THE UNIVERSITY OF KANSAS CANCER CENTER

MCA MASONIC CANCER ALLIANCE

COVID-19 and Individuals with Cancer

The COVID-19 (2019 Novel Coronavirus) virus has impacted the world for more than a year. Declared a pandemic by the World Health Organization in March 2020, there have been more than 108 million confirmed cases of COVID-19 across the globe, including more than 2.3 million deaths. More than 27 million cases and nearly half a million deaths have been reported in the United States. As of February 15, 2021, there have been 287,450 cases of COVID-19 in Kansas. All 105 Kansas counties have reported cases, and more than 4,400 deaths have been reported in the state. While COVID-19 has impacted millions of people, individuals living with cancer and cancer survivors are among the groups who have been disproportionately impacted.

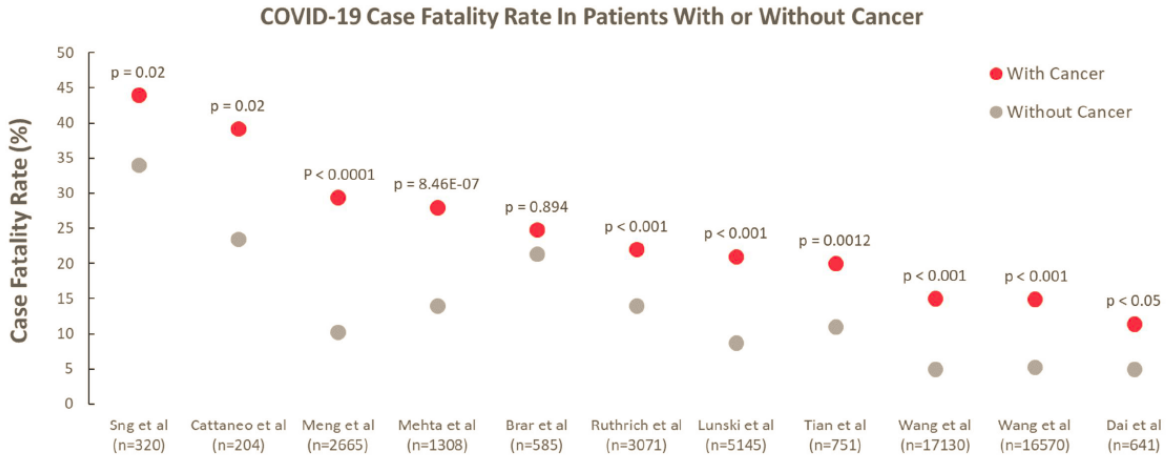
Cancer and COVID-19

Cancer is the second leading cause of death in the United States; the disease kills more than 600,000 Americans each year. According to the American Cancer Society:

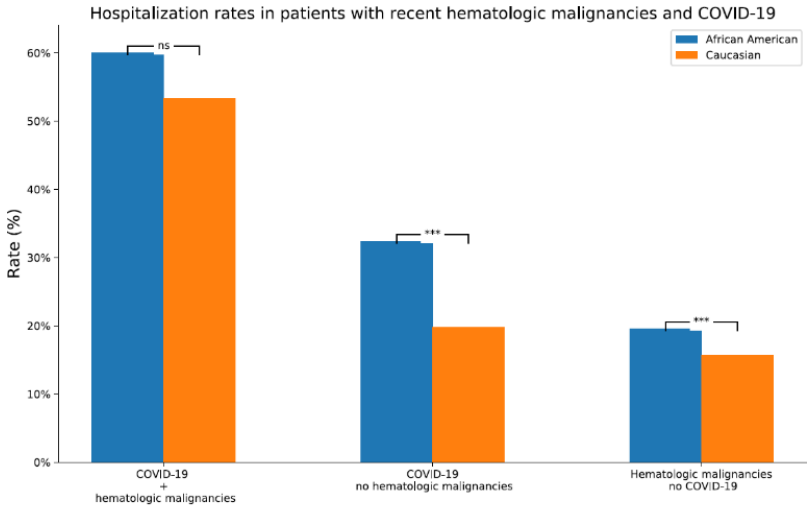
- nearly 17,000 Kansans will be newly diagnosed with cancer this year; and
- more than 5,000 Kansans will die from cancer in 2021.

