely to be identified and treated.

There were, however, some **challenges** with integrated programs as noted below.

- 1.) Tools were more bulky and hence more costly to reproduce.
- 2.) Training and supervision took longer.
- 3.) There were increased number of messages to be conveyed by health workers in behavior change programs

- 4.) There was lower visibility of some of the newer elements such as components of newborn health. Where staff was inadequate and work load was high, such elements tended to get neglected or even dropped
- 5.) Certain conflicts of interest became apparent, e.g. with breastfeeding when PMTCT was integrated with routine MNH care especially in countries with higher HIV prevalence, HIV –positive mothers too could needlessly not opt to breastfeed their babies.

Some **solutions** to the above challenges included the following:

- Prepare more compact training modules focusing on checklists and job aids to reduce printing and training costs (particularly important when several technical areas are integrated and implemented at scale).
- Incorporate creative methods of training such as on-site training and encourage learning of theoretical or “knowledge” components by workers on their own and have them together for shorter periods for the practical elements to improve competencies.
- Ensure that key new elements such as newborn care do not get neglected during the process of integration with more established components.
- Develop innovative, efficient and low-cost methods of supervision, data collection and other elements of monitoring and evaluation. For example, group supervision combined with visits to sites may be a feasible option.
- Increase local ownership of programs at peripheral (district or provincial) levels
- Increase links with communities to increase the demand side to improve quality of the care on the ‘supply’ side

Implementation of Programmatic Activities - Support at Different Levels

The various continuums of care were noted to be important. In the home-to-hospital continuum of care, provision of facility based services in isolation could have several disadvantages. For example, few newborns are currently reaching the peripheral facilities. Even in facility births, mothers and babies are discharged early and spend most of the postpartum period at home. Although early postnatal visits are improving, they are still inadequate, and additional support at the community level would be beneficial. Merely providing health services may not result in their optimal utilization and community needs may not be adequately understood and addressed..

Similarly, carrying out community based interventions in Isolation also has disadvantages. It promotes a parallel system, does not address existing health services and merely promoting care seeking for problems is of no use if the referral center is not strengthened to deal with referrals - it may even result in loss of credibility with the community

Thus both the facility and community should be addressed, establishing active functional links between the two so that they can support each other.

Strategies for Facility Level Support

- Mere presence of skilled birth attendants does not guarantee quality newborn care
 - Quality of care needs to be improved through training and supportive supervision and appropriate monitoring and evaluation.
 - The birthing process needs to be supported by a qualified birth attendant helped by a 2nd person who even if not equally qualified has received appropriate training.
 - Adequate, appropriate drugs, equipment and supplies of suitable strengths and sizes should be available with optimal maintenance. Procurement and supply of equipment can present a number of challenges including delays including their reaching the country and the individual health facilities, especially the peripheral centers. This needs to be factored into program implementation, as does maintenance and continued supply.
 - Appropriate referral/counter referral systems should be in place.
- Components required at *the peripheral health* centers include among others, the following:
 - Preventive essential newborn care (temperature maintenance, eye & cord care and early and exclusive breastfeeding)
 - Treatment of birth asphyxia, care of the LBW including KMC; treatment of all minor infections, identification of danger signs and at least administration of the first doses of antibiotics and referral for major infections. However, attempts should be made to treat fully those cases that can be managed at these peripheral centers.
 - Systems and resources for referral and counter-referral.
 - Counseling/ BCC strategies are as important at facility level as in the community.
- Components in smaller hospitals should have level II care with resources for referral
 - Both preventive and curative care is important. Prevention of infection is a priority. A few illustrative examples are noted. There needs to be more than just cleanliness at facility level. Items in high risk areas such as the delivery room and nurseries need to be sterile or subjected to high level disinfection, wherever possible. Where feasible, single use or disposable items need to be used.

- Appropriate solutions for intravenous therapy should be available and mixing of fluids at the facility should be avoided.
 - Both breastfeeding and use of expressed human milk for babies who cannot suckle should be promoted.
 - There should be adequate disposable/single use items such as I/V cannulas and micro-drip sets
 - Kangaroo mother care is an effective low cost method of caring for preterm/low birth weight babies.
 - Radiant overhead heaters allow easier access and have less risk of infection than incubators; but it is necessary to take into account increased insensible water loss.
 - Ensure that appropriate resources and systems are in place for maintenance, repair and replacement of equipment
- In larger/referral hospitals, where feasible, choose non-invasive methods / procedures over invasive ones such as use of pulse oximeters over intra- arterial O₂ monitoring in order to decrease infections. Before investing in ventilators and invasive methods, achieve a good survival of preterm and LBW infants without acquiring serious infections
 - Pre-service education for doctors, nurses and midwives must also improve with emphasis on competence
 - Partnership/links between community and health facilities are important.

