
Excess Maternal Death in the Time of Ebola

JOIA S. MUKHERJEE AND REGAN MARSH

PREFACE

Partners In Health (PIH) is an international charity that delivers health care by working with governments and communities in settings of poverty. In September 2014, PIH began working with local partners Last Mile Health in Liberia and Wellbody Alliance in Sierra Leone, and with the governments in both countries, to fight Ebola and help build and improve the domestic health systems. Between September 2014 and March 2015, PIH has supported more than ten specialized facilities to care for Ebola patients in the two countries, which have provided care for more than 2,000 patients. The authors of this article, as PIH employees, have been engaged in the design, implementation, and evaluation of the PIH response. The following reflects our work not only in addressing Ebola but also in the restoration of the health system.

Joia Mukherjee is Chief Medical Officer of the international medical charity Partners In Health. She is an infectious disease doctor and public health specialist and has been involved in the implementation of medical programs in resource-limited countries for two decades. She has been involved in coordinating Partners In Health's Ebola response in both Sierra Leone and Liberia since September 2014. Dr. Mukherjee is on the faculty at Harvard Medical School in the Department of Global Health and Social Medicine where she runs the Masters program in Global Health Delivery and global medical education programs. Regan Marsh is an Emergency Medicine physician and has worked for Partners In Health in Haiti and Malawi. She has designed and implemented the Emergency Medicine program in Haiti, most recently launching the new Emergency Medicine residency program, the first of its kind in Haiti. Dr. Marsh worked in Sierra Leone to coordinate Partners In Health's engagement in the government of Sierra Leone's effort to fight Ebola in 2014.

INTRODUCTION

The preamble to the 1946 constitution of the World Health Organization (WHO), states:

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition. The health of all people is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and States. The achievement of any State in the promotion and protection of health is of value to all.¹

The 2014 Ebola epidemic has laid bare the truth that the health care system in West Africa is skeletal at best, and certainly not able to fulfill the fundamental right to health for the people of the region. The rampant spread of Ebola in Liberia, Sierra Leone, and Guinea, is a symptom of weak and inadequate health systems.

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As global discussions of travel, quarantine, and the transnational spread of the epidemic loom,² it has never been clearer that the promotion and protection of health is of value to all.

Sadly, the health systems of the three West African countries burdened by the epidemic are not unlike other poor countries in the world, which have inadequate numbers of health workers, insufficient supplies of essential medicines, and which lack systems for waste management, epidemiological surveillance, and infection control. These gaps in the health care system have impeded the control of Ebola and have further amplified the epidemic within health facilities.³ As the epidemic worsened, health workers feared going to work and patients became afraid to use health facilities. Thus, utilization of even basic services dropped, and non-Ebola health outcomes also worsened.^{4,5}

Maternal mortality has always been closely associated with weak health systems, and the case is no different here. In fact, the further deterioration in health care services as a result of the Ebola epidemic has impacted

pregnant women disproportionately, and further illustrates the need for renewed efforts to strengthen health care systems in these countries. Because maternal mortality is an indicator of the sturdiness of a health system, we believe it can serve as a report card for health systems strengthening in the context of Ebola.

WEAK HEALTH SYSTEMS SET THE STAGE FOR EBOLA

When asking health workers whether the most recent Ebola outbreak has weakened the health system in rural Liberia and Sierra Leone, we hear, again and again, that the health system was very weak before Ebola, and that Ebola itself is not the problem but a symptom of the dysfunction. Examples abound. In one health center in Liberia, nurses complained of shortages of all drugs, except oral rehydration salts, for months preceding the Ebola crisis. In a 170-bed hospital serving half a million people in Sierra Leone, the X-ray machine had never been connected and just two doctors were on the staff.⁶

