Childbirth Education in Rural Haiti: Reviving Low-Tech Teaching Strategies

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ABSTRACT

On a medical mission into rural mountainous regions of Haiti, the authors were charged with teaching safer childbirth practices to untrained, mostly illiterate traditional birth attendants (TBA) who spoke Haitian Creole. In this isolated region with no physician or accessible hospital, almost all births occur at home. With no electricity, safe water supply, or sanitation facilities, childbirth education was a challenge. Accustomed to electronic, high-tech teaching aids, these childbirth educators had to modify educational strategies for these extraordinary circumstances. A successful solution was to revive decades-old teaching techniques and visual aids once used in Lamaze classes. The purpose of this article is to describe the teaching environment, the target audience, and the low-tech approach to childbirth education in Haiti.

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HAITI

The Human Suffering Index, devised by international health and population experts in 1991, ranked Haiti as the only nation in the Western Hemisphere categorized as "extreme human suffering" (Farmer, 2005). Three fourths of Haitians live in poverty on less than $2 per day, and half live in extreme poverty on less than $1 per day (World Food Programme [WFP], 2012). Even those living above these poverty lines have multidimensional deprivations in education, living conditions, and health (United Nations Development Programme [UNDP], 2011). Less than half of Haitian children attend school, with the average length of education being 5 years. Only 53% of the population can read. Two thirds of Haitians live in rural areas where less than half the population have access to clean water and only one tenth have access to sanitation facilities (Central Intelligence Agency [CIA], 2011). Half of Haitian families have only one room to sleep in (Pan American Health Organization [PAHO], 2012). According to the Haitian Health Foundation (HHF; 2010), living conditions in rural areas of Haiti are "dehumanizing."

According to the World Health Organization (WHO; 2012), 99% of maternal deaths occur in developing countries, particularly in rural areas and in

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poorer and less educated populations. The maternal mortality rate in Haiti is 300 deaths per 100,000 live births, and the infant mortality rate is 54 deaths per 1,000 live births. This compares to 24 maternal deaths per 100,000 and 6 infant deaths per 1,000 in the United States (CIA, 2011). One in 14 children does not survive to its first birthday (United Nations Children's Fund [UNICEF], 2006). Nine out of 10 births occur in homes—many of which have thatch roofs and mud floors—and are attended by untrained traditional birth attendants (TBAs). The high maternal and infant mortality rates can at least partially be explained by the home births in unsanitary conditions, the lack of skilled care, and the lack of transportation to distant hospitals and/or the inability to pay for care if complications arise (HHF, 2010).

These living conditions existed in Haiti before the earthquake and cholera epidemic of 2010 exacerbated the problems and further devastated the country (UNICEF, 2011). The 7.0 magnitude earthquake reduced much of Haiti to rubble, killed 220,500 people, left 500,000 homeless, and displaced 2.3 million residents (Brown, Ripp, & Kazura, 2012). The subsequent cholera outbreak affected 380,000 and caused 5,800 deaths (Chunara, Andrews, & Brownstein, 2012).

THE CHILDBIRTH EDUCATION CHALLENGE

The task of teaching childbirth education classes in Haiti was a challenging one for the authors, who were nursing professors with clinical experience in community nursing and maternity nursing as well as health education, childbirth education, and breastfeeding education. The physician who spearheaded the mission had periodically provided medical care in the area and was particularly concerned about the need for childbirth education. He recruited the authors because of their nursing and childbirth education experience. He and the mission liaison had well-established connections with key informants from this area of Haiti.

The native Haitian key informants included the only nurse in the area and a pastor and his wife. The nurse supervised the volunteer community health-care workers and the TBAs that included family members, untrained midwives, and community health-care workers who also functioned as midwives. Although the family members attend births out of circumstance and necessity, the community health-care workers and midwives volunteer for this role out of a desire to contribute to the health of the community. The other key informants were the pastor and his wife, respected leaders who are involved in all aspects of community life, and missionaries working with the pastor. Once these key informants were identified, there was frequent interaction to assess how best to approach this requested education. All content and materials were approved by these informants during the planning phase to ensure cultural sensitivity. With plenty of time to prepare, the key informants recruited the target audience through clinic and church promotions.