Quality of Care

Supportive supervision is an important method of improving and maintaining quality of care. It is, however, one of the most challenging of the components of program implementation. Supervision is not considered as an inherent part of the job description of the hospital staff and many look for 'incentives'. Designated "supervisors" are frequently in offices of the Ministry of Health and not in constant touch with the clinical skills they need to evaluate. Supervisory checklists have fewer steps than in the more detailed set of actions in the 'learning checklists' and hence may not be adequate for supervisors who are not fully familiar with the skills that they need to evaluate. Thus, having additional details in an appendix can be helpful.

Group supervision may be useful for scattered peripheral centers with few staff and for CHWs. This process can also be used to collect and review data. This can be combined periodically as feasible with visits to different centers for other aspects of on – site supervision.

With entities such as birth asphyxia, practice on babies may be difficult due to inadequate numbers of cases both during training and supervision. It is, therefore necessary to practice and evaluate on mannequins. Unfortunately, the numbers of mannequins available are limited, and more need to be more readily available. Similar challenges exist in relation to treatment of sick babies at peripheral centers as relatively few sick newborn are brought to the peripheral facilities.

Postnatal Care

The postnatal period is the most neglected period of the pregnancy, delivery, postnatal continuum of care. As 75% of the neonatal deaths take place in the first week of life, an early *focused* postnatal contact/visit within the first three days is essential. However, it is even more important to consider the “coverage” of the early postnatal period instead of just a visit. It is ideal to plan as a priority to *cover* the first week especially the first three days in the most feasible & effective manner. Scenarios may vary, needing different approaches for care. Births may take place at home or facility. Following a normal birth, stay at the facility can vary from 2 hours to 2 – 3 days. Long stays carry the potential risk of nosocomial infection and hence needless stay should be minimized. In addition, access to services varies greatly. Traditional practices that keep mothers and babies in their homes after births also need to be considered and appropriate negotiation and support need to be planned. Both the facility and community need to be addressed. Thus, additional support through CHW/CHV for both facility and home births may be required. A postnatal (PN) visit on day 2 in home births has been shown to decreased neonatal mortality. The ‘content’ of the visit is also important (focused PN contacts/visits).

At facility level the conventional “6 hrs – 6 days – 6 weeks strategy” poses challenges and hours may be difficult to identify and 6 days for a follow-up visit is rather late. It is easier to relate tasks to specific actions/changes that are clearly identifiable such as the time of birth, time of transfer out of the delivery room, stay in the postnatal ward at the facility with evaluation and care at least once a day for normal babies, and more frequently for babies with low birth weight or with problems, and a pre-discharge contact including proper assessment, care, counseling, and scheduling of an appointment for follow-up visits. The first follow-up visit is based on age of the baby at discharge from facility. Results from countries have indicated that early postnatal visits are feasible. At the follow-up postnatal visit(s) proper evaluation, care and counseling are equally important

Monitoring and Evaluation

This too constitutes one of the biggest challenges in implementation of program activities. HMIS in countries does not necessarily have the appropriate indicators for

newborn whether related to essential newborn care or IMNCI. Accordingly the necessary data is not collected at facility or community level.

Innovative Technology/Methods

Lessons learned from activities in the LAC region included the following.

- Standards and guidelines for newborn care were often not available or followed in countries
- Distance learning activities such as use of the Eluminate software, was effective for dissemination of knowledge and sharing of results and experiences in the LAC region and reduce costs
- Adapted collaborative methods between countries effectively promoted south-to-south exchange and development of ideas for additional actions that further improved services
- Exchanges between community and facility-based groups were feasible and useful
- NGOs with different delivery strategies could adapt a newborn care module and work together for quick expansion of activities.

The Way Forward

What components can readily be taken to scale? The low hanging fruit or the more feasible components may or may not be the most effective in achieving the desired results. Preventive aspects of essential newborn care including identification of danger signs and appropriate care seeking are more evidence based and more feasible to take to scale. Curative components such as resuscitation for birth asphyxia and treatment of infections present greater challenges but are extremely important in improving outcome and having a greater impact on neonatal mortality.

