



# Trend Analysis of Cancer Mortality and Incidence in Panama, using Joinpoint regression analysis.

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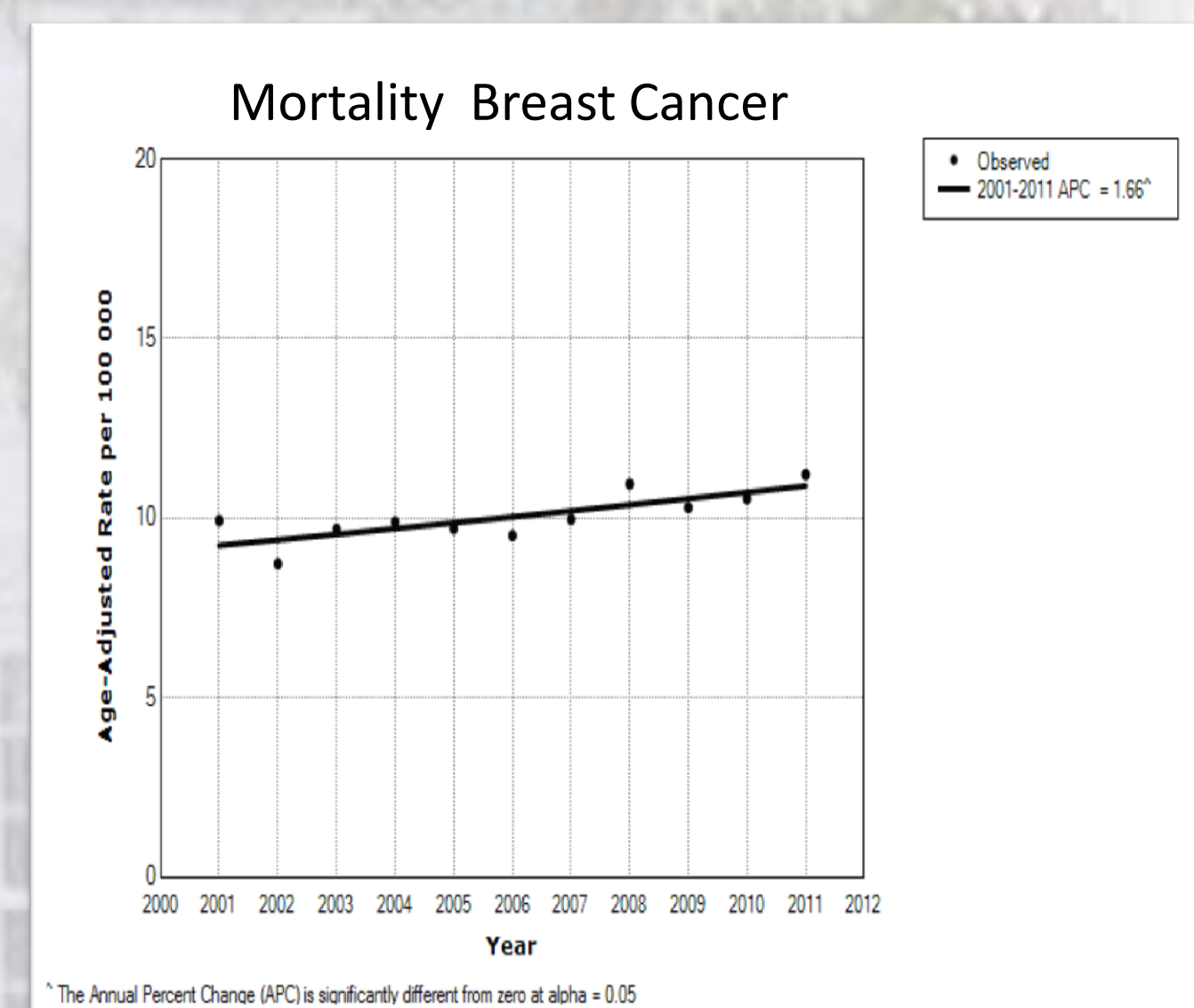
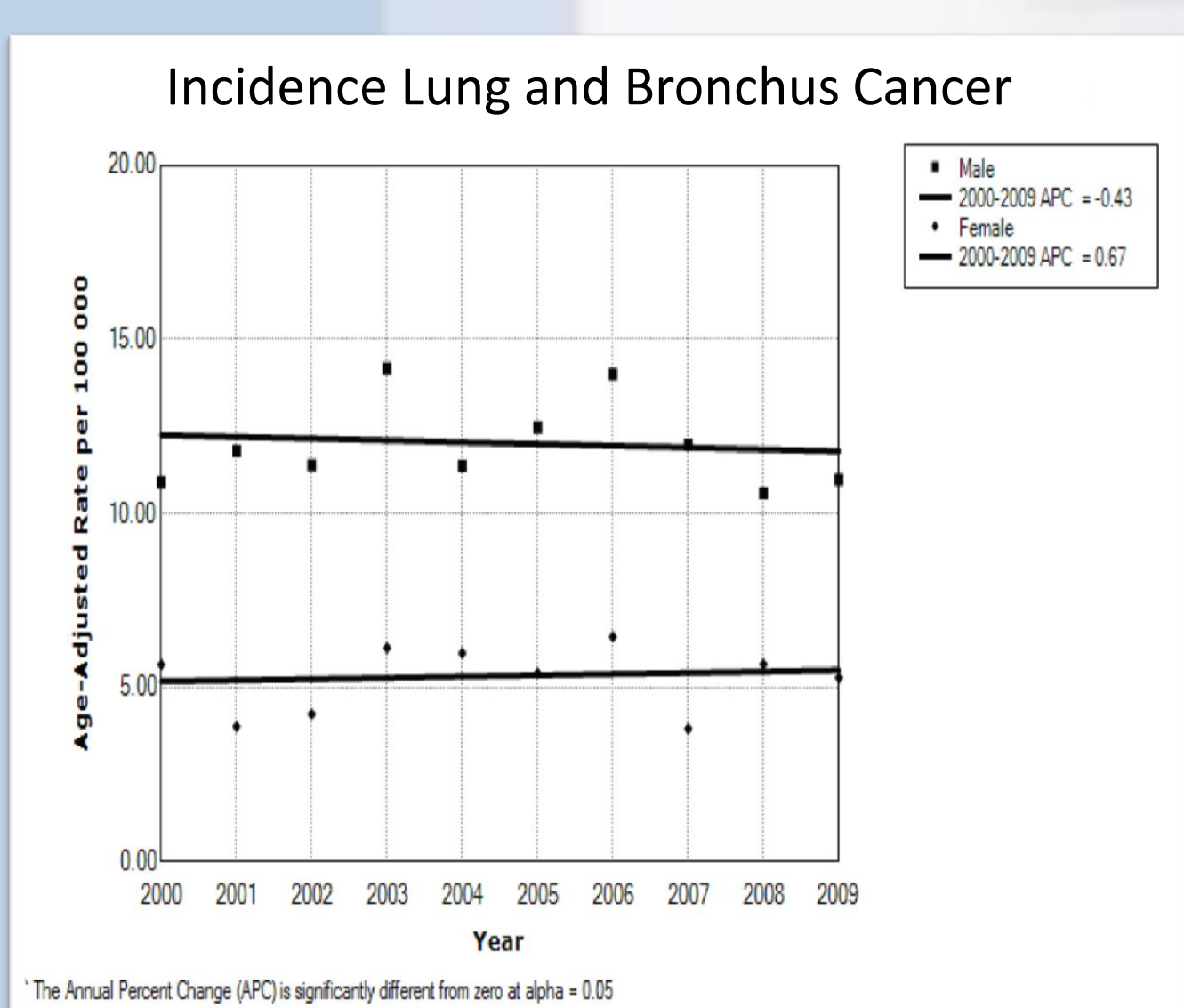
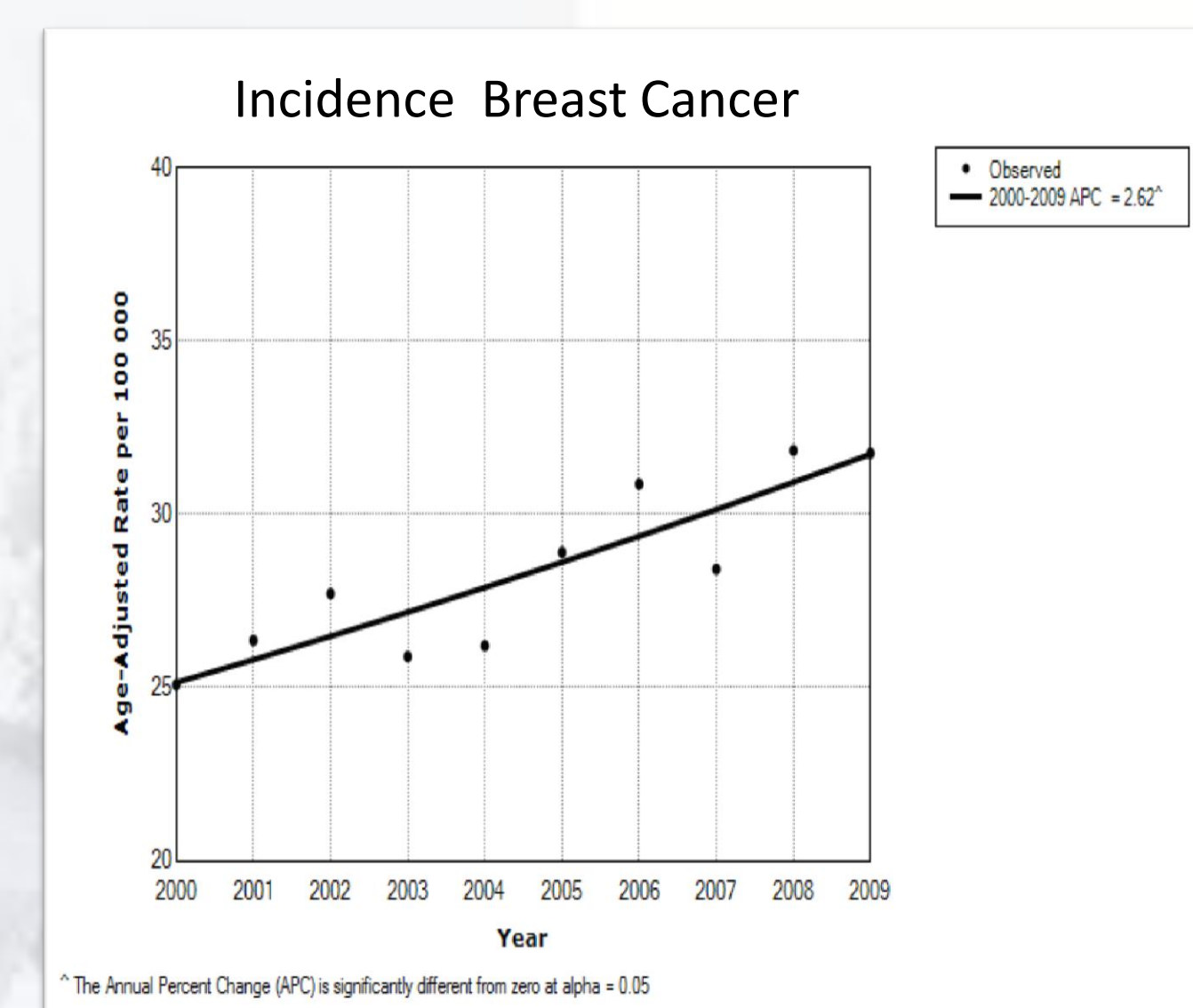
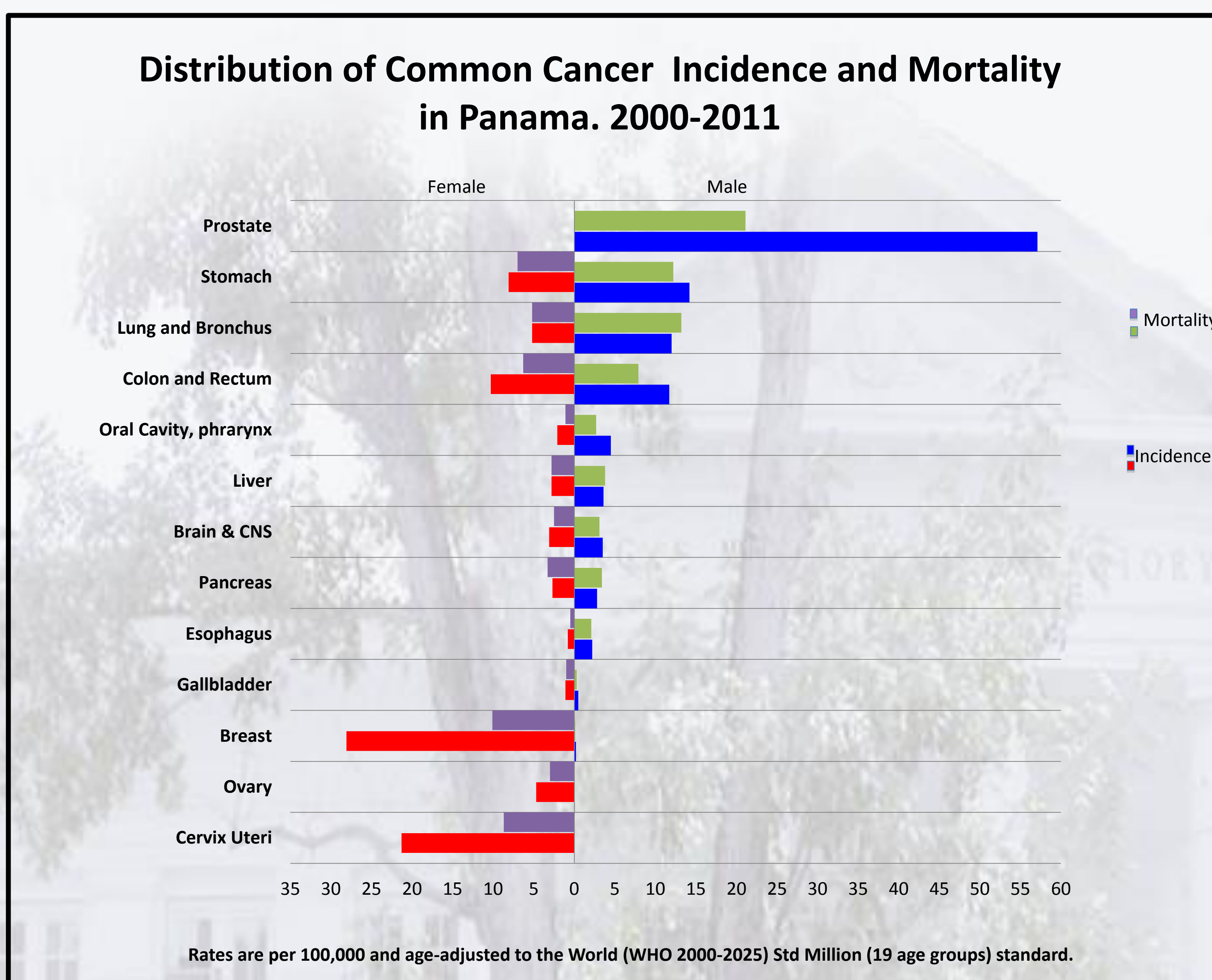
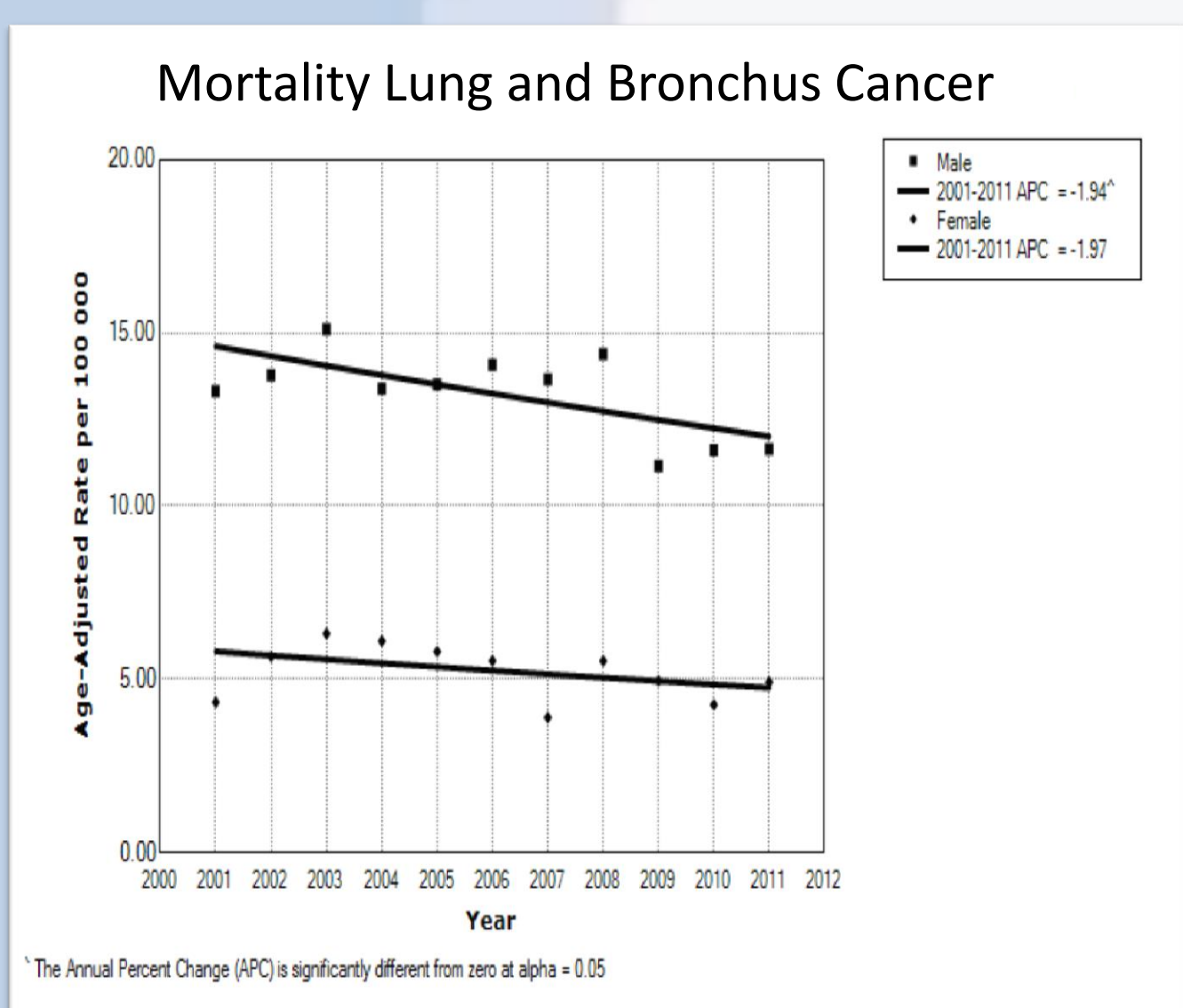
