THIS CHAPTER MEETS THE FOLLOWING IMMUNIZATION COMPETENCIES FOR HEALTH PROFESSIONAL (PHAC, 2008): http://www.phac-aspc.gc.ca/im/pdf/ichp-cips-eng.pdf

#11: Populations Requiring Special Considerations

- Competency: Recognizes and responds to the unique immunization needs of certain population groups.

1.0 ROUTINE IMMUNIZATION SCHEDULES

1.1 Routine Immunization Schedule for Infants, Children and Adolescents

- **Refer to Ch. 7, Special Populations and Ch. 10, Biological Products for vaccine eligibility and specific information.**
- When there is a delay in initiating or completing the vaccine series, use the recommended minimum interval schedule in SIM, Chapter 5, Section 2.1, *Minimum Intervals for Specific Vaccine Doses.*

Vaccine and age/grade	2 mo.	4 mo.	6 mo.	12 mo.	18 mo.	4-6 yrs.	Gr. 6	Gr. 8
Rot-1 or Rot-5 [10]	•	•	• (Rot-5)					
DTaP-IPV-Hib [1]	•	•	•		•			
Pneu-C-13 [2]	•	•		•				
Men-C-C				•				
MMRV				•	•			
HA [3]				•	•			
Tdap-IPV [4]						•*		
Men-C-ACYW-135							•	
HB							•	
HPV-9 [11]							•	
Var [5, 6, 8,]							•	
Tdap [7]								•
Inf [9]			•					

* Refer to Chapter 10, *Immunization Recommendations for Children 4-6 years of Age* for details.

[1] Hib schedule depends on age of child at presentation and previous doses received. Refer to SIM, Chapter 5, Section 1.2, *Hib Schedule for Children Delayed by 1 Month or More.*

[2] Pneu-C-13 schedules depend on age of child at presentation and previous doses received. Refer to SIM Chapter 5, Section 1.3A, *Pneumococcal Conjugate Schedule for Healthy Children Delayed by 1 Month or More.*

[3] People born since Jan. 1/82 who live in the Athabasca Health Authority or on reserves in Saskatchewan (excluding Creighton, Air Ronge and La Ronge) regardless of where they access immunization services.

[4] 5th dose is not required if child received the 4th dose after 4 years of age.

[5] Those born between Jan. 1/04 and Sept. 30/09 are to receive their second dose in Grade 6.

[6] Those who are cohort or age eligible for a 2-dose series and subsequently developed **laboratory confirmed** varicella breakthrough disease after their first dose **do not require** a second dose of a varicella-containing vaccine. Those born since January 1, 2003 are eligible to receive a cohort-based varicella vaccine series unless they have documentation:

- Of having previously received a cohort-based varicella vaccine series; or
- Of serological evidence of immunity to the varicella zoster virus; or
- Lab-confirmed evidence of disease (e.g., culture from a pox viral swab).
- Refer to SIM Chapter 5 Appendix 5.4 *Publicly Funded Varicella Immunization Eligibility and Panorama Directives* for further information.

[7] Tdap can be administered any time (e.g., the next day) after a tetanus-containing vaccine was given.

[8] Prior to immunizing females of childbearing age with live vaccines, it is best practice to verbally screen them for pregnancy and counsel them to prevent pregnancy for one month post-immunization. Female students up to and including Grade 6 do not require to be screened verbally for pregnancy or to receive counselling to avoid pregnancy for one month post-immunization prior to receiving live vaccines. Immunizers are encouraged to use their professional judgement to assess if pregnancy screening of individual female students in older grades is warranted, and to follow their regional screening policies as applicable.

[9] Children between 6 months and less than 9 years require 1 or 2 doses given no less than 4 weeks apart depending upon previous influenza immunization history.

[10] First dose must be given by 14 weeks 6 days of age; last dose must be given by 8 months -1 day. Rot-1 is a 2-dose series, Rot-5 is a 3-dose series.

[11] Females born since January 1, 1996 & males who are currently in grade 6 OR males born since Jan. 1, 2006 or males who did not receive or complete series when in grade 6 (2017/18 school year start date) until 27 years old. Refer to 2.1 *Minimum Intervals for Specific Vaccine Series* for age-specific interval and dose requirements.

1.2 Hib Schedule for Children Delayed by 1 Month or More

- Refer to Chapter 10, *Biological Products* for specific vaccine information.

Age at 1st dose of Hib [1] vaccine	Hib vaccine schedule [4]
3 to 6 months	3 doses, ≥ 4 weeks apart AND 1 booster dose [2]
7 to 11 months	2 doses≥ 4 weeks apart AND 1 booster dose [2]
12 to 14 months	1 dose (regardless of previous doses) AND 1 booster dose [5]
15 to 59 months [6]	1 dose [3] (regardless of previous doses)

Source: https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-4-active-vaccines/page-5-haemophilus-influenzae-type-b-vaccine.html

NOTE: Refer to SIM, Chapter 5, *Immunization Schedules* Sections *1.1 Routine Immunization Schedule for Infants, Children and Adolescents* and/or *1.4 Children 1 Year and Older but less than 7 Years Who Present for Immunizations* to determine when combination vaccines are appropriate to complete other antigen series (i.e., diphtheria, tetanus, pertussis, polio).

[1] If the primary Hib series is interrupted, complete the series according to age at which child re-presents for immunization defaulting to whichever primary schedule requires the fewest number of doses
[2] The 18 months reinforcement dose may be administered at 12 months if there is an 8-week interval following the previous dose **and** the child has received at least 2 doses of Hib.
[3] At 15 months of age or older, a single dose of any Hib product is required for a previously unimmunized or incompletely immunized child up to and including 59 months of age.
[4] Children who have had invasive Hib disease at less than 24 months of age must be re-immunized with a Hib-containing vaccine according to their age at presentation. Refer to the *Saskatchewan Communicable Disease Control Manual* at http://www.ehealthsask.ca/services/manuals/Pages/CDCManual.aspx for further information.
[5] Minimum 8-week interval between doses, with booster given ≥ 12 months of age.
[6] If DTaP-IPV/Hib is being used for children ≥ 4 years of age the additional (extra safe) doses of Hib are not a concern.

1.3A Pneumococcal Conjugate Schedule for Healthy Children Delayed by 1 Month or More [1]

- Refer to Chapter 10, *Biological Products* for specific vaccine information.

Age at Presentation [2]	Pneumococcal conjugate vaccine history	Completion of primary series requirement	Reinforcement
3 to 11 months	0	2 doses (min. 4 weeks apart)	One dose at 12 months of age or older [3]
	1 dose	1 dose (min. 4 weeks since first dose)	
	2 doses	0 doses	
12 to 23 months	0 doses	2 doses [3]	Not required
	1 dose at less than 12 months	2 doses [3]	Not required
	1 dose at 12 months or older	1 dose [3]	Not required
	2 or 3 doses at less than 12 months	1 dose [3]	Not required
	1 dose at less than 12 months **and** 1 dose at 12 months or older	1 dose [3]	Not required
	2 or 3 doses at less than 12 months **and** 1 dose at 12 months or older	Considered up to date	Not required
24 to 59 months	0	1 dose	Not required
	Any age-appropriate series incomplete by 24 months old	1 dose	Not required

[1] When an infant has received one or two doses of vaccine, and is subsequently diagnosed with a high risk medical condition, refer to Section 1.3B, *Pneumococcal Conjugate Schedule for Medically High Risk Children Delayed by 1 Month or More.*

[2] If series is interrupted, complete series according to age at which child re-presents. When there is a delay in initiating or completing the vaccine series, use the recommended minimum interval schedule in SIM, Chapter 5, Section 2.1, *Minimum Intervals for Specific Vaccine Series.*

[3] Minimum of 8 week interval required.

1.3B Pneumococcal Conjugate Schedule for Medically High Risk Children Delayed by 1 Month or More

- Refer to Chapter 10, *Biological Products* for specific vaccine information and specific health conditions.
- Children who are at high risk of IPD should also receive a dose of Pneu-P-23 at 2 years of age or older. This dose should be given whether or not the child received Pneu-P-23 prior to age 2 years. Pneu-P-23 should be given at least 8 weeks after the last dose of Pneu-C-13.
- Children up to 59 months of age who have previously received Pneu-P-23 should also receive all recommended Pneu-P-13 doses.

Age at Presentation[1]	Pneumococcal conjugate vaccine history	Completion of primary series requirement	Reinforcement
3-11 months	0 doses	3 doses (min. 4 weeks apart)	One dose at 12 months of age or older [2]
	1 dose	2 doses (min. 4 weeks apart)	
	2 doses	1 dose (min. 4 weeks since last dose)	
12-23 months	0 doses	2 doses [2]	Not required
	1 dose at less than 12 months	2 doses [2]	Not required
	1 dose at 12 months or older	1 dose [2]	Not required
	2 or 3 doses at less than 12 months	1 doses [2]	Not required
	1 dose at less than 12 months **and** 1 dose at 12 months or older	1 dose [2]	Not required
	2 or 3 doses at less than 12 months **and** 1 dose at 12 months or older	Considered up to date	Not required
24-59 [3] months	0 dose or incomplete vaccination schedule with any product	1 dose [2]	Not required
	Complete, age-appropriate vaccination with Pneu-C-7 or Pneu-C-10 (0 doses Pneu-C-13)	1 dose [2]	Not required

[1] If series is interrupted, complete series according to age at which child re-presents. When there is a delay in initiating or completing the vaccine series, use the recommended minimum interval schedule in SIM, Chapter 5, Section 2.1, *Minimum Intervals for Specific Vaccine Series*.

[2] Minimum of 8 week interval required since previous Pneu-C-13 dose.

[3] *Canadian Immunization Guide*, accessed September 22, 2014 at: http://www.phac-aspc.gc.ca/publicat/cig-gci/p04-pneu-eng.php

1.4 Children 1 Year and Older but less than 7 Years Who Present for Immunizations

- **Refer to Ch. 7, Special Populations and Ch. 10, Biological Products for vaccine eligibility and specific information**
- When there is a delay in initiating or completing the vaccine series, use the recommended minimum interval schedule in SIM, Chapter 5, Section 2.1, *Minimum Intervals for Specific Vaccine Series*.
- **Previous vaccine doses administered when child was younger are counted toward doses required in this schedule.**

	DTaP-IPV-Hib[1]	Pneu-C-13 [2,]	Men-C-C[10]	HA [3]	MMRV [4, 5, 9, 11]	MMR [6, 11]	Inf [7]	Tdap-IPV [8]
First visit	●	●	●	●	●	●	●	
1 month after 1st visit	●				●	●		
2 months after 1st visit	●	●						
6 months after 1st visit				●				
6 months after 3rd tetanus dose	●*							
4-6 years old (min. 6 months after last tetanus dose)								●*

* Refer to Chapter 10, *Immunization Recommendations for Children 4-6 years of Age* for details. If the child's third dose is received between 4-6 years, a 4th dose should be given at least 24 weeks later.

[1] Hib schedule depends on age of child at presentation and previous doses received. Refer to SIM, Chapter 5, Section 1.2, *Hib Schedule for Children Delayed by 1 Month or More* to assess if child requires Hib.

