IMMUNIZATION QUICK REFERENCE TABLE (May 2019)

Region of Waterloo
PUBLIC HEALTH AND EMERGENCY SERVICES

Note: This document is a reference tool only. It does not replace National (CIG), Provincial (Publicly Funded Schedule) or Regional (MD's, SOP's) Guidelines.

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Diphtheria, Tetanus, Pertussis, Polio and *Haemophilus influenza type b* (DTaP-IPV-Hib) Inactivated Pediacel (Sanofi)	Licensed for ≥ 6 weeks (42 days) to < 7 years 0.5mL IM Diphtheria Toxoid 15 Lf Tetanus Toxoid 5 Lf Acellular Pertussis Toxoid (PT) 20 µg Inactivated Poliomyelitis Vaccine Type 1 (Mahoney) 40 D-antigen units* Type 2 (MEF1) 8 D-antigen units* Type 3 (Saukett) 32 D-antigen units* Haemophilus influenzae type b polysaccharide conjugated to tetanus protein 10 µg,	**Routine:** - Administered at 2, 4, 6 and 18 months **Catch-up:** Primary series includes 5 doses of tetanus containing vaccine (DTaP-IPV-Hib, DTaP-IPV or Tdap-IPV) • Usually administered at 2, 4, 6-12 months and 4-6 years of age. • The fifth dose is not necessary if the 4th dose was administered after the 4th birthday DTaP-IPV-Hib may be used to complete series for children 1 to<5 years until the Hib requirements are met (see Hib table for detailed schedule) *minimum age for first dose is 6 weeks(42 days) *minimum interval between doses is 4 weeks(28 days) *minimum interval for booster dose is 6 months	85% against pertussis 95% against diphtheria 100% against tetanus 99% against polio 90% against Hib	Aluminum phosphate (adjuvant) 2-phenoxyethanol, polysorbate 80 bovine serum albumin neomycin polymyxin B trace amounts of streptomycin formaldehyde glutaraldehyde	Anaphylactic reaction to a previous dose of DTaP-IPV-Hib vaccine Anaphylaxis to any component of the vaccine	Mild localized pain, swelling or redness may occur at injection site. Generalized side effects include headache, fatigue and body aches.

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Hepatitis B (HB) inactivated, recombinant protein Engerix B (GSK) Recombivax (Merck Frosst)	**Routine**: 2 dose schedule for grade 7 students, 4-6 months apart depending on product **Catch-up:** Any Grade 7 student who missed one or both doses of HB is eligible to complete the series by the end of Grade 8. **High Risk** See publicly funded schedule table 3 for details	R**outine:** **Engerix:** Birth to 19 years: 10µg, 0.5ml IM per dose 11-15 years of age (inclusive): 20µg 1.0 ml IM per dose 20 years of age and older: 20µg 1.0 ml IM per dose **Recombivax:** Birth to 19 years: 5 µg, 0.5ml IM per dose (3 doses) 11-15 years (inclusive): 10µg 1.0 ml IM per dose (2 doses) 20 years and older: 10µg 1.0 ml IM per dose (3 doses) **Immunocompromised (dialysis, chronic renal failure and HIV positive:** **Engerix:** Birth to 16 years: 20µg, 1.0ml IM per dose (3 doses) 16 years and older (inclusive): 40µg 2.0 ml IM per dose (4 doses) **Recombivax:** Birth to 19 years: Double dose of health child (3 dose) 20 years of age and older: 40µg 1.0 ml IM per dose or 10µg 4.0 ml IM (3 dose series) **Accelerated schedule:** Series can be given at 0, 1, 2 and 12 Months, **or** 0,7,21 & 365 days **Interrupted series:** 2nd dose should be given as soon as possible after the1st dose; 2nd and third doses should be separated by an interval of at least 8 weeks. If only the third dose is delayed, administer as soon as possible Minimum Intervals for 3 dose series as per Publicly Funded Schedule, December 2018 1st dose, 2nd dose, 4 weeks after 1st dose, 3rd dose, 8 weeks after 2nd, 16 weeks after 1st dose and at age ≥24 weeks.	**3 dose series**: after 2 doses 70-84%, after 3 doses >95% effective Birth to 19 years of age: 0, 1 and 6 months **2 dose series (11-15 years of age only):** after 1 dose 74%, after 2 doses 90% effective	**Engerix:** Aluminum hydroxide multi dose vials contain: 2-phenoxy-ethanol thimerosal **latex** in preloaded syringe **Recombivax:** Yeast aluminum, **latex** in vial stopper multi dose vials contain: 2-phenoxy-ethanol thimerosal	Allergy to any component of the vaccine Previous anaphylactic reaction to the vaccine	Mild localized pain, swelling, or redness may occur at the injection site. Generalized side effects include fever, headache, fatigue and body aches

