Disclosures:
None

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Immunization Success

Public health success of the century

• Rates of vaccine preventable illnesses have plummeted
• Small pox eliminated from the world
• Polio gone in most of the world
• Measles gone in the Western Hemisphere
Immunization Success

- Congenital rubella eliminated in the Western hemisphere
- Diphtheria and tetanus almost gone
- *H. influenzae* type b almost gone in the US
- *S. pneumoniae* rates dropped not only in infants but siblings, parents and older
Immunization Success

- Admissions for dehydration dropped dramatically in US and wherever rotavirus vaccines used
- Liver cancer rates dropped in Asia following introduction of HBV vaccine at birth
- High risk HAV states eliminated rapidly
Vaccine Preventable Diseases

What About the World?

- One in five children doesn’t have access to vaccines
- About every 20 seconds a child dies of a vaccine preventable disease
- Every 20 minutes a child dies of measles
- We can change this!
Shot @ Life Vaccines

Polio
Rotavirus
Measles
Pneumococcal
Polio

Polio patient, India

Polio infection in unimmunized Amish population, Minnesota

Paralytic polio in unvaccinated U.S. traveler, 2006

Source: WHO/P. Virot
Polioviruses

Three types: one has been eliminated!
Virus circulates in the spring, summer, fall
Once infected a child sheds the virus for weeks
Most have no illness, some fever, less than 1% will become paralyzed
Courtesy of the WHO and the Centers for Disease Control and Prevention
Rotavirus

- Child gastroenteritis – ER visits, hospitalization, clinic visits, lost work time

- Live, oral vaccines:
  - Rotateq (Merck): pentavalent, human-bovine reassortant
  - Rotarix (GSK): monovalent, attenuated

- Both vaccines:
  - Effective
  - Well-tolerated
  - No increase in intussusception
Rotaviruses

Extremely common - winter, spring

Causes both vomiting and diarrhea

Very easy to spread from person to person

Viruses shed in the stool for weeks to months

Almost all children infected in the first years

Dehydration can be life threatening
Burden of RV Disease in US Children

- 20-60 deaths
- 55,000-70,000 Hospitalizations
- 205-272,000 ED visits / 410,000 OPD visits
- 2.7 million episodes

CDC
Dehydration and Malnutrition
Measles

Rash and conjunctivitis in a child with measles

Measles pharyngitis in an adult showing striking inflammation
Measles
Extremely contagious virus
Fever, cough, runny nose, red eyes, rash
Complications include superinfection, lung and brain involvement
Vaccine has been extremely effective but outbreaks persist
Pneumococcal Disease

- Leading cause of bacterial meningitis, bacteremia, acute otitis media in children
- Antibiotic resistant bacteria - Use the vaccine!

Periorbital cellulitis

Sepsis
**Streptococcus pneumoniae**

Bacteria which often lives in the nose

Carriage is very common

Infection can be mild to fatal: ear infection (otitis), sinusitis, pneumonia, meningitis

Preventing illness in children protects others!
Pneumococcal Vaccines

Conjugate vaccines: PCV7, PCV13

Select the most common strains
Vaccinate starting in infancy

Polysaccharide vaccines: PPS23

Many more strains; not effective in infants
Used in older children and adults
What Can You Do?

Join Shot@Life
Host an event
Advocate: blogs, op ed, letters
Advertise Shot@Life in your office
Get involved and save some lives!

ShotatLife.org
Smallpox - GONE

Courtesy of the Centers for Disease Control and Prevention