Journal of Midwifery & Women's Health www.jmwh.org

Review

Utilizing Task Shifting to Increase Access to Maternal and Infant Health Interventions: A Case Study of Midwives for Haiti

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The shortage of health workers worldwide has been identified as a barrier to achieving targeted health goals. Task shifting has been recommended by the World Health Organization to increase access to trained and skilled birth attendants. One example of task shifting is the use of cadres of health care workers, such as nurses and auxiliary nurse-midwives, who can successfully deliver skilled care to women and infants in low-resource areas where women would otherwise lack access to critical health interventions during the childbearing years. Midwives for Haiti is an organization demonstrating the use of task shifting in its education program for auxiliary midwives. Graduates of the Midwives for Haiti education program are employed and working with women in hospitals, birth centers, and clinics across Haiti. This article reviews the Midwives for Haiti education program and presents successes and challenges in task shifting as a strategy to increase access to skilled maternal and newborn care and to meet international health goals to reduce maternal and infant mortality in a low-resource country.
J Midwifery Womens Health 2016;61:103–111

Keywords: global health, health care workforce, maternal and infant mortality, midwifery education, task shifting

INTRODUCTION

Maternal mortality remains high in many developing nations, despite progress toward Millennium Development Goals to reduce maternal and infant mortality.[1] In the years between 1990 and 2013, the global maternal mortality ratio (MMR) decreased by 45%, from 380 maternal deaths per 100,000 live births in 1990 to 210 maternal deaths per 100,000 in 2013.[1] However, Haiti's MMR in 2013 was 350 per 100,000 live births, down from 670 in 1990. This is a uniquely high number of maternal deaths compared to other nations in the Caribbean and Western hemisphere.[1] This article describes the concept and use of task shifting in health care delivery and presents a case example of how the organization Midwives for Haiti has utilized task shifting for the education of more skilled birth attendants. Challenges, successes, and limitations of the program are discussed.

Background

National shortages and the misdistribution of health resources are present in many geographic settings. The misdistribution of health resources is common in areas where ethnic and cultural minorities are forced into remote areas or into urban slums.[2] In addition, in many settings professionals exercise occupational mobility and human resources are underfinanced. Factors that encourage health worker migration from developing countries include bad working conditions, politics, and the inability to use skills.[2–5] Although reliable figures on the health workforce in Haiti are not available, it is common for health professionals to emigrate, and international partners are known to pay higher salaries than the salaries paid by the Haitian government.[6]

The shortage of health workers worldwide has been identified as a barrier to achieving targeted health goals. The 2014 United Nation's Population Fund (UNFPA) report, *The State of the World's Midwifery*, identified the current and projected availability of skilled maternity care for the 73 countries that account for 96% of maternal mortality and 93% of newborn mortality.[7] These 73 countries have only 42% of the world's medical, nursing, and midwifery workforce. Given this problem, the World Health Organization (WHO) recommends the use of task shifting as a strategy to increase the number and proportion of births with a skilled birth attendant, thus improving access to key maternal and newborn health interventions.[8]

TASK SHIFTING

Task shifting is the "rational redistribution of tasks among health workforce teams. Specific tasks are moved, where appropriate, from highly qualified health workers to health workers with shorter training and fewer qualifications in order to make more efficient use of available human resources for health."[9] The first global conference on task shifting was held in Ethiopia in 2008, which led to global recommendations and guidelines on the use of task shifting in relation to HIV/AIDS services.[10] A 2007 WHO report from the HIV/AIDS program referred to task shifting as a recent term with a long history outside of HIV service delivery, noting that task shifting from physicians to health professionals with shorter training has been positive.[11]

The use of auxiliary health personnel in Zaire in the 1970s due to shortages of health care workers was an early example of task shifting, although the term was not in use at the time.[11] Examples of successful task shifting in high-income countries include expanding clinical service by using nurse practitioners, whereas nonprofessional community workers support patients living with chronic diseases.[11] Discussions of task shifting emphasize that effective task shifting requires health workers to be supported by interrelated parts of the health system.[8] Key factors for task shifting success include

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1526-9523/09/$36.00 doi:10.1111/jmwh.12396

Quick Points

- Task shifting is the means of shifting tasks from one level of caregiver to another to increase access to care.
- Haiti is currently meeting only 10% of the need for skilled birth attendants; an optimistic what-if scenario predicts only 37% of needs met by 2030.
- Midwives for Haiti has utilized several methods of reaching rural women with skilled care, including training skilled birth attendants and mobile prenatal clinics.
- Unless professional midwives invest time and resources into task shifting key life-saving skills needed by mothers and babies in developing countries, Millennium Development Goals addressing maternal and infant mortality will be continue to be unreachable by 2030.

training and supervision; access to needed supplies; clarity of roles and responsibilities; regulatory issues; salaries and working conditions; and working in the context of local community systems, including systems for referrals.[9]

High maternal and infant mortality rates are linked to financial and geographic barriers, along with deficient numbers of qualified health personnel, weakness of the health system, and lack of coordination of health workers working for private organizations.[6] For example, Haiti's current health care workforce is reported by UNFPA to meet 10% of the reproductive health needs of the population, projecting that 9% of needs will be met in 2030 if current workforce trends continue.[7] The report calculates where the country will be in 2030 if certain changes happen. The what-if trajectory assumes a 20% reduction in the number of pregnancies by 2030; a 2% annual increase in workforce efficiency until 2030; a reduction in workforce attrition by 50% over the next 5 years; and a doubling of the number of midwives, nurses, and physicians who graduate by 2020. If these changes were to occur, the health care workforce would then be able to meet 37% of the population's reproductive health care needs in 2030.[7] The what-if scenario, however, does not include a plan for how the changes would be accomplished.

