



GLOBAL HEALTH CHALLENGE

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Study Guide

Case: “Childhood Mortality in Chad”

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Chad: Country Background

Geography

Overview: Located in Sub-Saharan Africa, Chad shares its borders with Libya, Sudan, the Central African Republic, Cameroon, Nigeria, and Niger. At 1,284,000 square kilometers, Chad is roughly the size of Idaho, Wyoming, Utah, Nevada, and Arizona combinedⁱ. Chad exhibits some striking geographical characteristics: the country is landlocked and has a primarily desert climate. The country's far distance from the sea has impacted the country's historical development and has contributed to the poor available resources. Because of its location, the country is sometimes referred to as the "Dead Heart of Africa."ⁱⁱ



Figure 1. Map of Chad (Encyclopedia Britannica, 2011)

The land is divided into three main regions from north to south:ⁱⁱⁱ

- “Saharan zone” – desert – livestock raising, some trade (north)
- “Sahelian zone” – semiarid – livestock raising and grain cultivation (central)
- “Soudanian zone” – semitropical savanna – large-scale cultivation, trade, and crafts (south)

Natural Resources: Main natural resources include petroleum, uranium, fish (from Lake Chad), gold, limestone, and sand^{iv}. Cotton has been a major export, but since 2003 crude oil has been the main export for the country.



Figure 2. Locust Plague in Chad (NAU – Agencies, 01 Sept 2012)

According to the CIA World Factbook, less than 4% of the country's land is arable, located in the southern region – that area may receive up to 48 inches of rain per year. The absence of permanent streams, periodic droughts, and dry Harmattan winds have caused a lack of potable water in some areas of the country. Occasional locust plagues lead to severe food crises, with the last major plague occurring in September 2012. Improper waste disposal of rural areas have also led to soil and water pollution.

People

Diversity: Chad has a population of around 11 million people^{iv}. The country is unique in that it borders very diverse regions of Africa, resulting in a society that is economically, socially, and culturally fragmentedⁱ. To the North, Chad borders countries with heavy Islamic influence, and an economy geared toward the Mediterranean Basin. To the West lie diverse societies with many religions and cultures, and a long history of regional economies. Toward the equator, Chad borders countries who mostly uphold classical African religions or Christianity, and who are part of the Congo River economic system. Due to

this diversity, Chad is home to a multitude of ethnic groups. Though the official languages are French and Arabic, there are more than 120 difference languages and dialects spoken. Around 53% of the country is Muslim, 34% Christian, 7% animist, and 6% other. This diversity, albeit distinctive, has been an obstacle to the creation of a national identity.

Government and Economy: With a GDP per capita of \$1,035 in 2012^v, Chad is ranked as the fourth poorest country in the world by the United Nations' Human Development Index^{vi}. However, the Chad economy is expected to grow 10% in 2014, according to an IMF (International Monetary Fund) projection and Chad's finance minister, driven by higher crude oil receipts and better agricultural techniques^{vii}. The majority of the population relies on growing crops such as sorghum and millet, or raising livestock. Lake Chad, after which the country was named, is an important source of water for drinking, fishing, and irrigation projects. The United Nations Environmental Program has found that Lake Chad has been decreasing in size over the past thirty years due to unsustainable usage, a trend that may cause problems in the future.

The capital of Chad is N'Djamena, with a population of roughly one million^{viii}. The current ruling party is the Patriotic Salvation Movement, in control of the country since they started a guerilla war and ousted the authoritarian Hissen Habré 1990ⁱⁱⁱ. Although the new party under President Idriss Déby established a republican government, with a legislative and judicial branch, Déby has maintained a tight hold on power, suppressing any suspected opposition groups. The country has faced political violence and coups d'état in recent years, such as the Battles of N'Djamena in 2006 and 2008, when rebel forces unsuccessfully attempted to unseat current President Déby. Corruption has also plagued the country, topping the Corruption Perceptions Index from 2005-2013 (most recently scoring as one of the 12 most highly corrupt countries in the world)^{ix}. In addition to widespread poverty, displacement of people, ethnic and social disparities, and poor education and health care, banditry and robberies are common, fueled by a sense of insecurityⁱⁱⁱ.

International Relations

Relations with other African Countries: Chad is also a host country for refugees from Darfur and the Central African Republic, a constant source of political tension. According to US and international news sources, Chad has long been accused of meddling in the conflict occurring in the Central African Republic (CAR), helping to evacuate Muslims to Chad and helping Muslim (Seleka) rebels overthrow the predominantly Christian (anti-Balaka) government in March 2013. Over 76,000 people have fled from CAR to Chad, many of them mothers and children, to escape the crisis there^x. Violence in the CAR has escalated to inhumane proportions, with reports of lynchings, decapitations, and cannibalism – as of Sunday, March 30th, 2014, Chadian soldiers had killed over 30 CAR civilians in an attack in Bangui, CAR's capital city^{xi}. Chad is also known for having thousands of child soldiers involved in the front lines of the Darfur conflict in Sudan^{xii}, although in 2011 the Chadian government signed a pledge to end its use of child soldiers (and recruitment has since declined significantly).

