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### The Three Delays Revisited: Barriers to maternal and Infant Health in Iganga, Uganda

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# THE THREE DELAYS REVISITED: BARRIERS TO MATERNAL AND INFANT HEALTH IN IGANGA, UGANDA

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Victoria is a rising senior in the College of Arts & Sciences majoring in Anthropology with a minor in Psychology. In 2017, she received a Student Undergraduate Research Award to study maternal and infant health in Iganga, Uganda, under the guidance of Dr. Shanti Parikh. Victoria aspires to promote equity in health through evidence-based models. She intends to complete her senior honors thesis on adolescent perspectives on tobacco use in the upcoming year.

## KEY TERMS

- Maternal Health Outcomes
- Three Delays
- Barriers to Care
- Infant Mortality
- Care-Seeking
- Emergency Medicine
- Primary Health Care

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## ABSTRACT

Uganda has the fifth highest fertility rate in the world, with an average of 5.8 children per woman. This high birth rate is paired with maternal and infant mortality rates that remain high despite government efforts. Among pregnant women in Uganda, the majority of deliveries occur outside of a health facility and with no health care professional present, increasing the risk of mortality. The objectives of this project were to examine how women make decisions about where to seek care, what barriers they face in accessing health care, and where gaps in understanding exist between biomedical care providers and the communities they serve.

We conducted 38 semi-structured interviews in the Iganga District with women, men, and a variety of biomedical and traditional care providers. The analysis of these interviews builds on Sreen Thaddeus and Deborah Maine's "Three Delays Model" of maternal mortality. Our findings suggested a disconnect between health care providers and women surrounding the first delay: a delay in the decision to seek care from a health facility. Midwives in government health centers largely attributed these delays to women's inadequate knowledge and recommended further health education for the community. In contrast, the women we spoke to easily articulated the benefits of delivery in a health center, but offered an array of structural barriers that constrained their care-seeking options. The misattribution of these decisions to a lack of knowledge may result in the neglect of more systemic failures that lie at the root of the problem.

## FACULTY MENTOR: SHANTI PARIKH, PH.D., ASSOCIATE PROFESSOR OF ANTHROPOLOGY, AFRICAN AND AFRICAN-AMERICAN STUDIES

Professor Parikh's research focuses on the intersection of local transformations; global processes; and structures of inequalities surrounding issues of sexuality, particularly gender, sexual and reproductive health, regulation, courtship and romance, and marriage. Recently, she has begun further research on infidelity and HIV transmission and the social history of sexuality in rural post-colonial Uganda.

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## INTRODUCTION

Uganda has the fifth highest fertility rate in the world, with an average of 5.8 children per woman (Uganda Bureau of Statistics [UBOS] 2017). This high birth rate is coupled, unfortunately, with an infant mortality rate of 43 deaths per 1,000 live births, meaning that one in 23 of these children will die during the first year of life (UBOS 2017). The outlook for mothers is similarly bleak. As of 2015, a Ugandan female's lifetime risk of dying from maternal causes was one in 47 (The World Bank). Childbirth itself is the riskiest time: approximately half of these maternal deaths and 30-50% of newborn deaths will occur within one day of delivery (Waiswa *et al.* 2012). Many of the causes of mortality are preventable, so life or death may depend on how quickly the treatment of complications is initiated during this critical window of time (Thaddeus & Maine 1994). For this reason, it is particularly concerning that only 42% of deliveries in Uganda are supervised by health professionals (Waiswa *et al.* 2010).

The country has taken steps to address this problem, but more effective interventions are plainly needed. This research is aimed at identifying why current interventions have failed, and how a new focus has the potential to make a lasting impact in reducing maternal and infant mortality.

## RESEARCH QUESTION AND OBJECTIVES

The vast majority of maternal and neonatal deaths worldwide are preventable with timely medical intervention (Thaddeus & Maine 1994; UNICEF 2018). For this reason, Ugandan public health initiatives aggressively promote childbirth in facilities staffed with health care professionals. Despite these efforts, however, rates of delivery in these health facilities remain low.