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
***Haemophilus influenza type b* (Hib)** inactivated Act-Hib (Sanofi)	Licensed for use in >6 weeks 0.5 mL IM Haemophilus influenzae type b polysaccharide conjugated to tetanus protein 10 µg	**Routine:** Hib is routinely given in combination with four other antigens as DTap-IPV-Hib (see Dtap-IPV-Hib) **Catch up schedule for children < 5 years:** Number of doses required for protection will depend on age of first dose) **Age at first dose:** • 2-6 months: 3 doses, 2 months apart, boost at 15-18 months • 7-11 months: 2 doses, 2 months apart boost 15-18 months • 12-24 months: 1 dose, boost 15-18 months • 15-59 months: 1 dose **High risk:** • -persons with functional or anatomic asplenia; • -all immunocompromised persons related to disease or therapy; • -hematopoietic stem cell transplantation (or bone marrow or solid organ transplant) recipients; • -all lung and transplant recipients; • -cochlear implant recipients (pre/post implant); and • -all persons with primary antibody deficiencies.	95% protected against serious Hib infections	Tetanus toxoid sucrose trometamol	Anaphylactic reaction to a previous dose of Hib vaccine Anaphylaxis to any component of the vaccine	Mild localized pain, swelling or redness may occur at injection site. Generalized side effects include headache, fatigue and body aches.

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Human Papillomavirus (HPV 9) inactivated, recombinant protein- 9 valent Gardasil 9 (Merck Frost)	Licensed for use in females 9-45 years of age and males 9-26 years of age. 0.5mL IM **HPV 9:** Vaccine protects against types 6, 11, 16, 18, 31, 33, 45, 52, and 58	**School Program Eligibility:** All students in Grade 7-12 as of September 2017 (Born in 2005 or later) • Females in grade 7-12 (Born in 2004 or earlier) • Males in grade 7-12 (Born in 2004) **Note:** Students completing a 5th year are considered to be in grade 12 **High Risk Eligibility:** **HPV 9** MSM who have not received the HPV vaccine previously. **Schedule:** **If HPV4 is given at first dose:** • **2 dose series** Healthy students < 14 years of age at first dose. Given at 0 and 6 months. • **3 dose series** ≥ 14 years of age, Immunocompromised or immunocompetent HIV infected. Given at 0, 2 and 6 months. • **If HPV 9 is given at first dose:** • **2 dose series:** Healthy students **< 15 years** of age. Given at 0 and 6 months. • **3 dose series ≥ 15 years** of age, Immunocompromised or immunocompetent HIV infected. Given at 0, 2 and 6 months. **Interrupted Series:** **For HPV4 or HPV9 and completion of 2 or 3 dose schedule:** the age at 1st dose determines whether to complete series as a 2 or 3 dose schedule regardless **Interrupted series –minimum intervals (for 3 dose schedule):** o minimum interval between 1st and 2nd dose is 4 weeks o minimum interval between 2nd and 3rd dose is 12 weeks o minimum interval between 1st and 3rd dose is 24 weeks All three doses should be given within a 1 year period	Almost 100% effective	Yeast aluminum (as amorphous aluminum hydroxyphosphate sulfate - AAHS adjuvant) L-histidine polysorbate 80 sodium borate ** Does not contain antibiotics or preservatives	Anaphylactic reaction to a previous dose of HPV vaccine Anaphylactic reaction to any component of the vaccine Pregnant women or women who are planning pregnancy within the next year	Mild, localized pain, swelling, or redness may occur at the injection site. Generalized side effects include fever, headache, fatigue and body aches.