The scarcity of health care is also reflected in Haiti's 2012 national data, which documented that only 36% of births took place in a health facility. In the Department Centre region, located in the Central Plateau, 25% of births took place in a health facility.[12] The 2009 World Health Statistics report estimated that there were 1949 physicians in the country, or 3 per 10,000 persons.[13] There were 834 nurses and midwives, or one per 10,000 persons. Garfield and Berryman estimated there were 1400 qualified nurses in Haiti in 2010, and 70% of them worked in Port-au-Prince.[14]

The acute shortage of midwives globally, and in Haiti specifically, is expected to remain a crisis for many years.[7,8] No advanced practice roles are recognized in Haiti at this time, although nurses assume advanced roles when other practitioners are not available.[8] This had the effect of informally shifting the work of professional nurse-midwives and obstetricians to nurses, nurse's aides, and untrained traditional birth attendants. As this occurred without appropriate training and support, the resulting outcome has been ongoing high maternal mortality.

MATERNITY CARE TASK SHIFTING IN LOW-RESOURCE COUNTRIES

Task shifting has been used in many low-resource countries for the purpose of increasing the number of skilled birth attendants.[15–24] A skilled birth attendant is defined by WHO as: "An accredited health professional—such as a midwife, doctor, or nurse—who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the postnatal period and in the identification, management and referral of complications in women and newborns."[25] A literature review reveals the complexity of factors that influence success or failure of task shifting efforts.

Traditional Birth Attendant Training as a Task Shifting Strategy

Adegoke et al reviewed the education curricula of health care workers providing maternity services in Nigeria and compared the curricula to the International Confederation of Midwives (ICM) *Essential Competencies for Midwifery Practice*.[15,26] They found that midwifery core competencies were met in the midwifery education program, but the training of community health extension workers was judged inadequate to view the health extension workers as skilled birth attendants. Foster et al described a midwifery education outreach program for auxiliary nurses in the Dominican Republic.[16] The auxiliary nurses had 9 to 12 months of training following high school, and the midwifery program was based on a strategy of education that included student participation and dialogue, adult learning theory, and the theory of "empowerment education for social change."[16] The evaluation documented stressful working conditions, which included power outages and the unpredictable availability of running water, supplies, and medications. The study recommended development of a midwifery program for auxiliary nurses in the Dominican Republic, to be accompanied by the creation of a supportive environment with sufficient resources.[16]

Kruske and Barclay reviewed the history and practice of traditional birth attendants who assist women in childbirth and who learned skills through apprenticeship and observation.[17] The training of traditional birth attendants has occurred since the 1920s and was promoted by WHO in the

1970s to 1980s as a strategy to lower maternal and infant mortality. Outcomes were evaluated as unsuccessful, and policymakers assumed that poor literacy and lack of scientific knowledge prevented traditional birth attendants from using skills effectively.[17] However, the authors of this review noted that little attention was paid to quality control in designing the training; local customs and cultural differences were ignored; and the trainees were not incorporated into the health care system. In addition, women are reported as continuing to prefer traditional birth attendants even when professional services were available, citing cost, custom, convenience, and kindness as reasons for choosing traditional birth attendants.[17] The authors conclude that true collaboration with traditional birth attendants is needed and specifically encouraged policymakers and the ICM to recognize and include traditional birth attendants as members of the health care team.[17]

The theme of lack of attention to culture and lack of respect of traditional birth attendants was also discussed by Chary et al in their analysis of the role of indigenous midwives in Guatemala.[18] This qualitative study sought to determine if perceived failure of indigenous midwife training initiatives are due to an inherent lack of ability or to barriers such as poorly designed programs, marginalization of trainees, and inattention to culture and language of the trainees.[18] The study found that classes were not taught in the trainees' native language, and trainers misinterpreted the inability to follow Spanish teaching as boredom or inattention. The authors conclude that policy shifts away from training indigenous lay midwives have not taken into account the poor quality of such programs and called for a root cause analysis to identify factors that diminished the efficacy of training programs.[18]

