

PREDICTIVE MODELING FOR CANCER SCREENING



TEAM 1



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TABLE OF CONTENTS

01 PROBLEM STATEMENT

02 BUSINESS UNDERSTANDING

03 RESEARCH QUESTIONS

04 RESEARCH FINDINGS


05 RECOMMENDATIONS

06 CONCLUSION

07 OUTCOME

A black and white photograph of a middle-aged male doctor with short hair, smiling and looking off to the side. He is wearing a white lab coat over a light-colored collared shirt, and a stethoscope is draped around his neck. The background is a simple, light-colored wall.

PROBLEM STATEMENT

- Implementing data-driven strategies is imperative for Kenya to enhance cancer screening programs, combatting barriers like limited awareness, inadequate infrastructure, and financial constraints. By prioritizing early detection through these methods, Kenya can significantly alleviate the burden of cancer and reduce mortality rates.
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- A large, solid purple curved shape that starts from the bottom right corner and sweeps upwards and to the left, partially overlapping the text area.



BUSINESS UNDERSTANDING

- Cancer ranks as the third leading cause of death in Kenya, with late diagnosis contributing to high mortality rates.
- The project aims to enhance cancer screening efforts through data-driven strategies to address the urgent need for improved screening programs and increased participation rates.
- By identifying high-risk populations and implementing targeted interventions, the project anticipates increased screening participation rates, earlier detection of cancers, and improved treatment outcomes.
- Through this initiative, the project aims to significantly reduce cancer-related morbidity and mortality, improve public health outcomes, and ultimately save lives in Kenya.



RESEARCH QUESTION

1. What factors contribute to early detection of cancer among high-risk individuals?
2. How can predictive modeling using BRFSS data aid in identifying individuals at risk of cancer?
3. What are the implications of improving cancer screening efforts for public health outcomes in Kenya?



RESEARCH FINDINGS

1. What factors contribute to early detection of cancer among high-risk individuals?

- Age
- Whether had children or not
- Weight
- Height
- Marital status
- Physical health
- Mental health



RESEARCH FINDINGS

2. How can predictive modeling using the dataset aid in identifying individuals at risk of cancer?

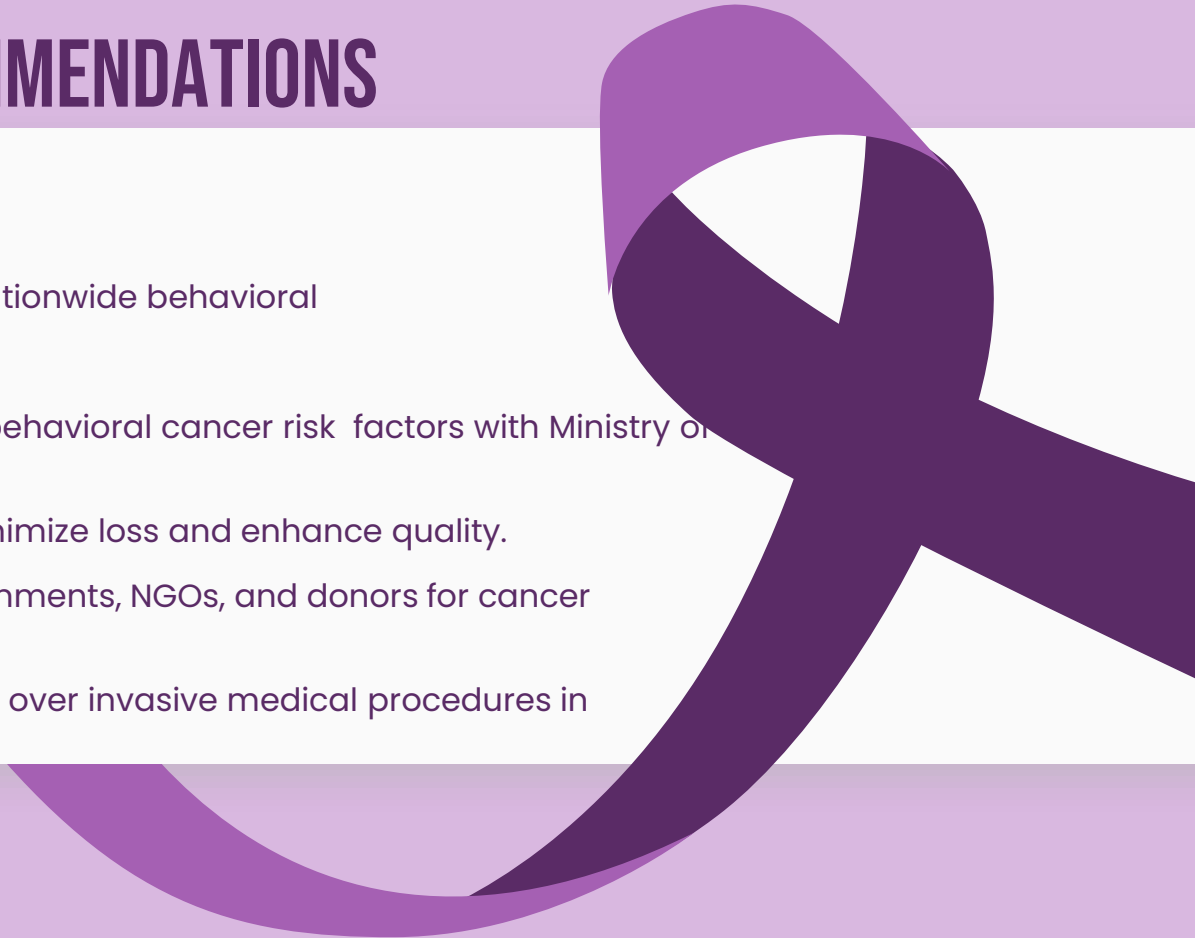
The model used in this project shows that we can use behavioral health factors to determine the level of risk(% scoring) of cancer of individuals, hence helping them determine the next course of action eg. going for physical cancer screening test.