To truly understand the Ebola crisis is to place it in a context in which very little health care is actually delivered, because of insufficient staff, inadequate medications, broken supply chains, and decaying infrastructure. Walking through the empty clinics and hospitals in the two countries, one feels demoralized by the crumbling buildings, broken machines, and undignified physical spaces in which clinicians attend to patients. This infrastructure did not crumble in the last year, but has suffered decades of under-investment. That the staff show up at all, given that they are paid little and irregularly,⁷ demonstrates the significant commitment of the health workers in such a difficult setting. Year after year, this shortage of ‘staff, stuff, and systems’ prevents people from realizing their right to health and allows epidemics like Ebola to enter, accelerate, and spread rapidly through communities.⁸

This situation was created by the long-term impoverishment of Liberia, Sierra Leone, and Guinea. For centuries, the extraction of resources like

diamonds, rubber, and oil by colonial powers and international corporations has left little wealth or infrastructure behind for the development of the populous. Poverty or a lack of attainment of the so-called “social determinants of health” underpins poor health outcomes.⁹ Impoverished

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governments without a tax base or other means to support public services, such as health and education, have sought loans to support development.¹⁰ These loans, most notably made by the World Bank and the International Monetary Fund (IMF), were designed according to the neoliberal economic view of development, which holds that the best route to development is a healthy private sector with minimal government interference.¹¹ Favoring private sector-focused development programs over public works has resulted in decades of contraction of the public sectors in many countries and have perpetuated under-investment in the development of the health systems needed for their citizens to realize their right to health.¹²

Lacking human resources and materials, the health systems in the world's poorest countries are unable to provide basic care. The populations know this from their experiences seeking care and consistently facing bad outcomes—from high maternal death rates, to low life expectancy. Thus,

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..... public clinics in the world's poorest countries are empty; they are underutilized even where the disease burden is highest.^{13,14,15} On a recent visit to Sierra Leone, when asking women what their experiences with the health care system were before Ebola, they expressed many frustrations, including a lack of medicines, saying: "I might be given a receipt to go the drug store, but I cannot afford these medicines. We are told medicines should be available but they are not."¹⁶

Even major hospitals in countries like Liberia, Sierra Leone and Guinea do not have proper waste management systems. Often, heaps of waste, from broken down vehicles to gloves and syringes, litter the grounds. Lacking faith in this broken system, people will seek care elsewhere—in private clinics or pharmacies or from traditional healers. When patients become desperate and other measures have failed, they may seek care in public facilities, but by this point their condition is often advanced.

How, then, do these underlying realities relate to the Ebola crisis? First, the population does not trust the health system. This made the education and early detection needed to staunch the crisis difficult. Secondly, without people coming forward for care, there is increased transmission at the community level. Third, once patients with Ebola began to come to health centers, transmission continued to other patients and providers as health workers and systems were inadequately equipped for infection

control.¹⁷ Lastly, health systems in resource-limited settings have little to no epidemiologic surveillance; even when an astute staff member sees something unusual, there are no clear channels for reporting and little follow-up.¹⁸

This is the setting in which Ebola emerged and spread, resulting in thousands of deaths from the virus itself and countless more from the further devastation of health systems. This dual impact, of Ebola itself and of the erosion of general health care, will be examined through the lens of maternal mortality.

MATERNAL MORTALITY AND EBOLA

Maternal mortality, or death during pregnancy or childbirth, has been closely associated with weak health systems and impoverished public sectors.¹⁹ This is because the reduction of maternal mortality cannot be addressed by one single intervention or medicine. Rather, it requires a comprehensive, systems-based approach—from family planning at the community level, to high quality prenatal care in primary health care clinics, to the provision of emergency obstetrical care (including C-section and blood transfusion) in hospitals. At each level of care, the staff must have adequate training and support, a steady and reliable flow of medications and commodities, and a referral network to assure that when emergencies arise, women can receive proper care. Delays or inadequacies at each step, particularly once a woman has gone into labor, can result in maternal death.²⁰

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Prior to the Ebola crisis, these three countries had some of the highest rates of maternal mortality in the world. Roughly one in one hundred pregnancies ended in a maternal death in Sierra Leone, compared with only one maternal death in 25,000 births in Norway.

