Vaxelis™ (diphtheria and tetanus toxoids and acellular pertussis adsorbed, inactivated poliovirus, Haemophilus b conjugate [meningococcal protein conjugate] and hepatitis B [recombinant] vaccine) – New drug approval

- On December 26, 2018, Sanofi announced the FDA approval of Vaxelis (diphtheria and tetanus toxoids and acellular pertussis adsorbed, inactivated poliovirus, haemophilus b conjugate [meningococcal protein conjugate] and hepatitis B [recombinant]), for active immunization to prevent diphtheria, tetanus, pertussis, poliomyelitis, hepatitis B, and invasive disease due to *Haemophilus influenzae (H. influenzae)* type b.
    - Vaxelis is approved for use as a 3-dose series in children from 6 weeks through 4 years of age (prior to the 5th birthday).
- Vaxelis is a hexavalent combination vaccine and the result of a joint-partnership between Merck and Sanofi. Vaxelis includes antigens for diphtheria, tetanus, pertussis (whooping cough), and poliomyelitis from Sanofi and antigens for *H. influenzae* type b and hepatitis B from Merck.
- The effectiveness of Vaxelis was based on two immunogenicity studies. In study 005, infants were randomized to receive 3 doses of Vaxelis at 2, 4, and 6 months of age and Daptacel® (diphtheria and tetanus toxoids and acellular pertussis vaccine adsorbed) and PedvaxHIB® (Haemophilus b conjugate vaccine [meningococcal protein conjugate]) at 15 months of age, or control group vaccines. In study 006, infants were randomized to receive 3 doses of Vaxelis at 2, 4, and 6 months of age and Pentacel® (diphtheria and tetanus toxoids and acellular pertussis adsorbed, inactivated poliovirus and haemophilus b conjugate [tetanus toxoid conjugate]) at 15 months of age, or control group vaccines.
    - In study 005, Vaxelis was non-inferior to the control group vaccines, as demonstrated by the proportions of participants achieving seroprotective levels of antibodies and pertussis vaccine response rates and geometric mean (antibody) concentrations (GMCs) (except to pertussis FHA antigen) following 3 doses of the vaccine. The non-inferiority criteria for vaccine response rates and GMCs for all pertussis antigens were met following the fourth dose.
    - Similar results were found in study 006, except the non-inferiority criteria was not met following the fourth dose for GMCs for pertussis PRN antigen (lower bound of 2-sided 95% CI for GMC ratio [Vaxelis group/control group vaccines] was 0.66, which was below the non-inferiority criterion > 0.67).
- Vaxelis is contraindicated in patients with severe allergic reaction (eg, anaphylaxis) to a previous dose of Vaxelis, any ingredient of Vaxelis, or any other diphtheria toxoid, tetanus toxoid, pertussis-containing vaccine, inactivated poliovirus vaccine, hepatitis B vaccine, or *H. influenzae* type b vaccine; encephalopathy within 7 days of a previous pertussis-containing vaccine with no other identifiable cause; and progressive neurologic disorder until a treatment regimen has been established and the condition has stabilized.
- Warnings and precautions for Vaxelis include management of acute allergic reactions, adverse reactions following prior pertussis vaccination, Guillain-Barré syndrome and brachial neuritis, altered immunocompetence, apnea in premature infants, limitations of vaccine effectiveness, and interference with laboratory tests.
- The solicited adverse reactions following any dose of Vaxelis were irritability, crying, injection site pain, somnolence, injection site erythema, decreased appetite, fever ≥ 38.0°C, injection site swelling, and vomiting.

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- Vaxelis is administered intramuscularly as a 3-dose series at 2, 4, and 6 months of age. The first dose may be given as early as 6 weeks of age. Three doses of Vaxelis constitute a primary immunization course against diphtheria, tetanus, *H. influenzae* type b invasive disease and poliomyelitis. Vaxelis may be used to complete the hepatitis B immunization series.

    — A 3-dose series of Vaxelis does not constitute a primary immunization series against pertussis; an additional dose of pertussis-containing vaccine is needed to complete the primary series.
    — Refer to the Vaxelis drug label for additional details.

- Sanofi and Merck are working to maximize production of Vaxelis to allow for a sustainable supply to meet anticipated demand. A commercial supply will not be available prior to 2020.

- Vaxelis will be available as a suspension for injection (0.5 mL) in single-dose vials.