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Averting maternal death and disability

Quality of care in institutionalized deliveries: the paradox of the Dominican Republic

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Abstract

Objectives: To better understand the paradox in the Dominican Republic of a relatively high maternal mortality ratio despite nearly universal institutionalized deliveries with trained attendants, a rapid assessment using an adaptation of the strategic assessment method was conducted. *Methods:* A multi-disciplinary team reviewed national statistics and hospital records, inventoried facilities, and observed peripartum client–provider interactions at 14 facilities. *Results:* The major referral hospitals, where more than 40% of births in the country occur, were overcrowded and understaffed, with inexperienced residents overseeing care provided by medical students, interns and nurses. Uncomplicated labor and deliveries were overmedicalized, while complicated ones were not managed appropriately; emergencies were not dealt with in a timely fashion. In the peripheral hospitals physicians were seldom present and clients were either turned away or delivered by unprepared nursing staff. Providers in the busiest facilities suffered from compassion fatigue, and were demoralized and overworked. In all facilities, quality of care was lacking and the delivery and birthing process was dehumanized. *Conclusions:* Access and availability of institutional delivery alone is not enough to decrease MMR, it is also the quality of emergency obstetric care that saves lives.
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Keywords: Maternal mortality; Emergency obstetric care; Quality of care

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1. Introduction

The keystone in the arch of safe motherhood is the availability of emergency obstetric care [1]. However, despite many articles, research, and editorials about the components of emergency obstetric care and the specific focus on 'availability of high quality obstetric care' [1], confusion remains about the role of institutional delivery in reducing maternal deaths.

Despite a high rate of institutional deliveries, nearly universal prenatal care, and the reported presence of 'trained' attendance at deliveries, the Dominican Republic maintains a maternal mortality ratio (MMR) greater than 100 per 100 000 live births. In this paper we will review the maternal health situation in the Dominican Republic and the results of a multi-disciplinary strategic assessment [2,3] of delivery services, which was undertaken in order to understand why women continue to die during institutional labor and deliveries.

The Dominican Republic (DR), the second-largest nation in the Caribbean, occupies the eastern two-thirds of the island of Hispaniola. It has a population of approximately 8.2 million, an annual growth rate of 1.8%, and women of reproductive age (15–49 years) number 2.2 million [4]. Currently, 62% of the population lives in urban areas; 30% of the total population lives in the National District (comprising the capital, Santo Domingo, and surrounding peri-urban areas). National literacy is at 82%, and male and female literacy are approximately equal.

The DR is one of the fastest-growing countries in the Caribbean. The World Bank [5] considers the DR a lower-middle-income country, with per capita income in 2000 at US $2080, but there is income inequality. The Dominican Republic has achieved some major improvements in reproductive health, such as the decline of the total fertility rate (TFR) from 7.4 to 2.7 between 1990 and 1996. The contraceptive prevalence rate is 64%; female sterilization is the most used method [4].

1.1. Maternal care

In 1999, 97% of women were estimated to deliver in a health facility; public sector facilities are the delivery location for 65.8% of urban births and 31.9% of rural births [6]. The Ministry of Health and Social Welfare (SESPAS) provides public sector care. SESPAS facilities in the Dominican Republic comprise municipal hospitals at the local level (primary care) and, at the referral level, both regional hospitals and facilities specifically designated for complicated births called 'maternities' (*maternidads*). In practice, however, the majority of women who deliver at one of the major maternity hospitals located in the National District have uncomplicated deliveries and are self-referred. Hospital records reviewed for 2000 showed that 62.3% of all parturients delivered with a general physician, 29.4% with an obstetric specialist, and 3.8% with a nurse [7]. The cesarean section rate was 27.5%, ranging from 24.0% in rural areas to 30.2% in urban areas [8]. Over 30% of pregnancies occur in adolescent women [9]

The causes of maternal deaths were identified as toxemia (45.8%), complications of abortion (19.4%), hemorrhage (11.1%), cardiopathies (9.7%), and 13.9% 'other causes' [10]. Six percent of maternal deaths were attributed to obstructed labor. Both the high rate of toxemia and the relatively high rate of obstructed labor are puzzling in light of the reported prevalence of institutional delivery.

The absolute number of maternal deaths and the estimated MMR in the DR are unclear [10–14], despite multiple investigations using a variety of methods. The most frequently cited statistics are from the 1996 Demographic Health Survey [4] that found an MMR of 229 using the sisterhood method [11]. Cáceres [10] estimated 110/100 000 for the National District in 1996, while Miller [12] using SESPAS data and hospital birth statistics for the National District estimated 140/100 000. If confidence intervals had been provided, we would probably find that these estimates are not different. No matter which figure is used, these estimates for maternal mortality are high given the other demographic, health, social, and economic characteristics of the DR, such as high rates of literacy, moderate rates of anemia during pregnancy, the relatively well-developed and maintained road system, the large number of private and public vehicles, and accessibility of health care facilities [5].