The purpose of this project was to explore the reasons behind these low rates of usage, specifically examining: (1) How women make decisions about where to seek care during pregnancy and delivery, (2) What barriers women face in accessing biomedical care, (3) Where gaps in understanding might exist between health care providers and the communities they serve. These areas of focus may serve to illuminate topics for further research to inform more effective approaches to maternal and infant health in Uganda.

## METHODOLOGY

My research methods consisted of focus groups, community mapping exercises, and semi-structured interviews. I conducted my research in the summer of 2017 in Iganga Municipality and three of its surrounding sub-counties: Nakigo, Ibulanku, and Nawandala. In each sub-county, my research collaborators and I worked with the local village health team (VHT<sup>1</sup>) member to identify health care providers and members of the community willing to participate. I conducted a total of four focus groups, three

<sup>1</sup>VHTs consist of volunteer community health workers who have basic medical training and serve as links between their communities and local health facilities.

involving five to six women with children in each of the sub-counties, and one group of elderly men and women in the Iganga Municipality. I also conducted 38 semi-structured interviews with local women, men, and a variety of biomedical and alternative health care providers, ranging from drug shop proprietors to traditional birth attendants (TBA). The bulk of my data was collected from interviews and focus groups with local women. In total, 29 women participated, ranging in age from 19 to 75. Two thirds of these participants had not been educated beyond the level of primary school, and 80% cited agriculture as their main source of income. The 15 women who were interviewed individually described a collective total of 62 pregnancies and deliveries. Data gathered on each pregnancy included outcome, complications, delivery location, fees, and post-natal care, among other factors. Questions also explored women's health literacy and reasoning for making care-seeking decisions.

## CONTEXT

The concept of primary health care (PHC) has been the central pillar of the Ugandan health system for nearly four decades (Tashobya & Ogwal 2004). Described as essential health care based in science and made universally accessible, PHC was introduced in the 1978 Declaration of Alma-Ata and included, as one of its eight basic services, maternal and child health care (World Health Organization [WHO]). The fundamental principles of PHC require that these essential services be *available, affordable, accessible, and acceptable* (WHO 1978). Uganda's efforts to implement PHC were "fragmented and uncoordinated" from the beginning due to political instability and poor governance. It is generally recognized that the country has struggled to implement PHC objectives (Tashobya & Ogwal 2004, 1).

The disconnect between vision and implementation of PHC is evident in Uganda's maternal and infant health services, which are supposed to offer free, high-quality care at government health centers. In reality, however, these facilities are often plagued by drug and staffing shortages and are unable to provide free treatment (Ministry of Health 2006). As a result, community members may turn to other practitioners such as traditional healers and traditional birth attendants (TBA<sup>2</sup>) to fill the gap in access to care. These practitioners often live in the community they serve, typically have no formal training, and are not recognized by the government.

Several attempts have been made to increase rates of health facility-based childbirth. While 92% of women now visit a health facility one or more times during pregnancy<sup>3</sup>, the rate is much lower for the actual delivery: fewer than half of all infants are born in health facilities (Waiswa *et al.* 2010). Despite decreases over the last few decades, Ugandan maternal and infant mortality rates are still some of the highest globally. The persistence of these poor indicators strongly suggests the need for better interventions in maternal and infant health.

<sup>2</sup>A traditional birth attendant (TBA) delivers babies and acquires her skills by delivering babies herself or through an apprenticeship to another TBA (Ministry of Health). She may attend to mothers in her home, often with the aid of traditional herbal medicines.

<sup>3</sup>Ministry of Health guidelines advise four prenatal care visits during pregnancy.