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Inactivated Polio Vaccine (IPV) inactivated Imovax Polio (Sanofi)	Licensed for >6 weeks of age 0.5 mL SC Inactivated Poliomyelitis Vaccine Type 1 (Mahoney) 40 D-antigen units* Type 2 (MEF1) 8 D-antigen units* Type 3 (Saukett) 32 D-antigen units*	**Infants and children < 4 years of age:** Four doses recommended in combination with other routinely administered vaccines at 2, 4, 6 and 18 months and 4-6 years of age. The fourth dose is not needed if the third dose is given on or after the fourth birthday. • minimum age for first dose is 6 weeks • minimum interval between doses is 4 weeks • minimum age for booster dose is 6 months **Unimmunized individuals > 4 years of age:** Two doses of IPV 4 to 8 weeks apart followed by a third dose 6-12 months later ****OPV and IPV are interchangeable** *** Adults (≥ 18 years of age)who are travelling to areas where poliomyelitis cases are still occurring should receive a **one** time adult booster dose (assuming they have received the childhood series)	Immunity to all three types of poliovirus in over 90% of people following two doses of vaccine given at least 4-8 weeks apart. Almost 100% immunity following a booster dose given 6 to 12 months later.	Polymixin B neomycin formaldehyde bovine serum polysorbate 80 2 phenoxy-ethanol	Anaphylactic reaction to a previous dose of IPV vaccine Anaphylaxis to a component of the vaccine	Local redness and erythema

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Measles, Mumps, Rubella (MMR) live, attenuated MMRII (Merck Frost) Priorix (GSK))	Licensed for ≥ 6 months of age 0.5 mL SC Serologic testing is not recommended before or after receiving measles-containing vaccine. If serology is inadvertently done subsequent to appropriate measles immunization and does not demonstrate immunity, measles re-immunization is not necessary.	**Children (6 months-17 years of age)** 2 doses at 1 year and 4-6 years • A 1st dose can be provided as young as 6 months of age (recommended if travelling to an endemic area), however 2 doses are required after the 1st birthday • 1st valid dose of MMR should be given on or after the 1st birthday. • 2nd valid dose of MMR vaccine should be given as MMRV at 4-6 years of age. Children between 4-12 years of age who have not received any doses of MMR or varicella consider two doses of MMRV vaccine given 3 months apart. **Adults (18 years of age and older)** **Born before 1970:** presume acquired natural immunity, some of these individuals may be susceptible. **Born in 1970 or later:** should have one documented dose MMR vaccine (unless specified below). **Specific groups** • **Health care workers** should have two documented doses of MMR vaccine. • **Students** in post-secondary educational settings, **born in 1970 or later** two documented doses. In students **born before 1970,** one documented dose. • **Military personnel,** (regardless of age) should have two documented doses • **Travelers born in 1970 or later**, two documented doses, **Travelers born before 1970** one documented dose of MMR vaccine. **Varicella, MMR and MMRV vaccine must be given on the same day or at least 28 days apart**	**Measles** 1st dose: 85-95% 2nd dose: almost 100% **Mumps** 1st dose: 62%-91% 2nd dose: 76-95% **Rubella:** 1st dose: 95% or greater .	**MMRII:** Residual components of chick embryon cell cultures neomycin gelatin red phenol human albumin **Priorix** Egg protein neomycin	When administered with other live vaccines, MMR should be given at the same time or separated by a 4 week interval Anaphylaxis to components Immunocompromised Pregnancy Severe febrile illness **Susceptible household contacts of immunocompromised people should receive vaccine as appropriate for age and risk factors.	Mild, non-transmissible usually subclinical infection 5% will have malaise and fever with or without rash lasting up to 3 days and occurring 7-12 days Less frequent with second dose tend to occur in those not protected by first dose Risk of arthralgia and arthritis increases with age and more common in unvaccinated, post pubertal female

