

NCCN GUIDANCE CANCER AND COVID-19 VACCINATION

PRELIMINARY RECOMMENDATIONS OF THE NCCN COVID-19 VACCINATION ADVISORY COMMITTEE*

- Patients with cancer should be prioritized for vaccination (CDC priority group 1b/c) and should be immunized when vaccination is available to them.
- Immunization is recommended for all patients receiving active therapy, with the understanding that there are limited safety and efficacy data in these patients.
- Reasons for delay of vaccines are similar to the general public (e.g., recent exposures to COVID-19), and cancer-specific factors. Vaccination should be delayed for at least 3 months following HCT or engineered cellular therapy (e.g. CAR-T cells) to maximize vaccine efficacy.
- Caregivers and household/close contacts should be immunized when possible.

TABLE 1. COVID-19 VACCINATION RECOMMENDATION FOR CANCER PATIENTS

Patients Treatment/Cancer Type	Timing ^{†,‡}
Hematopoietic Cell Transplantation (HCT) / Cellular Therapy	
Allogeneic Transplantation Autologous Transplantation Cellular therapy (e.g., CAR-T cell)	At least 3 months post-HCT/cellular therapy ^b
Hematologic malignancies	
Receiving intensive cytotoxic chemotherapy (e.g. cytarabine/anthracycline-based induction regimens for AML) Marrow failure from disease and/or therapy expected to have limited or no recovery Long-term maintenance therapy (e.g., targeted agents for chronic lymphocytic leukemia or myeloproliferative neoplasms)	Delay until absolute neutrophil count (ANC) recovery ^c When vaccine available When vaccine available ^c
Solid tumor malignancies	
Receiving cytotoxic chemotherapy Targeted therapy Checkpoint inhibitors and other immunotherapy Radiation Major surgery	When vaccine available ^{c,d} When vaccine available When vaccine available ^e When vaccine available Separate date of surgery from vaccination by at least a few days ^f
Caregivers and Household/Close Contacts (≥16 years of age)	
Any time eligible to receive the vaccine	

†COVID-19 vaccines should be prioritized over other needed vaccines, as data on dual vaccination is not available to date. 14 days recommended between COVID-19 vaccines and other approved vaccines.

‡Discussion with clinical trial leads should be considered in advance to prevent protocol violations or exclusions.

PRIORITIZATION AMONG CANCER PATIENTS IN THE SETTING OF LIMITED VACCINE AVAILABILITY

If there are limits to supply, prioritization may need to be considered for cancer patients. Prioritization is challenging to develop when considering the diverse population of patients with their varied comorbidities, demographic and social factors known to increase risk of COVID-19 acquisition, morbidity and/or mortality. Decisions must be made in accordance to state and local vaccine guidance on allocation. The following criteria can be used to help determine local guidance to consider when developing such decisions†:

1. Prioritize patients with active cancer on treatment (including hematopoietic and cellular therapy), those planned to start treatment and those immediately (<6 months) post-treatment, except those receiving only hormonal therapy.
2. Consider additional risk factors for such patients and other factors linked to adverse COVID-19 complications including but not limited to:
 - a. Patients with advanced age (e.g., ≤65 years of age)
 - b. Patients with co-morbidities (e.g. chronic pulmonary, cardiovascular or renal disease)
 - c. Social and demographic factors that include poverty, limited access to healthcare, and under-represented minorities

*The current vaccine recommendations and prioritization guidelines are preliminary and will be updated regularly based on availability of new data. There are important gaps in knowledge on vaccine immunogenicity in specific patients with cancer and therapies. We may learn that specific therapies limit vaccine efficacy and would warrant vaccine delay. The durability of vaccine protection is being investigated in the general population and is expected to be attenuated in immunocompromised patients with cancer.

Table Footnotes

- a. GvHD and immunosuppressive regimens to treat GvHD (e.g., systemic corticosteroids and targeted agents) are expected to blunt immune responses to vaccination. Delay of vaccination until immunosuppressive therapy is reduced and/or based on immunophenotyping of T cell and B cell immunity can be considered.
- b. Patients on maintenance therapies (e.g. rituximab, Bruton tyrosine kinase inhibitors, Janus kinase inhibitors), may have attenuated response to vaccination (see below).
- c. The committee recognizes that granulocytopenia does not, in itself, significantly affect immunologic response to vaccination. It is used in this setting of profound immunosuppression for patients with hematologic malignancies as a surrogate marker for recovery of adequate immunocompetence to respond to vaccines and sufficient platelet recovery to avoid bleeding complications from intramuscular administration. Due to short periods of neutropenia among solid tumor malignancies this is not used for timing of vaccination.
- d. In patients receiving chemotherapy, optimal timing of vaccination in relation to cycles of chemotherapy is unknown. Given the variability of specific regimens and intervals between cycles, it's not possible to state whether immunization will be more effective if administered at the time of chemotherapy administration versus mid-cycle when the WBC might be at its nadir. In the absence of data, we recommend vaccination when available.
- e. Theoretical risk of exacerbated immune related adverse events in patients receiving immune checkpoint inhibitors; there is no data on timing of vaccine administration, so this may be considered on the same day as immunotherapy for convenience and to reduce added visits to the office whenever possible.
- f. The primary reason for avoiding vaccine in the perioperative period is so that symptoms (e.g. fever) can be correctly attributed to surgery vs. vaccination. For more complex surgeries (e.g. splenectomy or which may lead to an immunosuppressive state) surgeons may recommend a wider window (+/- 2 weeks) from the time of surgery.
- g. Even if vaccinated, close-contacts should continue to wear masks, maintain social distancing guidelines, and follow other recommendations for COVID prevention.