



# Making an Informed Vaccine Decision:

A conversation with pediatricians to help parents understand vaccine benefits and risks

Presented by,

Dr. Larry Pickering

&

Dr. Jane Seward



### **Tonight's Speakers**

### Kim Kober

Moderator
Parent Network Associate,
NACCRRA

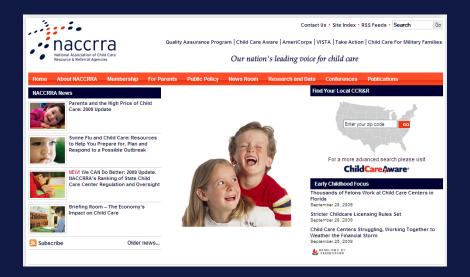
### Dr. Jane Seward,

Pediatrician
National Center for Immunization and
Respiratory Diseases
Centers for Disease Control and Prevention

### Dr. Larry K. Pickering,

Pediatrician
National Center for Immunization and
Respiratory Diseases
Centers for Disease Control and Prevention

### **NACCRRA**



www.NACCRRA.org

### **Child Care Aware and Parent Network**



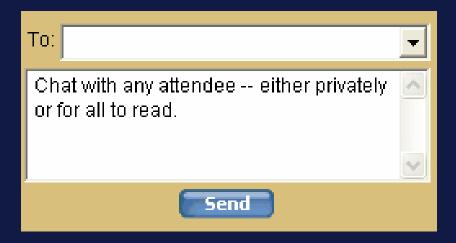




www.childcareaware.org

### **Webinar Logistics**





Questions: info@CCAParentNetwork.org

Recordings and Resources: www.CCAParentNetwork.org/webinar

# Making an Informed Vaccine Decision: A Conversation with Pediatricians to Help Parents Understand Vaccine Benefits and Risks

Dr. Larry Pickering and Dr. Jane Seward August 24, 2011



### **Disclaimer**

CDC and CDC faculty receive no commercial/financial support for this activity. CDC and our content experts wish to disclose they have no financial interests or other relationships with the manufacturers of commercial products, suppliers of commercial services, or commercial supporters. Use of brand names is not intended to be an endorsement of any particular product or company.

# **Objectives**

- Gain a better understanding of the recommended childhood immunization schedule, vaccines on the schedule, and vaccine safety
- Learn about the diseases that vaccines prevent
- Identify what you can do as a parent to protect your child from vaccinepreventable diseases, especially in child care settings

# Modern Day Vaccine-Preventable **Disease True Stories**

Matthew's Hib Story

"Gasping for Life": A True Story

44 didn't realize it, but the diseases that they give children shots for still exist," says Kelly Lacek. "Every parent should know these diseases are

Kelly and her husband have three children. Ashley, the oldest, was fully vaccinated; Stephen, the middle child, had some but not all vaccinations; and Matthew, the youngest, had only his first round of shots. The Laceks stopped vaccinating their kids after a health care professional they trusted gave them misinformation that caused them not to trust the safety of childhood vaccines.

Acting on this misinformation almost ended

It was April 22, 2006, shortly after his third birthday, when Matthew started having trouble breathing. His parents rushed him to their local hospital. There, a seasoned physician recognized the disease as one he had seen oftenmore than 20 years ago. Matthew's windpipe was swollen because he was infected with

Haemophilus influenzae type b-known as Hib. When it comes to a Hib infection, time is of the essence. Without prompt treatment, Hib disease can be fatal. Matthew immediately had a tube inserted into his windpipe so he could breathe. He spent 6 days in the hospital and eventually made a complete recovery. The Laceks began catching Matthew up on his vaccinations soon afterward. Today, Matthew and Stephen are fully vaccinated.

Since the first Hih vaccine was introduced in the States has plummeted. As a result, many doctors have never seen a case of Hib disease.

"We were lucky the doctor at our local hospita recognized Hib," says Kelly, "We later spoke to tricians at a children's hospital, and they admitted they might not have identified it so quickly, because Hib is rare now, thanks to vaccination."

The family does not know who Matthew caught the disease from. What the Laceks do know now is that infant immunization is crucial. As Kelly puts it, "There is almost nothing worse than your child suffering and nearly dying from a disease that can be prevented with a vaccine "

DISEASES and the VACCINES THAT PREVENT THEM

#### Hib is Serious and Potentially Deadly

Hib disease, which is caused by the bacteria Haemothilus influeทวดe type b, can be serious, especially when it causes invasive diseases. Invasive disease means that germs invade parts of the body that normally are free from germs (such as the fluid around the brain and spinal cord). When this happens, disease is very severe. Overall, before Hib vaccine, there were more than 20,000 cases of invasive Hib each year. All invasive infections can be life-threatening.