Several studies have examined the results of training frontline community health workers in rural Ethiopia, a country with high maternal and infant mortality.[19–21] Dynes et al documented effective learning by health education workers, volunteer health promoters, and traditional birth attendants, yet also identified that many health education workers do not prioritize maternal and newborn services, and families typically call traditional birth attendants to assist with birth rather than health education workers. Dynes et al emphasized that for gains to be made and sustained, education programs and services must be within an environment that enhances the role of frontline health workers; encourages communication; and increases demand for evidence-based, skilled services.[19] Another group of researchers reviewed knowledge and skills retention of community maternal health workers in rural Ethiopia, where 84% of the population lives. This analysis demonstrated the ability of varying cadres of health workers to acquire knowledge and skills related to maternal and newborn care. The health workers retained the majority of the knowledge and skills at 18 months.[20]

Challenges to Expansion of Task Shifting in Low-Resource Nations

Munga et al conducted interviews with health officials to characterize the extent and practice of task shifting in Tanzania.[22] Informants reported that task shifting was occurring in an ad hoc fashion and thought that implementation of task shifting was feasible, but many had concerns about the quality of services if appropriate policies and infrastructure were not in place before implementation.[22] Task shifting was seen as motivating health workers who assume higher level skills, and was also viewed as a strategy to encourage retention of health workers in rural areas. Acknowledging that the retention of nonphysician maternity clinicians in rural areas is low, the authors also emphasized that task shifting must be done along with additional long-term strategies and incentives in order to develop adequate numbers and levels of health personnel.[22]

A review of health care in Yemen in 2000 illustrates the cultural and geographic challenges in attempts to develop skilled health workers through task shifting.[23] In Yemen, untrained birth attendants have attended the majority of births in rural areas, and nomadic women commonly gave birth without assistance. A national curriculum began educating midwives in a 3-year program in 1997, and female primary health workers are trained in nursing and midwifery skills in a one-year course. Traditional values contributed to low numbers of female health workers. Families were reluctant to send their daughters away from home for training. Some daughters were prohibited from working in public service or from working at night for fear of harming their reputations. The authors described some of the daunting challenges to providing supervision and upgrading clinical skills for these cadres of health workers because distances between some health centers are more than 900 miles apart.[23]

Mexico is a middle-income country where most births are attended by physicians.[24] Maternal mortality rates have plateaued, and Mexico has not met international goals for maternal mortality.[24] Walker et al noted that nonphysician health professionals had never been evaluated or compared to the physician model of maternity care. In 2001, a midwifery school was established granting technical degrees in midwifery, and the nurses with bachelor's degrees learn skills to manage pregnancy and birth. The authors conducted a cluster-randomized trial in which midwives and nurses were placed in 27 clinics in 2 states that had high maternal mortality and then compared obstetric outcomes and access to care between the study sites and control settings that were serviced by physicians. The authors found that evidence-based practices were more likely to be implemented during labor and birth (odds ratio, 8.6; 95% confidence interval [CI], 2.9-25.6); birth outcomes improved in that more term newborns who weighed more than 2500 grams were born (incidence rate ratio [IRR] 2.4; 95% CI, 1.6-3.6), and the number of women who received care increased in the study sites (IRR, 1.3; 95% CI, 1.2-1.4).[24] The authors concluded that midwives and nurses with advanced maternity care training could be used to provide access to evidence-based maternity services. This study influenced national policy and led to the passage of legislation allowing the government to hire nonphysician and nonnurse professional midwives.[24]

Colvin et al reviewed qualitative research on task shifting to and from midwives to identify barriers and facilitators to successful implementation.[27] Task shifting practices in high-income countries are aimed at efficiencies and integration of services, whereas lower-income countries use task shifting to cover gaps in care. Task shifting often occurs without formal planning in an ad hoc manner in response to staff shortages,

poor outcomes, or lack of clarity in roles and responsibilities. The authors concluded that task shifting midwifery skills is complex and requires careful planning as well as ongoing supervision and support.[27]

An additional concern about the education of skilled birth attendants has been the time needed for education. The ICM has identified midwifery competencies that are essential regardless of program type or duration.[26] Fullerton et al reviewed competency-based education for midwifery training internationally.[28] The authors reviewed the varying pathways to midwifery and examined international efforts to provide skilled birth attendants for labor, birth, and immediate postpartum periods. They expressed concern that the emphasis on quantity is not accompanied by a corresponding emphasis on quality, asserting that the emphasis on quantity can undermine the development of skills that prevent complications.[28] The authors promoted the use of competency-based education using evidence-based curricula with a focus on outcomes; practice in the discipline must result in the skills for performance in the professional role. According to these authors, evidence does not support the idea that competency-based learning will shorten the period needed for education.[28]

Finally, Fulton et al examined task shifting from the economic perspective in order to identify the strength of the evidence and gaps in the evidence about task shifting, referencing the 2006 WHO report that acknowledges shortages of health workers whose limited numbers are not well matched to local health needs.[29] An economic perspective purports that the optimal mix of skills will use a combination of different types of health workers to achieve a target level of quality at the lowest cost.[29] In a review of 31 studies from low-income countries, the authors found that task shifting is a viable policy option for alleviating health care worker shortages. Examples of successful task shifting in Africa that were presented include using community based health workers to provide antiretroviral therapy for HIV/AIDS; surgically trained assistant medical officers produced similar patient outcomes as obstetrician-gynecologists.[29] Less successful examples of task shifting highlighted concerns for safety and quality, resistance by institutions and professionals, and challenges in sustaining motivation and performance.[29] The authors identified challenges in evaluating task shifting programs, including difficulty in evaluating contextual factors such as political support, amount of education and training of health workers, acceptability of health workers to the local community, living and workplace conditions, and leadership and supervision.[29]