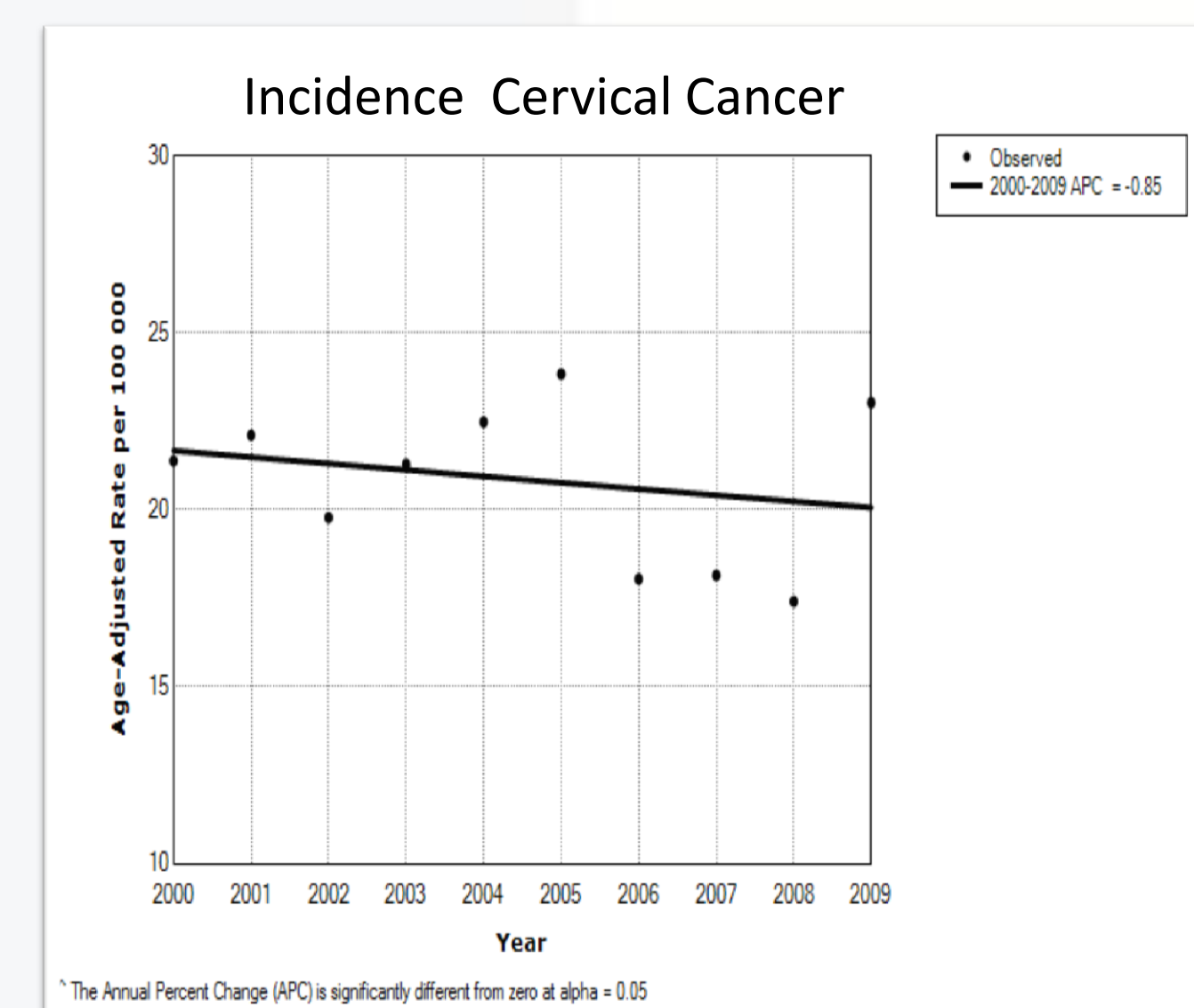
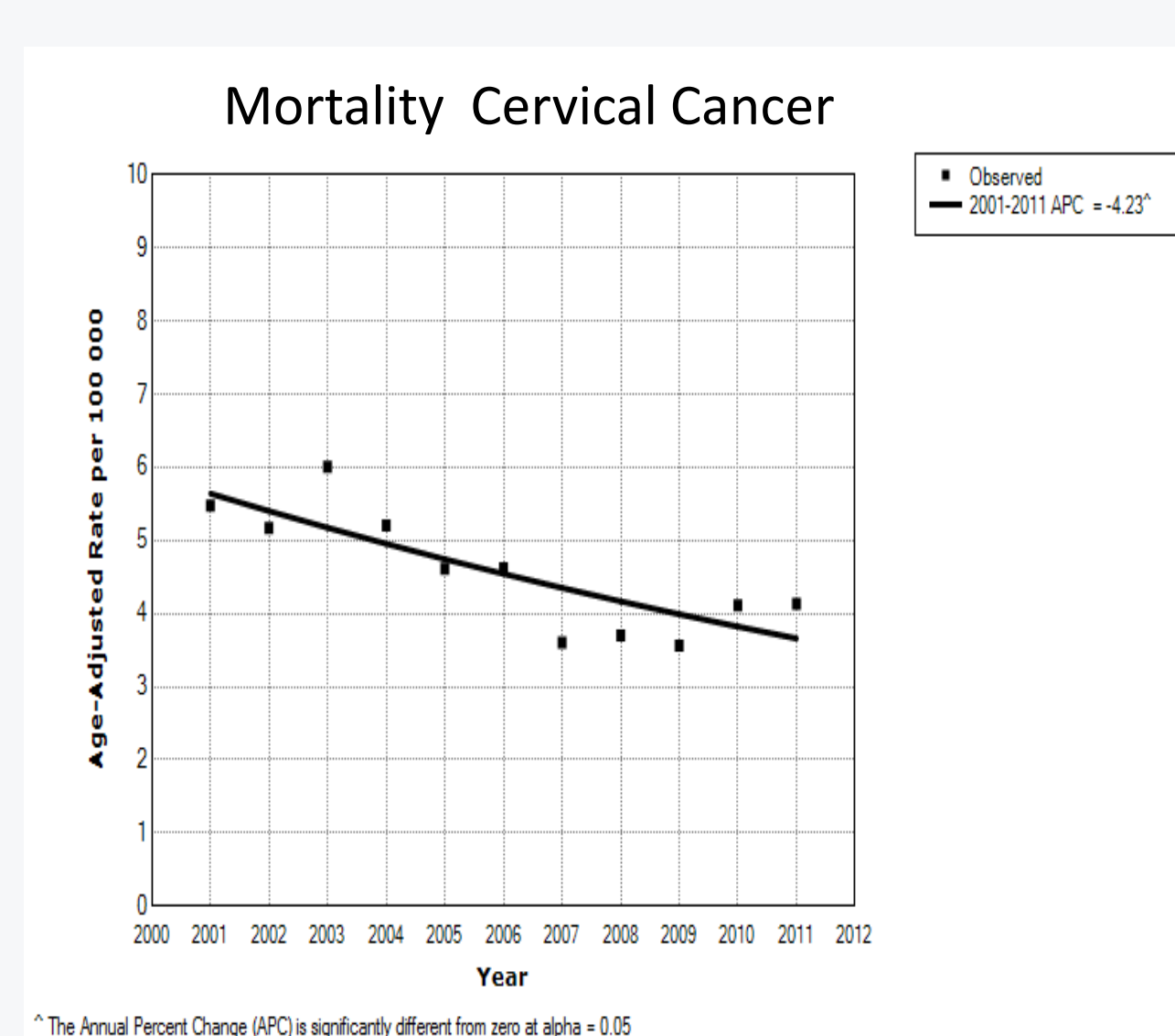
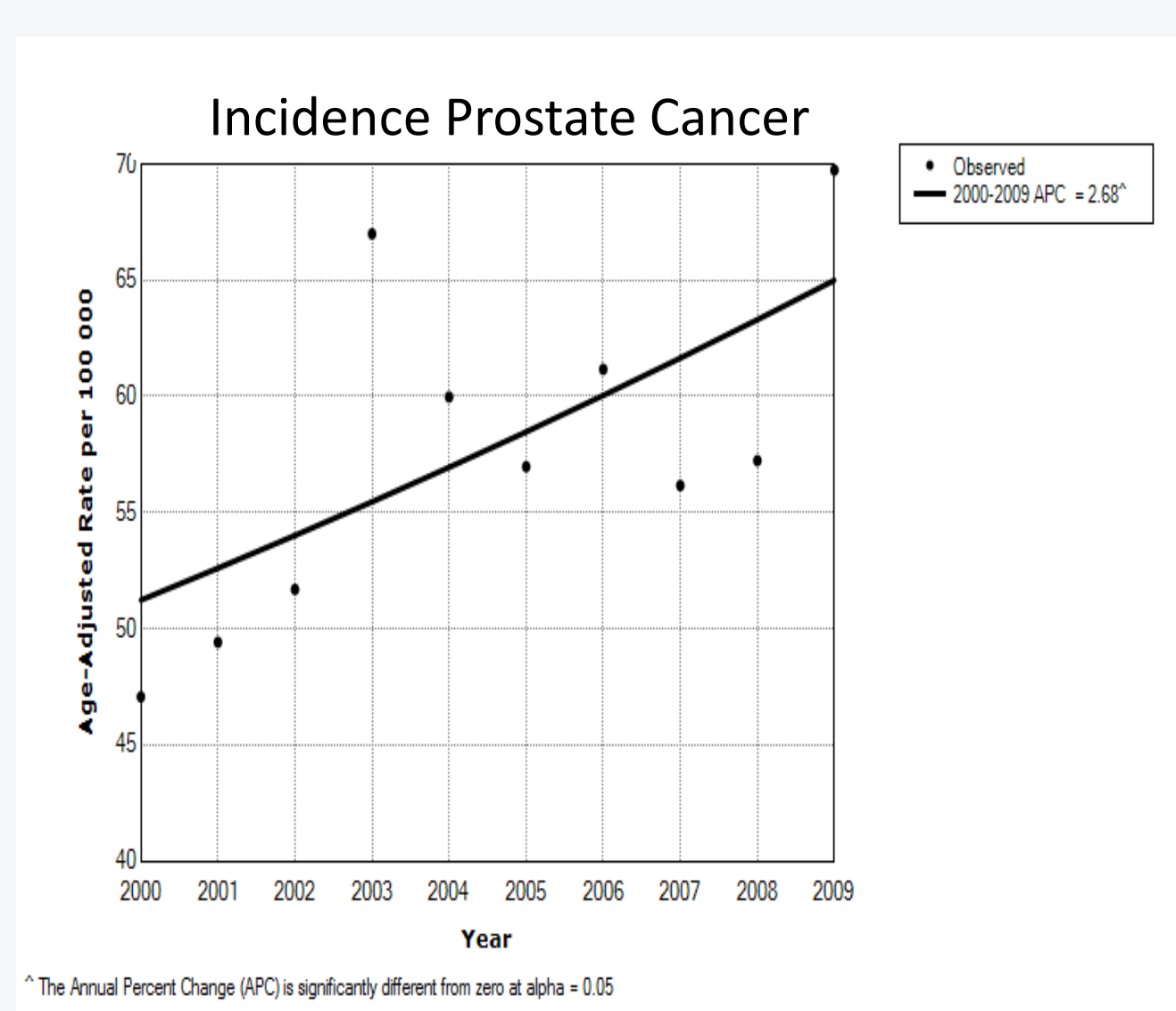
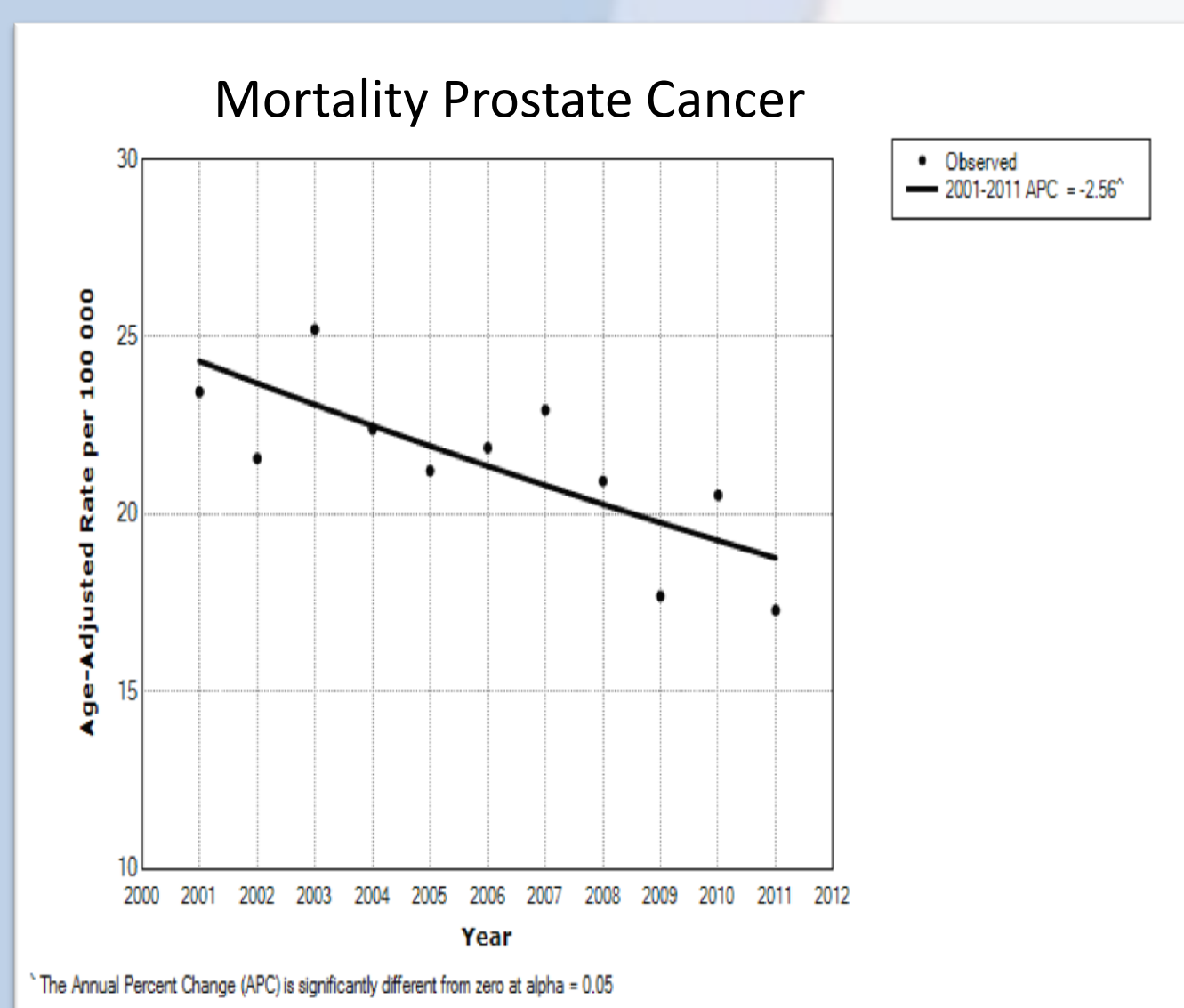
## Background

Cancer is one of the leading causes of death worldwide and its incidence is expected to increase in upcoming years. Nutritional shift and other lifestyle factors are becoming more apparent in developing countries. Panama