The authors had lived within the culture, eaten the traditional diet, and interacted with the target audience within their homes and at the clinic well in advance of the childbirth class. They had the assistance of many native Haitians including the key informants, the community health-care workers, and the interpreters. When preparing for the class, these natives reminded the authors that in that culture, the people can be very expressive, speak loudly, and have little regard for time. The authors, however, found the audience very respectful and careful to enter the class quietly when they were late. Because family and community support are also common in the Haitian culture, some participants attended for that purpose. Several participants were pregnant women who brought healthy, robust, well-dressed babies, which reminded the authors that Haitian culture considers children gifts from God. Parents will do almost anything to ensure that their children's needs are met, even if it means neglecting their own basic needs.

In addition to these contacts, the authors collaborated with other health-care providers from California, Chicago, and Italy who had participated in similar missions to that area to gain a better understanding of the task at hand and the modifications necessitated by the culture and the conditions. Major considerations included the environment in which the births would take place, the target audience of unskilled TBAs, and the teaching strategy modifications that would be required under these extraordinary circumstances.

The Environment

The first childbirth education consideration was the high-risk birthing environment. Globally, at least

1 woman dies every minute from complications of childbirth, and 20 more suffer injury, infection, or disease. Most of these deaths can be attributed to hemorrhage and infection compounded by unavailable, inaccessible, unaffordable, or poor-quality care. Most of these deaths would be preventable with access to adequate health services, equipment, and skilled health-care workers (United Nations [UN], 2010; WHO, 2012). Most maternal deaths occur during labor and birth and the immediate postpartum period with hemorrhage and sepsis being the primary causes (Ronsmans & Graham, 2006; WHO, 2012). Globally, about 25% of maternal deaths are caused by hemorrhage (Program for Appropriate Technology in Health [PATH], 2011; WHO, 2007), with the most common cause being failure of the uterus to contract adequately after birth (Matthews, Gulmezoglu, & Hill, 2007; Maughan, Heim, & Galazka, 2006). Hemorrhage is unpredictable, usually has a sudden onset, and without prompt skilled care can rapidly lead to hypovolemic shock and death. Delays in identifying postpartum hemorrhage, delays in transport to care facilities, and delays in receiving treatment contribute to the high maternal mortality from hemorrhage (PATH, 2011). In rural Haiti, with unavailable transportation and inaccessible health-care facilities, it was essential to emphasize to TBAs that uterine massage and putting the baby to breast immediately after birth can cause uterine contraction to minimize postpartal hemorrhage.

Next to hemorrhage, infection is a major cause of maternal mortality, accounting for about 15% of maternal deaths. Unhygienic conditions in rural homes in Haiti predispose to a high rate of maternal and neonatal infection, which can be effectively prevented by careful attention to a clean birth (WHO, 2012). Aseptic techniques and supplies can play a major role in reducing the incidence of infection (Maharaj, 2007). This includes hand washing, laying the baby on a clean surface, and tying and cutting the cord with clean supplies (WHO, 2012). Basic birthing kits can increase awareness and use of clean birth practices. These kits have been promoted by the PATH (2001) to improve clean birth practices. Recommended items included in the birth kits are soap to wash the birth attendant's hands and the woman's perineum, string and a clean razor blade to tie and cut the umbilical cord, plastic sheets to provide a clean birthing surface, and a pictorial instruction sheet to instruct the mother and/or birth attendant on how to use the items in the kit (PATH, 2001). Infants of mothers who used the basic birthing kit were 13 times less likely to develop cord infection than those whose mothers did not. Women using the kit were 3.2 times less likely to develop a postpartum infection. Furthermore, mothers who bathed before giving birth were 2.6 times less likely to develop sepsis and their infants were 3.9 times less likely to develop cord infection (Winani et al., 2007). With the assistance of donors, the authors prepared 50 birth kits to use in the childbirth classes in Haiti to help encourage a cleaner environment for home birth.

