

LINKING TRADITIONAL AND FORMAL HEALTH SYSTEMS TO SAVE THE LIVES OF ECUADOR'S MOST VULNERABLE MOTHERS AND NEWBORNS

“Josefina’s life is a life saved because if Sabina Guanotuna, the traditional birth attendant caring for Josefina, had not been part of a parish maternal newborn “micro-network team” and had not identified Josefina’s labor problems, Josefina would probably never have made it to our hospital. As is the custom, Josefina’s family would have looked to a family member for help. I do not want to imagine what would have happened with this delivery late at night in an area inaccessible to any form of transportation...the child, the mother, or most likely both would have died.”

Dr. Carlos Donoso

Latacunga Provincial General Hospital



Josefina is transported in a “chacana” by the rural doctor and her neighbors, *Photo by Dr. Mario Chávez, CHS-Ecuador.*



The ambulance from the hospital in Zumbahua waits to transport Josefina to the hospital. *Photo by Dr. Mario Chávez, CHS-Ecuador.*

On a cold February night in 2011, Josefina, a mother of four from the Angamarca parish in the Andean region of Cotopaxi, Ecuador, went into labor. Josefina and her family hoped and expected that she would be able to deliver her baby at home as she had done for her four previous deliveries. What Josefina did not know on that February night was that she would labor for hours in great pain without making progress. Fortunately for Josefina, she had been followed during her pregnancy by a team of health providers in her parish, including a traditional birth attendant (TBA) in her village named Sabina, a professional midwife, and a rural doctor. This team was aware of Josefina’s location and her approximate due date. Due to the strong communication channels that

had been established between Sabina and the other team members, Sabina was able to call on assistance when Josefina most needed help.

It is impossible to imagine what ran through Josefina’s mind as she was carried by her neighbors along a rural trail in a stretcher made from a blanket called a “chacana” to an ambulance waiting on a nearby road. Once Josefina arrived at the hospital, it became apparent that her labor was “obstructed” (not progressing normally), an important cause of maternal mortality in Ecuador and worldwide. When a woman develops obstructed labor, skilled health care is needed in a health center or hospital. Later that night, Josefina had a cesarean section in the Latacunga Provincial Hospital and delivered a healthy baby girl.

“After being notified that Josefina was in labor we came with a car to the foot of the hill [near her home] and hiked up the hill about one kilometer. At night it is almost impossible to get out from Josefina’s village. If the weather gets really bad then the road can only be crossed by tractor. At first, Josefina and her husband were reluctant to leave home. However, Josefina’s husband changed his mind once he understood from Sabina and ourselves that the lives of both Josefina and their baby were at risk.”

Dr. Mario Chávez, CHS-Ecuador

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The USAID Essential Obstetric and Newborn Care (EONC) Networks Project in Cotopaxi, Ecuador is supported by the American people through the United States Agency for International Development (USAID) and its Child Survival and Health Grants Program. The EONC Networks Project is managed by the Center for Human Services (CHS) under Cooperative Agreement No. GHS-A-00-09-00008-00. For more information about the EONC Networks Project, please contact Dr. Jorge Hermida at jhermida@urc-chs.com or visit <http://www.maternoinfantil.org>.

Bringing Two Health Care Systems Together: Delivering for the Most Vulnerable Women and Newborns in Ecuador's Cotopaxi Province

At 102 maternal deaths per 100,000 births and 8 newborn deaths per 1,000 births (2009), maternal and newborn mortality rates in the Cotopaxi Province are among the highest in Ecuador. Women in this largely rural (67%), poor (90%), and indigenous (40%) province with a population of nearly 350,000 are especially vulnerable at the time of childbirth. The majority of indigenous women deliver at home with a family member or a traditional birth attendant. In addition to cultural preferences and traditions, geographic and economic barriers as well as accessibility and quality of care (including client-centered, culturally sensitive care) are important influences on where a family decides to deliver and whether they follow through with a referral to a health center or hospital.

The maternal newborn health care system in Cotopaxi (as in most of Ecuador) is highly fragmented without consistent referral processes or coordination of care between community members, TBAs, clinics and hospitals. In essence, two systems of childbirth care have come to co-exist in parallel—one in the community and the other in the formal health system—with little to no coordination between the two.