## FINDINGS AND ANALYSIS

The realities of maternal and infant mortality are perhaps best summarized by a mother in Nawandala who had experienced more than one complicated pregnancy. Due to the language barrier, I have paraphrased an abbreviated version of her response, taking care to preserve the original meaning of her words:

*The greatest danger for us delivering mothers is that most of the health facilities are far away from us and we may die on the way because of the long distances. For example, in the case of a complication or emergency while in Nawandala Health Centre, they refer you to Iganga Hospital, which is relatively far for a dying mother or infant.<sup>4</sup> And you will have to spend a lot of money on the way. Sometimes, you may not be able to find the money for a taxi or a boda boda<sup>5</sup>.*

*You will also need to have some money for upkeep. In most cases, if you arrive at the hospital without money to help you be worked on or to buy particular medicines, you may be forced to go back home and sell some item in order to get money for treatment. For example, you may be pregnant, not knowing that you will require a C-section. When you reach the hospital, they may tell you that you are supposed to be operated on, and they will want money for the operation. When you don't have money for the operation, you or the people who accompanied you may be forced to go back and sell some of your property in order to get money for the operation. If it takes them too long to sell the property, you may die (Interview 26, pers. comm. 2017).*

### THREE DELAYS MODEL

To structure this analysis, I will employ the Three Delays Model, a widely used explanatory framework for maternal mortality that has been also modified by researchers in Tanzania to apply to perinatal deaths (Mbaruku et al. 2009). Research on the primary causes of maternal mortality has shown that “a majority of these deaths could have been prevented with timely medical treatment. Delay, therefore, emerges as the pertinent factor contributing to maternal deaths” (Thaddeus & Maine 1994, 1092). The Three Delays Model identifies three crucial phases during which delays may occur. A Phase I delay is a “delay in deciding to seek care on the part of the individual, the family, or both” (Thaddeus & Maine 1994, 1092). A Phase II delay is a “delay in reaching an adequate health care facility” (Thaddeus & Maine 1994, 1092). Finally, a Phase III delay is a “delay in receiving adequate care at the facility” (Thaddeus & Maine 1994, 1092).

For the purposes of this report, I will define “care” as biomedical treatment by a certified health professional at a government-recognized health center, clinic, or hospital. This is not meant to discount the services that may be provided by other practitioners,

<sup>4</sup>Iganga Hospital is approximately one hour from Nawandala Health Centre III by taxi or boda boda.

<sup>5</sup>Boda bodas are motorcycle taxis that serve as the primary form of transportation in Iganga.

such as traditional healers or TBAs; however, high-quality biomedical care is the standard goal of maternal and infant health initiatives. According to the Three Delays Model, one must focus on “the interval between the onset of an obstetric complication and its outcome,” that is, analyzing the steps taken when a complication arises, to see where delay influences the outcome. (Thaddeus & Maine 1994, 1092).

I would argue that in Iganga, the onset of labor is an obstetric complication in itself. Any delivery may suddenly become complicated, and a normal delivery may go awry when a mother delivers by herself at home or when attended to by a TBA who lacks the equipment or medications to handle routine problems. By the time a serious complication presents, it is often too late. I use the Three Delays Model because the same delays that put women and infants at risk of death, in the most extreme of cases, are also common causes of other adverse outcomes including morbidity and disability in what might otherwise be routine deliveries. For every mother who dies in Uganda, six more survive, but with “chronic and debilitating ill health” (Ministry of Health 2006, 7).

### Phase I: Delay in Deciding to Seek Care

The first phase in which care may be delayed begins with the onset of labor or of a complication. An example of a Phase I delay was described to me by one mother who delivered at home by accident. She had intended to deliver at a health facility but when she went into labor, it was a night when her husband was not around and she did not have enough money to go to the hospital (Interview 30, pers. comm. 2017). She believed she did not have time to reach a health facility because her water had broken, which she believed meant imminent delivery (Interview 30, pers. comm. 2017). She delivered by herself at home and sent her older son to fetch a neighbor, who helped her cut the umbilical cord and remove fluid from the baby’s mouth and nose (Interview 30, pers. comm. 2017).