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The Target Audience

The second childbirth education consideration was the target audience of unskilled, mostly illiterate TBAs who spoke only Haitian Creole (see Figures 1 and 2). Ninety-nine percent of maternal deaths occur in developing countries where the number of skilled health workers remains low (UN, 2010). Social and economic development strategies such as education of women, reduction of poverty, family planning services, antenatal care, skilled attendance at childbirth, and emergency services for obstetric complications are interventions known to increase maternal health and decrease maternal mortality. In developing countries, however, where progress in these areas is slow, key factors that influence the maternal mortality rate are who births the woman and where she gives birth (Koblinsky & Campbell, 2003).

Women in developing countries deliver at home for, primarily, social and cultural reasons. In a study of where poor women in developing countries give birth, Montagu, Yamey, Visconti, Harding, and Yoong (2011) stated that the most common reason for not delivering in a health-care facility was lack of access. Other reasons were a lack of trust or poor quality of service at the facility, no female providers at the facility, believing it was not necessary or customary to give birth at a facility, and husbands or family members not allowing it. Cost was rarely a factor. Reducing maternal and infant mortality

Figure 1. Traditional birth attendants and pregnant women awaiting a childbirth education class in a church pavilion in Haiti.

among the poor should focus on making home birth safer by increasing the rate of skilled birth attendance (Montagu et al., 2011). The WHO (2004) contends that providing skilled attendants who can prevent, detect, and manage complications is the single most important factor in preventing maternal deaths. In developing countries such as Haiti, most women are assisted at birth by TBAs or family members, or they give birth unattended. The TBAs lack formal training to assist with home births. Training programs sponsored by governments and other organizations have attempted to improve their skills. Compounding the problem of unskilled TBAs is the lack of a referral system and transportation to distant hospitals should obstetric complications arise. Fifteen percent of all births are complicated by a potentially fatal condition that requires emergency services including facilities for cesarean surgery and blood transfusion. According to the WHO, training of TBAs without a back-up referral system is not effective in reducing maternal mortality. A Cochrane Review also examined the effects of training programs on pregnancy outcomes and concluded that their potential to decrease neonatal mortality was promising only *if* combined with improved health services (Sibley et al., 2009). Although TBA training programs have had limited benefit without a referral system, for many women, TBAs are their only source of care (WHO, 2004). Currently, the only referral system is the nurse in the clinic and medical care from physicians on medical missions. If medical problems arise beyond what they can handle, patients can be referred to a hospital in a neighboring town. However, few patients have transportation

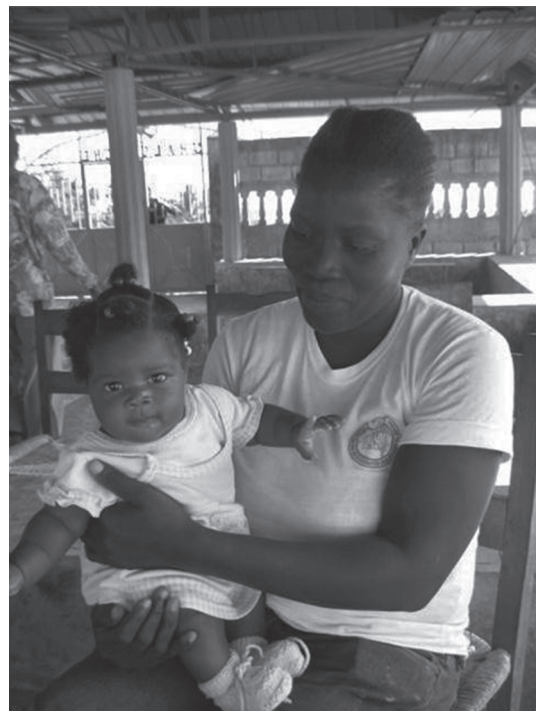

Figure 2. Haitian woman and infant attending the childbirth education class.