United States Involvement: After gaining independence from France in 1960, Chad has maintained diplomatic relations with the United States. The US continues to provide Chad with humanitarian assistance for refugees displaced from neighboring countries. In addition, the US continues to promote progress in Chad towards a more democratic system and cooperate with Chad on regional and international counterterrorism efforts^{xiii}.

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Chad: Childhood Mortality Background

Information on Childhood Mortality in General

Overview: Child mortality is formally defined as the death of infants and children under the age of five. Statistically speaking, about 43% of child mortality in 2011 occurred before 28 days of life^{xiv}. Recorded child mortality rates may be even higher as many deaths in the developing world are not recorded by statisticians – many poor families cannot afford to register their babies in the government registry.

Associated Diagnoses and Treatments: What makes child mortality such a pressing issue is that two-thirds of child deaths are preventable^{xv}. According to WHO and UNICEF, major infant and child killers include pneumonia, prematurity, birth asphyxia, measles, malaria, malnutrition, and diarrhea. Below is a brief definition of each cause of death^{xvi}:



Figure 3. Malaria is a common cause of child mortality in Africa.

- **Pneumonia:** lung inflammation caused by infection, in which the air sacs (alveoli) fill with pus and may become solid
- **Premature birth:** born before the end of the full term of gestation, especially three or more weeks before, when the baby's developing organs are not yet mature enough to allow normal postnatal survival
- **Birth asphyxia:** oxygen deprivation that lasts long enough to cause harm to the baby
- **Measles:** an infectious viral disease of the respiratory system, immune system, and skin, causing fever and a red rash on the skin
- **Malaria:** an infectious disease caused by a protozoan parasite that invades the blood (transmitted by mosquitoes in tropical and subtropical regions)
- **Malnutrition:** lack of proper nutrition, caused by not having enough to eat, not eating enough of the right things, or being unable to use the food that one does eat
- **Diarrhea:** a condition in which feces are discharged from the bowels frequently and in liquid form; results in dehydration and electrolyte imbalances

Most of the children who die each year from these issues could be saved by evidence-based cost effective measures. For example, vaccines, antibiotics, micronutrient supplementation, bed nets, breastfeeding practices, oral rehydration therapy, and improved family care methods are cost effective measures that can help improve child mortality rates^{xvii}.

It is also important to note the essential role of women when it comes to child mortality – after all, women are the individuals giving birth. The health and social well-being of a mother greatly affects that of her child. Improving maternal healthcare, nutrition for women, removing financial and social barriers to accessing basic services, and empowering women are policy interventions that can allow health systems to improve equity and reduce child mortality.

Campaign: With regards to already existing preventative action, decreasing child mortality rates by two-thirds by year 2015 is number four of the United Nation's eight Millennium Development Goals (MDGs)^{xviii}. Improving maternal health is number five, which can arguably also help improve child mortality rates. The eight MDGs were established in 2000 as a collective effort to provide needs for the world's poorest and uphold the human right to health. Unfortunately, although child mortality rates have been steadily declining worldwide, child mortality is one of MDG's least



successful goals. Based on the trajectory of current situations, more 50% of the countries MDGs are directed towards will not reach the proposed goal.

Childhood Mortality in Chad

Overview: Over the past decade, hundreds of thousands of refugees from conflicts in Darfur, Sudan and in the Central African Republic have flooded into Chad. Due to this influx of refugees, the key statistical indicators for children in Chad have significantly worsened. Most tellingly, one in five children will die before reaching age five. The most common killers for Chadian children are malnutrition, acute respiratory infection, malaria, and diarrheal diseases.

Many contributing factors lead to Chad's extremely high mortality rate, the ninth highest in the world as stated by the CIA World Factbook. Demonstrative of a weak health system, there is less than one qualified health worker per 1,000 people, and the government spends only three percent of its budget on health. This lack of preventative and primary health care is considered to be linked to recurrent malnutrition in Chad, which is responsible for more than half of under-five deaths. Beyond a scattered health system, poverty, cyclical droughts, and difficult access to food and safe drinking water can result in a diet in which certain nutrients are lacking, in excess, or in the wrong proportions.



Figure 4. A child in Chad suffering from malnutrition. (Doctors Without Borders, <http://www.msf.org/article/chad-malnutrition-patients-story>)

In addition, Chad is one of the most food-insecure countries in the world^{xiii}. This year, more than 500,000 children under five will probably be affected by acute malnutrition in the Sahel belt of Chad, particularly because a lack of rain in 2013 diminished agricultural production and will result in early onset of the hunger season (typically from April to September)^x. Malnutrition comes back again and again to a family because even when harvests are plentiful, the poor are forced to sell much of their harvests to repay debts incurred during the dry season, often at low prices due to high market supply. With reduced stocks to run through the lean period, they are again forced into debt. Nationally, nearly 30 percent of children are stunted.