3 What are the implications of improving cancer screening efforts for public health outcomes in Kenya?

- Lower mortality due improved early screening.
- Optimizing resource allocation for cancer programs.
- Improved public awareness of cancer.
- Improved quality of life.

RECOMMENDATIONS

- Utilize county health workers for nationwide behavioral
- health data collection.
- Establish a national database on behavioral cancer risk factors with Ministry of Health.
- Improve collection methods to minimize loss and enhance quality.
- Secure support from county governments, NGOs, and donors for cancer screening initiative.
- Focus on behavioral health factors over invasive medical procedures in screening programs.

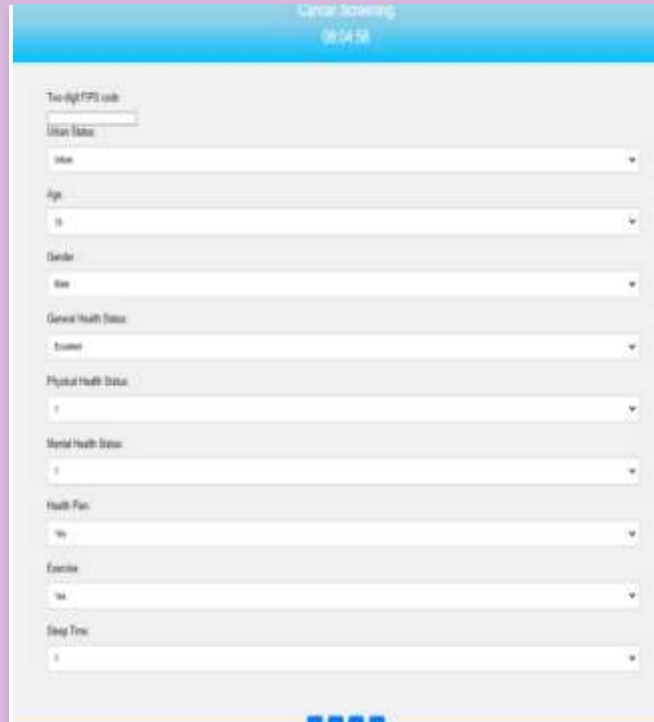


CONCLUSION



- Employed a data-first strategy to construct a supervised machine learning algorithm for predicting cancer likelihood.
- Identified county health government departments as optimal stakeholders.
- Proposed technology for enhancing nationwide cancer screening efforts and designing educational campaigns.
- Emphasized ease of use and accessibility of the technology for mass data collection and dissemination of cancer education.

OUTCOME



The screenshot displays a mobile application interface titled "Cancer Screening" with a timestamp of "08:04:58". The form contains the following fields:

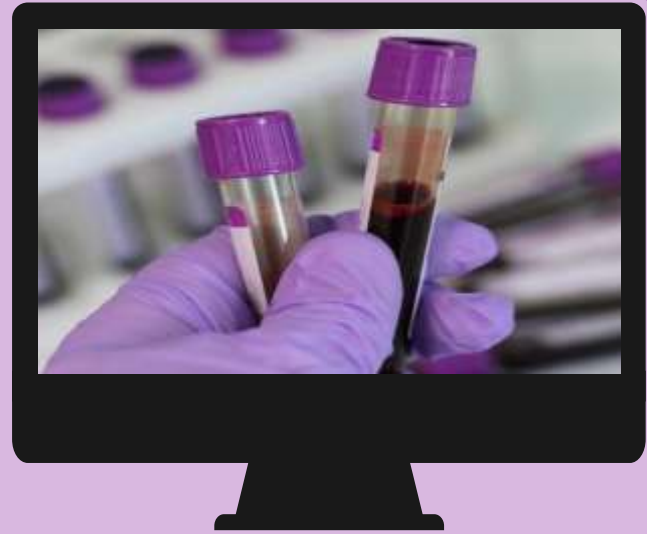
- Two-digit FPO code:** A text input field.
- Urban Status:** A dropdown menu with "Urban" selected.
- Age:** A dropdown menu with "18" selected.
- Gender:** A dropdown menu with "Male" selected.
- General Health Status:** A dropdown menu with "Excellent" selected.
- Physical Health Status:** A dropdown menu with "1" selected.
- Mental Health Status:** A dropdown menu with "1" selected.
- Health Freq:** A dropdown menu with "No" selected.
- Exercise:** A dropdown menu with "No" selected.
- Sleep Time:** A dropdown menu with "1" selected.

At the bottom of the screen, there are four blue navigation buttons.

- Design a user-friendly interface where new users can input their responses to the questions related to behavioral risk factors.
- Once the user submits their responses, it display the prediction results to the user, such as a percentage probability or risk score.



**EARLY DETECTION
MAKES A DIFFERENCE**



THANKS