Table 1: Country maternal mortality ratios²¹

	Maternal Mortality Ratio (National Estimate, Per 100,000 Live Births) 2013
Guinea	650
Liberia	640
Sierra Leone	1100
Norway	4
United States	28

Sadly, the Ebola epidemic has had a profound impact on this bellwether for health systems. Indeed, pregnant women have been impacted disproportionately by the Ebola epidemic for four distinct reasons. First, the virulence of Ebola among pregnant women is greater; second, health providers fear delivering children of potentially infected women due to the risk of exposure; third proper triage and detection of Ebola among pregnant women is difficult, due to an overlap between the Ebola case definition and non-Ebola related complications of pregnancy; and fourth, already weak maternity services have collapsed under the weight of the crisis.

When a pregnant woman contracts Ebola, her chances of dying from hemorrhage are very high. The fatality rate among pregnant women with Ebola has been reported to be as high as 95 percent in previous epidemics.²² No significant advances

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have been reported in this epidemic in improving survival of pregnant women with Ebola. Moreover, the process of assisting a woman in labor or delivering a baby when she has Ebola hemorrhagic fever poses a significant risk to staff because of the exposure to body fluids.²³ As a result many Ebola treatment facilities are reluctant to accept pregnant women. The lack of beds to specifically care for the needs of pregnant women with Ebola assures a continued high mortality rate, as pregnant women are turned away.²⁴

In addition, the signs and symptoms of Ebola during pregnancy are

nonspecific—fever, malaise, weakness, diarrhea, vomiting, bleeding, and preterm labor—and can be associated with other complications of pregnancy.²⁵ Thus, many pregnant women suspected of having Ebola were referred to isolation units (not treatment units per se) to wait for a test before receiving proper care. In the isolation units, particularly early in the epidemic, a confirmatory test might take four to five days. In this time, a woman in labor with complications would likely die while waiting for definitive treatment such as a C-section or blood transfusion for the management of eclampsia.

Lastly, Ebola's impact on pregnant women extends beyond women with Ebola or those whose symptoms meet the case definition. Ebola has torn apart the very health infrastructure that already featured the highest maternal mortality ratios in the world.²⁶

MATERNAL MORTALITY AND HEALTH SYSTEMS

THE STORY OF KAMARA

Kamara's story is the story of hundreds of women who have lost their lives during the Ebola crisis. It is a story that is a composite of experiences with the name and details changed to preserve confidentiality of the patients' and health workers' information. It is elaborated here to provide a window into the barriers women face in accessing quality health services for pregnancy in the time of Ebola. Kamara was a 37-year-old Sierra Leonean woman who presented to a public hospital with her third full-term pregnancy in January 2015, during the peak of the Ebola epidemic in Sierra Leone. She, like many women in Sierra Leone, had received limited antenatal care.

Care was present before the crisis, but during it, many facilities closed or significantly reduced their services, facing inadequate staff protection against Ebola and lacking diagnostic tests for the virus. Patients themselves were fearful of coming to the hospital because of the risk of contagion. Kamara went into labor at home, but the process did not progress as smoothly as her previous labors, and her family took her to the local district hospital. Thus began her journey—a series of out-of-pocket expenditures by the family, and delayed, inadequate, or non-existent care—that ended in the family's further impoverishment and the preventable death of a 37-year-old mother of two.

Unfortunately, Kamara's local hospital had been closed the previous week because of health workers becoming infected with Ebola. Her family hired a private nurse, who diagnosed her with obstructive labor and gave her

an IV. They then hired a taxi to drive her approximately forty-five minutes to a second public hospital supported by an NGO (and therefore still open). Upon her arrival, however, no midwife or physician was available. Prior to the Ebola epidemic, there had been just three midwives and two physicians working at the hospital, which served a population of 500,000. The scant staff, however, were pulled from their regular duties to address the crisis. All of the midwives were currently working on Ebola with other organizations, where there was a greater need and higher salaries.