[2] Only for children up to and including 59 months of age. Pneu-C-13 schedules depend on age of child at presentation and previous doses received. Refer to SIM, Chapter 5, Section 1.3A, *Pneumococcal Conjugate Schedule for Healthy Children Delayed by 1 Month or More.*

[3] People born since Jan. 1/82 who live in the Athabasca Health Authority or on reserves in Saskatchewan (excluding Creighton, Air Ronge and La Ronge) regardless of where they access immunization services.

[4] MMRV is offered to children 1 year up to and including 12 years of age who are eligible to receive a cohort-based varicella vaccine series unless they have documentation:

- Of having previously received a cohort-based varicella vaccine series; or
- Of serological evidence of immunity to the varicella zoster virus; or
- Lab-confirmed evidence of disease (e.g., culture from a pox viral swab).
- Serological varicella titre testing is not required before immunizing someone born since January 1, 2003 who does not have any of the above documentation. If child is varicella immune, provide MMR as noted in footnote 6.

[5] Two doses MMRV for varicella susceptible children born since October 1, 2009.

[6] Two doses MMR for children who have varicella immunity documentation as noted in footnote 4.

[7] Children between 6 months and less than 9 years old require 1 or 2 doses 4 weeks apart depending upon previous influenza immunization history.

[8] 5th dose is not required if child received the 4th dose after 4 years of age.

[9] Only people who are cohort or age eligible for a 2-dose series and subsequently develop **laboratory confirmed** varicella breakthrough disease **do not require** a second dose of a varicella-containing vaccine.

[10] If Men-C-ACYW-135 has been received ≥ 1 year old, Men-C-C not required.

[11] Refer to Appendix 5.2: *Publicly Funded MMR Vaccine Eligibility.*

1.5 Children 7 to 17 Years Who Present for Immunizations

- **Refer to Ch. 7, Special Populations and Ch. 10, Biological Products for vaccine eligibility and specific information.**
- When there is a delay in initiating or completing the vaccine series, use the recommended minimum interval schedule in SIM, Chapter 5, Section 2.1, *Minimum Intervals for Specific Vaccine Series.*
- **Previous vaccine doses administered when child was younger are counted toward doses required in this schedule.**

	Inf [1]	Tdap [2, 13]	IPV	MMRV [3, 11, 14]	MMR [4, 11, 14]	Var [5, 6, 11]	Men-C-C [8]	Men-C-ACYW-135 [7]	HB [9]	HPV-9 [10]	HA [12]
First visit	•	•	•	•	•	•	•			•[10]	•
1 month after 1st visit		•	•		•						
6 months after 2nd visit*		•*	•❖								•
Gr. 6						•		•	•	•[10]	
Gr. 8		•									

*** Refer to SIM Ch. 10 Tdap (Adacel and Boostrix) and Tdap-IPV (Adacel-Polio and Boostrix-Polio) pages for directives in completing all series, based on immunization status and/or age when first dose of a DTaP-containing vaccine was received (e.g., before or after 1 year old).**

❖ If the 3rd IPV dose was given before 4 years of age, the child requires another dose of IPV. They are considered up to date if the 3rd dose was given ≥ 4 years of age.

[1] Children between 6 months and less than 9 years require 1 or 2 doses 4 weeks apart depending upon previous immunization history.

[2] Grade 8 Tdap can be administered regardless of the interval since the last tetanus-diphtheria vaccine, but refer to the algorithm noted in footnote 15 for detailed information if the child had already received a Tdap dose since 11 years of age.

[3] MMRV can be offered to children 1 year up to and including 12 years of age, and all Grade 6 students. Anyone born since January 1, 2003 is eligible to receive a cohort-based varicella vaccine series unless they have documentation:

- Of having previously received a cohort-based varicella vaccine series; or
- Of serological evidence of immunity to the varicella zoster virus; or
- Lab-confirmed evidence of disease (e.g., culture from a pox viral swab).
- Serological varicella titre testing is not required before immunizing someone born since January 1, 2003 and/or is currently in Grade 6 who does not have any of the above documentation. If a child is varicella immune, provide MMR as noted in footnote 4.
- Give separate MMR and Var vaccines to varicella-susceptible children who are 13 years and older **and not** in Grade 6.

[4] MMR for children who have varicella immunity documentation as noted in footnote 3.

[5A] Eligible for 2-dose series: those born since Oct. 1/09, those born since Jan. 1/04 when in Gr. 6; those starting at 13 years and older.

[5B] Those 13 years and older require 2 doses given a minimum of 4 weeks apart. Only people who are cohort or age eligible for a 2-dose series and subsequently develop laboratory confirmed varicella breakthrough disease do not require a second dose of a varicella-containing vaccine.

[6] Self-reported varicella disease after 1 years of age is **only acceptable** as evidence of immunity for those born before January 1, 2003. They require documentation of a varicella serological titre if they want immunization beyond Grade 6.

[7] Grade 6 students can receive Men-C-ACYW-135 a minimum of 4 weeks after a previous Men-C-C vaccine and 3 or more years after previous Men-C-ACYW-135 dose.

[8] Men-C-C will forecast as overdue for a child until they become 10 years old. At 10 years old, Men-C-ACYW-135 automatically forecasts as part of the Grade 6 program eligibility and Men-C-C disappears from the forecast. The child remains eligible to receive the Men-C-C vaccine if they present before starting Grade 6.

[9] Provide an age-appropriate series.

[10] Females born since January 1, 1996 & males who are currently in Grade 6 OR males born since Jan. 1, 2006 or males who did not receive or complete series when in Grade 6 (2017/18 school year start date) until 27 years old. Refer to 2.1 *Minimum Intervals for Specific Vaccine Series* for age-specific interval and dose requirements.

[11] Prior to immunizing females of childbearing age with live vaccines, it is best practice to verbally screen them for pregnancy and counsel them to prevent pregnancy for one month post-immunization. Female students up to and including Grade 6 do not require to be screened verbally for pregnancy or to receive counselling to avoid pregnancy for one month post-immunization prior to receiving live vaccines. Immunizers are encouraged to use their professional judgement to assess if pregnancy screening of individual female students in older grades is warranted, and to follow their regional screening policies as applicable.

[12] People born since Jan. 1/82 who live in the Athabasca Health Authority or on reserves in Saskatchewan (excluding Creighton, Air Ronge and La Ronge) regardless of where they access immunization services.

[13] Refer to Appendix 5.3: Grade 8 Tdap Algorithm.

[14] Refer to Appendix 5.2: *Publicly Funded MMR Vaccine Eligibility.*

1.6 Adults 18 Years and Older Who Present for Immunizations

- **Refer to Ch. 7, Special Populations and Ch. 10, Biological Products for vaccine eligibility and specific information.**
- When there is a delay in initiating or completing the vaccine series, use the recommended minimum interval schedule in SIM, Chapter 5, Section 2.1, *Minimum Intervals for Specific Vaccine Series*.
- **Previous vaccine doses administered when person was younger are counted toward doses required in this schedule.**

	Inf	Tdap*	IPV* [1]	Td	MMR [2, 3]	Var [3, 4, 5]	Men-C-C [6]	Men-C-ACYW-135 [7]	HB [8]	HPV-9 [9]	Pneu-P-23 [10]	HA [11]
First visit	•	•	•		•	•	•	•	•	•	•	•
1 month after 1st visit			•	•	•	•			•	•		
6 months after 1st visit									•	•		•
6 months after 2nd visit			•	•								

***** Tdap-IPV may be given as this dose.

[1] Adults eligible to complete 3-dose IPV series (see p. 21). Booster doses of IPV are not publicly funded.

[2] Two doses for adults born since January 1, 1970. Those born before January 1, 1970 are considered immune to measles, mumps and rubella (excluding healthcare workers and healthcare students). Refer to Appendix 5.2: *Publicly Funded MMR Vaccine Eligibility.*

[3] Prior to immunizing females of childbearing age with MMR and Var vaccines, it is best practice to verbally screen them for pregnancy and counsel them to prevent pregnancy for one month post-immunization. Refer to SIM, Chapter 5, Section 1.8, *Publicly Funded Vaccine Eligibility Criteria* for rubella-susceptible women of child bearing age.

[4] For varicella susceptible individuals born since January 1, 1993 and for non-pregnant women of childbearing age. Those 13 years and older require 2 doses given a minimum of 4 weeks apart. Individuals eligible for a 2-dose varicella series who have lab confirmed varicella immunity after their first varicella-containing vaccine dose do not require a second varicella-containing vaccine dose as they will have developed immunity.

[5] Refer to Appendix 5.4 Publicly Funded Varicella Immunization Eligibility and Panorama Directives especially for a woman of childbearing age**.** Those born since January 1, 2003 are eligible to receive a cohort-based varicella vaccine series unless they have documentation:

- Of having previously received a cohort-based varicella vaccine series; or
- Of serological evidence of immunity to the varicella zoster virus; or
- Lab-confirmed evidence of disease (e.g., culture from a pox viral swab) ≥ 1 year old.
  - **NOTE**: Verbal history of disease after 1 year of age is accepted as evidence of immunity for persons born before January 1, 2003. It is unreliable and is not acceptable as of evidence of immunity for healthcare workers and healthcare students.
  - People born before January 1, 2003 who want to be immunized require serological evidence of susceptibility and this documentation must be provided to Public Health before they are immunized. **Refer to Appendix 5.4 Publicly Funded Varicella Immunization Eligibility and Panorama Directives** especially for a woman of childbearing age**.**

[6] For individuals born since January 1, 1993 up to and including 21 years of age; ineligible for vaccine upon 22nd birthday.

[7] For individuals born since January 1, 2000 up to and including 21 years of age; ineligible for vaccine upon 22nd birthday.

[8] For individuals born since January 1, 1984.

[9] Females born since January 1, 1996 and males born since January 1, 2006 until they are 27 years old.

[10] One dose for healthy adults 65 years and older; if they received a dose before 65 years old, they cannot get another dose.

[11] People born since Jan. 1/82 who live in the Athabasca Health Authority or on reserves in Saskatchewan (excluding Creighton, Air Ronge and La Ronge) regardless of where they access immunization services.

1.7 Recommended Publicly Funded Immunizations for Adults Who Completed a Primary Childhood Vaccine Series

- Refer to Chapter 10, *Biological Products* for specific vaccine information.
- When there is a delay in initiating or completing the vaccine series, use the recommended minimum interval schedule in SIM, Chapter 5, Section 2.1, *Minimum Intervals for Specific Vaccine Series*.

Vaccine	Frequency of Publicly Funded Immunization
Td (or Tdap)	• A tetanus-containing vaccine is recommended every 10 years. • Adults are eligible to receive one Tdap vaccine to replace a Td vaccine. • Refer to Chapter 5, Section 3.7, *Tetanus Prophylaxis in Wound Management* for more information. • Tdap can be given any time after Td if required (e.g., the next day).
Influenza	• Annually
MMR	• Refer to Appendix 5.2: *Publicly Funded MMR Vaccine Eligibility* to assess eligibility.
Pneu-P-23	• One routine dose for adults 65 years and older. • One dose for those 2 years up to and including 64 years of age who have specific health conditions. • Some individuals with specific high-risk medical conditions are eligible for only 1 publicly funded reinforcement dose 5 years after the first dose regardless of age (≥2 years) that the first dose was received. • Refer to Chapter 7, *Immunization of Special Populations* for more information.