Chen et al also examined multiple factors that affect access to skilled health workers.[30] These factors include the toll of HIV/AIDS, outward migration, and chronic underinvestment in human resources.[30] Evidence-based strategies that work to retain health care workers in remote and rural areas are based on education, regulation, and financial incentives, as well as management and social systems support.[2] Chen emphasized the necessity of multiple timelines and sustained investments that balance supply and demand—and the responsibility of national health systems to create jobs in remote and rural areas.[2]

In summary, it is important to note that task shifting will not solve all problems associated with health care worker shortages, and there is wide recognition that multiple complex factors are involved in successful task shifting. However, this brief example of the literature on task shifting demonstrates many successes of this approach.

CASE STUDY: MIDWIVES FOR HAITI USES TASK SHIFTING TO EDUCATE SKILLED BIRTH ATTENDANTS

Developing the Education Program

In 2005, Midwives for Haiti founders were invited by a group of Catholic health professionals to train skilled birth attendants for a rural birth center to be operated by a Haitian obstetrician (Nadene Brunk, CNM, MSN, personal verbal communication, March 2015). The first class of 8 students were *auxiliares* (auxiliary nurses) chosen by the obstetrician. The *auxiliare*, who has completed 18 months of nursing training, represents one of 2 levels of nursing recognized by the Haitian government. The *infirmiere* (nurse), who has completed 4 years of training, represents the second level.[7] A list of the multiple types of skilled birth attendants in Haiti is presented in Table 1.[7]

Collaboration with Haitian Ministry of Health

Early steps in planning the Midwives for Haiti education program involved collaboration with the Haitian government's Ministry of Health in the Central Plateau region. Meetings were held with the representatives of the Ministry of Health, the Society of Haitian Obstetricians and Gynecologists, and the Association of *Infirmiere Sage Femmes* (nurse-midwives). In 2009 the Director of the Ministry of Health for the Central Plateau signed a contract with Midwives for Haiti, which stipulated that the government-run hospital St. Therese Hospital, located in Hinche, the capital city of the Central Plateau, could be used as a training site for advanced obstetric training for *auxiliares* and *infirmieres* with valid diplomas. Since that time, a representative of the Ministry of Health has signed the diplomas of all graduates; the diplomas state that the graduates are *auxiliares* or *infirmieres* who have received advanced training in obstetrics. Midwives for Haiti refers to graduates as *auxiliare sage-femmes* (skilled birth attendants). Both *auxiliaries* and *infirmieres* have been in each class since the second class in 2008, and both are required to meet the same level of competency.

Benefits of this training program are acknowledged in a 2010 concept article, "Document de reflexion-Formationn et regulation des sages-femmes en Haiti (Planning document for the formation and regulation of midwifery in Haiti)."[31] This article summarized a February 2010 meeting with representatives of the ICM, UNFPA, and the Ministry of Health, with recommendations for developing a long-term plan to educate midwives in Haiti. In addition to recommending initiation of a 3-year direct-entry education program for midwives, the group recommended collaboration with traditional midwives and official recognition of *auxiliare sage-femmes*—the cadre of health workers educated by Midwives for Haiti—with these health workers working under obstetricians and *infirmiere sage-femmes*. The document specifically noted that the auxiliary sage-femmes work in the country, with little attrition, whereas many Haitian *infirmiere sage-femmes*

Table 1. Categories and Estimated Numbers of Skilled Birth Attendants in Haiti[3]

Haiti's Health Care Providers	Classification	Postsecondary School Education	Number in Haiti
Obstetrician	Advanced level associate clinician	7-9 years	400
Physicians/generalists	Nonspecialist doctor	5-9 years	374
Infirmieres, with and without licenses	Nurse	4 years	unknown
Infirmiere sage-femme	Nurse-midwife	4 years nursing education, plus 18 months midwifery education	201
Midwives for Haiti graduates	Auxiliary nurse-midwife	2-3 years	95
Auxiliare	Auxiliary nurse	A few months to 3 years	unknown
Matrones, traditional birth attendants	Traditional birth attendants	No formal education track	unknown

immigrate to other countries or are employed by private clinics or nongovernmental organizations.[31]

The Curriculum

Midwives for Haiti judged that if the *auxiliares* or *infirmieres* mastered content from *A Book for Midwives*, they could be safe providers of prenatal, birth, and postpartum care.[32] This text has been used in other underresourced countries, such as Guatemala and Mexico.[18] Other instructional materials included WHO midwifery education modules, White Ribbon Alliance materials, and a French language copy of the first edition of the American College of Nurse-Midwives Life Saving Skills modules. With these modest resources, the program began in 2006. The curriculum was updated in 2009 using global standards for initial education for nurses and midwives as a framework for a stronger and more structured curriculum and the WHO/ICM core abilities of skilled birth attendants.[25,33] The current 12-month curriculum owes much to the work of volunteers, such as midwifery students from Philadelphia University and the midwifery faculty of the University of Pennsylvania. Volunteer professional midwives have been an integral part of supporting the curriculum and students from the onset of the program. An evaluation study of the volunteer program in 2010 documented that volunteers were perceived as valuable to their education by Haitian students and also by their Haitian midwife instructors.[34]

