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 **BASICS**

**IMPROVING CHILD HEALTH IN
LATIN AMERICA AND
THE CARIBBEAN**

BASICS III

Background

Although neonatal mortality is lower in Latin America and the Caribbean (LAC) than in other developing regions in the world (at 15/1,000 live births), there is great variability among and within countries, with the newborn mortality rate (NMR) being as high as 31/1,000 live births (Haiti), and as low as 5/1,000 live births (Cuba and Chile)¹. Moreover, the NMR is double in the poorest quintile of the population compared to the richest². In many countries in LAC, this poorest quintile is represented by a very large underserved indigenous and rural population with geographic, financial, and cultural barriers to access to health care resulting in low proportions of skilled birth attendance (as low as 24% in some areas)¹. In addition, while in general there is an inverse correlation between NMR and skilled birth attendance, there are exceptions in the LAC Region as it is the case in the Dominican Republic (DOR), 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 (DHS, 2007).

The 3 main causes of newborn deaths in the Region are similar to the global scenario, but there is a trend of increased prematurity rates contributing to newborn deaths.

It has been observed in many countries that despite great advancement in technology for the care of premature babies, the indicators on some elements of essential newborn care are still lacking below. For example, in the Dominican Republic only 20% of newborn babies are exclusively breastfed (DHS, 2007) and in El Salvador only 33% of babies started breastfeeding within the first hour after birth (FESAL, 2009).

It is in that context that BASICS started activities to address newborn health in the LAC Region and became an active member of the Interagency Group for Newborn Health formed in 2004 in partnership with USAID, PAHO, URC/HCI, Save the Children/SNL, ACCESS, and the CORE Group, which developed into the LAC Neonatal Alliance officially formed in 2007. In addition, BASICS received USAID regional and country funding for the implementation of an intervention to address newborn mortality in the LAC Region.

Regional activities

In order to obtain relevant background information, a regional situational analysis was carried out and finalized in 2006. Based on it and with 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 Directing Council in September 2006. Subsequently, a Regional Plan of Action for Newborn Health was

¹ LAC Situational Analysis, 2006

² Lawn et al, 2005

developed and after inputs from countries at a meeting in Paraguay in August 2007, it was approved as a resolution by PAHO's Directing Council in September of 2008.

[Click here to download the document *Reducing Neonatal Morbidity and Mortality in Latin America and the Caribbean, an Interagency Strategic Consensus*](#)

The strategic objectives of the LAC Regional Action Plan were 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

[Click here to download the document: *Regional Strategy and Plan of Action for Neonatal Health within the Continuum of Maternal, Newborn and Child Care*](#)

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, and provided technical assistance for the strengthening of national plans of action for newborn health in the Dominican Republic and in Honduras.

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

In April of 2008 BASICS was invited to a Regional workshop of the Prevention of Post-Partum Hemorrhage Initiative (POPPHI) in Nicaragua to present on the integration of essential newborn care (ENC) at birth and active management of the third stage of labor (AMTSL), together with other members of the Neonatal Alliance who were also presenting their work in the same technical area.

In September of 2009 BASICS provided technical assistance for a Regional workshop of the Alliance with Ministries of Health and professional associations (Pediatric, Neonatology, Nursing, Midwifery, and Gynecology and Obstetrics) in Peru to promote the Regional Strategy and Plan of Action and achieve the commitment of the associations to the goals of the Alliance.

BASICS work will continue and be sustained as the LAC Neonatal Alliance will continue to operate with existing partners under USAID's LAC Bureau leadership for further dissemination of the Regional Strategy and Plan of Action in countries and other activities included in the work plan.

Click [here](#) to download the document: *Memorandum of Understanding between the Neonatal Alliance and the LAC Regional Professional Associations*

Country activities under a regional approach

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). In order to potentiate the use of resources and maximize impact BASICS developed in-country Partnerships with MOH and USAID Missions, USAID bilateral projects, UNICEF, PAHO, and NGOs (Save the Children, CCF, CRS, PRODIM, Red Cross, and others).

Objective and Methodology

The initiative aimed at identifying gaps in prevention and treatment of newborn infections at the facility or community level, and to try short cycles of change evaluating their impact on small scale. If successful, the changes were then brought up to scale. The intervention applied selected elements of collaborative models for quality improvement adapted by URC/HCI, such as:

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

Local technical support was provided by BASICS through 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. Other cadres of workers such as pharmacists, housekeeping, and others, were added as needed at the facility level.