1.8 Publicly Funded Vaccine Eligibility Criteria

* Individuals with specific high-risk medical conditions. Refer to SIM, Chapter 7, *Immunization of Special Populations*.

- Refer to Chapter 10, *Biological Products* for specific eligibility and vaccine information.
- When there is a delay in initiating or completing the vaccine series, the minimum interval schedule in SIM, Chapter 5, Section 2.1, *Minimum Intervals for Specific Vaccine Doses* may be applied.
- Individuals who started a routine publicly funded series in another jurisdiction will receive immunization services to complete their vaccine series only if that series complies with the SK routine immunization program or if that individual qualifies under a Special Population status. For example, infant HB series would be continued, but Men-C-C under a year of age would not be publicly funded.

Vaccine	Eligibility
HA*	• People born since Jan. 1/82 who live in the Athabasca Health Authority or on reserves in Saskatchewan (excluding Creighton, Air Ronge and La Ronge) regardless of where they access immunization services.
HB*	• Individuals born since January 1, 1984; all HCWs.
HPV-9*	• Females born since January 1, 1996 and males born since January 1, 2006 until 27 years old.
Influenza	• Individuals 6 months and older.
Measles	• Refer to Appendix 5.2: *Publicly Funded MMR Vaccine Eligibility*.
MenB*	• Individuals with specific high-risk medical conditions. Refer to SIM, Chapter 7, *Immunization of Special Populations*.
Men-C-C	• Individuals born since October 1, 2000 receive one dose at 1 year of age. • People born since January 1, 1993 to September 30, 2000 who did not receive in Grade 6, up to and including 21 years of age (ineligible at 22nd birthday).
Men-C-ACYW-135*	• Individuals born since January 1, 2000 who missed the Grade 6 program starting September 1, 2011 up to age 21 years of age. Ineligible upon 22nd birthday. • Individuals 8 weeks of age and older with specific high-risk medical conditions. Refer to SIM, Chapter 7, *Immunization of Special Populations*.
Mumps	• Refer to Appendix 5.2: *Publicly Funded MMR Vaccine Eligibility*.
Pneu-C-13*	• Children up to and including 59 months of age. Refer to SIM, Chapter 5, Section 1.3A, *Pneumococcal Conjugate Schedule for Children Delayed by 1 Month or More* • Children 60 months up to and including 17 years old with specific high-risk medical conditions. Refer to SIM, Chapter 7, *Immunization of Special Populations*. • Adult HSCT recipients. Refer to SIM, Chapter 7, *Immunization of Special Populations*.
Pneu-P-23*	• Adults 65 years and older. • Individuals 2 years and older with specific high-risk medical conditions. Refer to SIM, Chapter 7, *Immunization of Special Populations*.
Polio	• Those who have not completed a primary series.
Rubella	• According to CIG, 1 dose of rubella is considered sufficient for immunity in all ages. Refer to Appendix 5.2: *Publicly Funded MMR Vaccine Eligibility*. • Documented serological non-immune individuals who have documentation of receiving two previous doses of rubella-containing vaccines are ineligible to receive further doses of rubella-containing vaccine; document as a non-responder.
Td/Tdap	• Individuals who missed the Grade 8 adolescent program. • Adults 18 years and older are eligible to receive one Tdap to replace a Td dose.
Varicella	• Susceptible individuals born since October 1, 2009 are eligible for two doses. • Susceptible individuals born between January 1, 1993 to December 31, 2000 and/or born between January 1, 2004 and September 30, 2009: ➢ Individuals 1 year up to and including 12 years old at presentation receive one dose. ➢ Individuals 13 years and older at presentation receive two doses. • Susceptible individuals born between January 1, 2001-December 31, 2003 are only eligible for immunization in Grade 6 or later. • Susceptible non-pregnant females of childbearing age (refer to *chapter 7 section 5.2.A*)

2.0 MINIMUM INTERVALS BETWEEN VACCINE DOSES

- Minimum intervals are useful to assess the validity of vaccine doses an individual has previously received.
- A "minimum interval" is the shortest time between two doses of a vaccine in a multi-dose series in which a protective response to the subsequent dose can be expected.
- Minimum intervals may be used when an individual starts an immunization series at a later age/date or has fallen behind the routine immunization schedule.
- **When the client is up-to date for age at presentation, return to the routine age-appropriate schedule.**
- Refer to SIM, Chapter 8, Section 1.5.2, *Vaccines Given at Less than the Recommended Minimum Age* for live vaccine administered before 12 months of age.
- Vaccine doses that were given at intervals shorter than those shown in Table 2.1: *Minimum Intervals for Specific Vaccine Series* may be considered valid; refer to Chapter 8, Section 1.5, *Immunization Following Non-Conforming Situations* for more information.
- If two live parenteral vaccines are not given on the same day and are given at less than the recommended minimum intervals, the second vaccine that was given is considered invalid and must be repeated at the correct minimum interval. Refer to Chapter 5, Section 3.3.1, *Minimum Spacing between MMRV, MMR and Varicella Vaccine Doses*.

2.1 Minimum Intervals for Specific Vaccine Series

- Refer to Chapter 10, *Biological Products* for specific vaccine information.
- **When the client is up-to date for age at presentation, return to the routine age-appropriate schedule.**

Vaccine Series and Required Doses		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
DTaP-IPV-Hib [1] (min. age 6 weeks)		4 weeks	4 weeks	24 weeks [1]	24 weeks [2]
Rot-1 (min. age 6 weeks)		4 weeks			
Rot-5 (min. age 6 weeks)		4 weeks	4 weeks [12]		
HA (min. age 6 months)		24 weeks			
MMRV [3, 12]		4 weeks			
MMR [3]		4 weeks			
Var [3, 12]		4 weeks			
Inf (min. age 6 months)	First time recipients between 6 months up to 9 years	4 weeks			
IPV	3 dose primary series (7 years and older)	4 weeks	24 weeks		
Td or Tdap		4 weeks	24 weeks	5 years [6]	
Tdap-IPV (min. age 4 yrs)		4 weeks	24 weeks		
HPV-9 (min. age 9 yrs)	2 dose series for ages 9-14 years	24 weeks			
	3 dose series for age≥ 15 years	4 weeks	12 weeks[11]		
HB	2-dose series for ages 11-15 years	16 weeks			
	Routine indications [4]	4 weeks	8 weeks[9]		
	Infants 2000g or heavier at birth [4]	4 weeks	8 weeks[9]		
	Infants less than 2000g at birth [5]	4 weeks	4 weeks	8 weeks [9]	
Pneu-C-13 [7] (min. age 6 weeks)	2-dose series	8 weeks			
	3-dose series	4 weeks	8 weeks [8]		
	4-dose series	4 weeks	4 weeks	8 weeks [8]	
HAHB	3-dose series	4 weeks	5 months [11]		
	2-doses series (1 - 15 years only)	24 weeks			
Men-C-ACYW-135 (Menveo) (min. age 8 weeks)	4-dose series (8 weeks to 5 months)	8 weeks	8 weeks	8 weeks [10]	
	3-dose series (6 months to 11 months)	8 weeks	8 weeks [10]		
	2-dose series (12 months to 23 months)	8 weeks			
	2-dose series (≥2 years)	4 weeks			
4CMenB (Bexsero) (min. age 8 weeks)	4-dose series (8 weeks to 5 months)	4 weeks	4 weeks	8 weeks [10]	
	3-dose series (6 months to 11 months)	8 weeks	8 weeks [10]		
	2-dose series (12 months to 10 years)	8 weeks			
	2-dose series (≥11 years)	4 weeks			

[1] if the 4th dose of Hib is given before 12 months of age, another dose of Hib is required.
[2] The minimum age for dose #5 is 4 years old.
[3] If given before 1 year of age, individual requires two valid doses after 12 months of age.
[4] Minimum of 16 weeks spacing is required between dose 1 and 3.
[5] Refer to Chapter 7, Section 4.2.1, *Hepatitis B Infant Immunoprophylaxis Protocol.*
[6] 10 years between tetanus-containing vaccines for adults 18 years and older is the recommended interval with a minimum interval of 5 years in certain circumstances (e.g., wound management). Not recommended for routine application and only applicable to dose intervals beyond the 3rd dose.
[7] Refer to SIM, Chapter 5, Section 1.3A, *Pneumococcal Conjugate Schedule for Children Delayed by 1 Month or More.*
[8] The final dose should be given no sooner than 12 months of age, and at least 8 weeks after the previous dose.
[9] Infants must be at least 24 weeks of age for this dose.
[10] Dose must be given at 12 months of age or older.
[11] 24 weeks spacing required between doses 1 and 3.
[12] Max age of 8 months – 1 day.

3.0 TIMING AND SPACING OF BIOLOGICAL PRODUCTS

Administer all vaccine doses for which a client is eligible at the time of each visit. Simultaneous (at the same clinic visit but at different anatomical sites) administration of all vaccines for which a person is eligible is critical in increasing the probability that a client will be fully vaccinated, and, therefore, fully protected at the earliest opportunity.

3.1 Refusal of Multiple Injections

There are no contraindications to receiving multiple vaccines at the same clinic visit, and all opportunities to fully immunize clients should be utilized. There is no increased risk of side effects or reduced vaccine effectiveness. All client refusals of immunizations must be documented in the client's immunization record.

3.2 Timing and Spacing of Inactivated Vaccines

Inactivated vaccines are not affected by the presence of circulating antibodies and can be safely administered before, at the same time, or after a passive immunizing agent. The exceptions to this are the specific timing considerations between conjugate and polysaccharide presentations of vaccines containing similar antigens (e.g., Pneu-C-13 and Pneu-P-23; Men-C-C and Men- C-ACYW-135). Refer to specific vaccines in SIM, Chapter 10, *Biological Products* for more information.

3.3 Timing and Spacing of Live Attenuated Vaccines

A live injectable vaccine may interfere with the effectiveness of another live injectable vaccine if they are not given concurrently. To minimize this possibility, two or more live injectable vaccines should be administered either on the same day or be separated by an interval as recommended in Chapter 5, Section 3.3.1, *Minimum Spacing between MMRV, MMR and Varicella Vaccine Doses*. If two live injectable vaccines are not given on the same day and are given less than the recommended interval in section 3.3.1, the second vaccine that was given should be repeated at the recommended appropriate interval after it was originally given.

Injectable live vaccines are not believed to have an effect on live vaccines given by the oral (e.g. typhoid, rotavirus) or intranasal (e.g., live attenuated influenza) route. Therefore, live oral and intranasal vaccines can be safely administered before, at the same time, or after an injectable live vaccine. The exception to this guideline is the administration of live vaccines to high risk/immunocompromised clients. Refer to SIM, Chapter 7, *Immunization of Special Populations*.

