

Udacity Business Analytics Nanodegree Program: Working with Data

Interpreting Data of Malaria Deaths in Africa: 2000-2014

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Introduction

Malaria is a grave and even fatal parasitic infection that poses a global challenge. The CDC defines malaria as an illness that is transmitted to humans by an infected female *Anopheles* mosquito that becomes infective after feeding on the blood supply of an infected human host. Transmission of the infection goes beyond an insect bite, it can also be transmitted during blood transfusions, organ transplants, or shared syringes that come into contact with a contaminated blood supply, underscoring the urgency of preventative measures.

This report aims to interpret the malaria deaths across African countries from 2000 to 2014. Using data visualizations, this analysis will highlight trends and patterns of malaria fatalities across a map of 47 African countries and an interactive bar chart showing how the number of malaria deaths changed over time.

This analysis will answer key questions that will bring insights into the trajectory of this illness and its impact on populations in African countries. These insights will lead to informed strategies to combat its effect on vulnerable communities.

Key Questions

1. Which countries experienced the highest number of deaths from malaria from 2000 to 2014?
2. Did the countries with the most malaria-induced fatalities experience a significant decrease in the prevalence of deaths from 2000 to 2014?
3. Has the prevalence of malaria decreased across all African countries since 2000?
4. How can we use these insights to prevent malaria from impacting vulnerable populations?

Which countries experienced the highest number of deaths from malaria from 2000 to 2014?

