Adults with Malignant Neoplasm (Including Leukemia and Lymphoma)

For pediatric oncology clients refer to Part 2 – Immunization of Special Populations, Specific Immunocompromising Conditions, Immunization of Pediatric (those under 18 years of age) Oncology Clients Who Have Completed Treatment, Including Autologous HSCT.

For recipients of an HSCT, refer to Part 2 – Immunization of Special Populations, Specific Immunocompromising Conditions, Hematopoietic Stem Cell Transplantation (HSCT).

Recommended vaccines for those with malignant neoplasm [A, B]	
All routine inactivated vaccines	Immunize according to routine schedule for inactivated vaccines.
Pneumococcal polysaccharide vaccine	Provide one dose, followed by a once-only revaccination 5 years after the first dose.
Hib vaccine	Incompletely immunized individuals 5 years of age and older require one dose. If treatment includes irradiation of the spleen or splenectomy, provide one dose regardless of immunization history. [C]
Influenza vaccine	Immunize yearly (all those 6 months of age and older). Inactivated influenza vaccine should be used.
Meningococcal quadrivalent conjugate vaccine	Only if treatment involves irradiation of the spleen or splenectomy. [C] Re-immunize every 5 years.
MMR vaccine	**Contraindicated** in persons with immunosuppression due to leukemia, lymphoma, generalized malignancy or immunosuppressive therapy. [B, D] Refer to Immunization with Inactivated and Live Vaccines. Use Referral Form for MMR Vaccination.
Varicella vaccine [E]	**Contraindicated** in persons with immunosuppression due to leukemia, lymphoma, generalized malignancy or immunosuppressive therapy. [B, D] Refer to Immunization with Inactivated and Live Vaccines. Use Referral Form for Varicella Vaccination.

[A] For specific vaccine schedule information, refer to Part 4 - Biological Products.
[B] For clients currently undergoing treatment, refer to Part 2 – Immunization of Special Populations, Specific Immunocompromising Conditions, Immunosuppressive Therapy.
[C] Refer to Part 2 – Immunization of Special Populations, Specific Immunocompromising Conditions, Anatomic or Functional Asplenia.
[D] Vaccination may be considered if there is significant risk of wild type infection and the client is not significantly immunosuppressed and/or is receiving only low doses of immunosuppressive medications. Consultation with the primary oncologist is required.
[E] For clients with acute lymphocytic leukemia (ALL) – varicella vaccine is recommended if the client's disease has been in remission for ≥ 12 months, the client's total lymphocyte count is ≥ 1.2 X 10^9/L, the client is not receiving radiation therapy, and maintenance chemotherapy can be withheld for at least 1 week before to 1 week after immunization.

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Individuals with a malignant neoplasm are at risk of vaccine preventable diseases as a result of both their underlying condition and their treatment (e.g., chemotherapy, radiation therapy). There is a broad spectrum in the potential immunologic impact of cancer depending on cancer type and treatment used.

For most cancers, the main period of immune suppression is during or immediately following chemotherapy and/or radiation therapy when neutropenia and mucosal injury may be present. Refer to Part 2 – Immunization of Special Populations, Specific Immunocompromising Conditions, Immunosuppressive Therapy for immunization recommendations for individuals who are currently undergoing treatment.

Although inactivated vaccines can be safely administered at any time, in order to optimize immunogenicity, administer all appropriate vaccines/boosters at least 14 days before the initiation of therapy. If this cannot be done, delay vaccination until at least 3 months after immunosuppressive therapy has been stopped. For individuals whose treatment regimen includes anti-B-cell antibodies (e.g., rituximab), delay vaccination for at least 6 months. The exception to this is influenza immunization, which is recommended for all immunosuppressed individuals.

Specific malignancies, particularly lymphoid malignancies (e.g., Hodgkin lymphoma, non-Hodgkin lymphoma) are associated with significant deficits in cell-mediated and humoral. These patients have an increased susceptibility to infection, particularly with atypical organisms and encapsulated bacteria. These immune deficits can persist long after therapy completion.

Zoster vaccine:

Inactivated zoster vaccine (Shingrix®) is recommended by the National Advisory Committee on Immunization (NACI) for those 50 years of age and older, and may be considered for immunocompromised individuals. Although this vaccine is not provided free in BC, it may be purchased without a prescription at most pharmacies and travel clinics. For those with a contraindication to inactivated zoster vaccine, a live zoster vaccine (Zostavax® II) is also available; however, as it is a live vaccine, it must be given at least 4 weeks **prior** to initiation of immunosuppressive treatment or 3 months **after** completion of treatment (6 months for those whose treatment regimens include anti-B-cell antibodies [e.g., rituximab]). For more information, see Part 4 – Biological Products, Zoster Vaccines.