Expanding Care in Rural Areas

Consistent with their mission statement to increase the numbers of women in Haiti who have access to skilled care, Midwives for Haiti became aware that women in outlying rural areas lacked access to prenatal care. Responding to this need, Midwives for Haiti started a program of rural care through mobile prenatal clinics in 2010. A custom-fitted Jeep was purchased to navigate rivers and the rugged countryside. Hundreds of women began to attend these clinics in school yards, churches, and outside in open fields under the trees. Despite improvements in access to prenatal care, most women in the regions served by the mobile clinics continued to give birth at home with *matrones* (traditional birth attendants of Haiti). As many as 90% of rural Haitian women still give birth at home without a skilled attendant.[8] As local *matrones* became acquainted with the mobile clinics, some brought in their patients and asked for education and clean birth supplies. Responding to the grass roots request, Midwives for Haiti explored how they could provide effective *matrone* training, recognizing this as another level of task shifting. A government-approved *matrone* training program developed by Management Sciences for Health was adapted for this purpose.[35] In addition to clean and safe birth techniques, *matrones* were taught risk factors of obstetric complications and were provided with supplies. They were invited into the prenatal clinics and the local hospital with their patients, thus integrating task shifting recommendations to value the contributions of traditional birth attendants and incorporating them into the health care system.[14,17–19]

Outcomes

St. Therese Hospital

In 2000, almost 89% of births occurred at home in the Department Centre region (Central Plateau, population $>$ 600,000), which is the catchment and referral area for St. Therese Hospital in Hinche.[35] Eleven percent of these births took place in a health facility, and 1.7% took place in a public facility.[35] In 2006, when the Midwives for Haiti program began in this public hospital, only 2% of the pregnant women in this catchment area gave birth there (Mario Cyr, personal communication, Organizazione Mondiale della Sanità (OMS) aka WHO, March 2012). The reported reasons why women did not give birth at St. Therese Hospital were: 1) no skilled providers were present the majority of the time; 2) they wanted to give birth at home because it is more culturally accepted, and the local *matrones* were more trusted than the hospital staff; 3) they saw the hospital as a place to go to die; and 4) getting there was

a challenge due to lack of roads, modes of transportation, and extreme poverty (Mario Cyr, personal communication, OMS aka WHO, March 2012).

Between 2006 and 2012, the demand for skilled care at birth changed in the Central Plateau region. The Ministry of Public Health's 2012 survey on Mortality, Morbidity and Utilization of Services documented that 25% of births occurred in a health facility in the Central Plateau region.[12] Today, graduates of the Midwives for Haiti program attend an average of 201 births per month at St. Therese Hospital (St. Therese Hospital 2015 birth log).[36] The outreach to *matrones* also brought several benefits. Midwives for Haiti staff learned more about local beliefs and practices, and students learned the importance of working with *matrones*. An additional benefit was that the hospitals and mobile clinics saw an increase in referrals (St. Therese Hospital birth log).[36]

Graduates in the Health Workforce

As of mid-2015, the majority of the 95 graduates of the Midwives for Haiti program work in 5 hospitals and 13 birth centers in districts throughout Haiti. Most are employed by other nongovernment organizations, and 6 are employed by the government in rural birth centers. The Mobile Prenatal Clinic program cares for more than 500 women per month in 20 villages using prenatal screening that includes routine testing for sexually transmitted infections and treatment for anemia and worms. The matrone program has more than 120 graduates and has trained 50 matrone trainers. Based on a workload capacity and statistics from several clinics and hospitals, the employed graduates of the Midwives for Haiti program are expected to conduct more than 60,000 prenatal visits and attend more than 9,000 births in Haiti during 2015 (Nadene Brunk, CNM, MSN, personal communication, March 2015).

DISCUSSION

Midwives for Haiti is using task shifting to educate nurses in the core abilities of skilled birth attendants in Haiti, thus increasing access to maternal and newborn care for thousands of Haitian women. Midwives for Haiti also uses task shifting to train traditional birth attendants to screen pregnancies for risks that necessitate referral to skilled care. The Midwives for Haiti program is an example of a small organization responding to WHO recommendations to expand the task shifting of medical skills in developing countries.[8,9] Nurses who graduate from the Midwives for Haiti program have studied and demonstrated core competencies of midwifery, including skills in prenatal care, normal birth, and postpartum care. Prior to graduation, they demonstrate skills in tasks such as neonatal resuscitation, administration of antihypertensive medications for severe high blood pressure, active management of the third stage of labor, administration of intravenous fluids for resuscitation for postpartum hemorrhage, bimanual uterine compression for postpartum hemorrhage, and suturing of minor perineal lacerations (Table 2).[37]