In terms of disease prevention, only one in five Chadian babies is fully immunized against major vaccine-preventable diseases, which include polio, tuberculosis, diphtheria, pertussis, tetanus, and hepatitis. Chad being one of the hottest and least developed countries, health centers are few and far between, and only one third of them have the right equipment to maintain a cold chain necessary for storing, managing, and transporting vaccines.

Moreover, just over a third of the population has access to clean drinking water and, as a result, proper sanitation^{xviii}. This lack of access along with the presentation of health risks from a contaminated environment serves as a major factor in the country's recurrent outbreaks of diseases like polio, meningitis and cholera. Trekking to a water source reduces the amount of time a person can spend to study or pursue income-generating activities, which would enable them to eat better and live a healthier life.

Lastly, considering the large population, crowded conditions, poor nutrition, and disrupted provision of aid in refugee camps because of violence, periodic heavy rainfall, and other factors, the risk of polio, measles, and malnutrition have increased for those escaping conflict in surrounding areas. These forces in

conjunction with the presence of child marriages and soldiers^{xix}; the clinging to traditional and cultural remedies like uvula and tooth extraction that can kill rather than heal children^{xx}; and the fact that the primary school enrollment rate for girls at 51 percent lags far behind that for boys at 75 percent^{xxi} create a dismal yet improvable picture for the future of a child's health in Chad.

Current and Potential Strategies to Reduce Childhood Mortality

Though the phenomenon of childhood mortality still remains a prominent issue especially in Chad, the rate has been slowly declining, due mainly to a series of programs and initiatives by NGOs. Currently, one of the greatest examples can be seen for UNICEF, The United Nations Children's Fund, an NGO that focuses exclusively on children and their mothers. UNICEF has considerable programs focused specifically to reduce childhood mortality since it is one of their Millennium Development Goals.

To properly tackle this issue, UNICEF has designed and is administrating a variety of programs together. One of the most important for Chad includes their interventions to provide high-impact health and nutrition. Through this program, they focus on negotiating vaccine prices to make them more affordable for the general populace in the region, and so that everyone who needs them can have access to them. Along with this, they are also pursuing the addition of micronutrient supplements to these vaccines, like vitamin A, so that children, parents, and others can receive vital nutrients alongside with the vaccine. This is further followed by the promotion of breastfeeding through education, and awareness of young or recent mothers. This education is also carried to parents, so that parenting and family dynamics can also be further improved. Lastly, this is capped of by a dedication to improve local and national water and sanitation systems. Water quality and sanitation efficiency, play a direct role in the health of inhabitants, since they limit the spread of dangerous diseases, and infections, which are leading causes in childhood mortality. All of these programs are usually pursued on a community health level so that they can be more effective and can do greater good for the local populations.



Figure 5. Chadian mother and children. (UNICEF, <http://www.unicef.org.uk/Latest/Photo-stories/child-hunger-faltouma-and-tomas-story/>)

While the world has seen over a 50% reduction in childhood mortality in the past 40 years, there are still significant threats facing childhood survival, especially in Chad^{xvii}. 18 million of the 25 million children orphaned by HIV/AIDS are located in Sub-Saharan Africa; moreover, 174 out of every 1,000 children in the region still die before the age of 5^{xviii}. Overall, high-tech health care solutions are not necessarily needed to combat the problem of childhood mortality; rather, basic supplies, solid support, and knowledge and awareness of issues related to child mortality may prove most effective.

These ideas are meant to give you springboard to begin brainstorming on a proposal. Which of these strategies do you think will be most effective, both in terms of eradication of childhood mortality and in terms of cost? How can you expand upon these possible strategies and come up with a more detailed, feasible plan? Although these may sound like sound strategies, *how* exactly could the government of Chad implement them?

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## Suggested Roles

*These roles are included to help you start thinking about perspectives from which you might write your proposal, along with potential target audiences and strategies.*

- The Government of Chad
  - How high of a priority would childhood mortality control be on your agenda?
  - How many resources (i.e. money, manpower) would you allocate to reducing childhood mortality?
  - How would you change or adjust existing health care infrastructure to more adequately deal with childhood mortality?
  - How much would you rely on outside organizations (NGOs or international groups like the United Nations) to assist you in reducing childhood mortality?
- Non-Government Organization (NGO)
  - Non-profit organizations such as Safer Birth in Chad (<http://www.saferbirthin Chad.org/>) or the Chad Relief Foundation (<http://www.chadrelief.org/>)
  - How would you provide aid and resources (i.e. money, manpower) to Chad to assist in reducing childhood mortality?
- International Organizations
  - For example, the United Nations or the World Health Organization
  - How would you convince the government of Chad to do more to reduce childhood mortality?
  - What would you send to Chad to help out with wide-scale efforts?

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