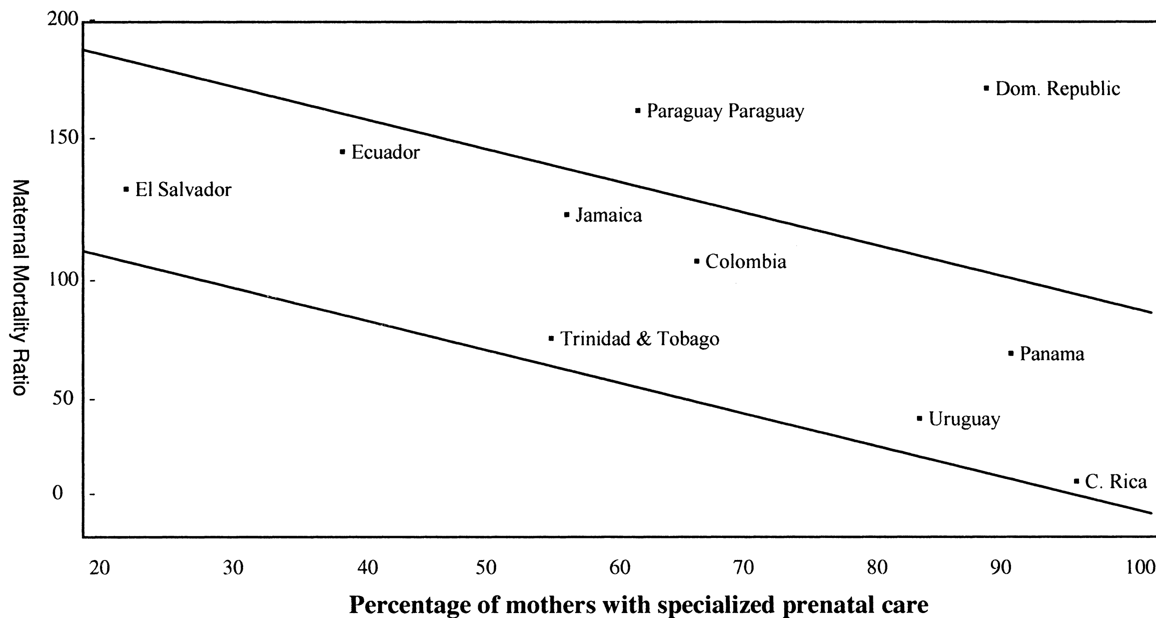

Fig. 1. Relationship between specialized prenatal care and maternal mortality in several Latin American and Caribbean countries, 1990.

The *Sistema Nacional de Vigilancia Epidemiological de Mortalidad Materna* [15] estimated that 61.7% of all maternal deaths they investigated were preventable.

Cerda [16] analyzed 28 cases of maternal deaths, of those, 24 (86%) occurred in public facilities. In 23 cases the death occurred in an institution with basic obstetric functions; in 21 cases the centers reported that they had the resources necessary to manage the case. In only three cases were there problems with resources (two lack of blood and one lack of transportation); while in 20 cases it appeared that the basic National Norms of attention had not been followed.

1.2. The paradox

An inverse association of high prevalence of institutional delivery and decreasing MMR, as demonstrated in Figs. 1 and 2, has held throughout Latin American/Caribbean countries, except for the Dominican Republic [10].

The current paradox of high MMR despite high rates of antenatal care and institutional delivery, calls into question the quality of maternity care in the DR. In response to this paradox and in line with other efforts at health reform in the DR [17], SESPAS, along with the Executive Commission for Health Sector Reform (CERSS) developed a set of National Norms (*Serie de Normas Nacionales*) to reduce maternal mortality by standardizing quality of technical care in institutional delivery. These include: Number 2 (*Vigilancia Epidemiológica de la Mortalidad Materna,* [18]), Number 5 (*Atención a la Mujer Durante el Embarazo, Parto, Puerperio y del Recién Nacido* [19]), and Number 7 (*Normas Nacionales para el Manejo de las Principales Urgencias Obstétricas* [20]). Likewise, SESPAS has created *El Plan de la Movilizacion Nacional* in order to reduce the MMR from '120 to 80 maternal deaths per 100 000 live births' [20].

Technical quality alone is not the sole goal of the National Norms. They also recognize health rights in general, and, specifically, reproductive health rights, the rights of women and children to dignified and ethical care, and to the social welfare

