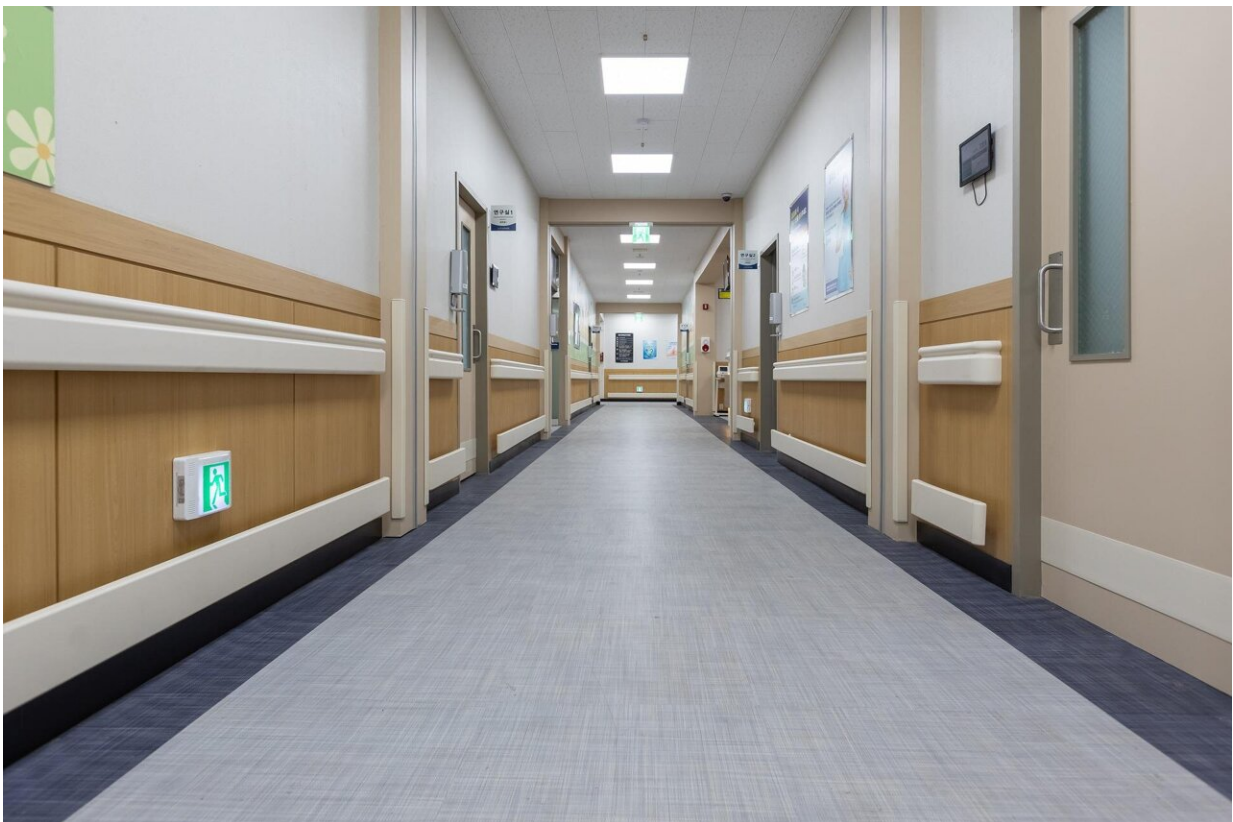


# Patients with past cancer history not associated with higher risk of COVID-19-related death or hospitalization

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Patients diagnosed with cancer more than one year ago and those not receiving active treatment were no more vulnerable to worse COVID-19

outcomes than patients without cancer, according to a new study led by UTHealth Houston.

Youngran Kim, Ph.D., and Liang Zhu, Ph.D., researchers in the Department of Neurology with McGovern Medical School at UTHealth Houston, were co-leading authors of the study, which was published today in *PLOS ONE*. Kim, a postdoctoral research fellow in the department, is currently an assistant professor in the Department of Management, Policy, and Community Health with UTHealth School of Public Health, and Zhu, a former associate professor of neurology, has since left UTHealth Houston.

Using [electronic health records](#) from more than 700 hospitals and 700 clinics in the U.S., a team of researchers with UTHealth Houston, Baylor College of Medicine, the University of Kentucky, and The University of Texas MD Anderson Cancer Center collaborated to assess the association between COVID-19 outcomes and existing [cancer](#)-specific characteristics.

Many studies have shown that people with cancer have higher risks for death and hospitalization after being diagnosed with COVID-19 compared to patients without cancer, but Kim said the revelation about the timing of the patients' past cancer diagnosis and ongoing treatment state is critical.

"We found that recent cancer diagnoses were associated with a 17% increased risk for death and 10% increased risk for hospitalization," Kim said. "However, a history of cancer more than one year before COVID-19 diagnosis was not significantly associated with increased mortality or hospitalization. Our study also confirmed other [risk factors](#) and racial disparities in COVID-19 outcomes among COVID-19 patients with cancer."

The researchers analyzed 271,639 [adult patients](#) diagnosed with COVID-19 between June 1, 2020 and Dec. 31, 2020. Of those patients, 18,460 also had at least one cancer diagnosis, including 10,426 patients diagnosed with cancer within one year before their COVID-19 infection.

Multiple outcomes were assessed, including all-cause 30-day mortality, hospitalization, admission to the [intensive care unit](#) (ICU), and ventilator use, which were compared using relative risks according to cancer status and treatments. Among the research team's key discoveries:

- While cancer patients had higher risks for 30-day mortality and hospitalization, there were no significant differences in ICU admission and ventilator use compared to patients without cancer.
- Recent cancer diagnoses were associated with higher risks for worse COVID-19 outcomes, particularly among recent metastatic (stage 4), hematological, liver, and lung cancers, compared to the non-cancer group.
- Among COVID-19 patients with a recent [cancer diagnosis](#), a higher chance of mortality was linked to chemotherapy or radiation treatments within three months before SARS-CoV-2 infection.
- Patients who were older, Black, received Medicare, and/or lived in the Southern U.S. were significantly more likely to die after SARS-CoV-2 infection.
- Diabetes and cardiovascular, liver, and renal diseases were also linked to an increased risk of death after SARS-CoV-2 infection.

Study investigators hope these findings will offer [health care providers](#) more refined risk information about the ways cancer patients may be impacted by COVID-19.

UTHealth Houston co-authors with the Department of Neurology at

McGovern Medical School included Xiaojin Li, Ph.D.; Yan Huang, Ph.D.; and Chunhui Gu, MS. Guo-Qiang "GQ" Zhang, Ph.D., professor in the department with secondary appointments at UTHealth Houston School of Biomedical Informatics and UTHealth School of Public Health, was the study team lead and corresponding author on the publication.

"Most scientific literature publishes affirmative results," Zhang said. "In this particular study, we not only confirmed general findings about worse COVID-19 outcomes for cancer patients, but elaborated on subgroups of cancer patients that were not overly impacted. This is an important finding for the health care system as they intervene based on the appropriate risk assessment and for cancer survivors to understand their specific risks associated with COVID-19. As the pandemic evolves, however, we may need to revisit this topic at a future time."

Other co-authors included Huili Zhu, MD, with Baylor College of Medicine; Heather Bush, Ph.D., with the University of Kentucky in Lexington; and Caroline Chung, MD, with MD Anderson.

**More information:** *PLOS ONE* (2022). [journals.plos.org/plosone/article?id=10.1371/journal.pone.0267584](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0267584)

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