LSU Health tumor registry data find acadiana colon cancer rates among nation's highest

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A special study using data from LSU Health New Orleans School of Public Health's Louisiana Tumor Registry has found that colorectal cancer incidence rates in the Louisiana Acadian parishes are among the highest in the United States. This study appears to be the first to identify a high rate of cancer in a large, regional, US founder population, raising the possibility of a genetic predisposition. Alternatively, an unidentified, robust environmental risk factor may be present.

The paper is published online in *Clinical and Translational Gastroenterology*, a *Nature* journal, at http://www.nature.com/ctg/journal/v5/n10/full/ctg201410a.html.

The study was led by Dr. Jordan Karlitz, Division of Gastroenterology at Tulane University School of Medicine who is also adjunct faculty at the LSU Health New Orleans School of Public Health, Dr. Xiao-Cheng Wu, Professor of Public Health and Director of the LSU Health New Orleans Louisiana Tumor Registry, Dr. Vivien Chen, LSU Health Professor of Public Health, and Dr. Elizabeth Fontham, Professor and Founding Dean Emeritus of the LSU Health New Orleans School of Public Health.

The research team chose to study the Acadian parishes where French is spoken as these parishes are home to the Cajun population that migrated to the region in the 1700s from Canada and France. The Cajuns are a founder population – a new population founded by a small number of individuals who have limited genetic variation relative to the larger original population. Founder populations are important to study as diseases with a hereditary basis, such as certain genetic conditions and cancers, can be seen with increased frequency. Results can yield important information about cancer susceptibility genes not only for the population being studied, but for others worldwide who may share a similar heritage.

The research team identified 18 Acadian parishes and stratified 2005-2009 cancer incidence data by age, ethnicity and gender by utilizing French language census data. A total of 3,288 colorectal cancer cases were identified in the Acadian region and 11,737 in Louisiana. They identified a subgroup of 9 parishes with higher proportions of French speakers, a marker for the Cajun population. Colorectal cancer rates in whites and white males in the 18 parishes were statistically significantly higher than both Louisiana and US rates. In the 9 parishes, rates increased further; whites had an incidence of 56.1 per 100,000, 13% higher than Louisiana and 23% higher than the US rate. In white males, incidence was 72.6 per 100,000, 19% higher than Louisiana and 37% higher than the US rate. If the 9-parish region were considered a "state," white males would have the highest colorectal cancer incidence in the United States by 11% compared with other white male populations.

"This study has identified disproportionately high rates of colorectal cancer in the Acadian parishes of Louisiana," says Dr. Karlitz. "The research highlights the importance of utilizing data made available by high-quality population-based cancer registries to identify at-risk populations that can have important implications with regard to health care delivery. Future studies to assess genetic and environmental risk factors will be necessary to better understand the colorectal cancer incidence in this population."

"This study demonstrates the importance of the Louisiana Tumor Registry at the LSU Health New Orleans School of Public Health in identifying areas

and populations at high risk of cancer. Without the population-based state registry, we would not have such data for cancer control and research," notes Dr. Wu.

Concludes senior author Dr. Elizabeth Fontham, who is from the region, "This study has provided provocative findings of a potential link between high colorectal cancer risk and the Acadian population of south Louisiana. Additional studies in this population are important in order to better understand the roles of specific factors, both genetic and/or environmental."

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