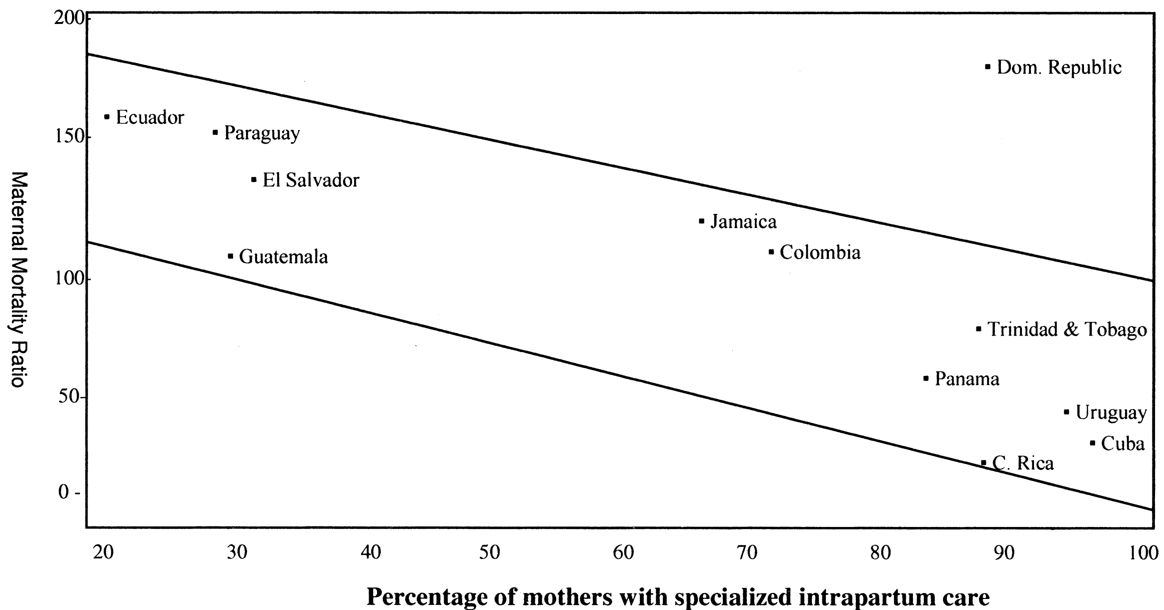

Fig. 2. Relationship between specialized attention in labor and delivery and maternal mortality in several Latin American and Caribbean countries, 1990.

that attends the reproductive health Norms:

> This also represents the promise and the moral responsibility of those whose daily interventions will be on the side of women and children at all service sites and whose activities will result in positive welfare, not only of health, but social welfare, that is a necessary component of reproductive health. It is for this reason that the attention that is given to women in labor should not be routine, but must be given with elements of quality and of high ethics so that all are treated with respect and dignity. [19]

2. Methods

A collaborative group from SESPAS, the United States Agency for International Development/DR Mission, local and international NGOs, with technical assistance from the Population Council, adapted and modified the World Health Organization Strategic Approach [2,3] as a method for assessing maternal health (MH). The strategic assessment is used to conduct a rapid, largely qualitative assessment to help governments define policy choices and research. This maternal health assessment was part of a larger assessment of overall reproductive health (RH) [21].

The strategic assessment relies on existing information to generate focusing questions, which guide the collection of mainly qualitative data that can be used for policy changes and service interventions to improve reproductive health and the quality of health services. The DR maternal health assessment was designed to examine current maternal health programs and policies; the unmet needs of maternal health care clients, and the capacity of service delivery systems to deliver quality care.

One of the first steps in a strategic assessment is to learn what is known about reproductive health problems in a country. A team from the Population Council conducted a literature review of existing documents on the status of maternal health in the DR, prepared a background document [22], and presented its findings at a dissemination workshop attended by over 50 governmental, non-governmental, national and international stakeholders. One of the purposes of this meeting was to prioritize problems, select a technical advisory

group, and for each stakeholder organization to nominate assessment team members.

The assessment team that resulted comprised a multidisciplinary group of 11 social scientists, nurses, midwives, physicians, and statisticians. Three provinces were selected for data collection, the National District, one agricultural region, which is the second most populated in the country, and one rural, economically depressed region. While the majority of maternal deaths occur in hospitals in the National District, the women who deliver there are often from one of the two other regions.

The team developed a set of tools for data collection, these comprised observation checklists for client/provider interactions, grids for collecting service statistics from record reviews and hospital birthing logs, and interview guides for individual and focus group interviews with providers, clients, and other stakeholders. The tools were pre-tested in the National District and revised accordingly.

The team examined availability, quality, and access of maternal health services at 14 facilities at the clinic (prenatal care only), municipal (primary or peripheral level) hospital, and referral center (maternity) level. During this assessment they observed and/or interviewed 57 prenatal patients, 55 women in labor, 21 women having vaginal deliveries, and six cesarean deliveries. They also interviewed and/or observed 88 providers of antepartum, labor, delivery, and postpartum care, including nurses, general doctors, obstetrician/gynecologists, residents, interns, and students. (Note: this number does not include the non-clinical personnel, such as hospital directors, administrators, or other administrative or laboratory personnel who were also interviewed.)

Primary data collection and synthesis occurred between November 2001 and February 2002. Draft findings were presented to the technical advisory group, then to SESPAS leadership, and next presented at a dissemination stakeholder's meeting. Recommendations and action plans developed at the meeting were incorporated into a final report [21]. The findings described here include the results of all investigations and stakeholder input pertaining to the immediate peripartum.

Table 1
Deliveries at referral level hospitals, 10 months, 2001

Institution	Cesarean section (%)	Mean births per month	Deaths (*n*, MMR)
A	22	1766	Not documented
B	31	726	12 (99/100 000)
C	45	475	Not documented
D	21	499	0
E	42	255	0
F	31	363	Not documented
Total	29	4084	

3. Findings

3.1. Referral level facilities

There are five facilities in the National District dedicated to high risk or complicated referrals; the assessment team visited four of them. For the referral-level facilities visited by the team in the three regions, statistics compiled over the preceding 10 months (January through October, 2001) are shown in Table 1. It is important to note that although institutional level Maternal Mortality Committees exist at all facilities, the team sometimes encountered facilities that did not keep track of maternal deaths in their labor and delivery statistics.