3.3.1 Minimum Spacing between MMRV, MMR and Varicella Vaccine Doses

Vaccine	Vaccine	Minimum Interval
MMRVar	MMRVar	4 weeks
MMRVar	Varicella	4 weeks
MMRV	MMR	4 weeks
Varicella	Varicella	4 weeks
MMR	MMR	4 weeks
MMR	Varicella	4 weeks

(Adapted from CIG, 2017)

3.4 Spacing of Vaccines and Blood Donation

- If an individual reports that they are planning to donate blood, inform them of the following intervals between vaccine receipt and blood donation.

Vaccine	Interval between vaccine receipt and blood donation
All inactivated vaccines	2 days
Varicella	3 months
Measles	6 weeks
Mumps	6 weeks
Rubella	12 weeks
HB [1]	4 weeks
HAHB [1]	4 weeks
Rabies (post-exposure treatment) [2]	52 weeks
Any immune globulin product	12 months

[1] Receipt of HB-containing vaccine (alone or in combination vaccine) requires 4 weeks deferral of blood donation because of the possibility of a false positive reactivity on the HBsAg donor screening assay.

[2] Receipt of rabies vaccine for post-exposure immunoprophylaxis (with or without rabies immune globulin) requires 52 weeks deferral for blood donation. *Vaccination Deferrals* information from Canadian Blood Services retrieved April 10, 2012 from http://www.blood.ca/.

3.5 Spacing of Live Vaccines, Blood Products and Passive Immune Globulin Preparations

- All immune globulin preparations and/or blood products can interfere with the immune response of a measles, mumps, rubella or varicella-containing vaccine (refer to Table 3.5.1: *Immune Globulin Preparations or Blood: Timing Intervals for Vaccines Containing Live Measles, Mumps, Rubella, or Varicella Virus*).
- If the immune globulin preparation or blood product is given 14 days or more after MMR, MMRV or varicella vaccine, the immunization does not need to be repeated.
- If the interval between administration of a measles, mumps, rubella, or varicella-containing vaccine and subsequent administration of an immune globulin preparation or blood product is less than 14 days, immunization should be repeated at the interval indicated in the table below.

3.5.1 Immune Globulin Preparations or Blood: Timing Intervals for Vaccines Containing Live Measles, Mumps, Rubella, or Varicella Viruses (CIG)

Product	Dose and route	Interval
Specific immune globulins (human)		
Hepatitis B immune globulin (HBIg)	0.06 mL/kg IM	3 months
Cytomegalovirus immune globulin (CMVIg)	150 mg/kg IV	6 months
Rabies immune globulin (RabIg)	20 IU/kg IM	4 months
Rh immune globulin (RhIg) [1]	150 to 300 µg IM	3 months
Tetanus immune globulin (TIg)	250 units IM	3 months
Varicella immune globulin (VarIg)	125 units/10 IM	5 months
Standard immune globulins (human)		
Immune globulin (Ig)	0.02 – 0.06 mL/kg IM	3 months
	0.25 mL/kg IM	5 months
	0.5 mL/kg IM	6 months
Intravenous immune globulin (IVIg) and/or Subcutaneous immune globulin (SCIg)	300 - 400 mg/kg IV	8 months
	1,000 mg/kg IV	10 months
	2,000 mg/kg IV	11 months
Other antibody products		
Palivizumab (respiratory syncytial virus monoclonal antibody) [Synagis®] (RSVAb)	15 mg/kg every 4 weeks IM	N/A
Blood transfusion products		
Plasma and platelet products	10 mL/kg IV	7 months
Whole blood	10 mL/kg IV	6 months
Packed red blood cells	10 mL/kg IV	5 months
Reconstituted red blood cells	10 mL/kg IV	3 months
Washed red blood cells	10 mL/kg IV	N/A

[1] A risk-benefit assessment is needed for post-partum women who have received RhIg and require MMR or Var vaccines. The risk of lowered vaccine efficacy due to potential interference from the RhIg needs to be weighed against the need for protection against the vaccine preventable disease. To optimize vaccine response, women who receive RhIg in the post- partum period should generally wait 3 months before being vaccinated with MMR or VAR vaccines. However, if there is a risk of: 1) exposure to rubella, measles, or varicella; 2) recurrent pregnancy in the 3 months post-partum period; or 3) a risk that vaccines may not be received later the vaccines may be given prior to discharge. In this context, serologic testing for antibodies to the vaccine antigens should be done 3 months after vaccination and non-immune women should be revaccinated. In the event that a post-partum woman these vaccines in the 14 days prior to receiving RhIg, serologic testing for MMR or varicella should be done 3 months later and the woman revaccinated if non-immune. (Adapted from CIG, http://www.phac-aspc.gc.ca/publicat/cig-gci/p01-10-eng.php).

3.6 Tuberculin Testing

All live and/or inactivated vaccines can be given simultaneously with a tuberculin skin test (TST), as they will not interfere with the TST result or vaccine immunogenicity. However, a measles-or varicella-containing vaccine (e.g., MMR, MMRV, or Var) or LAIV may interfere with the tuberculin test response and produce a false negative response if it was administered within the 4 week period before the TST.

No data exists for the potential degree of TST result interference that might be associated with other live vaccines (e.g., yellow fever) but it may be prudent to follow the 4 week guidelines noted above for measles-containing vaccines. If an injectable live viral vaccine is indicated, it may be in the client's best interest to get the vaccine versus missing an opportunity for immunization. If possible, delay the TST until 4 weeks following the date of immunization with a live injectable vaccine.

3.7 Tetanus Prophylaxis in Wound Management

3.7.1 Assess the Client's Tetanus Immunization History:

- Determine the number of doses of tetanus vaccine previously received.
- Determine when the last dose was given.
- Ask about adverse events following previous tetanus-containing vaccine or tetanus immune globulin (TIg).
- Refer to Chapter 10, *Biological Products* for specific vaccine and tetanus immune globulin (TIg) information.

3.7.2 Guide to Tetanus Prophylaxis in Wound Management (Ref: CIG https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-4-active-vaccines/page-22-tetanus-toxoid.html)

History of tetanus immunization	Clean, minor wounds		All other wounds [2]	
	Tetanus toxoid-containing vaccine [1]	Tetanus immune globulin [3]	Tetanus toxoid-containing vaccine [1]	Tetanus immune globulin [3]
Unknown or less than 3 doses in a vaccine series	Yes	No [5]	Yes	Yes [5]
3 or more doses in a vaccine series and less than 5 years since last booster dose	No	No	No	No [4]
3 or more doses in a vaccine series and more than 5 years but less than 10 years since last booster dose	No	No	Yes	No [4]
3 or more doses in a vaccine series and more than 10 years since last booster dose	Yes	No	Yes	No [4]

[1] **Tdap/Tdap-IPV is preferentially recommended for those 7-17 years who are not up to date with polio and/or pertussis vaccines.** Adults 18 years of age and older can receive 1 dose of Tdap (tetanus-diphtheria-acellular pertussis vaccine) to replace a Td (tetanus-diphtheria) vaccine.

[2] Proper wound cleaning is important to prevent tetanus. Examples of all other wounds: animal bites; wounds from road traffic accidents or caused by rusty/dirt contaminated objects; dirt contaminated wounds (feces, soil, saliva), puncture wounds and wounds resulting from crushing, burns and frostbite (product monograph).

[3] Tetanus immune globulin (TIg) dose is 250 units given deep IM (all ages and sizes) in a different limb (or site) from the tetanus-containing vaccine.

[4] Yes, if known to have a humoral immune deficiency state (e.g. HIV, agammaglobulinemia, hypogammaglobulinemia).

[5] For a person who has been vaccinated but is not up to date, there is probably little benefit in giving TIg more than a week or so after the injury. For a person believed to be completely unvaccinated, it is suggested to increase this interval to 3 weeks (i.e., up to day 21 post injury). http://www.immunize.org/askexperts/experts_per.asp#wound.

3.7.3 Reporting Guidelines

All immunizations must be reported to Public Health Services for entry into the client's immunization record in the provincial immunization registry.

3.8 Rabies Pre and Post-Exposure Management

Refer to the Saskatchewan Communicable Diseases Control Manual for additional information on conducting a risk assessment or investigating an animal bite. Available at: http://www.ehealthsask.ca/services/manuals/Pages/CDCManual.aspx

3.8.1 Pre-Exposure Management

1. Pre-exposure rabies vaccine is available for sale to those at high risk related to occupational exposure (e.g., veterinarians, animal control officers), and for travelers to endemic countries.
2. One IM dose is required on day 0, 7, and 21.
3. People with continuing high risk of rabies exposure such as certain veterinarians should have their serum tested for rabies antibodies every 2 years. A booster dose should be given to those with inadequate titres.

3.8.2 Post-Exposure Prophylaxis

1. **Refer to SIM, Chapter 10, *Biological Products* for rabies vaccine information.**
2. Rabies vaccine and rabies immune globulin (RabIg) are only initiated upon approval from a Medical Health Officer. Rabies post-exposure prophylaxis should be offered to exposed individuals regardless of the elapsed interval since exposure. The longest incubation periods for rabies have been reported to be several years.
3. For most clients, post-exposure prophylaxis immunization includes the administration of both RabIg and rabies vaccine.

3.8.2.1Previously Immunized Individuals

RabIg is not indicated for previously immunized individuals. Two doses of rabies vaccine are required for individuals previously immunized as noted below. The first dose should be given immediately (day 0) and the second dose given on day 3.

- Persons who have previously completed an approved rabies vaccine series (pre-exposure or post-exposure) with:
  - Human diploid cell vaccine (HDCV) such as IMOVAX®
    OR
  - Purified chick embryo cell culture vaccine (PCECV) such as Rab Avert®.
- Persons who completed immunization with other types of rabies vaccine (or with HDCV or PCECV rabies vaccine according to unapproved schedules) and have had a documented protective rabies antibody titre.
- Those who did not complete the rabies pre- or post-exposure series should be managed as per Section 3.8.2.2, *Previously Unimmunized Individuals*.