A distance learning network was created using the Elluminate software, facilitated by the CORE Group, to connect the country teams and BASICS HQ for technical updates (including capacity building on basic quality improvement methods) and regional sharing of results and experiences every 4 to 8 weeks—14 sessions were recorded and accessible through a link during the life of BASICS. Each 2-hour session included one or two technical presentations, presentation of results/experiences by each country, and discussion/Q&A sessions among participants from the 3 countries and BASICS HQ. These sessions were also useful for tutoring the BASICS in-country coordinators at the

beginning of the program. On occasion, participants from other organizations (PAHO, UNICEF, etc) attended virtually as well; also other technical elements of newborn health were presented by invited experts by request from countries (i.e. delayed cord clamping). Some sessions were originated in-country facilitated by BASICS HQ technical staff during technical support and supervision visits.

To stimulate in-country group interactions during the sessions the teams got together in a single venue and projected the session for all the participants. This also promoted and facilitated meetings that were carried out after the session ended.

Videoconferencing was used for the first two sessions at the initiation stage of the intervention but this technology was not well received by the participants, as it was more relevant for them to clearly see the presentations and other sources of information than to see each other on screen.

Click the titles below to download the *Power Point* presentations of the *Illuminate* sessions. All presentations are in Spanish only.

Spanish Title	English Translation of the Title
2007	
Introducción a la iniciativa regional de sepsis neonatal	Introduction to the regional sepsis initiative
Actualización sobre el desarrollo de la iniciativa	Update on the development of the initiative
Enfoque global de sepsis neonatal Indicadores	Global approach to newborn sepsis Indicators
Estrategias costo-efectivas para disminuir sepsis neonatal Estudio de caso	Cost-effective strategies to reduce neonatal sepsis Case study
Prevención de infecciones en el recién nacido Alimentación alternativa con leche materna	Prevention of infection in the newborn Alternative feeding with human milk
Introducción de la iniciativa de sepsis a nivel comunitario	Introduction to the regional sepsis initiative - community
Indicadores nivel comunitario	Indicators – community level
Estrategias de control de infecciones	Infection control strategies
Solución rápida de problemas en equipo	Rapid team problem solving
2008	
Apego precoz y lactancia materna exclusiva	Early and exclusive breastfeeding
Pinzamiento tardío del cordón: revisión actualizada de la evidencia	Delayed cord clamping: Updated review of evidence
Prevención de infecciones durante resucitación neonatal Signos clínicos predictivos de sepsis neonatal	Prevention of infections during newborn resuscitation Clinical signs predictive of neonatal sepsis
Infecciones nosocomiales en países en desarrollo	Nosocomial infections in developing countries

2009	
Manejo comunitario de casos de sepsis neonatal	Community case management of newborn infections
Actualización de impacto de intervenciones comunitarias en salud neonatal	Update on impact of community interventions in newborn health

Technical content

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 grams 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. It is important to mention that in Honduras the MOH promotes the first dose of oral antibiotic (Amoxicillin) before referral in the newborn with danger signs.

Population coverage

Four regional hospitals participated in the intervention in the Dominican Republic covering a population of 3.3 million—30% of the country's total population, and 7 regional hospitals in El Salvador covering 4.7 million—65% of that country's population. 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—10% of the country's population.

Progression of the Intervention

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.

At facilities, a situation analysis was carried out using a newborn services evaluation tool drafted by PAHO and BASICS. The assessment identified key gaps in the prevention and management of infections. For example, while very expensive equipment had been purchased, the hand washing practices and availability of basic supplies for these practices were deficient. In the Dominican Republic, elements of clean delivery were not being practiced appropriately (e.g., potentially contaminated instruments were being used to cut the umbilical cord in many instances).