With funding from the U.S. Agency for International Development (USAID) Child Survival and Health Grants Program (CSHGP), the Center for Human Services (CHS) is implementing a four-year project in Ecuador's Cotopaxi Province to create a functional, province-wide network of coordinated community, primary and referral essential obstetric and newborn care (EONC) services for mothers and newborns. As part of an **equity-based strategy**, the project targets 21 priority rural parishes out of a total of 38 parishes that meet at least two criteria known to be associated with a higher risk of maternal and newborn mortality in Ecuador: 1) more than 50% of the parish lives in extreme poverty, and 2) over 40% of the population is indigenous. Maternal and newborn mortality figures in these 21 parishes are much higher than in the rest of the province. The deliberate targeting of these parishes represents the project's commitment to equity for the most vulnerable.

"Up until now women and their babies in [indigenous and rural] communities were invisible to the public health system because families generally do not use formal health services due to traditional childbirth practices, fears of the health system, as well as geographic and economic barriers."

Dr. Mario Chavez, CHS-Ecuador

The province-wide EONC network encompasses three inter-connected levels: 1) a parish-level EONC "micro-network" that unites community and primary health care providers and representatives; 2) a county-level network that coordinates community, primary, and hospital services at the county level; and 3) referral-level comprehensive obstetric and neonatal services in the province capital hospitals that interacts with each level as needed. Each level of the province-wide network is supported to coordinate services to promote a more effective continuum of care for mothers and newborns.

At the heart of bringing the community and formal childbirth health care systems together is the creation of parish-level "micro-network" teams in each of the 21 parishes targeted by the project, which are concentrated in four of Cotopaxi's seven counties. These parish micro-network teams represent a **central innovation** of the project. Parish "micro-network" teams are comprised of community and social organization representatives, traditional birth attendants, and midwives and doctors who meet regularly (usually monthly) to plan and coordinate care for mothers and newborns in their parish with support from CHS project staff.

TBA members of the parish micro-network teams actively search for pregnant women in their communities, reporting back to the parish micro-network team during monthly meetings on the status of pregnant and post-partum women and newborns in their villages. TBAs receive ongoing support during initial training sessions and subsequent monthly meetings to provide home-based, high-impact routine pregnancy and post-partum services and to refer pregnant women to health centers for delivery. TBAs receive regular support by health center staff to counsel families for healthy



TBAs demonstrate the preferred Andean communities' birthing position to doctors and nurses as part of an exercise to make facility childbirth services more responsive to the preferences of Andean women and their families. Photo by Daniel González, CHS-Ecuador.

household practices and to learn to recognize, screen, and refer any women and newborns with risk factors or danger signs to the health center. Parish micro-network teams use project-wide standard referral coupons with culturally adapted pictorial images that TBAs can easily mark off at the time of a referral to indicate the reason (e.g. fever, prolonged labor).

A highly **evidence-based** best practice promoted by the Cotopaxi EONC Networks Project is the routine provision of home-based early post-partum care for mother and newborn during the critical high-mortality period in the first several days after birth. Increasingly adopted in Asia, home-based early post-partum care has been slow to be adopted in countries like Ecuador with a relatively high proportion of home births among certain populations like Andean indigenous groups. Even in facilities, compliance with evidence-based post-partum care has historically been weak, and women and newborns are typically discharged shortly after birth (well before 24 hours) while still squarely in the early period of increased risk.

Promoting Respectful, Client-centered and Culturally Responsive Care to Achieve Better Equity

The project builds on many years of work by CHS and its sister company, University Research Co. LLC (URC), to promote client-centered and culturally responsive childbirth services in Ecuador

and other countries in Latin America. Historically, indigenous women have often been shamed in clinics and hospitals for traditional childbirth practices greatly valued by themselves and their communities. As a regular part of project activities, parish EONC network teams of TBAs and skilled providers use improvement approaches to adapt and change facility childbirth services to be more responsive to the needs and preferences of indigenous women and their families. For example, as a result of project activities, women are now actively supported in project facilities to include their companion of choice during labor and delivery and to give birth in their preferred position (usually kneeling while being held in the arms of their partner).