3.8.2.2Previously Unimmunized Individuals

Rabies Immune Globulin (RabIg)

- There are no definite contraindications to receiving RabIg. If an individual has had a previous anaphylactic reaction to any of its components, it should be administered in a facility capable of managing anaphylaxis under direct medical supervision.
- As per local policy, clients or caregivers must sign a refusal form when they decline RabIg for post-exposure treatment.
- RabIg must be administered to unvaccinated persons as soon as possible after exposure**. If RabIg is not administered on day 0, it can be administered up to and including day 7 of the RPEP series.** Since vaccine-induced antibodies begin to appear within one week, there is no value in administering RabIg more than 8 days after initiating an approved vaccine course. The recommended dose is 20 IU/kg body weight. This formula is applicable to all age groups including children.
- If anatomically feasible, the full dose of RabIg should be thoroughly infiltrated into the wound(s) and the surrounding area. Any remaining volume should be injected IM at a site distant from vaccine administration (e.g., deltoid in those 12 month and older; vastus lateralis in all ages).
- The maximum volume of RabIg administered at each site should not exceed the volumes as indicated in the *Immune Globulin Preparation Maximum Site Volumes* chart in SIM, Chapter 10, *Biological Products*.
- **Do not administer RabIg in the same syringe as rabies vaccine.**
- **Do not administer RabIg in the same anatomical site on the same day that rabies vaccine is given.**

Rabies Vaccine

- **Refer to SIM, Chapter 10, *Biological Products* for specific rabies vaccine information.**
- There are no definite contraindications to administering rabies vaccine after significant exposure to a proven rabid animal. If the individual experiences significant adverse reactions, the MHO should be consulted and further doses should be administered in a facility capable of managing the reactions under direct medical supervision.
- Once initiated, rabies post-exposure prophylaxis should not be interrupted or discontinued because of mild local or systemic side effects to the vaccine. A patient's risk of acquiring rabies must be carefully considered before a MHO decides to discontinue prophylactic treatment.
- As per local policy, clients or caregivers must sign a refusal form when they decline rabies vaccine for post-exposure treatment.
- When notification of exposure is delayed, prophylaxis (RabIg and vaccine) can be started as late as 6 or more months after exposure.
- Vaccine is given IM into the deltoid muscle for older children and adults, and the vastus lateralis in infants and small children. Four separate doses of 1 mL of rabies vaccine should be given to healthy individuals. The first dose (on day 0) as soon as possible after exposure with an additional dose on day 3, 7, and 14. **Do not give rabies vaccine in the dorsogluteal or ventrogluteal sites.**
- Five separate doses of 1 mL of rabies vaccine should be given to immunocompromised individuals. The first dose (on day 0) as soon as possible after exposure with an additional dose on day 3, 7, 14 and 28.

- When the vaccine series has been administered according to the recommended schedule, antibody titres are not required. For immunosuppressed clients, antibody levels should be done one month following series completion or as per specialist consultation.
- If the recommended rabies vaccine schedule is interrupted or delayed, the series should be continued ensuring that the recommended time intervals between remaining doses are maintained.

4.0 GUIDELINES FOR OTHER IMMUNIZATION SCENARIOS

4.1 Unknown or Uncertain Immunization Status

An attempt to obtain an individual's immunization records should be made. Written documentation is preferred for Canadians and foreign-born individuals to assess the vaccines they received, administration dates, intervals and routes to assess dose validity. Verbal histories of disease alone may be unreliable, as several pathogens can cause a disease (e.g., meningitis). In Saskatchewan, verbal history of varicella disease is accepted as evidence of immunity for only individuals born before January 1, 2003 (who are not HCWs). Immunity can be determined by documented serological confirmation (preferably done in Canada), but this is not routinely recommended. Verbal immunization histories are generally accepted for childhood and adult **influenza** immunization histories. The following link has the updated immunization schedules for Canadian provinces and territories: https://www.canada.ca/en/public-health/services/provincial-territorial-immunization-information.html

Adults ≥ 18 years who were born or spent their childhood in Canada who do not have documented immunization records should be asked if they and/or their parents/caregiver accepted childhood vaccines. If the answer is affirmative, then assume that they have received all recommended childhood vaccines including:

- Tetanus – if born since 1940
- Diphtheria – if born since 1930
- Polio – if born since 1962
- Measles, Mumps, Rubella – see Appendix 5.2*: Publicly Funded MMR Vaccine Eligibility.*
- The following statement could be documented on the client's immunization record, "*Adult client reports routine immunizations received as a child. Assuming routine tetanus, diphtheria, and polio series complete based on routine schedule according to age. Client assumed to be immune to MMR based on age*".

If the answer is negative or client is uncertain about their immunization history as a child, then assume that they are unvaccinated and offer immunizations according to Chapter 5, Section 1.6, *Adults 18 Years and Older When Starting Immunization* without concern about prior receipt of these vaccines.

Immigrant adults ≥ 18 years who have arrived in Canada lacking acceptable documented immunization records (including immunization records on applications like Immunize.ca) or serological proof of immunity should be considered unimmunized and offered immunizations according to Chapter 5, Section 1.6, *Adults 18 Years and Older When Starting Immunization* without concern about prior receipt of recommended vaccines. If they do present acceptable documented immunization records, then ensure all primary series are completed as per Chapter 5, Section 1.6, *Adults 18 Years and Older When Starting Immunization.*

Canadian and foreign-born children lacking acceptable documented immunization records (including immunization records on applications like Immunize.ca) or serological proof of immunity should start a primary immunization schedule as indicated for their age at presentation without concern about prior receipt of recommended vaccines or previous disease (except for verbal history of varicella or herpes zoster disease since 12 months of age, preferably diagnosed by a healthcare provider). Refer to Chapter 5, Sections 1.1, *Routine Immunization Schedule for Infants, Children and Adolescents,* 1.3A, *Pneumococcal Conjugate Schedule for Children Delayed by 1 Month or More,* 1.4, *Children 1 Year and Older but less than 7 Years When Starting Immunizations,* and 1.5, *Children 7 to 17 Years When Starting Immunizations.*

For specific vaccine schedule information, refer to SIM, Chapter 10, *Biological Products.* Always ensure that immunizations are documented in the client's immunization record and that immunization records are provided to every client post-immunization.

4.2 Vaccine Interchangeability

It is preferable to administer vaccines from one manufacturer for an immunization series, as antigen content and method of formulation are specific to particular vaccine brands. However, immunization should not be deferred because a specific brand of vaccine is unavailable, unless specified by the Ministry of Health.

In Canada, routine publicly funded immunization programs for adult and children have standardized antigens that are necessary for effective protection against vaccine preventable disease. Several manufacturers produce vaccines for the same antigens and their vaccines are marketed with unique brand names. For vaccines to be interchangeable, they must meet the same indications for age usage, contain the same antigen serotypes for disease causing pathogens and be equally acceptable in terms of safety, reactogenicity, immunogenicity and efficacy. Some vaccines are formulated differently (hepatitis B vaccines RECOMBIVAX HB® and ENGERIX®-B) but are considered interchangeable during an immunization series. There is no data to support vaccine interchangeability of vaccines containing different antigenic serotypes when used for different indications. An example is the two human papillomavirus vaccines licensed in Canada. CERVARIX™ (HPV-2) is only indicated to protect females against 2 HPV strains that cause cervical cancer. In contrast, GARDASIL 9® (HPV-9) is indicated to protect females and males against 9 HPV strains that cause oral and genital cancers, and genital warts.

4.3 Individuals Who Received a Vaccine by a Route Other than that Recommended

Most live, attenuated and inactivated vaccines are to be administered by one specific route (IM, SC, PO or IN) as stated in the product monograph. However, some specific vaccine product monographs indicate two acceptable routes for administration of the vaccines. Examples include the PRIORIX ® brand of MMR vaccine and the PRIORIX-TETRA™ brand of MMRV vaccine. Generally, most vaccines that are indicated for IM injection but administered SC and vice versa, do not warrant re-immunization but the provider should consult with the regional MHO about such cases (e.g. exception includes HB and rabies vaccine doses which must be administered IM to be considered valid). Some adjuvant containing vaccines for IM injection that are erroneously administered by the SC route may result in localized inflammation, induration or granuloma formation at the injection site.

4.4 Individuals Who Received an Inappropriate Vaccine Dose

Administration of larger than recommended vaccine dosages are considered valid, but may cause greater local or systemic reactions. Administration of amounts smaller than those recommended, such as split doses or intradermal administration (unless specifically recommended for rabies or HB vaccine) may result in inadequate protection. If a fractional dose has been given, it is considered invalid and the client must be revaccinated with a full dose of age-appropriate vaccine as soon as possible.

If less than a full dose of vaccine was given because of syringe or needle malfunction, or other circumstance, the full vaccine dose should be repeated immediately to ensure the client's protection. There are two dose validity exceptions to this rule:

1. Patients who sneeze immediately after receiving intranasal (IN) influenza vaccine; and
2. If an infant regurgitates, spits, or vomits during or after receiving oral (PO) ROTARIX™ (Rot-1) or RotaTeq® (Rot-5) vaccine, count the dose as valid.

4.5 Immunization of Residents and Patients in Healthcare Facilities

Residents and patients in healthcare facilities should be offered publicly funded immunizations to prevent illness and reduce the spread of vaccine-preventable diseases. Pre-printed or standing orders, along with clear guidelines should be available to staff. Public health officials are available for consultation and to assist with policy development.

4.5.1 Special Care Homes

Definition of a Special Care Home: Special care homes are licensed under *The Housing and Special Care Homes Act* and funded by government through regional health authorities. A special care home is a facility that provides institutional long-term care services to meet the needs of individuals usually having heavy care needs that cannot be met in the community through home/community based services. Individuals are admitted to special care homes based on assessed need. Regional health authorities may operate a special care home directly or through affiliation.

Definition of Non-Licensed Long-Term Care Beds in Hospital: Non-licensed beds in hospitals, generally refers to those region designated long-term care units in hospitals that are not licensed as special care homes, but are included in the long-term care bed complement of the region.

Guidelines:

a) Refer to regulations.
b) Each agency/jurisdiction should have written policies and procedures related to immunization practices.
c) Obtain an immunization history.
d) Children living in long-term/chronic care institutions should be immunized according to recommended childhood immunization schedules (refer to SIM, Chapter 5, Section 1.1, *Routine Immunization Schedule for Infants, Children and Adolescents*.)
e) Residents should receive an annual influenza immunization.
f) Residents should be immunized with pneumococcal polysaccharide vaccine upon admission if there is no previous documentation of immunization. Routine re-immunization is not recommended but should be considered for those of any age at highest risk of invasive infection. Refer to Chapter 7, *Immunization of Special Populations* for more information.
g) Tetanus-containing vaccines are recommended every 10 years. Adults can receive a tetanus/diphtheria/pertussis (Tdap) vaccine once as an adult to replace a Td vaccine.

4.5.2 Personal Care Homes

Definition of a Personal Care Home: A facility licensed under *The Personal Care Homes Act*. Personal care homes are privately owned and operated. They are not publicly subsidized. That is, the residents of personal care homes pay the full cost of care and accommodation. Personal care homes provide accommodations, meals, and personal care to an adult who is not a relative of the personal care home licensee. Individuals do not need to demonstrate need to be admitted.

Guidelines:

a) Annual influenza immunization is recommended for residents in personal care homes.
b) Residents should be immunized with pneumococcal polysaccharide vaccine on admission if there is no previous documentation of immunization.
c) Tetanus-containing vaccines are recommended every 10 years. Adults can receive a tetanus/diphtheria/pertussis (Tdap) vaccine once to replace a Td vaccine.

4.5.3 Acute Care Facilities

If possible, provide publicly funded immunizations to eligible patients in hospitals (e.g., childhood series; special populations; tetanus-containing vaccine for wound management, etc). Refer patients to public health upon discharge for required follow up.

5.0 REFERENCES

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6.0 APPENDICES

Appendix 5.1: DTaP-IPV-Hib and HB Vaccine Schedule for Children who have previously Received DTaP-HB-IPV-Hib (INFANRIX hexa®) Vaccine Doses

- Refer to SIM, Chapter 10, *Biological Products* for specific vaccine information.
- Refer to SIM, Chapter 5, Section 1.2, *Hib Schedule for Children Delayed by 1 Month or More* to assess Hib vaccine requirements.