The following areas for intervention were initially identified through consensus:

El Salvador:

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

Dominican Republic:

1. Clean/Sterile delivery practices (hand washing, sterile gloves, sterile linen, sterile and exclusive instrument for cord cutting, clean perineum, and proper disinfection of areas)
2. Hand washing

The hospitals' staff (including administrative, pharmacy, lab technicians, students, interns, residents, as required) received technical refresher sessions on the selected areas of infection prevention and treatment. Monitoring instruments for hand washing and application of sterile delivery practices were developed by the teams with BASICS technical assistance and changes were measured weekly and reported monthly to the coordinators for sharing during the Elluminate sessions. The goal for the indicators for hand hygiene and sterile delivery practices was set at greater than 80% compliance by the observed staff. Using run charts from the collaborative model (measurements over time) allowed early detection of fluctuations in the indicators that required immediate actions.

The NGOs in Honduras working in the community with the newborn sepsis intervention implemented maternal and child (MCH) programs with different delivery

strategies and platforms, such as through traditional birth attendants (TBAs), various cadres of community health workers (CHWs) (for programs such as nutrition³, rural pharmacies, etc), and community mobilization groups.

A baseline assessment of knowledge and practices of infection prevention, identification, and referral was conducted by the NGOs using tools adapted by BASICS from AED materials. The survey showed, for example, that 45% of the 100 women interviewed gave birth at home (41% with a TBA), 16% of the mothers applied harmful substances on the cord (cooking oil, chicken fat, etc), and only 48% of the newborns were taken to health services for a checkup during the first week after birth. 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 volunteer groups in ENC using AIN-C, BASICS, and SNL materials.

BASICS promoted the coordination of activities among the 9 NGOs to implement a standardized newborn health module with selected maternal health elements. Each NGO incorporated the newborn element in their routine supervisory visits using the BASICS generic checklists and strengthening indicators as recommended by BASICS.

A very important element of the implementation was the constant accompaniment of the BASICS in-country coordinators; they made regular visits to the field to assist and support the teams and were always available by phone or e-mail to respond to their needs. BASICS HQ technical staff made quarterly visits to each of the countries for technical updates and support, supervision, and advocacy as required. Of main importance was the commitment and support of the countries MOH and of the hospitals and NGOs directors.

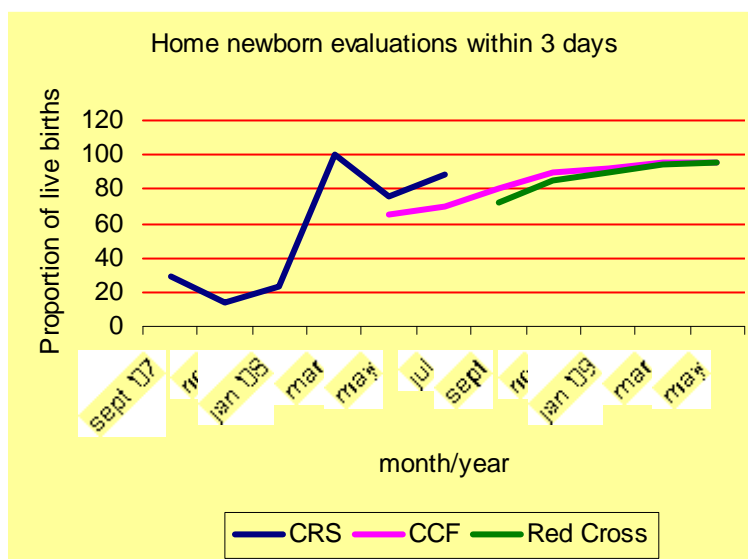
Results

The outcomes of BASIC work in LAC region were:

1. 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 1. During the period of January 2008 and June 2009 (18 months), 2 NGOs (CCF and Save the Children) reported a total of 1559 recorded births in their areas. Of these, 82% (1283) were evaluated within 3 days after birth; 10% of the newborns evaluated (131) were referred to facilities for danger signs, and 3 babies died representing a case fatality ratio of 3%.

³ Of the AIN-C program implemented by BASICS II which incorporates an essential newborn care module and which is currently a successful national strategy recently evaluated by BASICS III

Figure 1
Proportion of all Newborns in the Community evaluated within 3 days of birth by 3 NGOs participating in the initiative.