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Measles, Mumps, Rubella, Varicella (MMRV) live, attenuated Priorix-Tetra (GSK) ProQuad (Merck)	Licensed for 9 months-12 years of age 0.5mL SC Varicella vaccine has been administered to client within the last 3 months MMR vaccine has been administered within the last 6 weeks	**Routine:** given at 4-6 years of age (children should have received one dose of MMR at 12 mos and one dose varicella at 15 mos) **Catch-up:** Children 4-12 years of age who have not received any doses of MMR or varicella may receive 2 doses of MMRV **Recommended Intervals:** **MMRV and varicella should be given 3 months apart **MMRV and MMR vaccine should be given 6 weeks apart** **MMRV and MMRV should be given 6 weeks apart** **Minimum Interval:** ** minimum interval between MMR, MMRV and Varicella is 28 days (CIG varicella update December 2016) **NOTE:** MMRV is inadvertently given to a patient age 13 years and older, it may be counted towards completion of the MMR and varicella vaccine series and does not need to be repeated. (CDC) ***although may not be funded, susceptible household contacts of immunocompromised people should receive vaccine appropriate for age and risk factors. If a varicella-like rash develops, the rash should be covered and the vaccinee should avoid direct contact with the immunocompromised person for the duration of the rash.	**MMR:** With single dose at 12-15months of age 85-95% With 2nd dose, almost 100% effective **Varicella:** 1 dose 70-90% effective against disease of any severity and 95% effective against severe disease 2 doses100% against severe disease	Neomycin sorbitol lactose mannitol	Anaphylactic reaction to a previous dose of MMRV, MMR or Var or any component of the vaccine Suspected or known immunocompromising condition A personal or family history or febrile seizures of any etiology Severe allergic reaction to eggs or anything that contained eggs Severe febrile illness Received blood products or immune globulin	Pain and redness at the injection site low-grade fever occur Rash, including measles-like, rubella-like and varicella-like rash to less than 10% of vaccinees. Varicella-like rashes that occur within the first two weeks after immunization may be caused by wild-type virus. Health care providers should obtain specimens to ensure varicella disease is not confused with a reaction

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Meningococcal Conjugate Monovalent C (Men-C-C) Menjugate (Novartis) Neis Vac (GSK) **Meningococcal Conjugate Quadrivalent ACYW135 (Men-C-ACYW135)** Menactra (Sanofi) Menveo (GSK) **Meningococcal Polysacharide Quadrivalent ACYW135 (Men-P-ACYW135)** Menomune (Sanofi) **Meningococcal Conjugate B (Men-C-B)** Bexsero (Novartis)	Licensed for ≥ 2 months of age 0.5mL IM Licensed for 9 months-55 years of age 0.5mL IM Licensed for 2 years of age and older 0.5mLSC **Conjugated meningococcal vaccines do not result in hyporesponsiveness Licensed for 2 months -17 years 0.5mL IM	**Publicly funded school program :** Meningococcal quadrivalent ACYW135 conjugate vaccine: grade seven students since 2009 are perpetually eligible (clients born in 1997 or later) Meningococcal monovalent C conjugate vaccine: (clients born between 1986 and 1996) **Publicly funded routine schedule for children:** Monovalent meningococcal monovalent C conjugate vaccine: available to children one year of age on or after September 2004. **Publicly funded high risk clients:** Meningococcal quadrivalent ACYW135 conjugate vaccine: 9 months-55 years of age (2-4 doses + boosters) Meningococcal quadrivalent ACYW135 polysaccharide vaccine: >55 years of age (1 dose) ****Product discontinued-Substitute with Men C-ACYW135 (Menactra or Menveo)**** Meningococcal multicomponent B recombinant vaccine: 2 months-17 years of age (2-4 doses) **High risk clients:** 1.All persons with functional or anatomic asplenia 2.All persons with complement, properdin, factor D deficiency or primary antibody deficiencies 3. Cochlear implant recipients (pre/post implant) 4. Acquired complement deficiency 5. HIV **Minimum one month interval between two conjugate vaccines with the same antigens: Meningococcal C conjugate vaccine (Menjugate/Neis Vac) and Meningococcal ACYW135 conjugate vaccine (Menactra). **Minimum 6 month interval when giving a conjugate vaccine (Menactra, Menjugate and Neis Vac) after a polysaccharide vaccine (Menomune) with the same antigens.	Men-C-C: 97% effectiveness in infants within one year decreasing to 68% after 1 year. Longer term vaccine effectiveness requires receipt of a booster dose in the second year of life for those immunized in infancy. Menactra® vaccine demonstrated 80%-85% effectiveness in adolescents within 3 to 4 years of vaccination, effectiveness wanes over time.	**Menactra:** Diphtheria toxoid **latex** in stopper of vial **Menomune:** Thimerosal present in multi dose vial lactose **Menjugate:** Diphtheria toxoid aluminum Both products, liquid and powder **contain latex** **Neis Vac:** Tetanus toxoid aluminum **Bexsero:** aluminum hydroxide **contains latex** **Menveo:** Diphtheria toxoid	**All:** Allergy to vaccine or component **Menactra:** Pregnancy – Consult AMOH/MOH **"Pregnancy is not a contraindication to immunization; however, none of the conjugate vaccines, including Menactra have been studied in pregnant or breastfeeding women" (CCDR); **risk and benefit assessment advised** Severe allergy to latex **(latex in stopper of** Menactra vial) **Menveo:** May affect immune response of Tdap and Prevnar 13 if co-administered.	Mild, localized pain, swelling or redness may occur at the injection site. Generalized side effects include fever, headache, fatigue and body aches