Both Table 2 and the following narrative accounts are composites of the observations found during the assessment. While these are composites, it should be noted that there were similarities and differences between the referral-level National District facilities as to size, cleanliness, order, and management. It seemed that the less crowded the facility, the more attention was paid to quality of care, management, and cleanliness.

Table 2 lists specific National Norms for both normal labor and delivery (Normas de atención a la mujer durante el embarazo, parto, puerperio y del recién nacido [19]) and the delivery of emergency obstetric care (Normas Nacionales para el Manejo de las Principales Urgencias Obstétricas [20]) in one column, and lists in the column opposite the norm how often the team observed activities at the major maternity and referral facilities that violated the National Norms. Following

Table 2
Adherence to Norms for care of labor and delivery at three referral level hospitals

Norm	Observation if Norms were followed
Series no. 5: Norms for the attention of women in labor and delivery [19]	
Bring to the delivery ward when the woman is dilated 10 cm (primip) and 8 cm (multip)	Norm sometimes followed, often multips were delivering or had delivered when brought to delivery ward
Guarantee giving attention to the laboring woman, quality care, a clean birth, and a safe delivery	Norm sometimes followed
Protecting the perineum is the principal way to prevent tearing	Norm never followed
An episiotomy should not be performed routinely. When an episiotomy needs to be performed the laboring woman should be informed[a]	Norm never followed, episiotomies were frequently observed to be performed routinely; women were NOT informed prior to episiotomies
During delivery never push on the uterus to hasten the delivery	Norm never followed, external uterine manipulation and stimulation were routine
Wait for spontaneous delivery of the placenta NB norm is not active management of the third stage	Norm never followed manual removal of placenta (from vagina or uterua) often done
Examine the placenta and membranes to see that they are normal and complete	Norm always followed
Put the baby to the breast immediately	Norm never followed
Counsel about postpartum family planning	Norm never followed
Series no. 7: Managing obstetric emergencies [20]	
Wash the perineum and vulva with an antiseptic solution	Norm sometimes followed, often with water only
The left lateral side is the preferred position for labor	Norm never followed
Monitor the fetal heart rate and contractions every 15–30 min	Norm rarely followed
Monitor the progress of labor through vaginal exams that are performed under strict aseptic conditions, use a partograph or follow the curve of labor	Norm sometimes followed, charts kept but monitoring not always timely
Place the delivering woman in the modified lithotomy position	Norm sometimes followed
Catheterize the bladder only if it is necessary	Norm never followed
Cover the patient with sterile clothes	Norm never followed, only legs covered
For nulips always perform an episiotomy, for multips only when necessary[a]	Norm never followed for multips, all women were given episiotomies routinely
Perform episiotomy after giving local infiltration anesthesia	Norm sometime followed, episiotomies were observed being performed without anesthesia

Table 2 *(Continued)*

Norm	Observation if Norms were followed
Continue to monitor the fetal heart rate in the delivery ward	Norm never followed, no fetal heart rates were observed being taken in the delivery room
It is necessary to control the speed of delivery to allow the fetal head to go through the normal deflection and progressive and gradual delivery	Norm never followed, all deliveries were conducted rapidly
After the delivery of the head, aspirate the nares and oral pharynx	Never (births occurred too rapidly, suctioning was performed after complete delivery)
Place the baby to breast as rapidly as possible	Norm never followed
Deliver the placenta by maintaining sustained traction on the cord while gently holding the uterine fundus in the superior part of the abdomen	Norm sometimes followed
Immediately inspect the cord, membranes, and placenta	Norm always followed
Immediately inspect the cervix with ring forceps	Norm always followed, but not always with adequate light
Repair the episiotomy or laceration	Norm always followed, but not always with adequate light
Inspect the vagina after the repair and remove all gauze or tampons	Norm always followed
Take the pulse, blood pressure, and monitor if the uterus is firm and if there is genital bleeding	Norm sometimes followed
Take the patient to recovery when you are sure that there is no abnormal bleeding and vital signs are normal and stable	Norm never followed

$N=55$ labors, 21 deliveries. Observation rating: were Norms followed (always, sometimes, rarely, never)
[a] These two Norms are in conflict.

that table are narrative descriptions of observations from the labor and delivery wards.

3.2. Narrative composite description

In the following composite description of labors and births observed during a 3-day period at four referral-level hospitals in the National District, the above mentioned National Norms will be used as the lenses by which to view the activities; the most commonly violated Norms will be described and a reference to the Norm violated will be placed in parentheses after the description. This composite description covers observations of 55 laboring women, 21 vaginal deliveries, and three cesarean sections. For the purpose of clarity of exposition, and in fitting with the keystone of safe motherhood being EmOC, it would be ideal to separately describe the treatments accorded to normal labors and births and to complicated labors and births. However, one of the major problems in the quality of care in institutionalized births in the Dominican Republic was that there were not different levels of care given to the different needs of women with and without complications. No distinctions were obvious to the trained clinical observers who watched the care of parturients in the open labor and delivery wards of the main referral hospitals in the National District. For example, the team observed two women with diagnosed pre-eclampsia, one at each end of a noisy overcrowded ward of 14 other laboring patients. Neither woman was afforded the privacy, dim lights, nor quiet the Norms prescribe [20]. One woman had received magnesium sulfate and was unresponsive to verbal stimuli, there was no

evidence of her vital signs being monitored for signs of magnesium sulfate toxicity, there was no emergency cart nearby, nor did the observers note the availability of calcium gluconate.