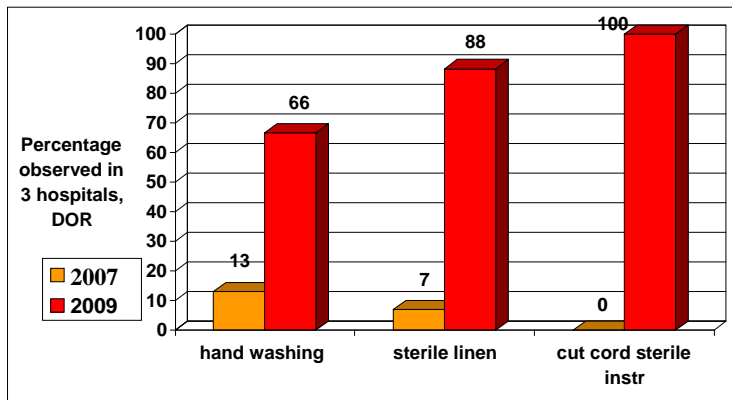


2. At *facility level* (in Dominican Republic and El Salvador) there was an increase in observed hand washing by staff before examining a newborn by 13% in El Salvador, and by 39% in the Dominican Republic 6 months after the commencement of the intervention. In El Salvador 89% of the observed staff in the 7 participating hospitals complied with the various aspects of hand hygiene (take off jewelry, keep fingernails short, wash hands before entering the area where newborns are cared for and before examining or carrying out a procedure for a newborn, correct use of alcohol-based hand rub) in the last semester of 2009 (January to July). Also, most supplies needed for hand hygiene were available in the labor and delivery rooms, in the operating room, in the rooming-in areas and in the nursery, in the hospitals during that time, but some hospitals lacked items required for hand drying (single use towels), particularly in the rooming-in areas. This element of infection prevention has been recently shown to have important impact on newborn mortality rates⁴.

⁴ In a recent study it was shown that hand washing by mothers and birth attendants reduced newborn mortality by 41% (Rhee V et al, Arch Pediatr Adolesc Med, 2008)

3. Improvements in delivery practices in the Dominican Republic such as use of *sterile* linen and cutting the cord with a *sterile* instrument two years after initiation of the program as shown in Figure 2. In general the percentage of staff observed complying with **all** elements of sterile/clean delivery was 0% at baseline (mostly due to cutting the cord with the same instrument used for the episiotomy). In June of 2009, 95% of the observed staff in all shifts in the delivery room at one Regional Hospital applied all the elements of sterile delivery, 85% did so in the morning shift at another, and 67% in the morning shift at a third facility.

Figure 2
Improvement in clean/sterile delivery practices in 3 hospitals in the Dominican Republic.



4. As a result of the increased awareness of the facilities staff on issues of prevention of infection in hospitals in both countries, other improvements were progressively instituted constituting a package of changes. Some of the added elements were single use of sterilized rubber bulbs for aspiration of secretions in newborn infants where required, sterilization of linen for the nursery, use of intravenous fluids of pediatric sizes to avoid sharing, promotion of hand washing and breastfeeding for mothers in “waiting huts” when mothers came in late pregnancy before the onset of labor, and institution of a policy to promote early and exclusive breastfeeding in hospitals. The last element was

extremely important in the DR as the latest DHS (2007) showed that only 20% of newborn were exclusively breastfed.

5. These changes contributed to a reduction over time in the proportion of admissions due to suspected cases of nosocomial newborn infections to the nursery by 30% in 2 hospitals in the DOR, and by 16% in 2 hospitals in El Salvador a year after the commencement of the intervention. Figure 3 shows the sustained reduction in suspected cases of nosocomial newborn infections in one hospital in the Dominican Republic 2 years after the initiation of the program; Figure 4 illustrates the impact in 2 referral hospitals in El Salvador.

Figure 3
Proportion of admissions to nursery due to suspected nosocomial infection between 2007 and 2009- Musa Hospital (DOR)