In a document outlining the country’s strategic plan to address maternal and neonatal health from 2007-2015, Uganda’s Ministry of Health explained Phase I delays:

*“The first delay occurs within the household/family level and is related to the limited ability of the woman and her close relatives to make a decision to seek care. This is closely linked to the inability to appreciate danger signs of pregnancy, delivery and postpartum due to inadequate knowledge. In addition, some cultural practices restrict women from seeking health care, while poverty at the household level also limits decision making to seek health care” (2006, 19).*

This definition emphasizes ignorance (“inadequate knowledge”) as the primary reason women delay in going to health facilities, with cultural factors and poverty seemingly added as afterthoughts. The logical solution to this problem is health education for women about danger signs during pregnancy and the benefits of childbirth in a health facility. My research did not fully support this thesis, however. Although the women I spoke to offered several reasons for giving birth outside of health centers, few of these could be traced to inadequate knowledge. Perhaps attesting to the success of education programs, the women I interviewed described accurately how health facilities could prevent mother-to-child HIV transmission or provide an injection to stop postpartum hemorrhage. They further understood the risks of tetanus from home deliveries, yet

they continued to deliver at home or with a TBA. The reasons women cited included long distances to health facilities, lack of money, and mistreatment or ridicule by health workers. Thus, it was not inadequate knowledge that kept women from health facilities, but rather structural barriers that made the use of those facilities impossible or unreliable.

In contrast, when I asked 12 health care providers about what could be done to reduce maternal and infant mortality rates, additional health education for communities was suggested 35 times. It seems apparent that there is a significant gap in understanding between women, health workers, and Uganda's Ministry of Health about the causes of first delays.

### **Phase II: Delay in Reaching a Health Facility**

The second opportunity for delay occurs after the decision to seek care has been made, as the mother attempts to travel to an adequate health facility. Such issues were frequently noted by women in the community when asked how maternal and infant mortality might be reduced. One participant in Nawandala explained that the majority of maternal deaths are due to the long distances in search of medical care, and offered the example of a blood transfusion (Interview 26, pers. comm. 2017). If you go to Nawandala Health Centre III requiring a transfusion, she explained, they will refer you to Bugono Health Centre IV (Interview 26, pers. comm. 2017). If Bugono cannot handle the case, they will refer you to Iganga Main Hospital, where you may arrive only to find that they do not have blood in stock for a transfusion (Interview 26, pers. comm. 2017). All of these referrals take a lot of time, she said, and in the process, either the mother or child may die (Interview 26, pers. comm. 2017). She requested that Bugono Health Centre IV be upgraded to a main hospital, arguing that if advanced services are brought closer to the community, maternal and infant mortality rates will drop (Interview 26, pers. comm. 2017).

While a few women described textbook examples of Phase II delays in their own childbirth experiences (e.g., waiting for an ambulance to arrive), the majority of references to the second delay occurred when women explained why they chose not to seek treatment from a health facility. Thus, Phase II concerns played into Phase I decisions. It is important to recognize that a decision to seek medical care during labor in Iganga is automatically beset by obstacles. Travel is costly and many women have only indirect access to money through a husband. One does not know how long labor may last. A woman may be incapacitated by contractions and unable to bear the pain of travel by motorcycle or crowded taxi. One solution—to travel before labor begins—could mean being away from home for an indeterminate length of time, which may simply be unfeasible. Thus, it is understandable that many women take the chance of delivering outside a health facility, not out of ignorance but because their choices are constrained by other Phase II obstacles. Of the 25 infants delivered at home or with a TBA, fear of delivering while en route to the health facility was identified as a factor in 16 cases. In stark contrast to these reports from the community, however, the health care providers I interviewed proposed efforts to address the second delay only five times.