Bridging Community and Formal Health Systems: A Life Saved

Earlier during Josefina's pregnancy, her husband, a leader in the community, had challenged the parish micro-network team about why TBAs were actively looking to identify pregnant women in their community. Fortunately, Sabina, the TBA in Josefina's village, had earned Josefina's husband's trust by convincing him that "... making connections with families and pregnant women is the only way to make contact and to win families' trust to be able to respond quickly to problems if they arise." As stated by Mario Chavez, Director of the Cotopaxi EONC Networks Project, "When people awake from the small dream of normal pregnancy, and we open our eyes to a possibility of risk, risks can be anticipated and dealt with."

The happy outcome for Josefina, her newborn and for her entire family reflects the overarching goal of the USAID-funded CHS Ecuador EONC Networks Project: to unify two parallel childbirth health care systems to deliver accessible high quality care for Ecuador's most vulnerable women, newborns and families.

Selected Results to Date

After three years of implementation, the project is now fully active in all 21 targeted Cotopaxi province rural parishes and is demonstrating solid gains in community- and facility-based services, including improved linkages between the two. As can be seen in **Table 1**, project results demonstrate improved coverage

Table 1: Coverage and Quality of Post-partum Care (PPC) in 7 Cotopaxi Parishes: Baseline vs. Project Year Three End-year Result

Indicator	Baseline April 2010	Sept. 2012
% of total deliveries (home & facility) benefitting from PPC in the first 48 hours	< 5%	71%
% TBA compliance with PPC counseling standards (observation of simulated or live session)	3%	69%
% TBA compliance with PPC newborn exam standards for danger sign recognition (observation of simulated or live exam)	0%	68%
% of TBAs able to cite at least 2 post-partum danger signs for mother	59%	98%
% of TBAs able to cite at least 2 newborn post-partum danger signs	61%	94%

Table 2: TBA and Health Center Linkages/Referrals in 7 Cotopaxi Parishes: Baseline vs. Project Year Three End-year Result

Indicator	Baseline April 2010	Sept. 2012
% of TBAs who report to know how to contact a skilled provider at nearest health center	19%	95%
% of TBAs who report to have visited a health center in the last 3 months	15%	97%
% of TBAs who report a "supervision" visit by a parish health center skilled provider in the last 3 months	< 10%	64%
# of newborns referred to a health center or county hospital by a TBA within the past quarter	17	94
# of women post-partum referred to a health center or county hospital by a TBA within the past quarter	15	107

Table 3: Selected Quality of Care Indicators in Facilities Participating in the Project

Ministry of Health Quality Indicator	Baseline 2010	Sept. 2012
% of deliveries benefitting from active management of the third stage of labor in participating facilities	68%	99%
% of births demonstrating compliance with partograph use in participating facilities	51%	94%
% of births documenting compliance with use of corticoids for fetal lung maturity in preterm birth in participating facilities	67%	96%
% of births documenting compliance with evidence-based case-management standards for premature rupture of membranes	0%	80%
% of newborns with documented compliance with essential newborn care standards in participating facilities	13%	91%
% of newborn asphyxia cases with documented compliance with evidence-based neonatal resuscitation standards in participating facilities	10%	94%

Figure 1: Increase in Assisted Births, Pujili County, January 2011–September 2012

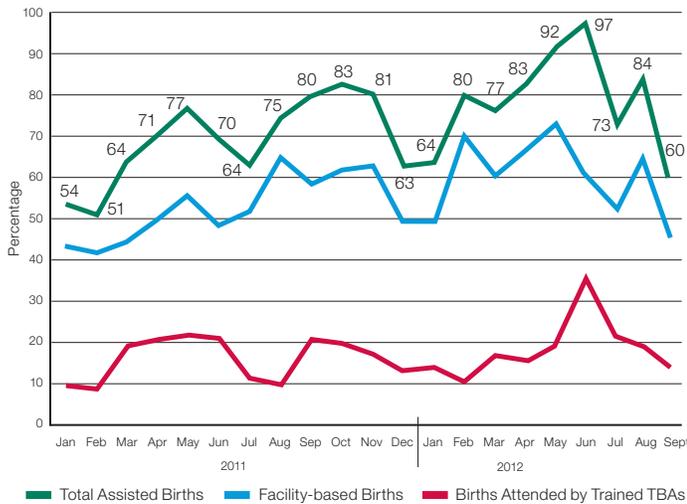
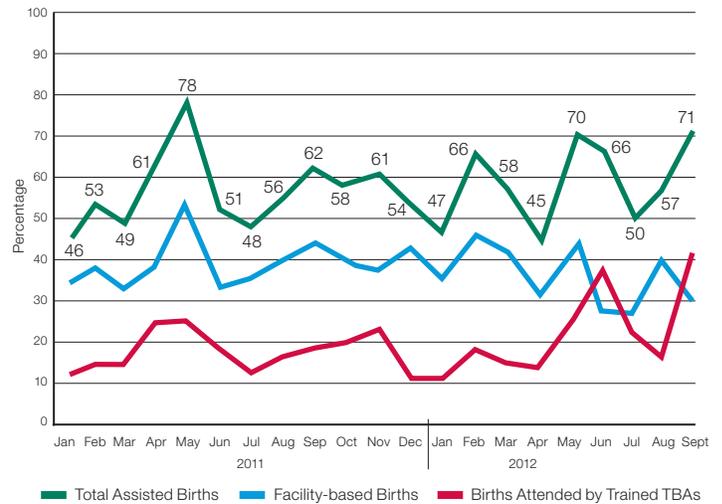