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Pneumococcal 23 valent (Pneu-P-23) inactivated, polysaccharide Pneumovax (Merck Frost) Pneumo 23 (Sanofi)	>2 years of age 0.5mL SC **can be given IM	All persons 65 years of age and older regardless of medical condition All residents of nursing homes, homes for the aged and chronic care facilities or wards; All persons who are homeless; and All individuals who use illicit drugs and/or alcoholics *For high risk children < 5 years and ≥ 2 years of age a dose of Pneu-23 vaccine should be given at least 8 weeks after the Pneu-13 vaccine. **High risk medical conditions include:** • chronic respiratory disease (excluding asthma, except those treated with high-dose corticosteroid therapy) • chronic cardiac disease; chronic renal disease, including nephrotic syndrome • chronic liver disease (including Hepatitis B and C, and hepatic cirrhosis due to any cause) and alcoholism * as per CIG (funding confirmed by MOHLTC Feb 28/12 via email) • diabetes mellitus • chronic cerebrospinal fluid leak • chronic neurologic condition that may impair clearance of oral secretions • Asplenia (functional or anatomic), splenic dysfunction, sickle-cell disease and other sickle cell haemoglobinopathies • primary immune deficiency • congenital immunodeficiencies involving any part of the immune system, including; B-lymphocyte (humoral) immunity, T-lymphocyte (cell) mediated immunity, complement system (proper din, or factor D deficiencies), or phagocytic functions • other conditions associated with immunosuppression (e.g., malignant neoplasms, including leukemia and lymphoma) • immunosuppressive therapy including use of long-term systemic corticosteroid, chemotherapy, radiation therapy, post-organ transplant therapy, certain antirheumatic; drugs and other immunosuppressive therapy • HIV infection • hematopoietic stem cell transplant (candidate or recipient) • solid organ or islet cell transplant (candidate or recipient) • cochlear implant recipients (pre/post implant)	80% in healthy adults 50-80% among elderly and high risk Antibody levels decline after 5-10 years One time booster for high risk clients: after 5 yrs for those >11yrs at first dose **or** after 3 yrs in those ≤ 10 yrs at first dose	Phenol	Anaphylaxis to components Severe febrile illness	Mild Soreness, redness, swelling at injection site 30-60% more common after SC Low grade fever Re-immunization at < 2yrs associated with increased local and systemic reaction