to the referral hospital and funds to pay for care. The community recognizes this as a real need and encourages its youth to pursue medical and nursing education and to stay to practice within the community. A local organization provides scholarships for promising youth at a college in a neighboring town. Nurses on medical missions to the area must serve as good role models and provide encouragement to these future health-care providers. They might also sponsor students in these very low-cost educational programs.

Teaching Strategies

The third consideration in teaching childbirth education in Haiti was modification of teaching strategies for this remote teaching environment and target audience. Recent childbirth education strategies used by the authors (for both student nurses and expectant parents) have included the use of PowerPoint slide presentations and DVDs requiring computer and projection equipment, YouTube clips requiring Internet access, and even high-fidelity childbirth simulators. In these remote regions, teaching aids needed to be portable and lightweight enough for airline transportation as well as motorcycle transportation into the mountains. They also needed to be techniques and teaching aids for conducting the class in an open air pavilion without electricity, computers, or Internet access. How could the instructors modify teaching strategies to fit these primitive conditions?

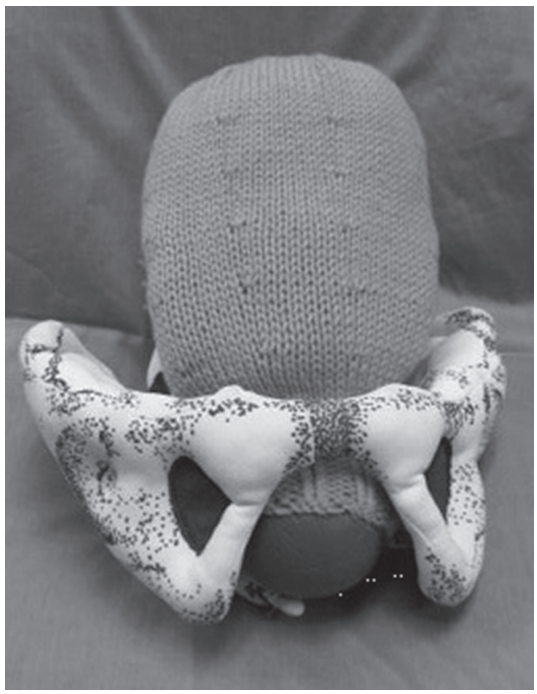

Figure 3. Fabric stuffed pelvis and knitted uterus used to teach childbirth classes to traditional birth attendants in Haiti.

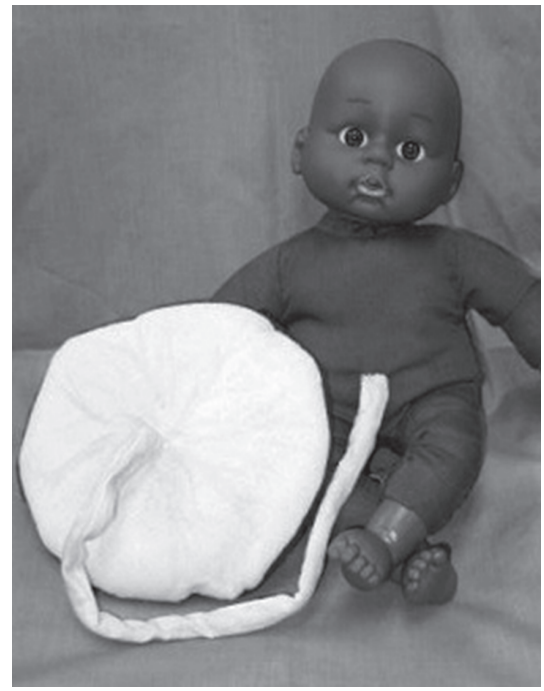

Figure 4. Homemade fabric placenta/umbilical cord and doll used to teach childbirth classes to traditional birth attendants in Haiti.

