

Gateway Immunization Coalition “Lickety Split” Update on Rotavirus and Tetanus

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Rotavirus Facts

Rotavirus Epidemiology

- Reservoir
 - Human —GI tract and stool
 - Transmission
 - Fecal-oral, fomites
 - Temporal pattern
 - Fall and winter (temperate areas)
 - Communicability
 - 2 days before to 10 days after onset of symptoms
- ◆ 48 Hour Incubation
 - ◆ Gastrointestinal symptoms resolve in 3-7 days
 - ◆ First infection after 3 months of age generally most severe
 - ◆ Severe diarrhea, fever, and vomiting

Rotavirus Facts Continued

Rotavirus Disease in the United States

- Estimated 3 million cases per year*
- 95% of children infected by 5 years of age
- Annually* responsible for:
 - more than 400,000 physician visits
 - more than 200,000 emergency dept visits
 - 55,000 to 70,000 hospitalizations
 - 20 to 60 deaths
- Annual direct and indirect costs are estimated at approximately \$1 billion
- Highest incidence among children 3 to 35 months of age

*Prevaccine era

Rotavirus Vaccine

Rotavirus Vaccines

- RV5 (RotaTeq)
 - contains five reassortant rotaviruses developed from human and bovine parent rotavirus strains
 - vaccine viruses suspended in a buffer solution
 - contains no preservatives or thimerosal
- RV1 (Rotarix)
 - contains one strain of live attenuated human rotavirus (type G1PA[8])
 - provided as a lyophilized powder that is reconstituted before administration
 - contains no preservatives or thimerosal

• Manufacturers: Merck & Co, Inc

Rotavirus Vaccine Recommendations

Rotavirus Vaccine Recommendations

- Similar estimates of efficacy and safety between RV1 and RV5
- No preference for one vaccine over the other
- Routine vaccination of all infants without a contraindication
- 2 (RV1) or 3 (RV5) oral doses beginning at 2 months of age
 - may be started as early as 6 weeks of age

- For both rotavirus vaccines
 - maximum age for first dose is 14 weeks 6 days*
 - minimum interval between doses is 4 weeks
 - maximum age for any dose is 8 months 0 days

Tetanus Facts

Tetanus Epidemiology

- Reservoir
 - soil and intestine of animals and humans
- Transmission
 - contaminated wounds
 - tissue injury
- Temporal pattern
 - peak in summer or wet season
- Communicability
 - not contagious

Tetanus Facts Continued

Tetanus Clinical Features

- Incubation period; 8 days (range, 3-21 days)
- Three clinical forms: local (uncommon), cephalic (rare), generalized (most common)
- Generalized tetanus: descending pattern of trismus (lockjaw), stiffness of the neck, difficulty swallowing, rigidity of abdominal muscles
- spasms continue for 3-4 weeks
- complete recovery may take months

Neonatal Tetanus

- Generalized tetanus in newborn infant
- Infant born without protective passive immunity
- 58,000 neonates died in 2010 worldwide

Tdap and Dtap Vaccines

DTaP, DT, Td, and Tdap

Type	Diphtheria	Tetanus
DTaP, DT	6.7-25 Lf units	5-10 Lf units
Td, Tdap (adults)	2-2.5 Lf units	2-5 Lf units

Tetanus Toxoid

- Formalin-inactivated tetanus toxin
- Schedule
 - three or four doses plus booster
 - booster every 10 years
- Efficacy
 - approximately 100%
- Duration
 - approximately 10 years
- Should be administered with diphtheria toxoid as DTaP, DT, Td, or Tdap

- Manufacturers: Sanofi Pasteur, GlaxoSmithKline Biologicals,

Tetanus Vaccines Continued

Routine DTaP Primary Vaccination Schedule

Dose	Age	Interval
Primary 1	2 months	---
Primary 2	4 months	4 weeks
Primary 3	6 months	4 weeks
Primary 4	15-18 months	6 months

Tetanus, Diphtheria and Pertussis Booster Doses

- 4 through 6 years of age, before entering school (DTaP)
- 11 or 12 years of age (Tdap)
- Every 10 years thereafter (Td)

Resources

- ◆ The Pink Book- 13th Edition (2015)
 - ◆ Centers for Disease Control and Prevention
 - ◆ <http://www.cdc.gov/vaccines/pubs/pinkbook/index.html>
- ◆ Vaccine Information Statement
 - ◆ (4/15/15 & 2/14/15)
 - ◆ <http://www.cdc.gov/vaccines/hcp/vis/>