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Pneumococcal 13 valent inactivated Prevnar 13 (Wyeth)	Licensed for ≥6 weeks of age 0.5 mL IM Licensed for ≥6 weeks of age 0.5 mL IM	**Low Risk Schedule:** **Routine**: (low risk children < 2years) 3 dose schedule at 2,4 months, booster dose at 12 months **Catch-up:** • 2-6 months: 2 doses, 2 months apart, boost at 15-18 months • 7-11 months: 2 doses, 2 months apart boost 15-18 months • 12-14 months: 1 dose, boost 15-18 months • 15-59 months: 1 dose **High Risk Schedule:** **Routine:** (high risk children <2yrs) 4 doses given at 2, 4, 6 months, boost at 15 months of age **Catch-up:** • 2-6 months: 2 doses, 2 months apart, boost at 15-18 months • 7-11 months: 2 doses, 2 months apart boost 15-18 months • 12-23 months: 2 doses, 2 months apart • 24-59 months: 1 dose **<u>Pneumococcal conjugate vaccine high risk individuals ≥ 50 years of age:</u>** • Individuals who have undergone hematopoietic stem cell transplants (HSCT) (3 doses) • Individuals with HIV (1 dose) • Individuals with other immunocompromising conditions including (1 dose) • :asplenia (anatomical or functional) • Sickle cell disease or other hemoglobinopathies • 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 • Immunosuppressive therapy • Malignant neoplasms including leukemia and lymphoma • **Vaccine intervals and considerations for HSCT recipients:** 1st dose, 2nd dose, 1 month after first dose, 3rd dose, 1 month after 2nd dose • 1 dose of Pneu-P-23 should be given at least 8 weeks after the last dose of Pneu-C-13 (except for HSCT recipients who should start series 3 to 9 months after transplant; 1 dose of Pneu-P-23 should be given 12 to 18 months post-transplant [6 to 12 months after last dose of Pneu-C-13]) • Alternatively, if Pneu-P-23 has already been received, 1 dose of Pneu-C-13 should be given at least 1 year after the last dose of Pneu-P-23	89-97% effective against IPD 54% reduction in AOM	Alum **latex in stopper**	Anaphylactic reaction to a previous dose of pneumococcal vaccine Anaphylactic reaction to any component of the vaccine Severe febrile illness.	29-37% have irritability, decreased appetite, drowsiness; pain, swelling and redness at site and/or low grade fever 2-3% have fever >39°

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Rotavirus live, attenuated Rotateq (Merck)	≥6 weeks of age or < 32 weeks of age (Rota-5) oral vaccine 2.0 mL Pentavalent Protects against serotypes G1, G2, G3, G4, G9	2, 4 and 6 months of age **Catch-up:** Minimum age at first dose ≥ 6 weeks old Maximum age at first dose <15 weeks Minimum interval between doses is 4 weeks. All doses should be administered by 32 weeks of age. NOTE: If an incomplete dose is administered for any reason (ie. infant spits or regurgitates the vaccine) a replacement dose should NOT be administered. Doses remaining in the series are recommended. **Interchangeability of vaccines** The vaccine series should be completed with the same product whenever possible. If product used for previous dose(s) is unknown, complete series with the available product. If any dose in the series was Rotateq (Rot-5) vaccine, a total of 3 doses of vaccine should be administered. **Note:** Excretion of live attenuated vaccine virus in stool is known to occur and lasts for 10 days with peak excretion around the seventh day after vaccination. Infants living in households with persons who have or are suspected to have immunosuppressive conditions can be vaccinated. To minimize the risk of transmission of RV vaccine virus, careful hand washing should be used after contact with the vaccinated infant, especially after handling feces (e.g., after changing a diaper), and before food preparation or direct contact with the immunocompromised person.	Efficacy against RV diarrhea of any severity: 74% to 87 % Efficacy against severe diarrhea due to RV: 85% to 98%. Data on the efficacy of incomplete vaccine series suggests that infants vaccinated during the RV season may derive substantial early protection against severe RV disease, despite not having completed a full series of immunization .	Dosing tube Latex free Sucrose Sodium citrate dehydrate Sodium phosphate monobasic monohydrate Sodium hydroxide Polysorbate 80	Anaphylactic reaction to a previous dose of rotavirus vaccine and/or to any component of the vaccine Suspected or known immunocompromising condition Severe Combined Immunodeficiency Disorder (SCID) A history of intussusception Uncorrected congenital abdominal disorders (such as Meckel's diverticulum) Received blood products, including immunoglobulin, within the last 42 days Severe febrile illness	Common side effects include: irritability and diarrhea, and uncommon side effects may include dermatitis, abdominal pain and/or flatulence . Severe reactions are rare and may include a slight increased risk of intussusceptions.

