

EPIsodes - Monthly Report

St. Lucie County Cancer Assessment—February 2019 Executive Summary

In February 2019, a cancer assessment was completed to address community concerns received by the Florida Department of Health in St. Lucie County (DOH-St. Lucie). In 2018, concerned citizens, comprised initially of a local glioblastoma support group, questioned the number of glioblastoma cases occurring in the community. Specifically, concerned citizens questioned if there were higher rates of glioblastoma among individuals younger than 40 years of age and in the geographic areas of zip codes 34982, 34983, and 34952.

For this assessment, the number of observed cases for zip codes 34982 (primary area of concern) and zip codes 34952 and 34983 (secondary areas of concern), and the state age-specific rates from 1998 to 2017 for glioblastoma were gathered from the Florida Cancer Data System (FCDS), Florida's statewide cancer registry. A glioblastoma case was defined based on the International Classification of Oncology, 3rd edition (ICD-O-3) histology codes 9440, 9441, 9442, 9445, 9450, 9451 and Behavior 3.

Cancer can occur randomly among populations. The number of cancer cases may vary from year to year even if there is no change in the population or environment. Overall, cancer occurrence showed a pattern in which most cases occurred over the age of 60 and there were more cancers among males than females as expected.

For this assessment, two time periods (1998-2007 and 2008-2017) were examined. There were no statistically significant differences in the number of observed cases than expected cases for all three areas of concerns.

The Florida Department of Health takes health concerns brought forward by the community very seriously and will continue to take necessary and appropriate actions to ensure the health and safety of our residents. The Department will continue to monitor cancer incidence in the suspected areas of concern. Moreover, the Department will continue to work with local cancer stakeholders to provide education on cancer and what constitutes a suspected cancer cluster in addition to staying abreast of any new medical and scientific discoveries to better understand the occurrence of glioblastoma. Finally, the Department will recommend to the respective advisory boards that funding allocations from the Legislature through the Bankhead-Coley Program and the Live like Bella Program provide opportunities to fund local researchers to conduct studies to better understand the burden and potential risk factors for brain cancer sub-types, more specifically glioblastoma.

St. Lucie County Cancer Assessment—Additional Information

- **DOH-St. Lucie Glioblastoma Concerns**, web page with more information and a link to the full report, St. Lucie Cancer Assessment—February 2019 stlucie.floridahealth.gov/programs-and-services/glioblastoma
- **Florida Cancer Data System** fcds.med.miami.edu/inc/welcome
- **FDOH Cancer Concerns** floridahealth.gov/diseases-and-conditions/cancer/cancer-registry/cancer-concerns/index

"Disease control and prevention are core functions of any public health agency. Protection of the public's health from existing, emerging, and re-emerging diseases requires diligence in all aspects of public health. The public health partners identifying and characterizing emerging trends in disease are the physicians, nurses, laboratorians, hospital infection preventionists, and other health care professionals who participate in reportable disease surveillance. Without their participation, the ability to recognize and intervene in emerging public health issues would be much more limited."

[Florida Morbidity Statistics Report 2016](#)



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St. Lucie County Cancer Assessment: Information for Clinicians

The Centers for Disease Control and Prevention define a cancer cluster as, “a greater than expected number of cancer cases that occurs within a group of people in a geographic area over defined period of time” (1). According to the National Cancer Institute, a review of 576 cancer cluster investigations conducted over 20 years found that an increase in cancer rate could only be found in 72 of the suspect clusters. Only three of those 72 could be linked to a possible exposure, and in only one case was a clear cause identified (2).

Glioblastoma is the most common malignant primary brain tumor accounting for 54% of all gliomas and 16% of all primary brain tumors. Glioblastoma, also known as “glioblastoma multiforme,” “grade IV astrocytoma” or “GBM,” is currently an incurable tumor with a medical survival of 15 months. GBM is comprised of primary and secondary types, constituting distinct disease entities which evolve through different genetic pathways, affecting patients at different ages and likely differing in prognosis and response to therapy.