Most striking to the team was the lack of adequately trained attendants, despite the presence of multiple staff members (this is in contrast to the understaffing seen at the *lower-level* hospitals described later). In 1 h at one of the referral hospitals 12 births took place; the most experienced person in the delivery ward was a first-year resident with 5 months of service. The other eight providers were interns and medical students, and (at least) four nurses. Although more experienced providers did lead the students on educational rounds, and occasionally a higher-level provider was noted to walk through the area, perhaps on their way to a clinic or to surgery, during the time of the team's observations (between 09.30 h and 14.00 h) few of these experienced, senior providers were seen caring for patients or teaching hands-on care to interns or students.

3.2.1. Labor wards in referral level hospitals

In general, the wards were overcrowded; some women labored two to a bed. The women labored alone, unaccompanied by family or friends. Although there were many students, interns, residents, and nurses, little attention was paid to the laboring women. Vital signs, fetal hearts, and a vaginal exam were taken and recorded approximately every 4–6 h, although a partogram was part of the patient chart, progress was not always charted, nor were management decisions based on the partogram. Women were not informed of the results of their examinations. Women with complications labored together with those labeled 'normal' in the one large, brightly lit and noisy ward. Some women were naked, most were lying on bare plastic mattresses, the one sheet having been soiled with urine, feces, or drenched in amniotic fluid. There was no privacy, no dignity, and no attempt to honor the human and reproductive rights of the laboring women. In addition, no attention was paid to even the most basic and obvious signs of physiological labor or of problems.

For example, a large group of residents, interns and medical students made rounds, led by their professor, a senior attending provider. This provider asked questions about labor management and diagnosis; however, no attempt was made to teach the students how to relate to the women as human beings, not just laboring bodies. At one point a woman gave birth unattended while a group of students stood around the bed across the aisle from her, no one noticed the very clear sounds of impending delivery amid the noise, cries, and conversations.

Overall cleanliness and orderliness of the ward were poor. Needles, intravenous catheters, and other dangerous waste were found in the beds and on the floor. Body fluids were also in the beds and on the floor. Trash containers were loosely woven plastic with no lids, so that even when trash was placed in containers it could fall out easily. The team's impressions of the labor ward were noise, dirt, overcrowding, lack of privacy and dignity, lack of attention, and over-medicalization of women without complications, while ignoring or under treating women with complications.

3.2.2. Delivery wards in referral level hospitals

A buzz of conversation was constant, with nurses, doctors, and students conversing among themselves, often about matters other than the birthing women and in contradiction to the National Norms [19], 'guarantee the parturient quality care'. Each patient, regardless of her gravidity, parity, presence or absence of complications, was accorded the same treatment for delivery—rushed into the delivery ward in a wheelchair, made to walk in bare feet across the often dirty, glass- and needle-strewn floor to the delivery table, put flat on her back with her legs in stirrups, often naked, in front of a group of residents, interns, and students. A nurse would pour a liter bottle of cold water over the patient's abdomen and perineal area as a form of 'surgical preparation' (often without soap or antiseptic, [19]). Next, one of the many providers would cut a large medio-lateral episiotomy ([19] 'episiotomy should not be routine' AND, 'protecting the perineum is the principal method to prevent tearing'), again, without attention to whether the patient was a primipara, multipara, or if the baby needed rapid delivery. In fact, while fetal heart rates were occasionally

auscultated in the labor ward, this was not the case in the delivery ward [20].

After the episiotomy was cut, it was common for the attending personnel to switch places, and the person who would deliver the baby would replace the person who cut the episiotomy. The delivery was conducted as rapidly as possible, with nurses and doctors yelling at the woman and using extreme force to pull the baby out of the woman's body [20]. As one observer stated, ''The resident did everything except put her foot up on the woman's bottom and pull. I've never seen anything like it. The baby was yanked out.'' Indeed, the trained clinician observers noted that basic obstetric anatomy and physiology, such as allowing the baby to rotate spontaneously, and the slow delivery of the head, were ignored.

All of the births observed resulted in a similar neonatal response. The babies were pale or gray and limp. The team did not observe a single newborn put to breast or even given to the mother to hold ([19] 'Put the baby to the breast immediately'). The babies were handed off to pediatric residents or students. Babies were only rarely received into a blanket or towel, or rubbed or stimulated at the bedside; rather the wet, cold, limp babies were rushed out of the labor ward, often with the running pediatric resident shouting over her/his shoulder, ''What is the mother's name?''

Immediately after the birth, a third provider would deliver the placenta. This was generally followed by a manual exploration of the mother's vagina and uterus. More cold water was then poured over the woman's abdomen and perineum, and then the placenta was inspected for completeness [20].

Often a fourth provider would repair the episiotomy. In most cases there was no special light used to illuminate the multiple layers of tissue involved; rather a medical student or intern would be left alone with some suture; occasionally a nurse would pour water over the perineum. Very little communication was observed to take place between the providers and the clients, and none of it was observed to be counseling or education.