Meningitis (infection of the covering around the brain and spinal cord) is just one of the invasive diseases that can be caused by Hib. The disease also can cause epiglottitis (life-threatening infection that can block the windpipe and lead to serious breathing problems), as well as pneumonia (infection in the lungs)

In the United States, before Hib vaccine was available, about 12,000 children each year—most of them younger than 5 years old—got Hib meningitis. In fact, Hib was the most common cause of bacterial meningitis in this country. As many as 600 of the children who got Hib meningitis each year died, and as many as 4,000 suffered serious life-long disability, including blindness, deafness, or

"Refore Hib vaccine was available a child's risk for getting invasive Hib disease was 1 out of 200 by age 5," says nediatrician Dr. Elizabeth Cavallaro of the Centers for Disease Control and Prevention (CDC). "That's about the same as the risk for polio in the United States before vaccination. Even though we no longer have polio cases in this country, most parents have heard of polio, but they may not have heard of Hib or know how dangerous it can be."

#### How Hib Spreads

Hib is spread from person to person by direct contact, or by contact with respiratory droplets from a cough or sneeze. Hib can be spread by people who are ill with the disease. More importantly, Hib can be spread by people who have the bacteria in their noses and throats but who do not show symptoms. In fact, this is the most common way that the

The story of Hib today is the story of an amazingly effective and very safe vaccine. "The Hib vaccine that we use now was first recommended for infants and toddlers in the United States in 1991," explains Dr. Anne Schuchat, director of CDC's National Center for Immunization and Respiratory Diseases. "In less than a decade of using this Hib vaccine, the serious disease was nearly wiped out in the United States."



American Academy

B

B

Φ

106 Degrees": A True Story

f you hear "106 degrees" you probably think "hea wave," not a baby's temperature. But for Megan Campbell's 10-month-old son, a life-threatening bout of measles caused fevers spiking to 106 degrees and sent him to the hospital.

"After picking our son up at child care because he had a fever," says Megan, "we went straight to our pediatrician who said our baby had a virus. Two days later, his fever hit 104 degrees and a rash appeared

Megan and husband Chris turned to the Internet. Finding pictures of measles that looked like their son's rash, they rushed him to the local children's hospital.

"No one there had seen or tested for measles for about 17 years," says Megan. "And no one expected it in the year 2008 in the United States. The next day, an infectious disease specialist

"We spent 3 days in the hospital fearing we might lose our baby boy. He couldn't drink or eat, so he was on an IV, and for a while he seemed to be wasting away. When he began to be able to drink again we got to take him home. But the doctors

#### Measles Symptoms

Measles begins with an increasing fever, then coughing runny nose, redness of the eyes, and finally, a rash breaks out. The rash usually starts on the head and then spreads to the rest of the body. Fever can persist, reaching extremely high temperatures, rash can last for up to a week, and coughing can

#### Measles Is Serious

According to Dr. Kathleen Gallagher of the Centers for Disease Control and Prevention (CDC), "Measles ranges from a pretty uncomfortable disease to a very serious one. For example, for every 1,000 children who get measles in a developed country like the United States, 1 to 3 of them die, despite the best treatment. Even recently, from 2000 through 2007, 1 out of every 4 people in the United States who got measles had to be hospitalized." Many of these serious cases were among children

DISEASES and the VACCINES THAT PREVENT THE

told us to expect the disease to continue to run its og high fever-which did spike as

### cloths. Also, as instr

signs of lethargy or non-re seen that, we'd have gone back to immediately

#### Thankfully, the baby recovered fully.

Megan now knows that her son was exposed to measles during his 10-month check-up, when another mother brought her ill son into the pediatrician's waiting room. An investigation found that the boy and his siblings had gotten measles overseas and brought it back to the United States. They had not been vaccinated.

\*People who choose not to vaccinate their children actually make a choice for other children and put them at risk," Megan explains. "At 10 months, my son was too young to get measles, mumps, rubella (MMR) vaccine. But when he was 12 months old, we got him the vaccine—even though he wasn't susceptible to measles anymore. This way, he won't suffer from mumps or rubella, or spread them to anyone else."