- Primary de novo GBM accounts for more than 80% of GBM and occurs in older patients (mean age = 64 years)
- Secondary GBM develops from lower grade astrocytoma or oligodendrogliomas and occurs in younger patients (mean age = 45 years)

Treatment for glioblastoma initially consists of maximally safe surgical resection followed by radiation therapy and concurrent chemotherapy. The average annual age-adjusted incidence rate of GBM is 3.19 per 100,000 persons in the United States (3).

Research suggests that about 5% of all glioblastomas are caused by hereditary conditions such as neurofibromatosis (type 1 and type 2), tuberous sclerosis and von Hippel-Lindau disease, whereas the remaining 95% are not attributed to any specific cause. Some commonalities of glioblastoma cases have been observed and are being considered by ongoing research; prior radiation or x-ray exposure to the head or neck, fungal infections of the scalp, previous cancers of the brain, men age 50 and older with chromosomal abnormalities on chromosome 10 or 17, and immune system disorders or the use of drugs that suppress the immune system. However, at this time, the causes of glioblastoma remain unknown (4, 5).

The Florida Department of Health assessed the number of observed cases of glioblastoma for the suspect zip codes and the state age-specific rates from 1998 to 2017 were gathered from the Florida Cancer Data System (FCDS). A glioblastoma case was defined based on the International Classification of Oncology, 3rd edition histology codes 9440, 9441, 9442, 9445, 9450, 9451 and Behavior 3.

Statistical testing was based on the 95% confidence interval of the Standardized Incidence Ratio (SIR) calculated. There were no statistically significant differences in the number of observed case than expected cases for all 12 subgroups (three zip codes, two time periods, males and females).

The Florida Department of Health in St. Lucie County takes health concerns brought forward by the community very seriously and will continue to take necessary and appropriate actions to ensure the health and safety of our residents. The Department will continue to monitor cancer incidence in the suspected areas of concern and continue to provide education on cancer and the respective risk factors for different cancer types and the importance of maintaining a healthy lifestyle.

We understand that cancer, particularly glioblastoma, is a frightening diagnosis for your clients and their families. Answering questions about glioblastoma and addressing the concerns of our community are both difficult but very important tasks. We are asking our health care partners to join our overall effort to educate by providing this information to concerned clients, as well as continuing your own efforts to keep our whole community healthy.

In addition, if you or your clients have further questions about the St. Lucie Cancer Assessment, glioblastoma, general cancer risks, or would like to report a specific case of glioblastoma, call the Florida Department of Health in St. Lucie County at 772-462-3800.

References:

1. CDC. [Investigating suspected cancer clusters and responding to community concerns: Guidelines from CDC and the Council of State and Territorial Epidemiologists. MMWR 2013; 62 \(RR-08\)](#)
2. National Cancer Institute. [cancer.gov/about-cancer/causes-prevention/risk/substances/cancer-clusters-fact-sheet?redirect=true](#)
3. Tamimi AF, Juweid M. Epidemiology and Outcome of Glioblastoma. In: De Vleeschouwer S, editor. Glioblastoma [Internet]. Brisbane (AU): Codon Publications; 2017 Sep 27. Chapter 8. Available from: [ncbi.nlm.nih.gov/books/NBK470003/](#) doi: 10.15586/codon.glioblastoma.2017.ch8
4. Memorial Sloan Kettering Cancer Center. [mskcc.org/cancer-care/types/brain-tumors-primary/risk-factors](#)
5. Moffitt Cancer Center. [moffitt.org/cancers/glioblastoma/diagnosis/causes/](#)

Preliminary Cases of Reportable Diseases/ Conditions in St. Lucie County and Florida, Year to Date March 2

Note that this table includes preliminary confirmed and probable cases reported in Florida residents (regardless of where infection was acquired) by date reported to the Bureau of Epidemiology as captured in the reportable disease surveillance system (Merlin).