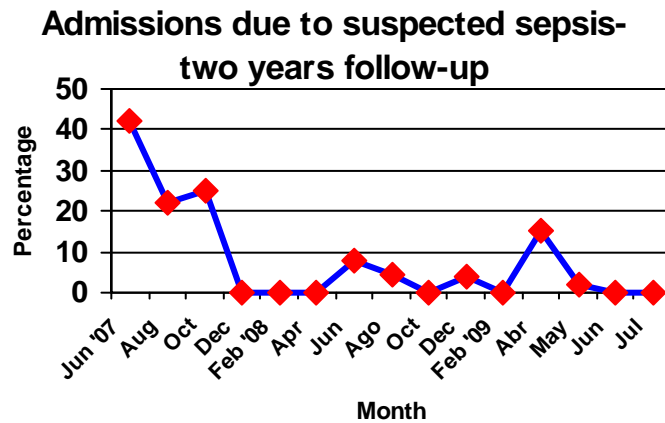
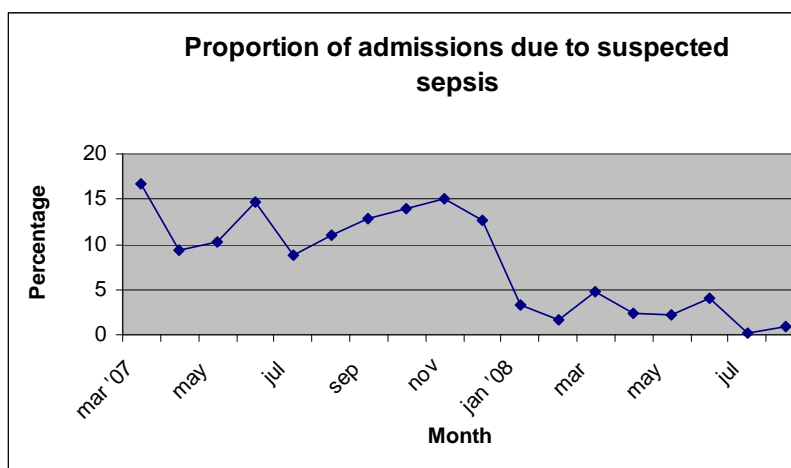


Figure 4
Proportion of admissions to nursery due to suspected nosocomial infection
between 2007 and 2008- s hospitals (ELS)



Even though it is difficult to give full attribution to just one infection prevention activity for this impact, the trend over time could have resulted from the implementation of a package of changes. In addition, other general infection control programs implemented by partners (bilaterals) could have contributed to the results.

6. For another cycle of changes in the intervention in the Dominican Republic, an evaluation of application of elements of ENC at birth was done adapting BASICS generic checklist. Eighteen direct observations were made in 3 Regional Hospitals at baseline, which revealed weaknesses in some elements (eye prophylaxis and breastfeeding in the first hour were not carried out/facilitated by any of the observed staff). After in-service training sessions for birth attendants were carried out, the observations were repeated showing important improvements (100% of the staff observed carried out eye prophylaxis; 33% facilitated breastfeeding in the first hour after birth).

7. In addition, BASICS provided technical assistance for updating the national guidelines for the management of newborn infections together with the MOH and the bilateral in El Salvador. These will be published when updates in other technical areas are finalized this year.

Other qualitative results

BASICS intervention facilitated the exchange of skills among NGOs (using each others tools, trainers, and resources); for example, the technical staff from one NGO trained the other's CHWs in AIN-C, while the latter trained the former's TBAs in clean delivery practices), as well as the collaboration among participating countries (trainers from ELS trained staff in newborn resuscitation in Honduras), and among hospitals in one country (a team from one facility teaching the other biosafety practices, filing systems, and data collection and analysis).

For some NGOs the experience with BASICS provided leverage and experience to obtain grants for expansion of MNH activities, hence also contributing to improve newborn health in more underserved areas in the country.

Expansion of activities

During the intervention there were opportunities to expand BASICS newborn activities technically and geographically in countries.

In Honduras there was a quick coverage expansion due to the addition of communities where additional NGOs joining the intervention worked, and also through the geographic expansion of the work of selected NGOs due to grants from other agencies (World Bank, USAID).

Recognition by the MOH of activities of the NGOs with the technical support from BASICS resulted in these organizations being asked to participate in the Committee of the National Strategy for Accelerating the Reduction of Maternal, Newborn, and Child Mortality (RAMNI in Spanish) as representatives of the community-based activities. The group lead by BASICS was requested by the USAID Mission to draft a national strategy for improving community based newborn care in Honduras which includes a mapping data base of the services offered by the NGOs to facilitate coordination of activities and identify overlap. For the purpose of the national strategy, BASICS facilitated a workshop to revise and standardize all available training and supervision materials for maternal and newborn health at community level in Honduras, including BASICS counseling cards, for adaptation to local needs. In addition, the country Mission requested that BASICS facilitated meetings between the NGOs in the initiative and POPPHI for a pilot study on AMTSL implementation by TBAs, which is currently in progress.