After the woman's perineum was repaired, the provider would leave and the woman was left to lie (often in her own blood, urine, feces, and/or cold water) on a plastic sheet with her legs in stirrups [19,20] until a nurse would come along to check vital signs or a porter would arrive with a wheelchair. The observers noted that women brought their own towels and clothes and would often get themselves up, dry themselves off with their own towels, and change from their wet, bloody clothes (if they weren't already naked) into their own nightclothes. They then walked barefoot across the bloody, slippery floor to the wheelchair. The porter would wheel them into the hall where they would wait; sometimes they would be given their babies, sometimes not. There was little information communicated about the newborn's condition, if he/she was not given to the woman.

3.2.3. Quality care possible

While the descriptions above covered most of the referral hospitals observed, at one National District facility, which conducted approximately 15 deliveries daily, the team found the following: a specialist ob/gyn was on duty in the hospital 24 h a day and specialists and/or senior residents supervised the services and the students. First-year residents cared for parturients without complications, while specialists and fourth-year residents cared for those with complications. There was a special area for women with pre-eclampsia. The team did not observe any deliveries in this location, but did observe one patient in labor who appeared to be treated with respect. It is possible that the quality of care, which seemed higher in this one institution, can be related to the lower census, as well as to the hospital director's and staff emphasis on quality of care.

3.2.4. Peripheral and primary care facilities

Although complicated pregnancies are intended to be cared for only at the maternity/referral-level, since complications can occur at any time, to any pregnant women, all facilities should be capable of early identification and treatment, stabilization, and referral of complications [23]. Currently the lower-level facilities are not prepared, equipped, stocked, or adequately staffed to provide quality EmOC. Table 3 shows birth statistics for three

Table 3
Deliveries at three peripheral level facilities, 10 months, 2001

Facility	Cesarean section (%)	Mean births per month	Deaths
A	6.5	50	0
B	1	40	0
C	0	11	0
Total	3.6	101	

peripheral facilities for the 10-month period (January–October, 2001). Municipal (peripheral) hospitals are instructed to refer patients with complications to higher levels; therefore the low rate of cesarean section reflects this trend. Many municipal hospitals do not provide delivery services.

Lower-level (peripheral/municipal) facilities are low-volume facilities. Often this was due to inappropriate triage, admitting, and referral practices. Sometimes this was due to clients' preference; having heard by word-of-mouth that the institution was understaffed, clients would purposely bypass the lower-level and go directly, without referral, to one of the higher-level centers. However, clients also said that even when they came to the municipal hospital in order to deliver there, they would often be sent to the referral center without the benefit of screening/triage for level of care necessary. In addition, other clients related experiences of having arrived at the municipal institution only to be sent home until 'labor was more advanced.' Others, returning to the hospital in 'advanced labor' with no history of medical or obstetric problems, and no complications in labor, would still be referred on to the higher-level facilities.

In some of the lower-level facilities trained physicians rarely were available, leaving unskilled nurses to attend labors, diagnose complications, and make decisions about who should be referred and why, and/or how to handle complications as they arose in labor. These nurses were trained nurses, but not trained as midwives or obstetric nurse specialists, therefore despite being called 'trained personnel' they were not adequately prepared for the tasks of labor management, triage, and delivery. The doctor on-call almost always signed the birth record, thus the high official rate of women delivering with a physician [7]. While around the world trained nurses and midwives have proven to be as safe or safer than doctors in performing triage, uncomplicated labor management, early problem identification/management/ and appropriate referral [24], the nurses in the DR lower-level facilities lack this kind of training. Furthermore, these facilities are also understaffed. At one of the lower-level facilities the team visited, an adolescent had just delivered alone; the only available nurse had been busy with another patient when this adolescent had her baby.

The following neonatal death occurred while the team was in a small peripheral facility, we believe had we not been there observing, the mother might have died too. This tragic story demonstrates again how complicated labors were ignored, and, despite clear protocols (Norms) for caring for complicated cases, these protocols were ignored.

Senora Xiques is 20 years old, having her first pregnancy, she arrived at the hospital on a Friday at 13.30 h with a diagnosis of 41 weeks' pregnancy in labor, no complications; she had prenatal care. She had a blood pressure of 110/70, the fetal heart rate was 144, contractions were moderate, and the cervix was 2 cm dilated. She did not see a doctor on Saturday or Sunday. On Monday morning, an auxiliary nurse examined Senora Xiques and reported her cervix to be completely dilated, but that the fetal head was still high. At 16.00 h on Monday (3 days after she was admitted), the assessment team observed that she was in great pain, bleeding very heavily, and the contraction pattern was hypertonic. A physician on the assessment team attempted to listen to the fetal heart, but she heard no sound. She performed a vaginal exam and found the cervix to be 8 cm, and the baby's head at −2 station. The team contacted the obstetrician on duty who arrived and performed a cesarean section; the baby, an 8-pound, 6-ounce male, was dead. The placenta was found to be 40% detached, and Senora Xiques received a 500 ml transfusion. When asked what she thought had happened, she said, ''The baby had problems and died because of them.''