Data for 2018 and 2019 is preliminary and will change. Case counts may change with additional review. A percentage of cases will be determined not to be cases after additional review and this percentage varies by disease.

Please note that counts presented in this table may differ from counts presented in other tables or reports, depending on the criteria used.

Changes in case definitions used for epidemiologic surveillance can result in dramatic changes in case counts. Current Florida Surveillance Case Definitions are available online at: <http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/surveillance-and-investigation-guidance/index.html>

[^]Case definition for reported lead poisoning changed in 2018.

*Beginning in 2018, the probable case definition for Shiga toxin-producing E. coli (STEC) included non-culture tests for symptomatic people.

**From 2015 to 2016, the probable case classification for campylobacteriosis included non-culture tests for symptomatic people with no culture result available and no other enteric pathogen detected. Beginning in 2017, the probable case classification was revised to include non-culture tests for symptomatic people, independent of a culture result or detection of another enteric pathogen.

^^Beginning in 2017, the probable case classification for salmonellosis, shigellosis, and vibriosis included non-culture tests, independent of the presence of symptoms.

[Click here for a list of Reportable Diseases/ Conditions in Florida](#)

Disease Category	St. Lucie County		Florida	
	Year to Date, March 2			
	2018	2019	2018	2019
Vaccine-Preventable Diseases				
Measles (Rubeola)	0	0	0	0
Mumps	0	0	15	5
Pertussis	0	0	50	54
Varicella (Chickenpox)	2	1	101	158
CNS Diseases and Bacteremias				
Creutzfeldt-Jakob Disease (CJD)	0	0	5	2
Haemophilus influenzae Invasive Disease	0	2	77	54
in children 5 years or younger	0	0	8	4
Listeriosis	0	0	9	3
Meningitis, Bacterial or Mycotic	2	0	24	9
Meningococcal Disease	0	0	8	4
Streptococcus pneumoniae Invasive Disease	-	-	-	-
Drug-Resistant	1	1	66	59
Drug-Susceptible	1	4	119	94
Enteric Infections				
Campylobacteriosis*	13	16	627	729
Cryptosporidiosis	0	1	72	90
Cyclosporiasis	0	0	0	1
Giardiasis, Acute	2	2	159	174
Salmonellosis**	17	13	598	675
Shiga Toxin Producing Escherichia coli (STEC) [^]	1	0	117	98
Shigellosis**	2	2	180	264
Typhoid Fever (Salmonella serotype Typhi)	0	0	5	1
Viral Hepatitis				
Hepatitis A	0	2	24	438
Hepatitis B, Acute	1	2	123	112
Hepatitis B, Chronic	12	15	793	804
Hepatitis B, Surface Antigen in Pregnant Women	2	0	67	72
Hepatitis C, Acute	1	2	61	24
Hepatitis C, Chronic	78	65	3,937	3,904
Hepatitis D, E, G	0	0	2	3
Vectorborne, Zoonoses				
Dengue Fever	0	0	2	21
Ehrlichiosis/Anaplasmosis	0	0	1	2
Lyme Disease	1	0	16	18
Malaria	0	0	6	3
Rabies, Animal	0	0	31	22
Rabies, Human	0	0	1	0
Rabies, Possible Exposure	22	13	660	690
Rocky Mountain Spotted Fever/Rickettsiosis	0	0	0	3
West Nile Virus Disease	0	0	0	2
Others				
Botulism, Foodborne	0	0	0	0
Botulism, Infant	0	0	0	0
Brucellosis	0	0	1	3
Carbon Monoxide Poisoning	0	0	29	32
Ciguatera Fish Poisoning	0	0	13	14
Lead Poisoning ^{^^}	3	5	230	240
Legionellosis	1	0	71	60
Mercury Poisoning	0	0	6	4
Vibriosis (Excluding Cholera)**	1	0	21	29