There is clear evidence that community based interventions are beneficial in reducing mortality even when they cover the above preventive aspects using communication strategies and community mobilization, However, it is not always clear as to exactly what are the specific critical elements to be addressed and to what depth must it applied to get the desired impact on mortality. In addition, is it feasible to replicate and *sustain* these activities at scale with community volunteers? Community case management for the newborn has also been shown to be very effective but does not receive adequate support by professional bodies and ministries of health and policy issues present considerable challenges.

Although treatment at facility level care is universally accepted, there are a number of challenges. Most of the evidence is at the hospital level. Health workers at peripheral centers often do not have the competence to deal with sick newborns. In fact, the standard facility IMCI strategy recommends administration of the first doses of antibiotics and referral to the appropriate hospital. One of the challenges is that sick newborns rapidly lose their capacity to suck and retain feeds and may require intravenous fluids that may not be currently feasible at many peripheral centers.

Both community and facility must to be addressed with good functional links between the two. It may be beneficial to have a triage system with the apex at the district hospital with two-way links with the peripheral health centers, health posts and the community (see figure 6).

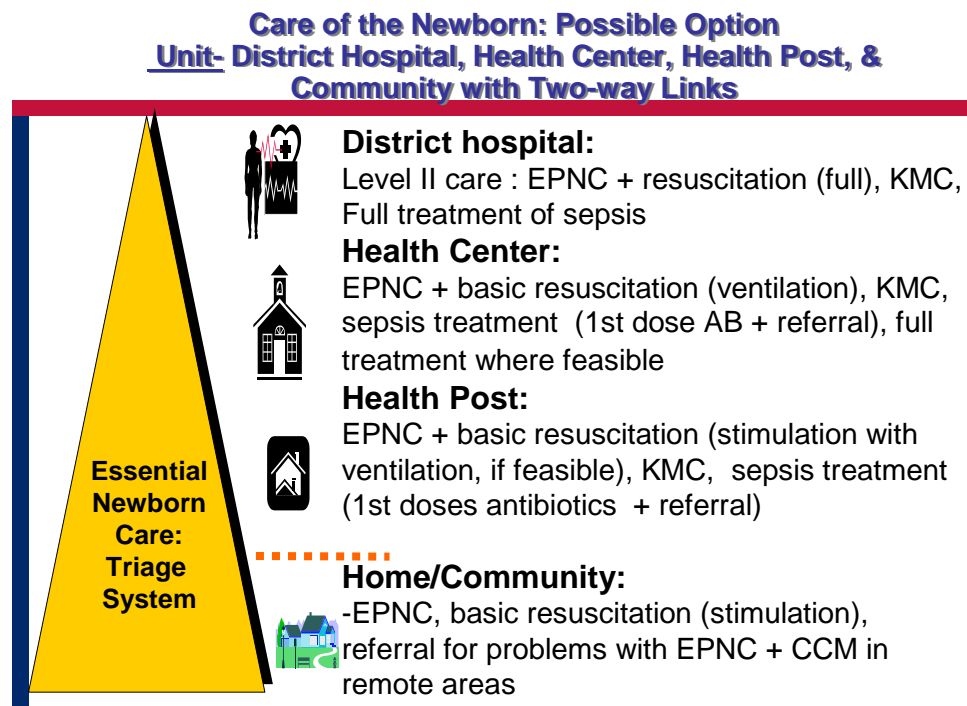


Figure 6: A district level strategy for newborn care
 (EPNC – Essential preventive newborn care;
 KMC – Kangaroo mother care;
 CCM – Community case management)

In addition, as conventional in-service training programs are costly, time consuming and take the health workers away from their workplace for long periods, more innovative on site training and improved competency based pre-service education of doctors, nurses and midwives are essential.

It is important to note that operational research programs showing good results with decrease in neonatal mortality have often used intensive training methods and closer supervision that may not always be easy to apply in *programs at scale*. The “how”, thus, constitutes a major challenge. In addition, there are other non-health components that can have a profound effect on outcome such as water and sanitation and functional female literacy that need to be promoted along with conventional health interventions.

It is not practical to wait for the ideal plan and strategy. We may need to start with the most feasible evidence based package using reasonable criteria for prioritization and build strategically on existing programs to target the newborn with the mother. Interventions need to be scenario-based and prioritized to suit the local situation and expanded with adequate monitoring and evaluation in order to achieve the desired public health impact.