### **Phase III: Delay in Receiving Adequate Care**

Finally, Phase III delays refer to impediments to accessing medical care within a health facility. Health centers and hospitals near Iganga often lack even the most essential items, such as gloves, qualified personnel, blood, and lifesaving drugs. As one key informant

explained, health centers are restocked infrequently, and may have medicine for two weeks, only to run out for the following three months. When a patient requires a drug that the health center does not have, she is given a prescription and instructed to buy that medication from a drug shop. Patients are often unable to afford such medicines, and as a result drug stores will sell a patient just half or a quarter of the dose they require (Interview 33, pers. comm. 2017). Government-employed midwives reported long hours, inadequate staffing, and poor compensation in their jobs.

One unexpected cause of delay was related to the personnel in government health facilities. In several of my interviews, both health care providers and women described the problem of health workers abusing patients. Women reported experiencing verbal abuse in particular—being shamed or neglected for not providing their own birth equipment, being denied lifesaving treatment because they delivered with a TBA, and even being slapped by midwives when they took too long to answer a question. One participant recounted the story of her daughter, who had gone to a health facility to give birth, but asked to be referred to a higher facility because her labor was not progressing (Focus group 1, pers. comm. 2017). The health workers refused to give her referral documents, saying that they had already spent a long time suffering with her (Focus group 1, pers. comm. 2017). The refusal to refer may have been due to the fact that the health workers would not receive a delivery fee if they referred the mother. The participant reported that when her daughter finally gave birth, the baby was dead (Focus group 1, pers. comm. 2017). The health workers did not report the death and simply kept quiet and buried the baby (Focus group 1, pers. comm. 2017). This story was not unique; midwives and health workers were frequently described as rude, callous, and harsh by women in Iganga. Five women and two health care providers proposed that more attentive and compassionate care from health workers could reduce maternal and infant mortality.

TBAs appear to treat laboring mothers completely differently. In interviews with 15 women, I asked them how they chose the location where they delivered each of their children. Women who delivered with a TBA often mentioned how caring she was during pregnancy and delivery and cited this as a factor in their decision. The women who delivered at health centers or hospitals recognized the high quality of medical care they received, but the health workers and midwives were never once described as caring or kind. Psychology research has shown that social judgments of individuals and groups are largely determined by two traits: warmth and competence (Fiske et al. 2007). Through my interviews with both health care providers and women in the community, government health workers were consistently described as cold, though it was acknowledged that they usually provided competent care.

One may wonder if abuse that in most cases is verbal should be enough to deter women from delivering in a health facility. After all, aren't a healthy mother and baby worth enduring some coldness or harsh words? For Ugandan women, however, emotional support during labor has special significance.

The importance of warmth was articulated for me by one mother who recalled being mistreated at a health facility while in labor with her second child (Interview 12, pers. comm. 2017). Women deserve care and kindness from midwives, she explained, because during delivery they exist in a space between life and death (Interview 12, pers. comm. 2017). A safe and healthy delivery, a relatively routine experience for women in the Global North, is anything but a guarantee for women in Uganda. With the risk of death



looming over her, it is easy to understand a pregnant woman's desire for compassion and respect. Also notable is research finding that a perception of warmth is more difficult to reestablish than a perception of competence (Cuddy *et al.* 2011). This suggests that an expectant mother would be quicker to regain confidence in a kind TBA who has made a medical error than in a health worker who verbally abused her, even if that health worker provided competent medical care.

Misunderstanding of the factors causing a first delay can also perpetuate Phase III delays in access to appropriate medical care. A traditional birth attendant reported that when her clients go to health centers for post-natal care, they are scolded by midwives for delivering with a TBA, and their infants are sometimes denied immunizations (Interview 12, pers. comm. 2017). The reasons for this treatment emerged from the narratives of the health workers I interviewed, who blamed mothers for delaying before coming to the facility or for delivering with a TBA. Midwives appeared to interpret these behaviors as willful disregard of their advice, overlooking the structures of inequality that might prevent women from accessing recommended care. Such reports from TBAs, midwives, and community members indicate a clear need for better communication between patients and providers.