The American Cancer Society also notes that individuals with cancer may have a higher risk of infection than people without cancer, as cancer and cancer treatments can affect a person's immune system and other body systems in different ways. Individuals in active treatment often receive frequent in-person clinical care and treatment, which has the potential to increase risk of exposure to the virus. Further, cancer treatment is often immunosuppressive, and this effect can last several months after a patient completes treatment.

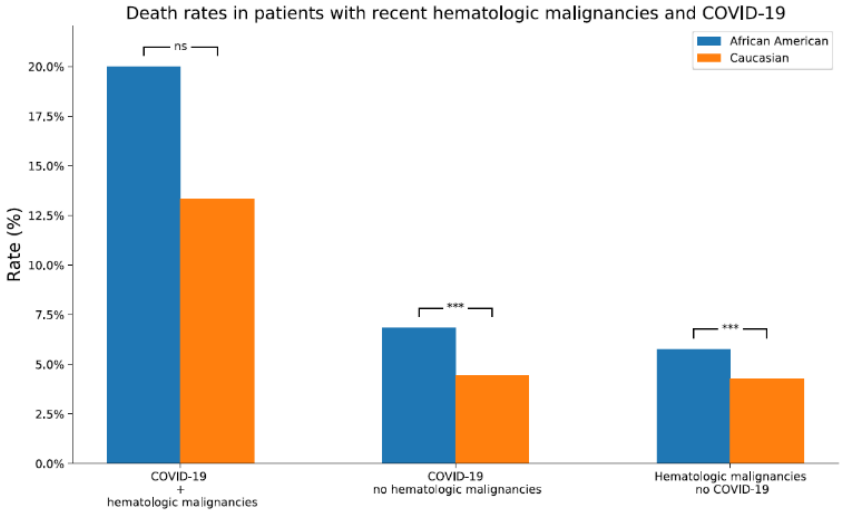
There is mounting evidence that patients with cancer are at increased risk of severe illness and death if infected with COVID-19. A December 2020 article presented data showing that patients with cancer who are diagnosed with the virus are more likely to require hospitalization (47.46%) than persons without cancer who have been diagnosed with COVID-19 (24.26%).[1] The data also illustrated that the association between recent cancer diagnosis and significantly increased risk for COVID-19 infection was strongest in patients with hematologic malignancies and lung cancer.[1] Additionally, a recent examination by the American Association for Cancer Research COVID-19 and Cancer Task Force of 28 peer-reviewed studies found that COVID-19 fatality rates for patients with cancer were double that of patients without cancer (see figure below).[2]



Findings from another recent study indicated that individuals with COVID-19 and hematologic malignancies, in particular, are hospitalized more often than those with COVID-19 and no hematologic malignancy. As the figure below illustrates, African Americans are even more disproportionately impacted than Caucasians.[3]



Further findings from the aforementioned study indicate that individuals with COVID-19 and hematologic malignancies, in particular, have an increased mortality risk than those with COVID-19 and no hematologic malignancy. Once again, as the figure below illustrates, African Americans are even more disproportionately impacted in terms of mortality than Caucasians,[3] further highlighting the overall disparities African Americans face when it comes to COVID-19.



Cancer Survivorship in Kansas

The Centers for Disease Control and Prevention defines a cancer survivor as a person who has been diagnosed with cancer, from the time of diagnosis through the remainder of his or her life. With advances in early detection and treatment options over the last couple decades, there are now more than 17 million cancer survivors living in the United States. In 2016, approximately 11.5 percent of Kansans ages 18 years and older – one in every nine adults – were cancer survivors.

The Kansas Cancer Partnership, the state's cancer coalition, prioritized the need to address cancer issues that impact survivors and included strategies for doing so in the 2012-2016 Kansas Cancer Prevention and Control Plan. Cancer survivors face certain health challenges that other populations generally do not; as such, prioritizing cancer survivors in the Kansas vaccination strategy highlights a continued commitment to cancer survivorship care across the state.