Midwives for Haiti has earned the trust of the community and of the Ministry of Health. A substantial factor in this trust is the program's attention to developing respectful relationships and learning the significance of cultural practices. Multiple findings in the literature have emphasized the

Table 2. Midwives for Haiti Skills Checklist[a]

1. Respectful communication
2. Consent for care
3. Universal precautions
4. Nutritional counseling
6. Prenatal visits
7. Obstetric history and physical examination
8. Identification of problems and risk factors
9. Prenatal examination
10. Calculate estimated date of delivery
11. Laboratory tests
12. Prenatal preventative care
13. Planning for delivery
14. Vital signs assessment
15. Evaluation and management of first trimester bleeding
16. Administer IM injections
17. Starting an IV
18. Peripheral IV inspection
19. Administration of intravenous medications
20. Urinary catheter placement
21. Evaluation of the fetal heart rate during labor
22. Evaluation of fetal position (Leopold's maneuvers)
23. Labor evaluation
24. Labor support
25. Labor management
26. Manage a normal cephalic delivery
27. Active management of the third stage of labor
28. Family planning counseling
29. Newborn evaluation
30. Newborn eye care and vitamin K injection
31. Evaluation and management of the fourth stage of labor
32. Complete care and evaluation of the postpartum
33. Post abortion care
34. Evaluation and management of ruptured membranes
35. Speculum examination
36. Cervical examination
37. Evaluation and repair of perineal lacerations
38. Induction of labor
39. Augmentation of labor
40. Post-operative care
41. Evaluation and management of preterm labor
42. Evaluation and management of pre-eclampsia
43. Evaluation and management of eclampsia
44. Evaluation and management of sexually transmitted infections
45. Management of postpartum hemorrhage
46. Jadelle insertion
47. IUD insertion

(Continued)

Table 2. Midwives for Haiti Skills Checklist[a]
48. Newborn resuscitation
49. Management of shoulder dystocia
50. Management of a breech delivery
51. Management of a prolapsed cord
52. Use of the partograph

Abbreviations: IM, intramuscular; IUD, intrauterine device; IV, intravenous.
[a]A complete description of the checklist items can be found at https://www.midwivesforhaiti.org/skills-checklist.html.
Source: Midwives for Haiti.[36]

impact of culture development and that a lack of attention to culture may cause training programs to be ineffective. Evans reviewed studies that evaluated the effect of culture on maternal mortality rates.[38] This review found that decisions women make for themselves and their infants impact morbidity and mortality and that culture is a dominant influence on behavior. The review presented examples of harmful cultural practices that affect maternal mortality, including cultural pressure for early marriage and childbearing; belief that bleeding after birth is necessary to cleanse the womb; and practices that cause direct harm, such as burning, cutting, limiting food and water, and exposure to infectious agents.[37] The implications for Midwives for Haiti and other task shifting programs are clear. To be effective, task shifting must be done in a context that develops and provides care that combines medical, spiritual, and social factors important to the community.

Challenges and Limitations

Midwives for Haiti acknowledges many challenges in developing and sustaining this education program to educate skilled birth attendants. Some of these challenges are sustainment of adequate funding, problem-solving of intermittent shortages of essential medications and supplies, lack of full integration with Haitian health care and health education systems, infrastructure development within the organization for program evaluation, and a weak national infrastructure that limits the collection of data on both morbidity and mortality and the workforce. Sustainability of this education program is a critical concern. Haiti is the poorest country in the Western Hemisphere, with inadequate resources committed to funding the education of health workers and salaries of health workers. Thus, it has been imperative to develop a base of committed individual and institutional donors. Led by dynamic and creative leaders, the organization is currently meeting its obligations. Long-term sustainability is difficult to ensure, but Midwives for Haiti's leaders are both creative and committed to success. Leaders' ongoing collaboration with the Ministry of Health is a strength that may lead to stronger integration within the Haitian health care system.

Continued Development and Future Plans

With a mission of increasing access to skilled care to pregnant women in rural Haiti, Midwives for Haiti began class 8 with 30 nurses in the fall of 2015. It will continue quality care initiatives at St. Therese Hospital in collaboration with the Ministère de la Santé Publique et de la Population (Ministry of Health and Population). The Mobile Prenatal Clinic program remains the most cost-effective method for delivering skilled prenatal care to hundreds of women in rural areas and has received funding for another year. A challenging goal is to continue development of data systems for needs assessment and program evaluation.

The absence of hospitals and birth facilities for rural Haitian women continues to be a barrier to skilled care. Midwives for Haiti believes that a skilled midwife in every village would be a cost-effective solution to this problem. With the support of the organization Every Mother Counts, Midwives For Haiti opened a rural birth center in Cabestor, Haiti in November 2015.

