

## Immunocompromised Individuals

Immunocompromised individuals are unable to mount an adequate immune response. The cause of the altered immunocompetent state can be primary (inherited) or secondary (acquired) and it can be temporary or permanent.

A variety of conditions and treatments can affect the immune system of an individual, making them more vulnerable to a range of communicable diseases. These conditions include:

- Asplenia (functional or anatomic)
- Congenital immunodeficiencies involving any part of the immune system, including B-lymphocyte (humoral) immunity, T-lymphocyte (cell-mediated) immunity, complement system (properdin, or factor D deficiencies), or phagocytic functions
- Hematopoietic stem cell transplantation (HSCT)
- Human Immunodeficiency Virus infection (HIV)
- Immunosuppressive therapy including corticosteroids, chemotherapy, radiation therapy, post-organ-transplant therapy, certain anti-rheumatic drugs, and drugs used for the management of inflammatory bowel disease
- Islet cell transplant (candidate or recipient)
- Chronic kidney disease
- Chronic liver disease (including hepatitis B and C)
- Malignant neoplasms including leukemia and lymphoma
- Solid organ transplant (candidate or recipient)

Individuals with conditions that compromise the effectiveness of their immune system are at particular risk of infection with encapsulated bacteria such as *Streptococcus pneumoniae* (pneumococcal), *Neisseria meningitidis* (meningococcal), and *Haemophilus influenzae* type b (Hib).

In some immunocompromised individuals, even a less than optimal response to vaccine may provide important benefit as they may be at high risk of morbidity and mortality due to vaccine preventable infection.

Only HSCT clients require re-immunization after treatment, due to the ablation of hematopoietic cells in the bone marrow pre-transplant. This treatment eliminates the patient's immune memory. All other immunocompromised individuals should be immunized according to past immunization history. The exception to this is asplenic clients > 5 years of age who should receive 1 dose of Hib vaccine regardless of their immunization history.