The selection of teaching strategies was obvious. The teaching aids used a half century ago to teach Lamaze classes would be perfect visual aids. The knitted uterus and the stuffed pelvis (see Figure 3) came out of storage. A homemade padded fabric placenta and umbilical cord were attached to a culturally appropriate dark-skinned doll with a soft stuffed body (see Figure 4). The knitted uterus and doll were used to demonstrate cervical dilatation and effacement. The doll and pelvis demonstrated the cardinal movements of labor (see Figure 5), and the doll and placenta/cord were used to simulate the clamping and cutting of the cord. The positions for labor, positions for pushing, and techniques for blowing or panting to prevent rapid expulsion of the head were physically demonstrated by the instructors.

Another teaching strategy was to demonstrate the use of items in basic birthing kits. Birthing kits with essential supplies for a sanitary home birth were distributed to class participants. Each item in the kit was shown and its use demonstrated. Pictorial instructions for use of each of the items in the birth kit as well as important techniques and safety

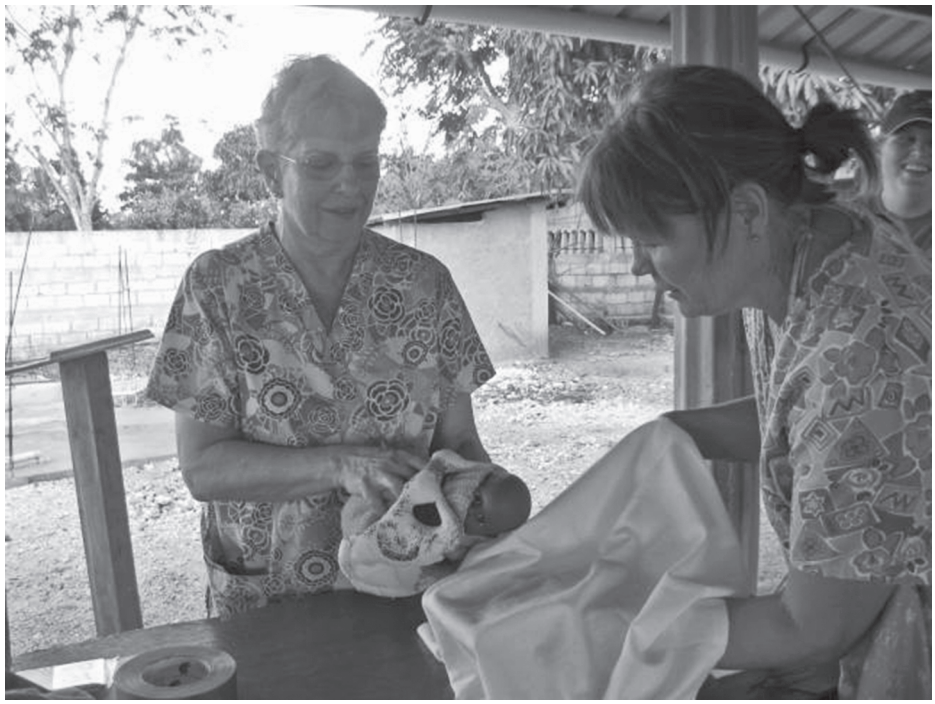

Figure 5. Childbirth educators using visual aids to demonstrate the mechanisms of labor.

precautions were included. Methods for clearing the airway and skin-to-skin positioning of the baby were explained and demonstrated. Putting the baby to the breast or massaging the fundus to stop bleeding was also demonstrated. Exclusive breastfeeding was encouraged to prevent the threat of cholera. Maintenance of cleanliness was emphasized throughout each demonstration.