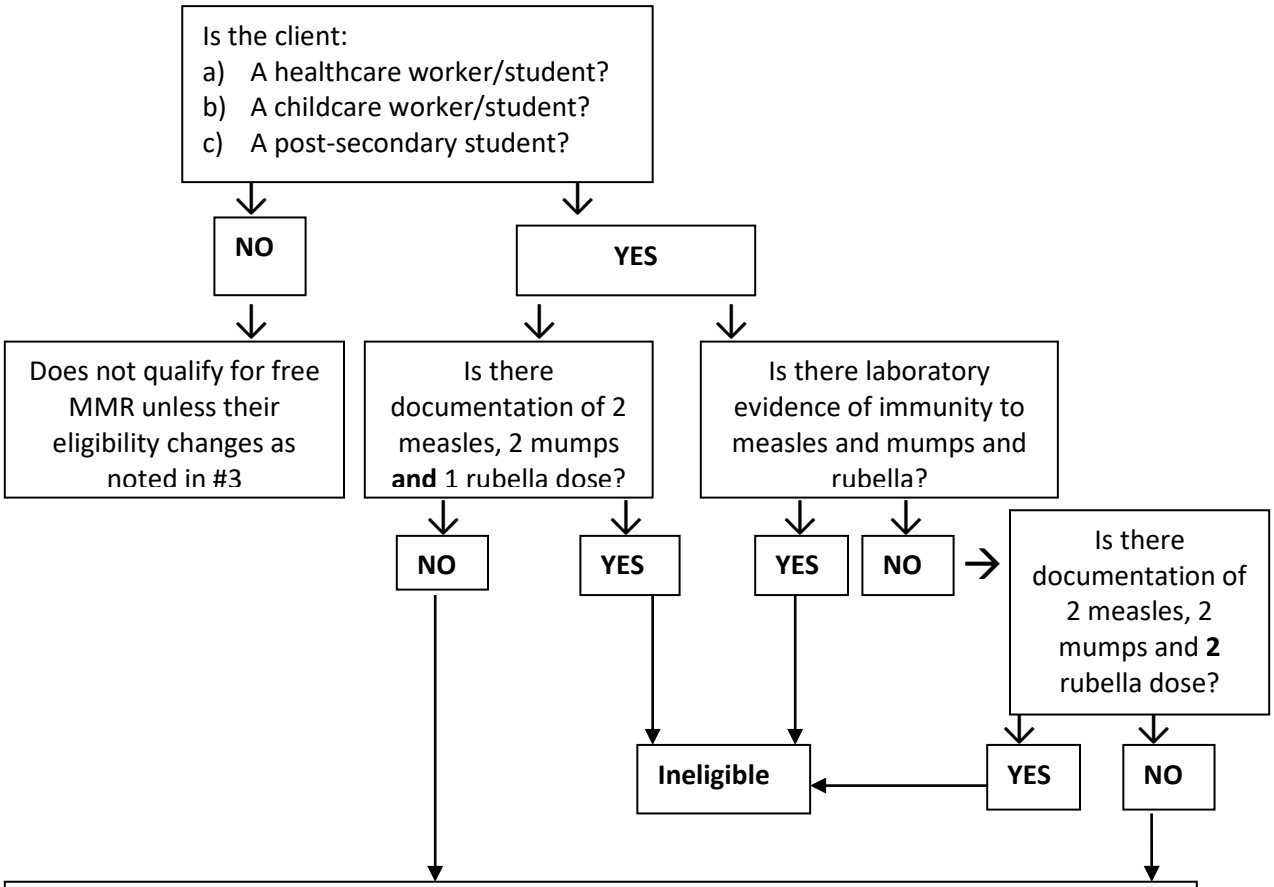
	2 months	4 months	6 months	18 months
DTaP-HB-IPV-Hib schedule	DTaP-HB-IPV-Hib #1	DTaP-HB-IPV-Hib #2	DTaP-HB-IPV-Hib #3	DTaP-IPV-Hib #4 **(PEDIACEL)**
Completion Requirements	**Previously received:** DTaP-HB-IPV-Hib #1	**Continue with:** • DTaP-IPV-Hib #2 • Hep B #2	**Continue with:** • DTaP-IPV-Hib #3 • Hep B #3	**Finish with:** • DTaP-IPV-Hib #4
Completion Requirements	**Previously received:** DTaP-HB-IPV-Hib #1	**Previously received:** DTaP-HB-IPV-Hib #2	**Continue with:** • DTaP-IPV-Hib #3 • Hep B #3	**Finish with:** • DTaP-IPV-Hib #4
Completion Requirements	**Previously received:** DTaP-HB-IPV-Hib #1	**Previously received:** DTaP-HB-IPV-Hib #2	**Previously received:** DTaP-HB-IPV-Hib #3	**Finish with:** • DTaP-IPV-Hib #4

Appendix 5.2: Publicly Funded MMR Vaccine Eligibility (applies to everyone ≥ 1 year old)

(Note: Refer to Chapter 7, *Special Populations Section 5.2 Pregnancy* for specific recommendations)

1. **People born since January 1, 1970 are eligible to receive 2 doses of MMR** as opportunities for immunization present. **Vaccination is not required and serology is not required for anyone if a documented immunization record shows 2 valid doses of measles, 2 valid doses of mumps and 1 valid dose of rubella have been received.**

2. **People born before January 1, 1970 are assumed to be immune to measles and mumps. Some client may be eligible for MMR if they meet the following criteria:**



3. ***Travellers born before January 1, 1970*** **who plan to travel to a measles-, mumps- or rubella-endemic country**:
   - **a. If born between January 1, 1957 and December 31, 1969:**
     - i. Ask client if they recall having had measles, mumps or rubella or being informed by their parent that they had measles, mumps or rubella as a child?
     - ii. Ask client if they recall being informed by their parent that they were vaccinated against measles, mumps or rubella as child?

     → **If they answer No to any disease in both questions, then provide 1 dose MMR. Titres are recommended but not required in these situations.**
   - **b.** For persons born before January 1, 1957, no screening questions and no MMR vaccination.

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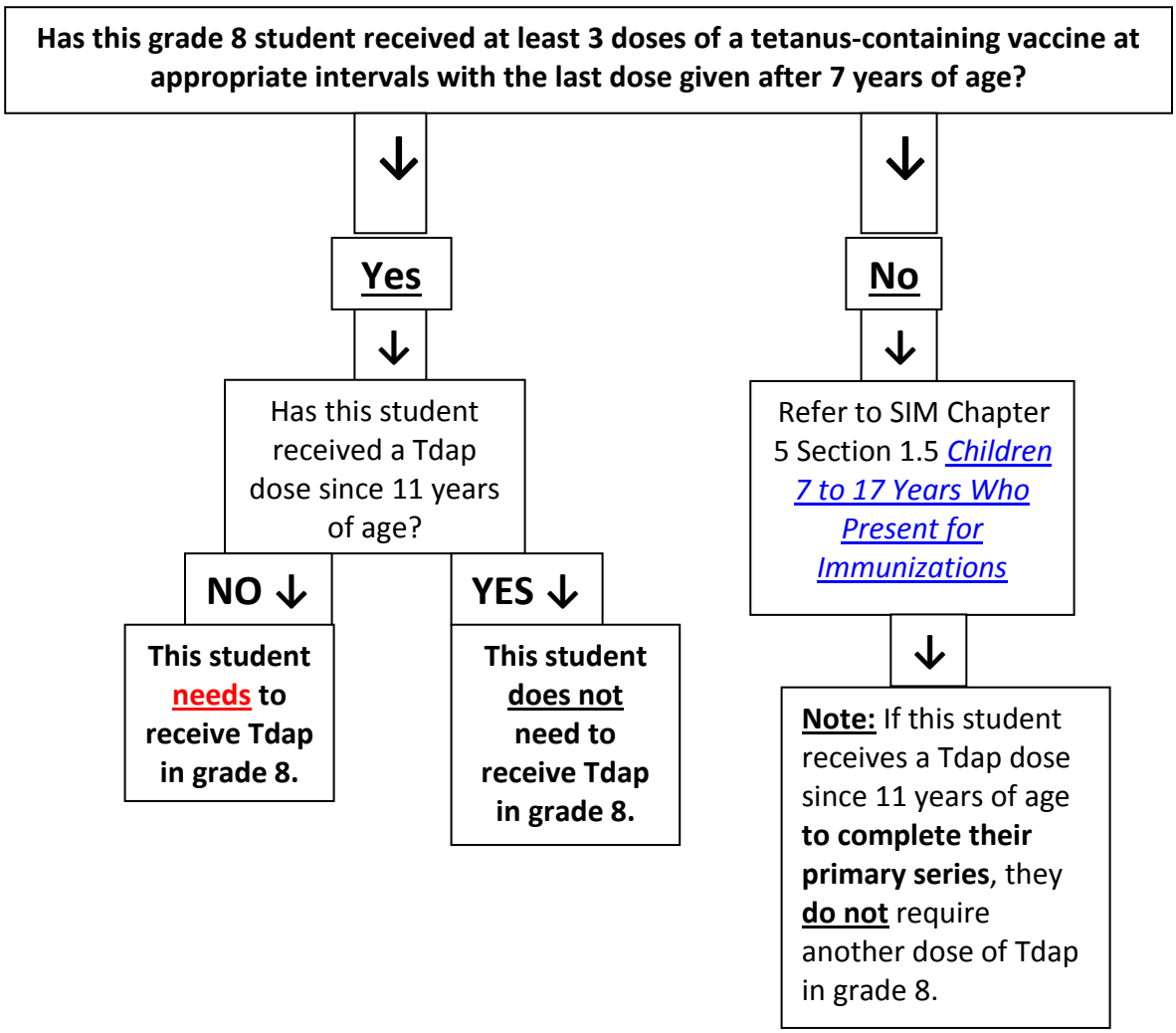
Appendix 5.3: Grade 8 Tdap Algorithm



Appendix 5.4 Publicly Funded Varicella Immunization Eligibility and Panorama Directives

	Date of Birth Range			
Scenario	**Jan. 1/93 – Dec. 31/02***	**Jan. 1/03 – Dec. 31/03***	**Jan. 1/04 – Sept. 30/09**	**Since Oct. 1/09**
Susceptible **&** no documented varicella immunizations	• Will forecast all required doses as eligible forever • Immunize as appropriate without serology if consent grant; **OR** • Document refusal			
Susceptible **&** documented varicella immunization history between 1 to 12 years old	• Considered immune after min. 1 dose	• Considered immune after min. 1 dose	• Considered immune after 2 doses • 2nd dose forecasts **(grade 6)**	• Considered immune after 2 doses • 2nd dose forecast forever if not yet received
Susceptible **&** documented 1st varicella dose given **since** 13 years old	• 2nd dose will forecast (1st dose may have been purchased or publicly funded) • Considered immune after 2 doses			
Has disease history **&** no documented varicella immunizations; previous vaccine refusal may or may not have been documented	• Considered immune based on cohort as determined by the Ministry of Health • Do not offer vaccine as regular practice • If *Disease History* noted as "*Special Consideration - Precaution*", delete this precaution. • Document "*Special Consideration - Exemption*" to end further forecasting **<u>If client request to be immunized in the future:</u>** • Requires serology to confirm immunity status • If immune update "Special Consideration - Exemption"; source is Lab Report • Document refusal or consent grant as appropriate	• If *Disease History* noted as "*Special Consideration-Precaution*", offer vaccine at next opportunity (e.g. at next school grade vaccine record review) • Add "Effective To Date" and then the "*Special Consideration-Precaution*" is to be end-dated once the "Consent" grant or refusal has been entered in Panorama • Remains eligible for vaccine if refused so offer vaccine at next opportunity (e.g. at next school grade vaccine record review) • Serology not required to confirm immunity status if client requesting to be immunized in future.		