CONCLUSION

The global shortage of 2.4 million health care providers will not be easily solved.[2–4] Task shifting is a strategy for increasing access to vital health services, and strategies for retention of existing health care workers include developing better working conditions and investment from nongovernmental organizations in local health workers.[2–5,9] The work of Midwives for Haiti is an example of investment in local health workers and retention of those health workers. The controversy continues between grassroots organizations that use task shifting to provide training in midwifery skills versus the goals of groups such as the ICM, which supports a higher level of education for midwives. Yet, multiple authors have demonstrated the ability of different cadres of health workers to absorb and retain knowledge and implement skills, if the task shifting occurs with appropriate attention to cultural factors, supportive supervision, and within the context of the health care system.[16–24] The benefits of task shifting midwifery skills to nurses in Haiti have included: 1) an increased retention of health workers (only one out of 95 graduates has left the country), 2) increases in opportunities for employment for nurses with midwifery skills (a 91% employment rate including the 2015 graduates), 3) increased access to antenatal care for women in rural areas, and 4) increased numbers of births occurring in medical clinics and hospitals. At an approximate cost of $5600 per student, Midwives for Haiti has invested in individuals who are living and working in maternal health for a lifetime. This investment is crucial to reducing preventable maternal and infant mortality. The question now should be: How can we teach and task shift midwifery skills to persons who have access to the neediest women in the world with an approach that is "safe, efficient, effective, equitable, and sustainable?"[9]

AUTHORS

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CONFLICT OF INTEREST

The authors have no conflicts of interest to disclose.