The language difference necessitated teaching the class through a Creole interpreter. This required the use of the simplest terminology and avoiding figures of speech. It was necessary to speak clearly and enunciate well, pausing after every phrase or short sentence to allow the interpreter to decide how best to express what was said. This pause allowed the instructors to not only organize their thoughts before the next sentence but also gave them an opportunity to observe the audience for nonverbal cues about how the message was being received. The instructors had been concerned about the translation of many female anatomical terms, but were relieved that the interpreter was a medical student who seemed very comfortable with the terminology. As with all interpretation, it was necessary to maintain eye contact with the audience members and speak directly to them rather than speaking to the interpreter. However, it was a little frustrating when there seemed to be a conversation between the audience and the interpreter who was eliciting clarification of their comments and questions. Because it is important that the interpreter keep the educator in the conversational loop, it was often necessary to ask the interpreter about his complex interchanges with the audience to take advantage of teachable moments arising from questions and concerns from the audience.

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The focus of the class was on facilitating normal processes and maintaining cleanliness. However, some questions asked by participants were related to complications such as eclampsia, which presented the opportunity to encourage regular monitoring at the newly established blood pressure clinic supervised by the nurse who also attended the class. This could facilitate identification of risk factors, early recognition of signs and symptoms, and more frequent monitoring. The highest risk women could be prioritized for referrals and use of whatever meager resources are available. Although the only cure for preeclampsia is birth, simple, safe, and low-cost interventions have been

proposed by recent Cochrane reports. Low-dose aspirin for at-risk women has been reported to have moderate effectiveness in prevention of preeclampsia and its consequences (Duley, Henderson-Smart, Meher, & King, 2007). Calcium supplementation also appears to be beneficial in preventing preeclampsia in high-risk women in communities with low dietary calcium intake (Atallah, Hofmeyr, & Duley, 2006). Without facilities for induction and cesarean surgery, these low-cost, easily administered preventive measures might have promise in preventing preeclampsia and saving lives. Another concern that was raised in the class was what the mother would do if no one was there to assist with the birth. This prompted a discussion of modifications that the mother would make for an unattended self-delivery. Because teaching through an interpreter was a novel experience for the authors, it was surprising how time consuming the process was. Therefore, time management was important to cover the essential concepts in the time allotted.

EVALUATION

How can this childbirth education experience be evaluated? Short-term, it was evident that the TBAs showed eager attentiveness to the class and a hunger for any information they could receive, particularly the responses to their questions and concerns. They demonstrated a great appreciation for the birthing kits that were distributed. The medical student interpreter provided feedback expressing that the information was well-received and much appreciated, and that the experience had enkindled in him a desire to become involved in education of these TBAs on a regular basis. A missionary familiar with the culture and language provided a positive evaluation of the material that was presented as well as the cultural sensitivity with which it was delivered. Upon returning home, to achieve some continuity of education, feedback was provided to the educators who had assisted with the needs assessment and who will be embarking on future medical missions. The TBAs' eagerness for education to improve childbirth experiences for their people, in spite of the conditions they live in, was inspiring and engendered an eagerness to return to Haiti to implement lessons learned from this transformative experience. Although the mission was short, there have been opportunities to speak with the key informants and other locals through e-mail and social networking on Facebook. There has also been extensive communication with members of other teams that have gone to Haiti and those who plan to go in the future to compare notes and offer suggestions for follow-up on the original class.

IMPLICATIONS FOR CHILDBIRTH EDUCATORS EMBARKING ON MEDICAL MISSIONS

Before embarking on a medical mission, it is important to thoroughly prepare for the challenge:

1. Perform a literature review to find out as much as possible about the country and its people.
2. Find out how, where, and under what circumstances babies are born.
3. Investigate the causes and rates of maternal and infant mortality.
4. Assess circumstances that could be contributing factors such as water shortage, inadequate sanitation facilities, and lack of a waste disposal system.
5. Establish contact with key informants who can help with the needs assessment, orientation to the culture, promotion of the classes, and physical arrangements.
6. Do a thorough cultural assessment to learn about cultural and religious beliefs that can influence birthing practices.
7. Cultivate a willingness to learn how they do things, and how you can teach them to do those things in a safer manner, rather than trying to teach them how to do it your way.
8. Establish a network of professionals who have had similar experiences with the culture and seek their advice on what worked and what did not work, and what they would do differently the next time.
9. Find out what these professionals taught and seek to provide consistency and continuity of education.