[Click here to download the document *A Holistic Community Model for Maternal and Neonatal Health in Honduras*](#)

In El Salvador the MOH expanded the infection prevention strategy in all 28 maternity hospitals in the country, and BASICS facilitated the dissemination process. In 2009, an evaluation of the rational use of antibiotics for treatment of newborn sepsis was carried

out in the 7 hospitals participating in the intervention using an evaluation tool developed by BASICS and the MOH. In addition, the MOH requested from BASICS to carry out the third evaluation of the Mother-Baby Package Strategy in all 28 national maternity hospitals, which has been implemented in the country for the past 10 years; BASICS II carried out the second evaluation in 2004. The results and recommendations of the evaluation will be used by the MOH to guide the decision-making process for the next 4 years regarding maternal and newborn facility-based services.

[Click here to download the report of the *Third Evaluation of the Extended Mother-Baby Package in the 28 Maternities in El Salvador*](#)

In the Dominican Republic BASICS facilitated study tours to regional centers of excellence in Colombia (Kangaroo Mother Care) and Argentina (Family Centered Maternity), two programs that have shown important improvement in newborn health and survival. Teams from two regional hospitals were trained in one of the strategies each in May of 2009, accompanied by the BASICS country coordinator, who supported and supervised the first stages of the implementation of the interventions. Previous to the trip, an agreement was signed between BASICS, USAID, the MOH, and the hospitals directors in which the hospitals committed to implementation and dissemination of the strategies. Sites preparations were made in the months previous to the training. In July of 2009 there were 58 premature/LBW babies in the KMC program and doing well. The hospital implementing FCM carried out a baseline evaluation of gaps and is currently making changes in policy and infrastructure to address them. In August of 2009 the hospital was visited by Dr Miguel Largaia from Argentina, who is the pioneer and leader of the program that has run for 30 years in his country; he expressed his satisfaction with the achievements to date. The continuation of the implementation of these programs will be supported by the new bilateral in the Dominican Republic.

The LAC Regional initiative experience was presented at the Global Newborn Symposium in Dakar, Senegal in June of 2009, which created a lot of discussion among participants from other Regions, particularly Africa, who expressed their interest to replicate it.

Challenges and the way forward

- At the beginning of the intervention the facilities and NGOs were concerned about an intervention that offered only technical assistance with no other major financial resources. Very quickly the teams learned that there were many improvements that were possible with already available internal resources
- In some complex level 3 facilities there was a lot of resistance to implement the strategy. Where this issue was unsolvable the intervention was moved to Regional referring facilities.

- Standards and guidelines for newborn care were often not available, updated, or followed in countries. These were revised as part of the activities of the intervention and as a result from the technical updates carried out during the distance learning sessions.

Lessons learned

- Distance learning activities such as use of the Eluminate software, were effective for dissemination of knowledge and sharing of results and experiences in the LAC region and for reducing 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.
- It is important to have commitment from Hospital administrators to achieve sustainable changes
- Simple infection prevention measures can reduce morbidity from newborn sepsis in facilities in LAC.

Recommendations

1. The LAC Neonatal Alliance work is an important coordinating mechanism to promote newborn health as a priority and to support and strengthen national action plans. Hence, the involvement of agencies and organizations addressing newborn survival in the Region is desired.
2. The methodology used in the LAC Regional newborn sepsis intervention can be adopted for other priority elements of newborn health and also by other Regions. Local adaptations might be required; for example, if internet-based software for distance learning is not feasible technologically, other ways of communication can be explored. The in-country technical support is of key importance at least until the quality improvement teams take full ownership of the activities.
3. The implementation of the KMC and FCM strategies in the Dominican Republic should be closely monitored, and if proven successful, maybe combined and replicated in other facilities in the country and in other countries in the Region.

4. The coordinated work of various NGOs in countries in LAC (in this case for newborn health) has proven to be very effective. This mechanism for rapid expansion and optimal use of resources could be explored for other countries and other Regions.
5. It is important to draft/revise/enforce newborn health protocols and guidelines as part of the activities.