*Refer to Chapter 7, *Special Populations* for details re: Women of childbearing age who have documentation of previously receiving only one dose of varicella containing vaccine may be eligible to receive a publically funded second dose based on documented serological immunity.

Appendix 5.5 Rotavirus Vaccine Eligibility Dates

Birthdate	Min date dose #1	Max date dose #1	Max date final Dose
1-Jan	12-Feb	15-Apr	31-Aug
2-Jan	13-Feb	16-Apr	1-Sep
3-Jan	14-Feb	17-Apr	2-Sep
4-Jan	15-Feb	18-Apr	3-Sep
5-Jan	16-Feb	19-Apr	4-Sep
6-Jan	17-Feb	20-Apr	5-Sep
7-Jan	18-Feb	21-Apr	6-Sep
8-Jan	19-Feb	22-Apr	7-Sep
9-Jan	20-Feb	23-Apr	8-Sep
10-Jan	21-Feb	24-Apr	9-Sep
11-Jan	22-Feb	25-Apr	10-Sep
12-Jan	23-Feb	26-Apr	11-Sep
13-Jan	24-Feb	27-Apr	12-Sep
14-Jan	25-Feb	28-Apr	13-Sep
15-Jan	26-Feb	29-Apr	14-Sep
16-Jan	27-Feb	30-Apr	15-Sep
17-Jan	28-Feb	1-May	16-Sep
18-Jan	1-Mar	2-May	17-Sep
19-Jan	2-Mar	3-May	18-Sep
20-Jan	3-Mar	4-May	19-Sep
21-Jan	4-Mar	5-May	20-Sep
22-Jan	5-Mar	6-May	21-Sep
23-Jan	6-Mar	7-May	22-Sep
24-Jan	7-Mar	8-May	23-Sep
25-Jan	8-Mar	9-May	24-Sep
26-Jan	9-Mar	10-May	25-Sep
27-Jan	10-Mar	11-May	26-Sep
28-Jan	11-Mar	12-May	27-Sep
29-Jan	12-Mar	13-May	28-Sep
30-Jan	13-Mar	14-May	29-Sep
31-Jan	14-Mar	15-May	29-Sep
1-Feb	15-Mar	16-May	30-Sep
2-Feb	16-Mar	17-May	1-Oct
3-Feb	17-Mar	18-May	2-Oct
4-Feb	18-Mar	19-May	3-Oct
5-Feb	19-Mar	20-May	4-Oct
6-Feb	20-Mar	21-May	5-Oct
7-Feb	21-Mar	22-May	6-Oct
8-Feb	22-Mar	23-May	7-Oct
9-Feb	23-Mar	24-May	8-Oct
10-Feb	24-Mar	25-May	9-Oct
11-Feb	25-Mar	26-May	10-Oct
12-Feb	26-Mar	27-May	11-Oct
13-Feb	27-Mar	28-May	12-Oct
14-Feb	28-Mar	29-May	13-Oct
15-Feb	29-Mar	30-May	14-Oct
16-Feb	30-Mar	31-May	15-Oct
17-Feb	31-Mar	1-Jun	16-Oct
18-Feb	1-Apr	2-Jun	17-Oct
19-Feb	2-Apr	3-Jun	18-Oct
20-Feb	3-Apr	4-Jun	19-Oct
21-Feb	4-Apr	5-Jun	20-Oct
22-Feb	5-Apr	6-Jun	21-Oct
23-Feb	6-Apr	7-Jun	22-Oct
24-Feb	7-Apr	8-Jun	23-Oct
25-Feb	8-Apr	9-Jun	24-Oct
26-Feb	9-Apr	10-Jun	25-Oct
27-Feb	10-Apr	11-Jun	26-Oct
28-Feb	11-Apr	12-Jun	27-Oct
29-Feb	12-Apr	13-Jun	31-Oct
1-Mar	12-Apr	13-Jun	31-Oct
2-Mar	13-Apr	14-Jun	1-Nov
3-Mar	14-Apr	15-Jun	2-Nov
4-Mar	15-Apr	16-Jun	3-Nov
5-Mar	16-Apr	17-Jun	4-Nov
6-Mar	17-Apr	18-Jun	5-Nov
7-Mar	18-Apr	19-Jun	6-Nov
8-Mar	19-Apr	20-Jun	7-Nov
9-Mar	20-Apr	21-Jun	8-Nov
10-Mar	21-Apr	22-Jun	9-Nov
11-Mar	22-Apr	23-Jun	10-Nov
12-Mar	23-Apr	24-Jun	11-Nov
13-Mar	24-Apr	25-Jun	12-Nov
14-Mar	25-Apr	26-Jun	13-Nov
15-Mar	26-Apr	27-Jun	14-Nov
16-Mar	27-Apr	28-Jun	15-Nov
17-Mar	28-Apr	29-Jun	16-Nov
18-Mar	29-Apr	30-Jun	17-Nov
19-Mar	30-Apr	1-Jul	18-Nov
20-Mar	1-May	2-Jul	19-Nov
21-Mar	2-May	3-Jul	20-Nov
22-Mar	3-May	4-Jul	21-Nov
23-Mar	4-May	5-Jul	22-Nov
24-Mar	5-May	6-Jul	23-Nov
25-Mar	6-May	7-Jul	24-Nov
26-Mar	7-May	8-Jul	25-Nov
27-Mar	8-May	9-Jul	26-Nov
28-Mar	9-May	10-Jul	27-Nov
29-Mar	10-May	11-Jul	28-Nov
30-Mar	11-May	12-Jul	29-Nov
31-Mar	12-May	13-Jul	29-Nov
1-Apr	13-May	14-Jul	30-Nov
2-Apr	14-May	15-Jul	1-Dec
3-Apr	15-May	16-Jul	2-Dec
4-Apr	16-May	17-Jul	3-Dec
5-Apr	17-May	18-Jul	4-Dec
6-Apr	18-May	19-Jul	5-Dec
7-Apr	19-May	20-Jul	6-Dec
8-Apr	20-May	21-Jul	7-Dec
9-Apr	21-May	22-Jul	8-Dec
10-Apr	22-May	23-Jul	9-Dec
11-Apr	23-May	24-Jul	10-Dec
12-Apr	24-May	25-Jul	11-Dec
13-Apr	25-May	26-Jul	12-Dec
14-Apr	26-May	27-Jul	13-Dec
15-Apr	27-May	28-Jul	14-Dec
16-Apr	28-May	29-Jul	15-Dec
17-Apr	29-May	30-Jul	16-Dec
18-Apr	30-May	31-Jul	17-Dec
19-Apr	31-May	1-Aug	18-Dec
20-Apr	1-Jun	2-Aug	19-Dec
21-Apr	2-Jun	3-Aug	20-Dec
22-Apr	3-Jun	4-Aug	21-Dec
23-Apr	4-Jun	5-Aug	22-Dec
24-Apr	5-Jun	6-Aug	23-Dec
25-Apr	6-Jun	7-Aug	24-Dec
26-Apr	7-Jun	8-Aug	25-Dec
27-Apr	8-Jun	9-Aug	26-Dec
28-Apr	9-Jun	10-Aug	27-Dec
29-Apr	10-Jun	11-Aug	28-Dec
30-Apr	11-Jun	12-Aug	29-Dec
1-May	12-Jun	13-Aug	31-Dec
2-May	13-Jun	14-Aug	1-Jan