Childbirth educators engaged in medical missions must remember that although they cannot change the lives of everyone in these underdeveloped countries in the short-term, their efforts are worth the possibility of saving even one mother or infant.

10. While serving in the mission field, be a good role model, recruiting and encouraging young people to pursue education in health care.
11. Advocate for and support medical and nursing education to empower local youth to prepare to meet the long-term needs of their communities.
12. Upon your return, network with those who succeed you, and provide the same advice and support you obtained.

Resources and links have been provided in the Appendix to assist with this preparation.

CONCLUSION

The mission provided care and education to the poorest of the poor who otherwise would not have received care, so we know that we made a difference. In measuring the success of a mission, it is helpful to contemplate the classic story of the *Star Thrower* by Loren C. Eiseley. A young girl walking on the beach after a terrible storm encounters thousands of starfish washed up on the beach. She throws them one by one back into the ocean to the amusement of onlookers. When asked why she bothers since she cannot save them all, she throws another back in and says, "But I made a difference to that one!" Moved by her persistence, the onlookers soon joined in and all the starfish were saved. Childbirth educators engaged in medical missions must remember that although they cannot change the lives of everyone in these underdeveloped countries in the short-term, their efforts are worth the possibility of saving even one mother or infant. Perseverance against great odds and knowing that we have the power to save or change even one life is a powerful personal motivator and can inspire others to join the effort toward a common goal.

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1. To learn more about what is included in a Basic Delivery Kit, go to: http://www.path.org/publications/files/MCHN_BDKG.pdf

Children_in_Haiti_-_One_Year_After_-_The_Long_Road_from_Relief_to_Recovery.pdf
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APPENDIX

Resources/Links

Basic Delivery Kit Guide
Program for Appropriate Technology in Health (PATH)
http://www.path.org/publications/files/MCHN_BDKG.pdf

Cleanliness, Clean Delivery & Cord Care
World Health Organization
http://helid.digicollection.org/en/d/Js2892e/

Cultural Competency and Haitian Immigrants
http://www.salisbury.edu/nursing/haitiancultcomp/preg_and_childbear_prac.htm

Goal 5: Improve Maternal Health
United Nations Millennium Development Goals
http://www.un.org/millenniumgoals/2008highlevel/pdf/newsroom/Goal%205%20FINAL.pdf

Haiti
Pan American Health Organization and World Health Organization
http://www.paho.org/english/dd/ais/cp_332.htm

Haitians
Salisbury University
http://www.fachc.org/pdf/mig_haitians.pdf

Making Pregnancy Safer: The Critical Role of the Skilled Attendant: A joint statement by WHO, ICM and FIGO (2004)
http://www.who.int/maternal_child_adolescent/documents/9241591692/en/

Maternal Mortality
World Health Organization
http://www.who.int/mediacentre/factsheets/fs348/en/index.html

Tips on Teaching in a Developing Country
Society for Education in Anesthesia
http://www.seahq.net/index.php?view=article&catid=57%3Acommittees&id=166%3Atips-on-teaching-in-a-developing-country&tmpl=component&print=1&layout=default&page=&option=com_content

Steps Toward Achieving Skilled Attendance at Birth
World Health Organization
http://www.who.int/bulletin/volumes/86/4/08-052928/en/index.html

WHO Recommendations on Prevention of Postpartum Hemorrhage
http://guideline.gov/content.aspx?id=13554

The World Factbook
Central Intelligence Agency
https://www.cia.gov/library/publications/the-world-factbook/