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Tetanus, diphtheria (Td) inactivated Td Adsorbed (Sanofi)	≥ 7 years of age 0.5mL IM 5 Lf of tetanus toxoid 2 Lf of diphtheria toxoid	**Routine:** Adults 19-64 years of age 1 dose every ten years once they have received their one time adult dose of Tdap (only if they did not receive their 14-16 year Tdap) **Catch up schedule:** unimmunized adults ≥ 18 years of age **Assess need for polio • 1st visit: Tdap or Tdap-IPV • 2nd visit (2 months after 1 visit): Td or Td and IPV • 3rd visit (6-12 months after 2nd visit): td or Td and IPV • Booster (every 10 years): Td. **depending on immune status dose may not be needed. Unimmunized adults or those with unknown history who may be exposed to wild polio or health care workers should receive series. o minimum interval between doses is 4 weeks, o minimum interval for booster dose is 6 months **NOTE: As per AMOH Tdap-IPV is an appropriate choice when Td-IPV is not available.**	Booster response 81% in adults and 100% in adolescents. -boost every ten years	Phenoxythanol aluminum phosphate formaldehyde.	Anaphylactic reaction to a previous dose of Tetanus, Diphtheria containing vaccines manifested as urticaria, swelling of the mouth and throat, difficulty breathing or hypotension Anaphylaxis or hypersensitivity to any component of the vaccine Presence of any acute illness, including febrile illness	Local symptoms: • Moderate or worse pain (12.2% to 18.9%) • swelling (10.3% to 16.2%), • redness (5.4% to 21.4%) Systemic reactions: • Fever ≥38.0°C (0.8% to 4.2%), • chills (4.6% to 8.1%), • sore or swollen joints (5.3% to 8.1%).
Tetanus, diphtheria and pertussis (Tdap) inactivated Adacel (Sanofi) Boostrix (GSK)	≥ 4 years of age 0.5mL IM 5 Lf of tetanus toxoid and 2 Lf of diphtheria toxoid 2.5 µg acellular pertussis pertussis toxoid (PT)	**Routine:** a single dose of Tdap is recommended for all adolescents between the ages of 14-16 years **and** 24-26 years. **Catch-up**: (when polio not required or if Adacel-IPV unavailable) • unimmunized children/adolescents beginning their primary series at 7 years of age or older should receive 3 doses of Tdap; first two doses 2 months apart and third dose 6-12 months later. • Adults are eligible to receive one publicly funded lifetime dose o minimum interval between doses is 4 weeks, o minimum interval for booster dose is 6 months **NOTE: As per AMOH Tdap-IPV is an appropriate choice when Td-IPV is not available.**	When given recommended number of doses, over 85% are protected against pertussis and diphtheria and over 95% protected against tetanus	**Adacel™:** aluminum phosphate, 2-phenoxyethanol, formaldehyde, gluteraldehyde **Boostrix™:** aluminum phosphate, 2 phenoxyethano,l **latex** (in cap of prefilled syringe, none in vial)	Anaphylactic reaction to a previous dose of Tdap vaccine Anaphylactic reaction to any component of the vaccine Severe febrile illness	Mild, localized pain, swelling or redness may occur at the injection site. Generalized side effects include headache, fatigue and body aches.

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Tetanus, diphtheria, pertussis and polio (Tdap-IPV) inactivated Adacel-IPV (Sanofi) Boostrix-Polio (GSK)	4-64 years of age 0.5mL IM AdacelPolio 5 Lf of tet toxoid 2 Lf of dip toxoid 2.5 µg Pert Toxoid Polio Type 1 40 D-Ag units Type 2 8 D-Ag units Type 3 32 D-Ag units BoostrixPolio 5 Lf of tet toxoid 2.5 Lf of dip toxoid 8 µg Pert Toxoid Polio Type 1 40 D-Ag units Type 2 8 D-Ag units Type 3 32 D-Ag units	**Routine schedule : children beginning immunization in infancy:** Tdap-IPV should be given at the 4-6 year (5th) or school entry dose as long as the client has completed a primary DTap-IPV/DTaP-IPV-Hib series (at least 3 doses) **Catch-up schedule : children/adolescents starting immunizations at 7-17 years:** 3 doses of Tdap and IPV are required, they can be given separately as Tdap and IPV or in combination as Tdap-IPV according to schedule below: **Tdap IPV catch up schedule : individuals aged 7-17 years of age:** **3 doses:** **1st visit, 2nd visit (2 months after 1st visit), and 3rd visit (6-12 months after 2nd visit)** **Catch-up schedule: adults ≥ 18 years of age:** Unimmunized adults, 1 dose preferably to start the primary series Individuals traveling to polio risk destinations and needing a Td update o minimum interval between doses is 4 weeks, o minimum interval for booster dose is 6 months **NOTE: As per AMOH Tdap-IPV is an appropriate choice when Td-IPV is recommended.**	When given recommended number of doses, over 85% are protected against pertussis and diphtheria and over 95% protected against tetanus	Aluminum phosphate 2-phenoxyethanol polysorbate 80 bovine serum albumin formaldehyde gluteraldehyde streptomycin neomycin polymixin B	Anaphylactic reaction to a previous dose of Tdap vaccine Anaphylactic reaction to any component of the vaccine Severe febrile illness	Mild, localized pain, swelling or redness may occur at the injection site. Generalized side effects include headache, fatigue and body aches.