On arrival, Kamara began convulsing—a sign of eclampsia. Proper prenatal care could have warned staff of this condition, had Kamara's blood pressure been taken and medicines made available. After ten minutes of attempting to resuscitate Kamara, she was declared dead.

Kamara didn't have Ebola.

In addition to eclampsia, her death was brought about by a dysfunctional, under-resourced health system. The collision of a deadly communicable disease with a health system incapable of delivering needed basic care demonstrates that socio-political circumstances can inadvertently worsen healthcare crises in developing countries.

DISCUSSION

The Ebola crisis has been a canary in the coalmine of very weak health systems in West Africa, exposing many failings from inadequate staffing to non-existent surveillance and infection control. No area of care is more sensitive to weaknesses in the health system than maternal mortality.

We believe a true strengthening of the health systems is imperative for responding to the Ebola crisis in the long term, and that the report card for health systems strengthening ought to be the reduction of maternal mortality.

In 2000, United Nations member states targeted a set of measurable goals for health and development to be achieved by 2015, known as the Millennium Development Goals (MDGs). The fifth goal (MDG 5) sought to reduce maternal mortality by 75 percent and provide universal access to reproductive health services. While some progress has been made globally, achievement of this goal has proved difficult for many countries, particularly those of sub Saharan Africa where systems are the weakest, geographic distances are large, and economic development is slow.^{27,28}

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Improvement in women's health cannot be made through single interventions but requires strengthening the health system at every level of care.²⁹ Similarly, the systemic vulnerability of women's health makes it the worst hit aspect of the health delivery system when epidemics strike. We believe a true strengthening of the health systems is imperative for responding to the Ebola crisis in the long term, and that the report card for health systems strengthening ought to be the reduction of maternal mortality.

Our work with Partners in Health in Lesotho is instructive. Lesotho is a country with one of the highest rates of maternal mortality in the world, owing to the remote terrain and a high infectious disease burden (in this case, HIV and TB).³⁰

Our organization has looked critically at how to design a systematic approach to reduce maternal mortality, and we recognized the need for a comprehensive strategy at three levels. First, building community participation with trained and compensated women's health workers to assist women in attending prenatal services and to follow up on the birthing and a post-partum plan. Second, assuring a robust primary health care platform that can provide quality prenatal care, including blood pressure and other screenings, and has adequate triage and treatment for infectious disease. Third, securing access to midwives who are trained and equipped to adequately and safely perform delivery and who can refer patients to high quality emergency care when needed.³¹

When such a comprehensive approach was implemented in the rural mountainous regions of Lesotho, we saw a marked increase in utilization of prenatal services, early detection, and treatment of HIV and facility based delivery. Such a system, with appropriate adaptation for the epidemiologic threat of Ebola, could have saved the life of Kamara and many like her.

FINAL THOUGHTS

To reduce maternal mortality, we must redouble our effort and investment in health systems. Although we have acknowledged for twenty years that decreased maternal mortality requires comprehensive care, there has been a stifling lack of financial support for this comprehensive approach.³²

Now, in the context of Ebola, it is clear that investments are necessary. In the years since the drafting of the MDGs, the global community has renewed its commitment to primary health care, universal coverage, and achieving health goals as an integral part of development. Yet the Ebola crisis has depicted with brutal clarity the gaps that remain in the provision of care.

Particularly when one interrogates the causes of maternal mortality, worsened by Ebola, there is no question that large-scale investments and international support must be increased and sustained to build the staff, resources, and systems to achieve substantive reductions in death during pregnancy and childbirth.³³ These are imperatives not only for the fight against Ebola but also for the realization of all individuals' right to health.^f

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