Kaiser Permanente Northern California patients on cancer treatment with SARS-CoV-2 have an increased risk of requiring noninvasive ventilation compared to patients with SARS-CoV-2 and no cancer

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| Challenge | **COVID-19 is a serious worldwide health challenge. Recommendations for cancer therapy depend on an understanding of outcomes for cancer patients if they are infected with COVID-19.** |
| Existing Evidence | Based on the early experience in China and Italy, the overall trend is toward worse COVID‐19 outcomes for those with a diagnosis of cancer, especially those with thoracic malignancies. |
| Target Population | Patients with cancer who have undergone cancer therapy (either surgery or cancer medication) within the past six months (compared to patients without cancer). |
| Intervention or Exposure | A retrospective cohort study of adults with a positive lab test for COVID-19 between 2/25/20 and 6/8/20. |
| **Outcomes/Key Findings** | Of the 4,627 patients diagnosed with COVID‐19 from February 25, 2020, to June 8, 2020, 33 (0.7%) had active cancer treatment within 180 days, 214 (4.6%) had a history of cancer, and 4,380 (94.7%) had no diagnosis of cancer. Of the patients with cancer receiving active treatment, the most common cancer diagnoses were breast (*n* = 9) and hematologic (*n* = 7). The most common treatments were targeted (*n* = 14), chemotherapy (*n* = 12), and hormonal (*n* = 11).**Patients with active cancer treatment had a higher risk of requiring noninvasive ventilation (OR, 2.57; CI, 1.10–6.01) than those without cancer.** There was a strong trend (non–statistically significant) towards higher risk of death (OR, 2.78; CI, 0.92–8.43) in patients with active cancer. Those with a history of cancer had comparable outcomes to those without any cancer history. |
| **Resulting Action/Change** | **The results, along with other publications on the topic, inform discussions about COVID-19 risks for patients on cancer therapy and, where appropriate, timing of cancer therapy, and appropriate precautions for risk reduction.** |
| Additional Recommendations | These data can be combined with other KPNC studies to identify patients most likely to benefit from enhanced COVID-19 precautions (including for emerging variants), early vaccination, etc. Beyond the standard age criteria. |
| Implementation Tools  | Data were collected from the electronic medical record using an internally developed algorithm and chart review. |
| Implementation Measurement | Risk of adverse outcomes (ED visits, hospitalization, ICU admission, invasive ventilation, noninvasive ventilation and death) |
| Reference | **Table 2.**Adjusted odds ratios and 95% confidence intervals of clinical outcomes among 4,627 COVID‐19–positive patients diagnosed between February 25, 2020, and June 8, 2020

| **Characteristics** | **Any outcome (*n* = 1,829)**[***a***](https://theoncologist.onlinelibrary.wiley.com/doi/10.1002/onco.13602#onco13602-note-0008_9) | **ED (*n* = 1,767)** | **IP (*n* = 931)** | **ICU (*n* = 308)** | **Invasive ventilator (*n* = 212)** | **Noninvasive ventilator (*n* = 1,104)** | **Death (*n* = 150)** |
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| Cancer history |  |  |  |  |  |  |  |
| Active treatment for cancer (*n* = 33) | 1.96 (0.85–4.50) | 1.44 (0.65–3.19) | 1.55 (0.67–3.59) | 1.30 (0.41–4.08) | 0.81 (0.18–3.75) | 2.57 (1.10–6.01) | 2.78 (0.92–8.43) |
| History of cancer with no active treatment (*n* = 214) | 1.23 (0.89–1.69) | 1.00 (0.73–1.38) | 1.06 (0.75–1.50) | 1.21 (0.76–1.95) | 1.14 (0.66–1.96) | 1.25 (0.89–1.75) | 0.92 (0.54–1.57) |
| No cancer (*n* = 4,380) | 1.00 (Ref) | 1.00 (Ref) | 1.00 (Ref) | 1.00 (Ref) | 1.00 (Ref) | 1.00 (Ref) | 1.00 (Ref) |

* Reference: <https://doi.org/10.1002/onco.13602>
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