3.2.5. Management issues

During the observations when team members inquire why certain procedures that violated Norms

(for example why only water, rather than antiseptic solution was used to wash the perineal area before delivery), we were always told that the institutions were very poor and did not have the resources to follow the Norms. When we asked why personnel who were listed as being on-duty were not at their posts, we were told that the pay scale in the public sector was so low that providers had to have second jobs to keep their families fed. In fact, most of the questions we asked about management issues were responded to from an economic perspective, and lack of fiscal resources was the reason given for lack of compliance with Norms. When we asked nurses in the lower-level institutions why they did not follow the referral protocols, they told us because they lacked the appropriate forms that would need to be filled out to accompany each women who was sent on to the major referral centers, so, instead, they just sent them on without referral slips or charts describing the client's status or previous history. The staff at lower-level institutions likewise ascribed the reasons for sending so many normal clients on to referral-level institutions by citing the lack of availability of drugs. Human rights and management issues were confounded as no drugs for pain were given at either lower-level or referral-level facilities; again the reason given was lack of funds and resources.

One of the National District referral facilities was markedly different; in that there was a solid sense of an overall systems approach to management of a perinatal unit. A specialist oversaw all staff (including cleaners and porters) and was kept apprised of logistics of patterns of patient flow and supplies of necessary drugs and supplies, from intravenous solutions and needles to cleaning substances. This person was clearly both a skilled provider (highly experienced and able to teach), but also a manager, who gave the labor, delivery, neonatal, and postpartum areas a clear sense of purpose. However, he is only in the building from 07.00–16.00 h, 5 days a week, and when the ward became very crowded and/or he was in surgery, it was clear to the observers that the management strategies were not followed as closely as when the census was lower and/or the manager was physically present.

3.2.6. Perspectives of patients, clinical staff and stakeholders

In addition to the records reviews, facilities inspections, and staff–patient interaction observations summarized above, the team also conducted in-depth and focus group interviews of patients, clinical staff, and other stakeholders. They offered perspectives, often contradictory, on maternal health care; some of these quotes are listed below.

(i) *Patient perspectives on maternal health*. The following quotes were collected at three National District maternities and one regional hospital from peripartum clients:

- ''The nurses don't help you, or even watch you. If you don't know someone here, you are without attention.''
- ''They want you to finish rapidly and get out.''
- ''The nurses and the cleaners are animals with clothes on.''
- ''I went for a sonogram and the students were all talking as if the patients weren't there. One doctor even bought clothes from a wandering salesperson.''
- ''We are never checked by doctors. They never explain our condition nor why we have cesarean deliveries.''
- ''When a baby dies, they say the baby came with problems, and in many cases they blame the patients for their complications.''
- ''I was alone, by myself, I had no one familiar nearby.''
- ''There was no water to bathe in, no water to drink.''
- ''It was very noisy and it smelled very bad.''

(ii) *Clinical staff perspectives on maternal health.* In comparison to the descriptions by the clinic attendees and the observations by the assessment team, providers had both similar and different perspectives on reasons for poor maternal health in the country. Some blamed the clients for the high maternal death rate:

- ''The clients are not well-educated and therefore they have complications.''
- ''They don't get the tests we order.''
- ''The clients don't come to their check-ups.''
- ''The adolescents don't cooperate.''

Others mentioned the lack of staffing and lack of time to see clients:

- ''We need more general doctors to help during the consultations so that we can decrease the number of women seen by nurses.''
- ''There aren't doctors to oversee the labor and deliveries. All of the work falls on the nurses.''
- ''Some cases require the care of specialists, but there aren't enough.''
- ''The women die because they arrive with established complications, and we don't have intensive care, it is also the fault of poor education of pregnant women during their prenatal consultations.''
- ''The doctors don't have time during the consultations, particularly with high-risk pregnancies. Doctors must understand that all pregnant/laboring women are high risk, that is the only way to decrease morbidity and mortality.''

However, none of the providers mentioned a lack of attention to the protocols or lack of quality of care. Many of the providers were unaware that the National Norms existed; even when they knew about them, few were able to locate them in the facility, even fewer had had an orientation to the Norms and how to apply them in their individual situations.

(iii) *Perspective of other stakeholders.* During the dissemination meeting some of the stakeholders, who included members of the ob/gyn society, private and public sector obstetrician–gynecologists, hospital directors, administrators, and Ministry of Health staff, made the following comments:

- ''The reason for the high level of maternal mortality is an issue of quality having to do with provider's attitudes. Specialists are not present when problems arise; there is not good management of complications. I don't see a way to resolve this. It is a problem of culture and power.''
- ''Here we have a problem of dual employment. Although the doctors are paid to be at their public sector posts, they never come, especially when the posts are in the rural areas. There is no shortage of physicians, just a lack of attendance.''
- ''MMR is our number one reproductive health problem, and is due mainly to attitudes in physicians; specialists are never in their work places, and do not follow-up on patients. Regional (peripheral) hospitals lack proper equipment, do not provide information to the clients, do not apply Norms, and there are not physicians on duty 24 hours.''