has seen an increased in the incidence and mortality by cancer over the past 10 years. The aim of this study is to utilize Joinpoint regression analysis to study the trends of the incidence and mortality of cancer in Panama.

## Methods

Cancer mortality cases reported from the year 2001 to 2011 were obtained from the Panamanian National Institute of Census. Cancer incidence was estimated by the cases recorded from the Panamanian National Cancer Registry. The Joinpoint Regression Analysis program version 4.04 was used to examine trends in overall age adjusted mortality and incidence rates for selected cancers.

## Trends in Cancer Mortality and Incidence in Panama



Trends in all-ages age-standardized mortality and Incidence rates (world). "Best" Joinpoint model estimates for selected cancer sites by gender.

## Results

Overall, the trend of cancer mortality in Panama has declined over the last 10 years. In men, the mortality of prostate cancer ranked highest (21.1 per 100,000) followed by lung and bronchus cancer (13.2 per 100,000) and stomach cancer (12.2 per 100,000). Incidence was also led by prostate cancer (58.1 per 100,000) followed by stomach cancer (14.1 per 100,000), lung and bronchus cancer (12 per 100,000) and colon and rectum cancer (11.8 per 100,000). In women, mortality from breast cancer ranked first (10.1 per 100,000) followed by cervical cancer (8.7 per 100,000), stomach cancer (7.0 per 100,000) and lung and bronchus cancer (5.2 per 100,000). The incidence followed the same initial pattern of mortality with breast cancer ranking the highest (28.5 per 100,000) followed by cervical cancer (20.7 per 100,000) and colon and rectum cancer (10.4 per 100,000).

## Conclusions

This study has revealed compelling cancer trends patterns over the past 10 years in the country. Although Panama is considered a developing nation, our data demonstrates that some cancer mortality trends, like the one seen in cervical and lung cancer behave similar to the ones seen in developed countries. While others like breast cancer, follow similar patterns seen in countries undergoing a transition to a developed economy with its associated lifestyle, nutrition and body weight changes.

## Acknowledgement

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