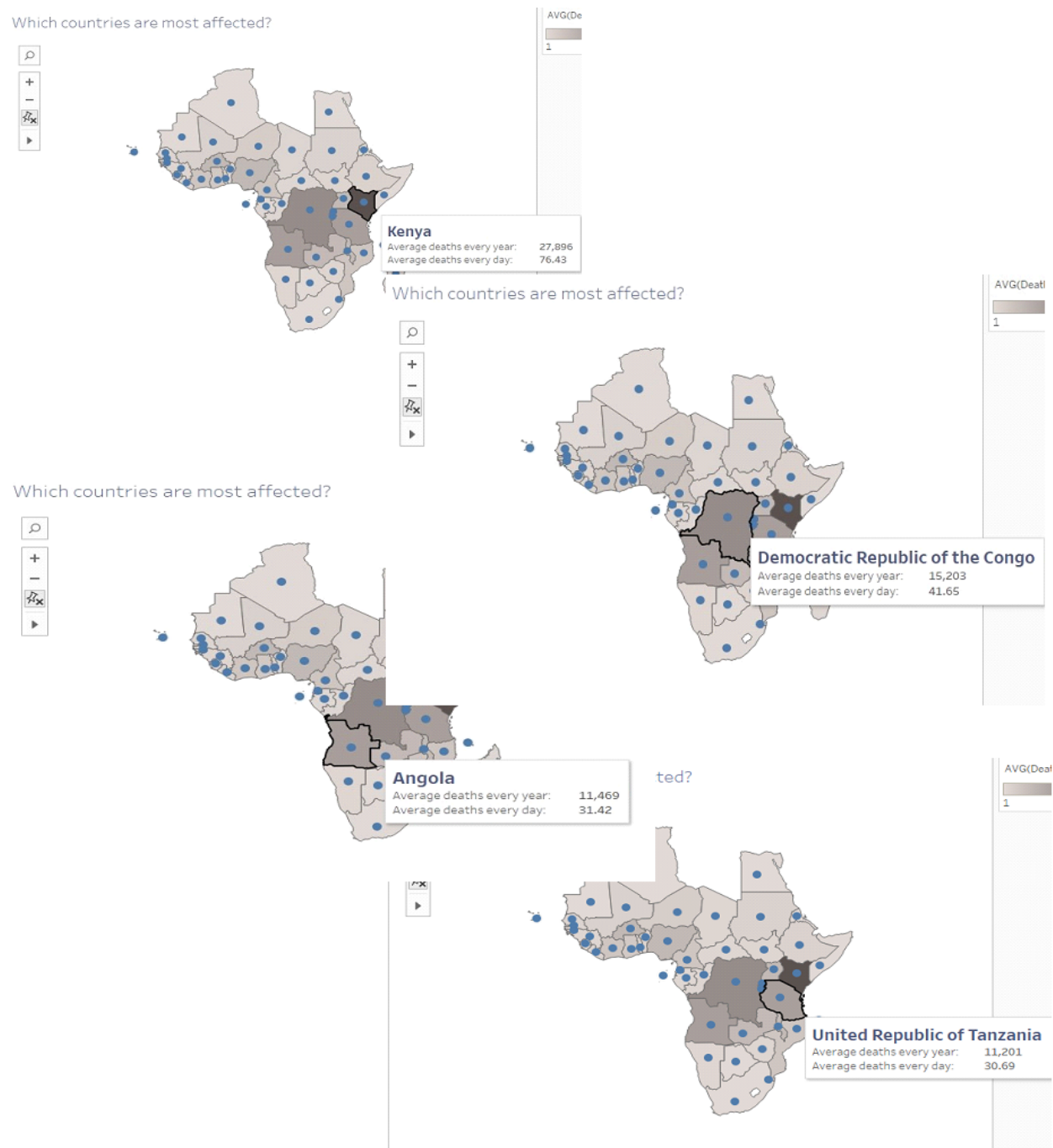


Figure 1

Figure 1 depicts the countries most affected by malaria. The darker shading marks a higher number of deaths caused by malaria. By hovering over each plotted dot on the map, Kenya had the highest number of deaths from malaria infections. The Democratic Republic of the Congo had the second highest instance of fatalities from malaria. The third highest prevalence of malaria occurred in Angola. Lastly, the United Republic of Tanzania had the fourth highest fatalities induced by malaria.

Did the countries with the most malaria-induced fatalities experience a significant decrease in the prevalence of deaths from 2000-2014?

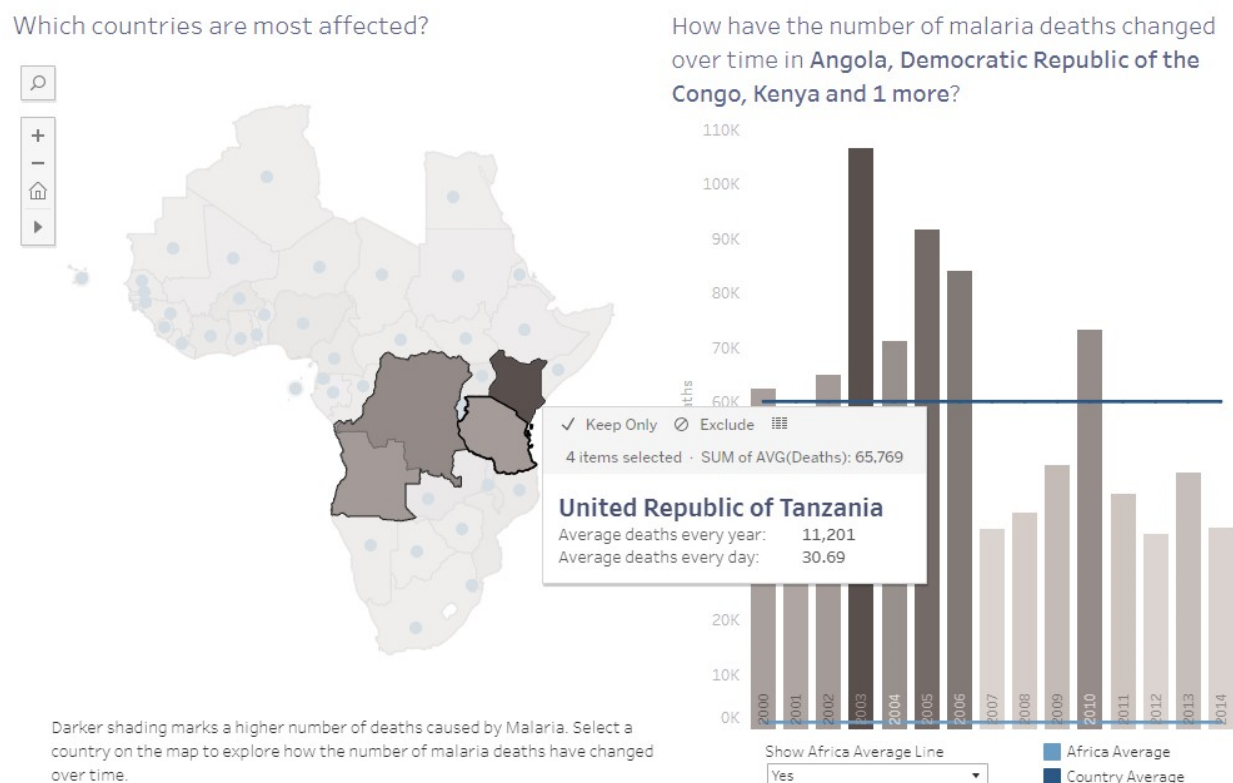
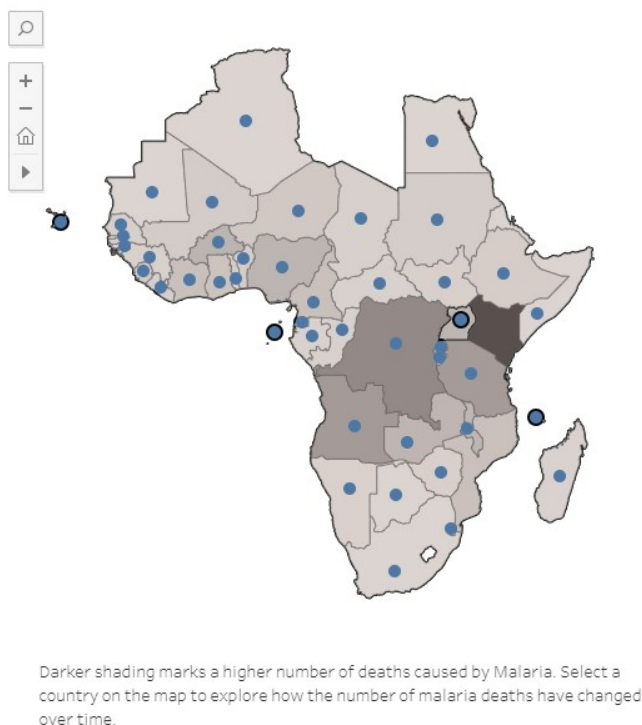