Figure 2: Increase in Coverage of Early Post-partum Care, Seven Micro-networks in Pujili County, February 2011–September 2012



and quality of home-based post-partum services as measured by TBA competence and knowledge.

Similarly, the project is demonstrating improved linkages between TBAs and parish health centers, an essential first step to building a better continuum of care for mothers and newborns. As demonstrated in **Table 2**, contact between TBAs and health centers has increased substantively from year one to year three. This increase is reflected in an increased number of referrals by TBAs, suggesting improved detection of mothers and newborns with complications during the critical early post-partum period and improved coordination between two historically divided systems of childbirth care in Ecuador's Andean region.

In addition to increasing access and use of high-impact services, the project is working with facility-based quality improvement teams who regularly monitor quality of care indicators and implement improvement actions to correct deficiencies. **Table 3** shows the evolution of compliance with selected quality of care indicators in facilities in the project's area.

The project also regularly monitors the quality of home visit activities conducted by trained TBAs, through observation of live or simulated home visit sessions with the use of a mannequin and a checklist. As seen in

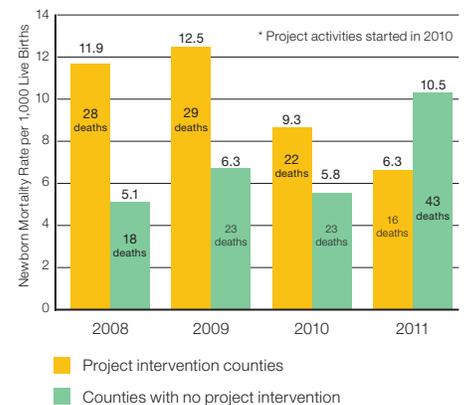
Table 1, TBA compliance with post-partum counseling standards has increased from 3% at baseline in 2010 to an average 69% compliance with post-partum counseling standards in the last quarter of 2012.

By linking TBAs, local organizations and the formal health system, the EONC networks approach has been able to increase skilled birth attendance in project target parishes. **Figure 1** shows the percentage of expected births in one of the earliest target counties (Pujili) which were attended either at MOH facilities or by trained TBAs who work regularly as part of the EONC network.

Likewise, the coordinated work of the EONC networks has resulted in an increase in the percentage of expected births in the area that received early post-partum care, either in the first 48 hours after delivering at a facility or through a home visit, as shown for Pujili County in **Figure 2**.

Recent official national data from Ecuador's national Institute for Statistics and Census (INEC) demonstrate a decreasing disparity between newborn mortality rates in project versus non-project parishes as well as clear reductions in newborn mortality rates in project intervention counties, as shown in **Figure 3**. These results show the project's success in reducing newborn mortality disparities in the most vulnerable parishes in the province.

Figure 3: Reduction in Newborn Mortality in Project Intervention Counties, 2008–2011



Expanding and Sustaining the Gains

In light of results generated by the innovative EONC network model in the Cotopaxi Province, Ecuador's national Ministry of Health (MOH) has started work to progressively scale up the model to the entire country as a central element of its national strategy to reduce maternal and newborn mortality. The USAID-funded EONC Networks Project is now working with the central MOH to draft a scale-up strategy of the EONC network model as it consolidates gains in project year four in Cotopaxi's 21 parishes.

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