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Varicella live, attenuated Varivax III (Merck Frost) Varilrix (GSK)	12 months and older 0.5mL SC	**Routine:** Children 15 months of age should receive the 1st dose. The second dose should be given as MMRV at 4-6 years of age; **Catch-up:** Children born on or after Jan. 1, 2000 and who are at least 1 year of age are eligible for 2 doses of varicella vaccine; **High risk:** -Susceptible children and adolescents given chronic salicylic acid therapy -All persons with cystic fibrosis -Susceptible household contacts of immunocompromised persons -Susceptible persons receiving low dose steroid therapy or inhaled/topical steroids -Immunocompromised persons (see CIG) ****consultation required** **Recommended intervals:** **Varicella and MMR vaccine must be given on the same day or at least 28 days apart **MMRV and varicella must be given 3 months apart **MMRV and MMR vaccine must be given 6 weeks apart **Varicella and varicella must be given: -3 months apart if 12 months-12years - 6 weeks apart if 13 years and older **Minimum interval:** **Varicella containing vaccines must be given at least 28 days apart (CIG varicella update-December 2016)	1 dose 70-90% effective against disease of any severity and 95% effective against severe disease 2 dose100% against severe disease	**Varivax:** Gelatin neomycin bovine serum **Varivax III:** Neomycin human albumin lactose	Anaphylactic reaction to a previous dose of varicella containing vaccine; Anaphylactic reaction to any component of the vaccine; Suspected or known immunocompromising condition; Severe febrile illness; Received blood products or immune globulin (see table in MD); Pregnancy Child with a history of chicken pox after 1 year of age. **Susceptible household contacts of immunocompromised people should receive vaccine as appropriate for age and risk factors. If a varicella-like rash develops, the rash should be covered and the vaccinee should avoid direct contact with the immunocompromised person for the duration of the rash. Secondary transmission from people with post-vaccination varicella-like rashes can occur rarely.	Mild including, injection site pain, swelling and redness 10% to 20% Low-grade fever 10% to 15% Varicella-like rash occurs within 5-26 days at the site **or** generalized in 3% to 5% after the first dose and 1% after a 2nd dose If rashes occurs within the first two weeks after immunization it may be caused by wild-type virus, health care providers should obtain specimens from the vaccinee to ensure varicella disease is not confused with a reaction to vaccination.

Type of Vaccine	Indication/ Dose	Publicly Funded Schedule	Efficacy/ Boosting	Components	Contraindication/ Precautions	Side Effects
Zoster live, attenuated Zostavax (Merck)	≥50 years of age 0.5mL SC Persons, 60 years of age and older without contraindications, should receive one dose of HZ vaccine. Adults 50 to 59 years of age without contraindications may receive one dose of HZ vaccine.	**Routine:** 65-70 years of age	Overall vaccine efficacy 51.3% for HZ incidence and 66.5% for PHN. Duration of protection beyond 4 years is unknown. Vaccine protection against HZ remains statistically significant up to 5 years and results also suggest some efficacy up to year 7. Need for revaccination has not been defined.	Gelatin neomycin bovine serum	Contraindicated in persons with a history of anaphylaxis to vaccine or components. Contraindicated during pregnancy. Contraindicated if immunocompromised Individual should consult with attending physician if requesting vaccination. HZ vaccine should be administered to individuals indicated for vaccine regardless of whether or not the person has a history of varicella infection. Nearly all Canadians eligible for HZ immunization will have had prior varicella exposure, even if a diagnosis of varicella cannot be recalled, routine testing of adults aged 50 years and older for VZV antibody prior to immunization is **not** recommended. There should be an interval of at least one year between an episode of HZ and receipt of HZ vaccine. Individuals with a history of Herpes Zoster Opthalmicus (HZO),should consult an ophthalmologist.	Mild including injection site pain, swelling and redness 40%-53%