REFERENCES

1. World Health Organization. *Trends in Maternal Mortality: 1990-2013.Estimates developed by WHO, UNICEF, UNFPA, The World Bank, and the United Nations Population Division*. Geneva, Switzerland: World Health Organization, 2014. Available at: http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2013/en/. Accessed January 10, 2015.
2. Chen LC. Striking the right balance: Health workforce retention in remote and rural area. *Bull World Health Organ*. 2010;88:323.
3. Nair M, Webster P. Health professionals' migration in emerging market economies: Patterns, causes and possible solutions. *J Public Health (Oxf)*. 2013;35:157-163.
4. Muslin I, Willis WK, McInerey M, Deslich S. Global worker migration: Crisis and opportunity in the nursing profession. *J Health Manag*. 2015;17(1) 1-10.
5. World Health Organization. *Migration of Health Workers: The WHO Code of Practice and the Global Economic Crisis*. Geneva, Switzerland: World Health Organization; 2014.
6. Pan-American Health Organization. *Health in the Americas. 2012 Edition: Country Volume*. Washington, DC: Pan American Health Organization; 2012. Available at: http://www.paho.org/hq/index.php?option=com_content&view=article&id=2151&Itemid=1876&lang=en&limitstart=3. Accessed February 2, 2015.
7. United Nations Population Fund. *The State of the World's Midwifery: A Universal Pathway. A Woman's Right To Health*. New York, NY: UNFPA; 2014: 110-11.
8. World Health Organization. *WHO Recommendations: Optimizing Health Worker Roles to Improve Access to Key Maternal and Newborn Health Interventions through Task Shifting*. Geneva, Switzerland: World Health Organization; 2012.
9. World Health Organization. *Task Shifting. Global Recommendations and Guidelines*. Geneva, Switzerland: World Health Association; 2008.
10. World Health Organization. *First global conference on task shifting*. 2008. Available at: http://www.who.int/healthsystems/task_shifting/en/. Accessed July 10, 2015.
11. World Health Organization. *HIV/AIDS Programme. Task shifting to tackle health worker shortages*. 2007. Available at: http://www.who.int/healthsystems/task_shifting_booklet.pdf. Accessed July 10, 2015.
12. Ministry of Public Health and Population (le Miniestere de la Sante Publique and de la Population-MSPP) Haitian Childhood Institute (l'Institut Hatien de l'Enfance-IHE). And ICF International, 2013: *Haiti 2012 Mortality, Morbidly and service Utilization Survey Key Findings*. Calverton. Available at: http://www.haitilibre.com/en/news-9007-haiti-health-emmus-v-2012-survey-findings.html http://www.haitilibre.com/images/SR199.eng.pdf. Accessed April 24, 2015.
13. World Health Organization. *World Health Statistics 2009. Health workforce, infrastructure, essential medicines*. Available at: http://www.who.int/whosis/whostat/EN_WHS09_Table6.pdf. Accessed April 23, 2015.
14. Garfield RM, Berryman E. Nursing and nursing education in Haiti. *Nurs Outlook*. 2012;60(1):16-20.
15. Adekoke A, Mani S, Abubakar A, Van den Broek N. Capacity building of skilled birth attendants: A review of pre-service education curricula. *Midwifery*. 2013;29:e64-e72.
16. Foster J, Regueira Y, Burgos RI, Sanchez AH. Midwifery curriculum for auxiliary maternity nurses: A case study in the Dominican Republic. *J Midwifery Womens Health*. 2005;50:e45-e49.
17. Kruske S, Barclay L. Effect of shifting policies on traditional birth attendant training. *J Midwifery Womens Health*. 2004;49:306-311.
18. Chary A, Diaz AK, Henderson B, Rohloff P. The changing role of indigenous lay midwives in Guatemala: New frameworks for analysis. *Midwifery*. 2013;29:852-858.
19. Dynes M, Buffington ST, Carpenter M, et al. Strengthening maternal and newborn health in rural Ethiopia: Early results from frontline health worker community maternal and newborn health training. *Midwifery*. 2013;29:251-259.
20. Goabezayehu AG, Mohammed H, Dynes MM, et al. Knowledge and skills retention among frontline health workers: Community maternal and newborn health training in rural Ethiopia. *J Midwifery Womens Health*. 2014;59:S21-S31.
21. Spangler SA, Gobezayehu AG, Getachew T, Sibley LM. Interpretation of national policy regarding community-based use of misoprostol for postpartum hemorrhage prevention in Ethiopia: A tale of two regions. *J Midwifery Womens Health*. 2014;59:S83-S90.
22. Munga MA, Kilima S, Mutalemwa P, Kisoka WJ, Malecela MN. Experiences, opportunities and challenges of implementing task shifting in underserved remote settings: The case of Kongwa district, central Tanzania. *BMC Int Health Hum Rights*. 2012;12-27. Available at: http://www.biomedcentral.com/1472-698X/12/27. Accessed 2/1/2015.
23. Penney DS. Meeting women's health needs in Yemen. *J Midwifery Womens Health*. 2000;45:72-78.
24. Walker D, De Marian L, Gonzalez-Hernandez D, Padron-Salas A, Romero-Alvarez M, Suarez, L. Are all skilled birth attendants created equal? A cluster randomized controlled study of non-physician based obstetric care in primary health care clinics in Mexico. *Midwifery*. 2013;29:1199-1205.
25. World Health Organization. *Making Pregnancy Safer: The Critical Role of the Skilled Attendant: A Joint Statement by WHO, ICM and FIGO*. Geneva: WHO; 2004. Available at: http://www.who.int/maternal_child_adolescent/documents/9241591692/en/ Accessed 2/9/2015.
26. International Confederation of Midwives. *Essential competencies for basic midwifery practice FE*. Available at: http;//www.internationnal midwives.org. Accessed February 2, 2015.
27. Colvin CJ, de Heer J, Winterton L, et al. A systematic review of qualitative evidence on barriers and facilitators to the implementation of task-shifting in midwifery services. *Midwifery*. 2013; 29:1211-1221.
28. Fullerton JT, Thompson JB, Johnson P. Competency-based education: The essential basis of pre-service education for the professional midwifery workforce. *Midwifery*.2013;29:1129-1136.
29. Fulton B, Scheffler RM, Sparkes SP, Auh EY, Vujicic M, Soucat A. Health workforce skill mix and task shifting in low income countries: a review of recent evidence. *Hum Resour Health*. 2011;9. Available at: http://human-resources-health.com/content/9/1/1. Accessed March 2015.
30. Chen L, Evans T, Anand S, et al. Human resources for health: overcoming the crisis. *Lancet*. 2004;364:1984-1990. Available at: http://www.thelancet.com. Accessed April 23, 2014.
31. Lynch B, deBernis L. Document de reflexion-Formation et regulation des sages-femmes en Haiti. *Concept Paper-Ecole_des_Sages-Femmes*-French.docx. March 2010. Accessed August 30, 2014. *United Nations Population Fund*. Ce document de réflexion a été développé à la demande du Dr Raymond, directeur du département de la Santé de la Famille au Ministère de la Santé publique et de la Population d'Haïti, à la suite d'une réunion avec le Dr Luc de Bernis, conseiller principal en santé maternelle au FNUAP et Bridget Lynch, présidente de la Confédération internationale des sages-femmes. UNFPA, 2010. 1-10. Available at: http://www.unfpa.org/ …/R334_Lynch_deBernis_2010_Haiti_ICM_UNFPA_Fond des Nations Unies pour la Population. Accessed March 2015.
32. Klein S, Miller S, Thomson F. *A Book for Midwives*. Berkeley, CA: Hesperian; 2013.
33. World Health Organization. *Global standards for the initial education of professional nurses and midwives*. Available at: http://www.who.int/hrh/nursing_midwifery/hrh_global_standards_education.pdf. Accessed March 2009.
34. Floyd B. Lessons learned preparing volunteer midwives for service in Haiti: After the earthquake. *J Midwifery Womens Health*. 2013;58:5598-568.
35. Management Sciences for Health, UNFPA Ministe Sante Piblik Ak Poilasyon, USAID. Gid antrènman ak òganizasyon pwogram matwòn. OMS Haiti; 2009. Ministère de la Santé Publique et de la

Population (MSPP). Enquête Mortalité, Morbidité et Utilisation des Services EMMUS-III Haïti 2000. Available at: http://dhsprogram.com/publications/publication-FR121-DHS-Final-Reports. Accessed April 24, 2015.
36. St. Therese Hospital Birth Log 2014 and 2015.
37. Skills Checklist. Midwives for Haiti. Available at: https://www.midwivesforhaiti.org/skills-checklist.html. Updated March 2014. Accessed August 18, 2015.
38. Evans EC. A review of cultural influence on maternal mortality in the developing world. *Midwifery*. 2013;29:490-496.