Figure 2

Figure 2 highlights the four countries with the highest prevalence of deaths caused by malaria. We can see that these countries did experience a decrease in deaths from 2000 to 2014. We can see that the countries experienced the most deaths in 2003, 2004, and 2005. The four countries were highlighted by clicking Ctrl and selecting the four countries to showcase how the number of malaria deaths changed over time from 2000 to 2014.

Has the prevalence of malaria decreased across all countries in Africa since 2000?

Which countries are most affected?



How have the number of malaria deaths changed over time in Algeria, Angola, Benin and 44 more?

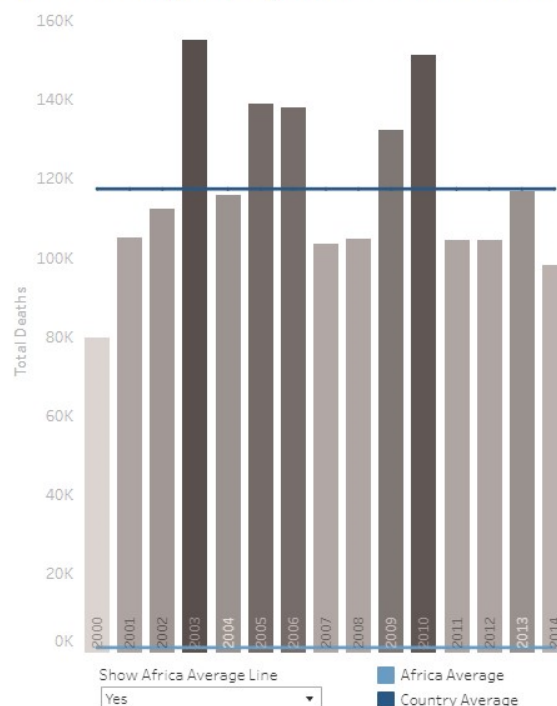


Figure 3

Figure 3 shows that work still needs to be done to prevent the risk of death from malaria. Although the countries have seen a decline in deaths from malaria, African countries saw the most deaths occur in 2003 and 2010, with several years seeing over 100,000 deaths. The average number of deaths in the 47 countries was around 120,000. The map was highlighted by clicking Ctrl to highlight all the countries represented on the map, illuminating how the number of malaria deaths changed over time in all 47 African countries.

How can we use these insights to prevent malaria from impacting vulnerable populations?

Analyzing the impact of malaria on vulnerable populations is necessary because the infection doesn't only cause heartbreaking deaths but also arrests economies and crushes communities. Governments, health organizations, and social charities can use these insights to focus their efforts on creating policies, developing treatments, and supporting vulnerable communities most likely to be gravely impacted by the consequences of malaria. Unfortunately, with global governments focusing on treating Covid-19, improvements for illnesses like malaria have plateaued. According to Malaria No More UK, malaria death rates have fallen by 60% since 2000, saving 7.6 million lives. With the help of continued analyses of malaria's impact on vulnerable populations, we can help save the 3.7 billion at risk. Raising awareness of the effect of malaria on countries most likely to be impacted by the consequences of this illness, leaders can ensure communities have access to curative treatments and preventative measures such as mosquito repellent sprays and textiles.

Resources

CDC - Malaria - About Malaria - FAQs. (2022, March 22). Centers for Disease Control and Prevention. <https://www.cdc.gov/malaria/about/faqs.html>

Help make malaria no more. (n.d.). Malaria No More UK. <https://malariafreeschools.org.uk/>

Malaria. (n.d.). Tableau Software. Retrieved August 13, 2023, from https://public.tableau.com/views/MakeoverMonday34Malaria_0/MalariainAfrica?%3Aembed=y&%3AshowVizHome=no&%3Adisplay_count=y&%3Adisplay_static_image=y