

ACT 265

H.B. NO. 654

A Bill for an Act Relating to Health.

Be It Enacted by the Legislature of the State of Hawaii:

SECTION 1. The legislature finds that liver cancer in Hawaii occurs at extremely high rates. According to the United States Centers for Disease Control and Prevention and the Hawaii Tumor Registry, Hawaii has had the highest or second-highest rate of liver cancer among all of the states in recent years.

Every year in Hawaii there are one hundred eighty-four newly diagnosed cases of liver cancer, including bile duct cancer, according to the Hawaii Tumor Registry. From 2004 to 2013, available data on liver cancer indicates an annual increase in Hawaii of 2.1 per cent in males and 1.3 per cent in females, while the incidence of many other cancers such as colon, lung, prostate, and stomach cancer declined. There are currently about one thousand patients in Hawaii fighting liver cancer and bile duct cancer, both of which are almost always fatal.

The legislature further finds that liver cancer, which starts in the liver and includes bile duct cancer, is most commonly caused by the hepatitis B virus, hepatitis C virus, and heavy alcohol consumption. In Hawaii, however, these factors are near the national average, which suggests that other factors may be contributing to the high occurrence of liver cancer in the State. Other factors that can cause liver cancer are non-alcoholic steatohepatitis (NASH or fatty liver); infectious agents such as liver fluke, a type of parasitic flatworm found in fish, shrimp, and vegetables grown in fresh water; and consumption of foods containing aflatoxins, a fungus abundant in warm and humid regions that can grow on foods, such as grains and nuts that are stored improperly. Almost all of these possible etiologies lead to chronic inflammation in the bile ducts. Such inflammation can result in genetic alterations in the liver and bile ducts, which predispose individuals to the development of cancer.

The precise etiology of the increased incidence of liver and bile duct cancer in Hawaii is not known. Understanding this is essential in order to implement appropriate public health interventions to decrease the burden of this disease. Recent research at the University of Hawaii cancer center suggests that many individuals who are not obese can accumulate liver fat insidiously that may predispose them to cancer. Also, the prevalence of aflatoxins and cancer-causing liver fluke infections in Hawaii is not well-defined.

In addition, liver and bile duct cancer has racial and ethnic predispositions, with the highest incidence and mortality rates seen in Native Hawaiian males and Chinese females. The reason for the racial and ethnic disparities requires further study but may possibly be related to environmental exposures.

In order to better understand the etiologies of liver and bile duct cancer, the high incidence of this disease compared to other states, and the racial and ethnic disparities, the University of Hawaii cancer center is proposing a three-year study with the following goals:

- (1) Examine the incidence of insidious fatty liver across diverse population groups in Hawaii and correlate with environmental and dietary exposures that may be causative;
- (2) Define the incidence of liver fluke infection and aflatoxin exposure in diverse population groups in Hawaii, correlate exposure to the development of chronic liver inflammation and cancer, develop biomarkers that can be utilized for diagnostic and prognostic purposes in exposed individuals, and develop cancer prevention interventions to mitigate the risk of future liver cancer development; and
- (3) Identify additional biomarkers, such as bile acid or intestinal microbiome composition, that may correlate with the development of liver and bile duct cancer in order to inform public health interventions for liver and bile duct cancer prevention.

Liver cancer is the leading cause of cancer deaths worldwide, but accounts for only 2.4 per cent of all new cancer cases in the United States. Therefore, it has not been a high priority for research funding from the National Institutes of Health. Since liver cancer is so widespread in Hawaii, where it is the fifth most common cause of cancer mortality, more resources need to be devoted to research. The University of Hawaii cancer center is preparing to examine the causes of liver and bile duct cancer with specific attention to disparities across different racial and ethnic groups in order to inform public health and medical interventions to reduce the burden of this disease.

The purpose of this Act is to appropriate funds to the University of Hawaii cancer center to determine the etiologies of the high incidence of liver and bile duct cancer in Hawaii.

SECTION 2. There is appropriated out of the general revenues of the State of Hawaii the sum of \$350,000 or so much thereof as may be necessary for fiscal year 2019-2020 for the University of Hawaii cancer center to determine the etiologies of the high incidence of liver and bile duct cancer in Hawaii.

The sums appropriated shall be expended by the University of Hawaii for the purposes of this Act.

SECTION 3. The University of Hawaii cancer center shall submit a report of its findings, including how the appropriated funds were spent, to the legislature no later than twenty days prior to the convening of the regular session of 2020.

SECTION 4. This Act shall take effect on July 1, 2019.

(Approved July 8, 2019.)