Vaccination Sites

Several cancer centers/sites throughout Kansas are willing and ready to serve as a vaccination site and/or collaborate with their local health departments to facilitate access for the requested priority groups:

- Cancer Centers of Kansas – Chanute, Dodge City, El Dorado, Independence, Junction City, Kingman, Liberal, Manhattan, McPherson, Neodesha, Newton, Parsons, Pratt, Salina, Wellington, Wichita, Winfield
- Coffeyville Regional Medical Center – Coffeyville
- LMH Health – Lawrence
- Olathe Health – Olathe
- Salina Regional Health Center, Tammy Walker Cancer Center – Salina
- The University of Kansas Cancer Center – Fairway, Kansas City, Overland Park, Westwood
- The University of Kansas Health System St. Francis Campus – Topeka

Vaccination Prioritization Request

The overall goal for prioritizing individuals for the COVID-19 vaccination is to ensure that those at the highest risk for harm from COVID-19 receive the vaccine first. With this goal in mind, individuals with cancer undergoing active therapy and/or recently completed therapy (within six months), as well as survivors of lung and hematologic malignancies, have been consistently shown in published studies to be at a high risk for severe complications (including death) from a COVID-19 infection. In fact, this group of individuals likely has a higher risk than healthy individuals who are age 65 and older. Making vaccines available to populations that are most at risk for severe COVID-19 complications is essential to saving lives during this pandemic.

Pointing to findings from their recently-conducted literature review, the American Association for Cancer Research urges vaccination priority be given to all patients in cancer treatment and to those with advanced cancer.[2] Additionally, the National Comprehensive Cancer Network, an alliance of cancer centers that publishes guidelines for cancer care, published further recommendations in late January 2021, "affirming that cancer patients should be prioritized for vaccination and noting that vaccination is recommended for all cancer patients, household contacts, and caregivers."[4]

Patients who are in active treatment, those with hematological malignancies, and individuals diagnosed with lung cancer are at particular risk for poor outcomes from COVID-19. Patients who have completed cancer treatment within the last six months, as these patients are still likely to be vulnerable due to compromised immune systems, are also at a heightened risk. We urge the State of Kansas to include these individuals in the current Phase 2 for vaccination.

Approximately 18,000 Kansans would potentially be impacted by this request (see table below):

	All patients in active or recent treatment	Hematological malignancies (in post treatment)	Lung cancer (in post treatment)	Projected total patients in treatment, hematological cancer survivors, and lung cancer survivors
Ages < 65 years*	14,398	531 incidence 2,683 prevalence	619 incidence 979 prevalence	18,060

Incidence represents expected cases in Kansas for 2020 and cases likely to be in active treatment or 0-6 months post-treatment surveillance. Counts for all patients in active or recent treatment include expected incidence cancer cases for 2020 doubled to include approximate recent 2021 diagnoses and recurrent or metastatic cases. Prevalence represents approximate number of living cases in Kansas diagnosed 2013-2020 (estimated using cancer incidence for all ages and <65 years in KS 2013-2020 and SEER 18 site-specific relative 5-year survival rates for all ages). Hematologic cancers limited to leukemia and non-Hodgkin's lymphoma.
Data sources: actual cancer incidence cases were obtained from the Kansas Cancer Registry, 2013-2017 (last access 1/2021), and expected incidence cases from the American Cancer Society Cancer Statistics 2018-2021 publications. 5-year relative survival rates were obtained from the SEER 18 cancer registries: https://seer.cancer.gov/statfacts/html/.

*Individuals 65 years and older are already in the current priority vaccination group.

References

1. Wang Q, Berger NA, Xu R. Analyses of risk, racial disparity, and outcomes among US patients with cancer and COVID-19 infection. *JAMA Oncol.* 2020:E1–E8. https://doi.org/10.1001/jamaoncol.2020.6178.
2. Ribas A, Sengupta R, Locke T, Zaidi SK, Campbell KM, Carethers JM, et al. Priority COVID-19 vaccination for patients with cancer while vaccine supply is limited. *Cancer Discov.* 2021, *11*(2):233–236. https://doi.org/10.1158/2159-8290.CD-20-1817.
3. Wang Q, et al. Center for Artificial Intelligence in Drug Discovery, School of Medicine, Case Western Reserve University, Cleveland, OH, USA.
4. National Comprehensive Cancer Network. 2021. https://www.nccn.org/covid-19/pdf/COVID-19_Vaccination_Guidance_V1.0.pdf