Appendix 5.5 Rotavirus Vaccine Eligibility Dates

Birthdate	Min date dose #1	Max date dose #1	Max date final Dose
9-May	20-Jun	21-Aug	8-Jan
10-May	21-Jun	22-Aug	9-Jan
11-May	22-Jun	23-Aug	10-Jan
12-May	23-Jun	24-Aug	11-Jan
13-May	24-Jun	25-Aug	12-Jan
14-May	25-Jun	26-Aug	13-Jan
15-May	26-Jun	27-Aug	14-Jan
16-May	27-Jun	28-Aug	15-Jan
17-May	28-Jun	29-Aug	16-Jan
18-May	29-Jun	30-Aug	17-Jan
19-May	30-Jun	31-Aug	18-Jan
20-May	1-Jul	1-Sep	19-Jan
21-May	2-Jul	2-Sep	20-Jan
22-May	3-Jul	3-Sep	21-Jan
23-May	4-Jul	4-Sep	22-Jan
24-May	5-Jul	5-Sep	23-Jan
25-May	6-Jul	6-Sep	24-Jan
26-May	7-Jul	7-Sep	25-Jan
27-May	8-Jul	8-Sep	26-Jan
28-May	9-Jul	9-Sep	27-Jan
29-May	10-Jul	10-Sep	28-Jan
30-May	11-Jul	11-Sep	29-Jan
31-May	12-Jul	12-Sep	30-Jan
1-Jun	13-Jul	13-Sep	31-Jan
2-Jun	14-Jul	14-Sep	1-Feb
3-Jun	15-Jul	15-Sep	2-Feb
4-Jun	16-Jul	16-Sep	3-Feb
5-Jun	17-Jul	17-Sep	4-Feb
6-Jun	18-Jul	18-Sep	5-Feb
7-Jun	19-Jul	19-Sep	6-Feb
8-Jun	20-Jul	20-Sep	7-Feb
9-Jun	21-Jul	21-Sep	8-Feb
10-Jun	22-Jul	22-Sep	9-Feb
11-Jun	23-Jul	23-Sep	10-Feb
12-Jun	24-Jul	24-Sep	11-Feb
13-Jun	25-Jul	25-Sep	12-Feb
14-Jun	26-Jul	26-Sep	13-Feb
15-Jun	27-Jul	27-Sep	14-Feb
16-Jun	28-Jul	28-Sep	15-Feb
17-Jun	29-Jul	29-Sep	16-Feb
18-Jun	30-Jul	30-Sep	17-Feb
19-Jun	31-Jul	1-Oct	18-Feb
20-Jun	1-Aug	2-Oct	19-Feb
21-Jun	2-Aug	3-Oct	20-Feb
22-Jun	3-Aug	4-Oct	21-Feb
23-Jun	4-Aug	5-Oct	22-Feb
24-Jun	5-Aug	6-Oct	23-Feb
25-Jun	6-Aug	7-Oct	24-Feb
26-Jun	7-Aug	8-Oct	25-Feb
27-Jun	8-Aug	9-Oct	26-Feb
28-Jun	9-Aug	10-Oct	27-Feb
29-Jun	10-Aug	11-Oct	27-Feb
30-Jun	11-Aug	12-Oct	27-Feb
1-Jul	12-Aug	13-Oct	28-Feb
2-Jul	13-Aug	14-Oct	1-Mar
3-Jul	14-Aug	15-Oct	2-Mar
4-Jul	15-Aug	16-Oct	3-Mar
5-Jul	16-Aug	17-Oct	4-Mar
6-Jul	17-Aug	18-Oct	5-Mar
7-Jul	18-Aug	19-Oct	6-Mar
8-Jul	19-Aug	20-Oct	7-Mar
9-Jul	20-Aug	21-Oct	8-Mar
10-Jul	21-Aug	22-Oct	9-Mar
11-Jul	22-Aug	23-Oct	10-Mar
12-Jul	23-Aug	24-Oct	11-Mar
13-Jul	24-Aug	25-Oct	12-Mar
14-Jul	25-Aug	26-Oct	13-Mar
15-Jul	26-Aug	27-Oct	14-Mar
16-Jul	27-Aug	28-Oct	15-Mar
17-Jul	28-Aug	29-Oct	16-Mar
18-Jul	29-Aug	30-Oct	17-Mar
19-Jul	30-Aug	31-Oct	18-Mar
20-Jul	31-Aug	1-Nov	19-Mar
21-Jul	1-Sep	2-Nov	20-Mar
22-Jul	2-Sep	3-Nov	21-Mar
23-Jul	3-Sep	4-Nov	22-Mar
24-Jul	4-Sep	5-Nov	23-Mar
25-Jul	5-Sep	6-Nov	24-Mar
26-Jul	6-Sep	7-Nov	25-Mar
27-Jul	7-Sep	8-Nov	26-Mar
28-Jul	8-Sep	9-Nov	27-Mar
29-Jul	9-Sep	10-Nov	28-Mar
30-Jul	10-Sep	11-Nov	29-Mar
31-Jul	11-Sep	12-Nov	30-Mar
1-Aug	12-Sep	13-Nov	31-Mar
2-Aug	13-Sep	14-Nov	1-Apr
3-Aug	14-Sep	15-Nov	2-Apr
4-Aug	15-Sep	16-Nov	3-Apr
5-Aug	16-Sep	17-Nov	4-Apr
6-Aug	17-Sep	18-Nov	5-Apr
7-Aug	18-Sep	19-Nov	6-Apr
8-Aug	19-Sep	20-Nov	7-Apr
9-Aug	20-Sep	21-Nov	8-Apr
10-Aug	21-Sep	22-Nov	9-Apr
11-Aug	22-Sep	23-Nov	10-Apr
12-Aug	23-Sep	24-Nov	11-Apr
13-Aug	24-Sep	25-Nov	12-Apr
14-Aug	25-Sep	26-Nov	13-Apr
15-Aug	26-Sep	27-Nov	14-Apr
16-Aug	27-Sep	28-Nov	15-Apr
17-Aug	28-Sep	29-Nov	16-Apr
18-Aug	29-Sep	30-Nov	17-Apr
19-Aug	30-Sep	1-Dec	18-Apr
20-Aug	1-Oct	2-Dec	19-Apr
21-Aug	2-Oct	3-Dec	20-Apr
22-Aug	3-Oct	4-Dec	21-Apr
23-Aug	4-Oct	5-Dec	22-Apr
24-Aug	5-Oct	6-Dec	23-Apr
25-Aug	6-Oct	7-Dec	24-Apr
26-Aug	7-Oct	8-Dec	25-Apr
27-Aug	8-Oct	9-Dec	26-Apr
28-Aug	9-Oct	10-Dec	27-Apr
29-Aug	10-Oct	11-Dec	28-Apr
30-Aug	11-Oct	12-Dec	29-Apr
31-Aug	12-Oct	13-Dec	29-Apr
1-Sep	13-Oct	14-Dec	30-Apr
2-Sep	14-Oct	15-Dec	1-May
3-Sep	15-Oct	16-Dec	2-May
4-Sep	16-Oct	17-Dec	3-May
5-Sep	17-Oct	18-Dec	4-May
6-Sep	18-Oct	19-Dec	5-May
7-Sep	19-Oct	20-Dec	6-May
8-Sep	20-Oct	21-Dec	7-May
9-Sep	21-Oct	22-Dec	8-May
10-Sep	22-Oct	23-Dec	9-May
11-Sep	23-Oct	24-Dec	10-May
12-Sep	24-Oct	25-Dec	11-May
13-Sep	25-Oct	26-Dec	12-May
14-Sep	26-Oct	27-Dec	13-May

Appendix 5.5 Rotavirus Vaccine Eligibility Dates

Birthdate	Min date dose #1	Max date dose #1	Max date final Dose
15-Sep	27-Oct	28-Dec	14-May
16-Sep	28-Oct	29-Dec	15-May
17-Sep	29-Oct	30-Dec	16-May
18-Sep	30-Oct	31-Dec	17-May
19-Sep	31-Oct	1-Jan	18-May
20-Sep	1-Nov	2-Jan	19-May
21-Sep	2-Nov	3-Jan	20-May
22-Sep	3-Nov	4-Jan	21-May
23-Sep	4-Nov	5-Jan	22-May
24-Sep	5-Nov	6-Jan	23-May
25-Sep	6-Nov	7-Jan	24-May
26-Sep	7-Nov	8-Jan	25-May
27-Sep	8-Nov	9-Jan	26-May
28-Sep	9-Nov	10-Jan	27-May
29-Sep	10-Nov	11-Jan	28-May
30-Sep	11-Nov	12-Jan	29-May
1-Oct	12-Nov	13-Jan	31-May
2-Oct	13-Nov	14-Jan	1-Jun
3-Oct	14-Nov	15-Jan	2-Jun
4-Oct	15-Nov	16-Jan	3-Jun
5-Oct	16-Nov	17-Jan	4-Jun
6-Oct	17-Nov	18-Jan	5-Jun
7-Oct	18-Nov	19-Jan	6-Jun
8-Oct	19-Nov	20-Jan	7-Jun
9-Oct	20-Nov	21-Jan	8-Jun
10-Oct	21-Nov	22-Jan	9-Jun
11-Oct	22-Nov	23-Jan	10-Jun
12-Oct	23-Nov	24-Jan	11-Jun
13-Oct	24-Nov	25-Jan	12-Jun
14-Oct	25-Nov	26-Jan	13-Jun
15-Oct	26-Nov	27-Jan	14-Jun
16-Oct	27-Nov	28-Jan	15-Jun
17-Oct	28-Nov	29-Jan	16-Jun
18-Oct	29-Nov	30-Jan	17-Jun
19-Oct	30-Nov	31-Jan	18-Jun
20-Oct	1-Dec	1-Feb	19-Jun
21-Oct	2-Dec	2-Feb	20-Jun
22-Oct	3-Dec	3-Feb	21-Jun
23-Oct	4-Dec	4-Feb	22-Jun
24-Oct	5-Dec	5-Feb	23-Jun
25-Oct	6-Dec	6-Feb	24-Jun
26-Oct	7-Dec	7-Feb	25-Jun
27-Oct	8-Dec	8-Feb	26-Jun
28-Oct	9-Dec	9-Feb	27-Jun
29-Oct	10-Dec	10-Feb	28-Jun
30-Oct	11-Dec	11-Feb	29-Jun
31-Oct	12-Dec	12-Feb	29-Jun
1-Nov	13-Dec	13-Feb	30-Jun
2-Nov	14-Dec	14-Feb	1-Jul
3-Nov	15-Dec	15-Feb	2-Jul
4-Nov	16-Dec	16-Feb	3-Jul
5-Nov	17-Dec	17-Feb	4-Jul
6-Nov	18-Dec	18-Feb	5-Jul
7-Nov	19-Dec	19-Feb	6-Jul
8-Nov	20-Dec	20-Feb	7-Jul
9-Nov	21-Dec	21-Feb	8-Jul
10-Nov	22-Dec	22-Feb	9-Jul
11-Nov	23-Dec	23-Feb	10-Jul
12-Nov	24-Dec	24-Feb	11-Jul
13-Nov	25-Dec	25-Feb	12-Jul
14-Nov	26-Dec	26-Feb	13-Jul
15-Nov	27-Dec	27-Feb	14-Jul
16-Nov	28-Dec	28-Feb	15-Jul
17-Nov	29-Dec	1-Mar	16-Jul
18-Nov	30-Dec	2-Mar	17-Jul
19-Nov	31-Dec	3-Mar	18-Jul
20-Nov	1-Jan	4-Mar	19-Jul
21-Nov	2-Jan	5-Mar	20-Jul
22-Nov	3-Jan	6-Mar	21-Jul
23-Nov	4-Jan	7-Mar	22-Jul
24-Nov	5-Jan	8-Mar	23-Jul
25-Nov	6-Jan	9-Mar	24-Jul
26-Nov	7-Jan	10-Mar	25-Jul
27-Nov	8-Jan	11-Mar	26-Jul
28-Nov	9-Jan	12-Mar	27-Jul
29-Nov	10-Jan	13-Mar	28-Jul
30-Nov	11-Jan	14-Mar	29-Jul
1-Dec	12-Jan	15-Mar	31-Jul
2-Dec	13-Jan	16-Mar	1-Aug
3-Dec	14-Jan	17-Mar	2-Aug
4-Dec	15-Jan	18-Mar	3-Aug
5-Dec	16-Jan	19-Mar	4-Aug
6-Dec	17-Jan	20-Mar	5-Aug
7-Dec	18-Jan	21-Mar	6-Aug
8-Dec	19-Jan	22-Mar	7-Aug
9-Dec	20-Jan	23-Mar	8-Aug
10-Dec	21-Jan	24-Mar	9-Aug
11-Dec	22-Jan	25-Mar	10-Aug
12-Dec	23-Jan	26-Mar	11-Aug
13-Dec	24-Jan	27-Mar	12-Aug
14-Dec	25-Jan	28-Mar	13-Aug
15-Dec	26-Jan	29-Mar	14-Aug
16-Dec	27-Jan	30-Mar	15-Aug
17-Dec	28-Jan	31-Mar	16-Aug
18-Dec	29-Jan	1-Apr	17-Aug
19-Dec	30-Jan	2-Apr	18-Aug
20-Dec	31-Jan	3-Apr	19-Aug
21-Dec	1-Feb	4-Apr	20-Aug
22-Dec	2-Feb	5-Apr	21-Aug
23-Dec	3-Feb	6-Apr	22-Aug
24-Dec	4-Feb	7-Apr	23-Aug
25-Dec	5-Feb	8-Apr	24-Aug
26-Dec	6-Feb	9-Apr	25-Aug
27-Dec	7-Feb	10-Apr	26-Aug
28-Dec	8-Feb	11-Apr	27-Aug
29-Dec	9-Feb	12-Apr	28-Aug
30-Dec	10-Feb	13-Apr	29-Aug
31-Dec	11-Feb	14-Apr	30-Aug