ALASKA

Alaska Cancer Registry; David K. O'Brien, PhD, GISP

Stomach Cancer Trends across the North American Arctic: A Collaborative Project amongst Arctic Registries of the United States and Canada

NATIONAL PROGRAM OF CANCER REGISTRIES

SUCCESS STORY

SUMMARY: Stomach cancer incidence rates are relatively low (about 7 cases per 100,000 for the United States); however, there is a large disparity in stomach cancer rates depending on geography and race. Indigenous Arctic peoples tend to have much higher rates. For example, Alaska Natives have an average rate of about 21 cases per 100,000 from 2012-2016. Current rates of stomach cancer across the entire North American Arctic are not well described, and differences with national counterparts have not been thoroughly examined.

The Alaska Cancer Registry (ACR) is currently involved in a collaborative study with the lead agency for this study, the Office of the Chief Medical Officer, Department of Health & Social Services, Yukon, Canada, to evaluate the burden of stomach cancer across Canada and the United States with a focus on Arctic populations. For this study, several agencies in Alaska and across Arctic Canada are working together to calculate rates of stomach cancer incidence for North American Arctic populations and compare to national counterparts.

Stomach cancer rates for various regions and race groups were compiled and it was indeed evident that the Arctic indigenous populations of Canada and Alaska had a disproportionally higher cancer burden. The study lead investigator presented the preliminary results of the study as a poster at an international conference in Copenhagen, Denmark in August 2018. Future work on this study is planned and ACR will continue to work with our project partners in Canada and Alaska to address important research questions related to cancer that affect Arctic populations.

CHALLENGE: In 2012, stomach cancer was the fifth most commonly diagnosed cancer world-wide and the third most common causing death (1). Globally, rates vary by geography and disproportionately affect Indigenous populations (2). Canadian and American stomach cancer rates have declined for several decades (3, 4). However stomach cancer remains a highly fatal cancer; for instance, the five-year age-standardized relative survival is 28% in the United States and 26% in Canada (5). Despite declining rates, the burden of stomach cancer appears to disproportionately affect Arctic populations (5, 6, 7). Current rates of stomach cancer across the North American Arctic are not well described, and differences with national counterparts have not been thoroughly examined.

SOLUTION: In 2016, the Alaska Cancer Registry (ACR) worked on a study regarding stomach cancer incidence in Alaska Natives as a collaborative effort with CDC's Arctic Investigations Program (AIP) in Anchorage. As a result of this project, in 2017 Dr. Michael Bruce of CDC-AIP put ACR in touch with Jonathan Simkin of the Office of the Chief Medical Officer, Department of Health & Social Services, Yukon, Canada. Mr. Simkin was interested in doing a similar project for all of Arctic North America spanning Alaska in the United States and the northern providences of Canada. A collaborative project team was assembled and included cancer registries from Yukon, and Northwest Territories in Canada, ACR and the Alaska Native Tumor Registry (ANTR) in the United States, as well as CDC-AIP. Alaska data were provided for the study by ACR. Dr. David O'Brien was the lead project contact for ACR. Mr. Simkin conducted this study with various U.S. and Canadian agencies through the School of Population and Public Health, University of British Columbia, Vancouver.

RESULTS: The study objective was to calculate rates of stomach cancer incidence for North American Arctic populations and compare to national counterparts. The study team members compiled stomach cancer incidence on the following geographic and/or racial groups:

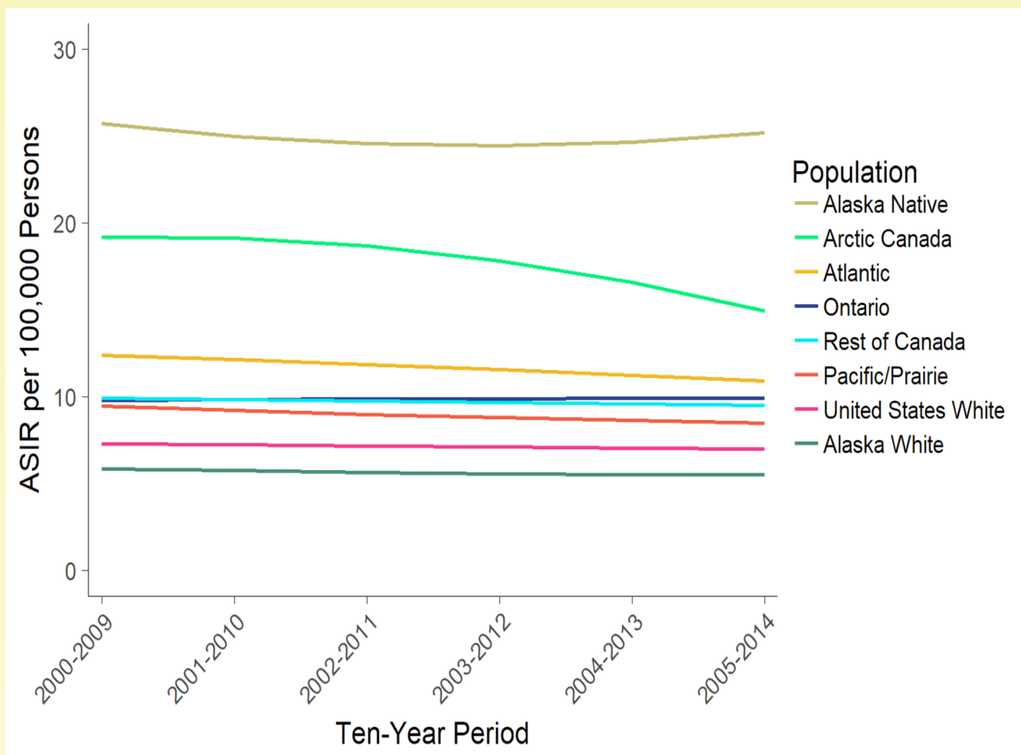
Canada

- Arctic Canada (Yukon Territory, Northwest Territory, and Nunavut)
- Atlantic
- Ontario
- Pacific /Prairie
- Rest of Canada

United States

- United States White
- Alaska Natives
- Alaska White

Data were standardized to the 2011 Canadian standard population and are illustrated on the following graph as 10-year rolling incidence rates. This is the first time Canadian and U.S. stomach cancer incidence data were assembled and presented together in this way. As the Canadian cancer registries do not collect data by race, Canadian rates are for all races combined, while the U.S. data are stratified by race. As indigenous peoples tend to be disproportionally affected by stomach cancer and have higher rates, the data for United States and Alaska tend to serve as "bookends" to the Canadian data in that the Canadian data fall between the data for Whites and Alaska Natives. The Arctic Canada data have a larger proportion of indigenous Canadian people and their rates are the highest of the Canadian dataset.



SUSTAINING SUCCESS: Mr. Simkin assembled a conference abstract for the project and Dr. O'Brien contributed and was a co-author, along with the other project team members. Mr. Simkin submitted the abstract to the 17th International Congress of Circumpolar Health (ICCH17) and it was accepted as a poster presentation. Mr. Simkin prepared the conference poster and Dr. O'Brien contributed. The poster described these preliminary results (incidence rates and standard incidence ratios to show statistical significance) and discussed stomach cancer risk factors, specifically *H. pylori* infection, smoking, and diet. Mr. Simkin traveled to Copenhagen, Denmark, in August 2018 and presented the poster at the conference. The poster placed 2nd in the conference's overall poster judging. Future work is planned for this study, including a peer-reviewed publication, and we will continue to work with our project partners in both Canada and Alaska to address important cancer research questions affecting Arctic populations.

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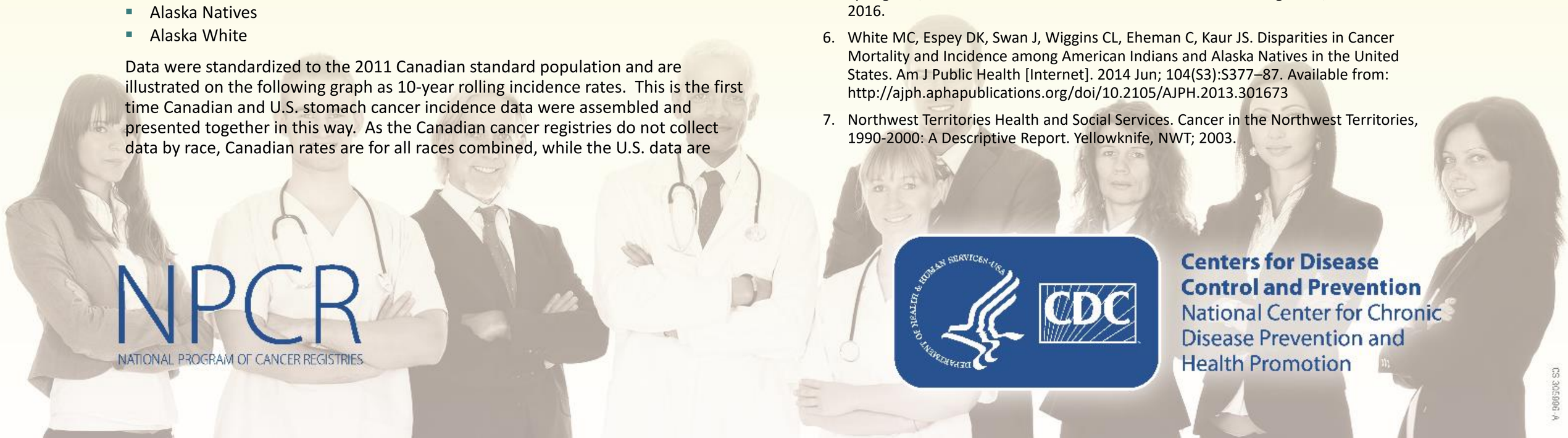

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