4. Conclusions

This study, while limited in its generalizablity by the small sample, short assessment period, and largely qualitative methodology, still sheds light on the paradox in the DR of MMR of over 100 despite economic advances and 97% institutional deliveries. Structural, social, political, and economic reasons have been given for the persistence of high rates of MMR despite the attention to the problem [18]; however, the strategic assessment team findings attribute the overriding causes of high MMR to lack of staffing in primary level facilities, overcrowding and/or lack of skilled attendants at the referral-level facilities, non-adherence or lack of knowledge of the National Norms, poor physician attitudes, and a lack of respect for reproductive rights and the rights and dignity of women. Overall the issues contributing to maternal mortality in the DR were issues of quality of care.

The assessment team believes that if the National Norms, which are well written and reflect current accepted obstetric practice according to international standards [23], were to be followed, quality of care could be improved and the MMR might be decreased. The Norms need to be operationalized at the institutional level as protocols. Unfortunately, the Norms are not adhered to, nor do there seem to be real consequences for non-adherence. This situation is made worse by the lack of authority of hospital directors and managers to sanction non-adherence to Norms and/or non-attendance by trained providers.

Understaffing or lack of appropriately trained staff appears to be another constraint to improving maternal health care. This is combined with the lack of appropriate referrals and triaging of clients

to the appropriate setting, which has led to over-utilization of the referral institutions. This, in turn, has led to the over-medicalization of uncomplicated pregnancies and deliveries, as well as the overcrowding of the main facilities, which, then, leads to both a degradation of quality of care necessary for women with complicated labors/deliveries, and to the staff's compassion fatigue and the degradation of the interpersonal relationships necessary to maintain the dignity and rights of all patients.

Another contributing factor is the non-adherence to the epidemiologic tracking system and maternal mortality review committees. While these could be a way of determining causes of death (and therefore help to plan strategies for prevention), the low percentage of cases in which the cause of death is actually determined prevents this from being a useful tool for improvement. Finally, as many of the clinicians and decision makers interviewed noted, the overall constraint to improving maternal health is one of attitude—attitude of clinical staff toward patients, of persons in authority toward clinicians, and of women's low expectations of a system that instead of serving them, places them at risk.

The publication of the report on the DR reproductive health assessment [21] along with the public dissemination meeting, and several press conferences and newspaper reports on the findings have succeeded in turning the country's attention to the problem of the MMR. Following the publication of the findings, the SESPAS re-examined maternal mortality statistics in communities outside the study areas, and concluded that several maternal deaths were due to the negligence and apathy of the physicians who were either attending or who were supposed to be present at a delivery, but were not. In 15 cases they sanctioned and took away the licenses of those whose care was substandard. A few months after the dissemination meeting, the United Nations Population Fund (UNFPA) and SESPAS committed several million dollars to a 3-year program to reduce maternal mortality; these projects will be established in two of the three strategic assessment regions [25]. In addition, USAID has based their major 5-year RH/MH strategy on the findings of the report [personal communication, Dr. David Losk, Population/Health/Nutrition Officer, USAID Mission, DR].

The Obstetrics and Gynecology Society of the Dominican Republic in collaboration with SESPAS, USAID, and others held a 'Forum on Quality of Care: Women's and Maternal Health,' in early October 2002. The results of the strategic assessment were again presented during a workshop whose theme was 'What can *I* change to improve the quality of care.' Again suggestions and recommendations were made that included the following:

- Provide for sensitization, humanization, and training of personnel.
- Institute human and reproductive rights training into preservice curriculum for nursing and medical students and in-service training for current providers.
- Legislate training, licensing, and accreditation.
- Widely disseminate the National Norms, train all providers in use of the Norms, use the Norms to develop institution-specific protocols, supervise and oversee implementation of the Norms/protocols.
- Apply sanctions for violation and non-adherence to the National Norms.
- Apply sanctions for violations of malpractice and neglect of clients.
- Strengthen the Maternal Mortality Committee so that all maternal deaths are audited to learn what system breakdowns contribute to maternal mortality.
- Incorporate community and women's groups into the work of organizing and managing public maternity services.
- Improve the infrastructure, staffing, and stocking of the lower-level facilities so that they can provide basic EmOC [23].
- Improve the capacity of the lower-level facilities and those in rural areas to make appropriate, timely referrals for clients needing comprehensive EmOC [23].

Experiences in many countries have shown that reducing maternal mortality depends on the availability and use of emergency obstetric care for managing complications. However, EmOC should

not be confused with institutional delivery. As Fortney [1] stated, ''the keystone in the arch of safe motherhood,'' is access and availability of *high quality* emergency obstetric care. The strategic assessment in the DR has demonstrated that the lack of *quality* emergency obstetric care is at the root of continuing high maternal mortality ratios. Now the task is to turn this situation around rapidly. The DR government, the multilateral agencies, international donors, NGOs, reproductive rights activists, professional associations, health care providers, and women's groups must now work together to implement quality obstetric care in the DR and to make quality emergency obstetric care a reality. The strategic assessment helped take the first steps by raising awareness and providing a platform of actions. The government's first response to the findings of the strategic assessment report was to eliminate some of the worst offenders of women's reproductive and health rights in the public maternal care system. Recommendations for sound policies and programs have followed, and both governmental and international donor funds have been dedicated to implementing them. The results of these and future activities will need to be assessed in the following years, using the strategic assessment report as a baseline for comparison and evaluation.

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