## CONCLUSIONS

One shortcoming of the Three Delays Model is its linearity; it treats each type of delay as an isolated event. Our research, however, produced numerous examples where women declined to seek care—a seeming Phase I delay—because they could anticipate a Phase II or Phase III obstacle (e.g., inability to pay for transportation). This was true of the vast majority of first delays described to us. Rather than failures of mothers to recognize a problem, as the Ministry of Health suggested, they were logical products of past experience. Thus, after the first encounter with long distances, expensive treatment, or inadequate care at a health facility, these Phase II and III factors will become Phase I considerations. Particularly in Uganda, where the average woman has five or six children, the compounding second and third delays encountered in early pregnancies may deter future care-seeking behaviors, magnifying the risk of maternal and infant mortality with each subsequent pregnancy.

Of the seven women who delivered with a TBA, five had previously delivered a child at a health facility or hospital, suggesting it was not lack of knowledge about the benefits of facility-based birth that drove their decisions. Of the eight deliveries that occurred at home, seven were attributed to the inability to reach an adequate health facility. These women cited sudden, intense labor pains, long distances to health facilities, and lack of money for transportation as reasons they delivered outside of a health center. Several women noted the level of compassionate, high-quality care they received from a TBA as a factor in their decision, contrasting it with stories of harassment and neglect by government health workers.

Despite the variety of Phase II and III factors contributing to these decisions, each of the deliveries might simplistically be categorized as examples of the first delay. There is reason, therefore, to revisit findings on neonatal mortality in Uganda that implicate the first delay as the greatest contributor to mortality and prescribe yet more community education as the solution (Waiswa *et al.* 2010). Such a response, however, would be

insufficient because it fails to address the systemic Phase II and III factors at the root of the decision to delay biomedical care.

## RECOMMENDATIONS

Based on my analysis of the narratives of women in Iganga and the advice I received from both health care providers and community members, I propose three recommendations for future health care initiatives.

The most fundamental recommendation is to shift the emphasis of maternal and infant mortality interventions from educating women about health to holding the government accountable for addressing more systemic issues. The Ugandan government claims to offer free health care to citizens, but until there is access to affordable transportation and health centers are close to the community and fully stocked with drugs, equipment, and well-compensated staff, this promise will not become a reality. Focusing the bulk of intervention efforts on empowering women to seek health care in a system that constantly thwarts their efforts can actually be counter-productive, as it shifts the responsibility for maternal mortality to the women themselves. Though it may seem counterintuitive, the first delay can perhaps best be addressed by efforts to mitigate delays in Phases II and III.

There is also a clear need to rebuild community trust in the health system. I recommend that concerted efforts be made to reduce the rates of abuse and neglect that patients experience at the hands of government health workers. According to my interviews with local women, health workers accused of abuse are sometimes transferred to other facilities, but this merely relocates the problem. Further research is indicated to identify effective methods of addressing such issues, perhaps looking to TBAs for guidance in compassionate care delivery. In addition, research may explore ways to involve TBAs in the government health system, leveraging their skills to rebuild trust and link mothers and infants to advanced care. Eliminating neglect and abuse by health workers is an inexpensive intervention that could substantially reduce delays in the decision to seek care.

Finally, it appears that many of the problems outlined above are exacerbated by misunderstandings between health care providers and patients. In Iganga, knowledge about maternal and infant health flows in one direction: from providers and policymakers to individuals. Scholars such as Paulo Freire argue for the importance of dialogue, writing that “to substitute monologue, slogans, and communiqués for dialogue is to attempt to liberate the oppressed with the instruments of domestication” (Freire 1970/1993, 47 in Bruzas 2018). To promote a mutual exchange of knowledge, I suggest that maternal and infant health initiatives incorporate the opportunity for an open forum in which biomedical health workers, traditional health care providers, and patients can discuss their experiences, ask questions, and voice their concerns. While open communication will not solve all problems, infinitely more progress can be made toward our mutual goal if health care providers and patients join together. In that way, they may address the real problems and enable Iganga to at last make progress on maternal and infant mortality.

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