People Exposed to Measles Who Have Not Been Vaccinated Almost Always **Get Measles** 

Measles is one of the most contagious diseases known. Measles is a virus that mainly spreads by direct contact with airborne respiratory droplets. For example, if someone who is contagious coughs or sneezes near someone who is susceptible, the susceptible person is very likely to get measles. You can catch measles just by being in a room where a person with measles has been ... even if the person is gone!

#### Vaccine Has Made Measles Rare in United States, but Not Worldwide

Thanks to vaccination, the number of measles cases in the United States reached an all-time low of 37 in 2004. Rut worldwide measles still causes between 150 000 and 175,000 deaths each year. There is no drug to cure measles. "It's critical to remember the global picture for any vaccine-preventable disease," says the World

story about her baby who had measles

Megan's





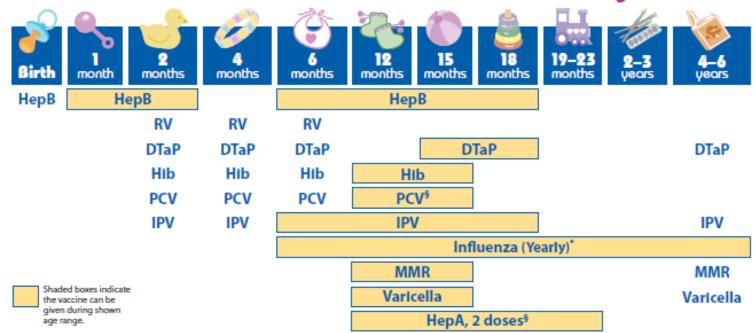


http://www.cdc.gov/vaccines/spec-grps/hcp/conv-materials.htm#disvp

# The U.S. Recommended Childhood Immunization Schedule

- Most children can be protected against 14 vaccine-preventable diseases before they turn 2 years old, if they follow the recommended immunization schedule.
  - Goal: protect infants and children by providing immunity early in life, before they are exposed to life-threatening diseases

#### 2011 Recommended Immunizations for Children from Birth Through 6 Years Old



NOTE: If your child misses a shot, you don't need to start over, just go back to your child's doctor for the next shot. The doctor will keep your child upto-date on vaccinations. Talk with your doctor if you have questions.

FOOTNOTES

- HepA vaccination is recommended for high-risk children older than 2 years. Children with certain medical conditions may also need a dose of meningococcal vaccine (MCV4) and pneumococcal vaccine (PPSV). HepA vaccination may be administered to any child older than 2 years for whom immunity is desired. See vaccine-specific recommendations at http://www.cdc.gov/vaccines/pubs/ACIP-list.htm.
- Two doses given at least four weeks apart are recommended for children aged 6 months through 8 years of age who are getting a flu vaccine for the first time. Children who only got one dose in their first year of vaccination should get two doses the following year.

See back page for more information on vaccinepreventable diseases and the vaccines that prevent them.

For more information, call toll free 1-800-CDC-INFO (1-800-232-4636) orvisit

http://www.cdc.gov/vaccines



U.S. Department of Health and Human Services Centers for Disease Control and Prevention



American Academy of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN'



#### Based on Immunization Schedule for Children O through 6 Years of age

Birth Date:	Month	✓ Day	Select	~	
Child's Nam	e: *(Opt	ional)			
			G	et Schedule	

Make a schedule for your child using this web tool: <a href="http://www.cdc.gov/vaccines/recs/scheduler/catchup.htm">http://www.cdc.gov/vaccines/recs/scheduler/catchup.htm</a>

# Setting the Schedule

- Factors considered:
  - How well a vaccine works in preventing a disease and how safe it is when given at specific ages
  - The severity of the disease
  - How many children get the diseases if there is no vaccine
  - The differences in how well a vaccine works for children of different ages

# Comparison of Pre-Vaccine Era Estimated Annual Morbidity or Mortality with Current Estimate: Vaccine-Preventable Diseases

Disease		ne Era Annual timate	2009 Estimat	te Percent Decrease
Hepatitis A	- // -	117,333 †	8,493	93%
Hepatitis B (acute)		66,232 †	9,419	86%
Pneumococcus (invasive)				
all ages		63,067 †	44,000 #	30%
< 5 years of age		16,069 <b>†</b>	4,700##	72%
Rotavirus (hospitalizations, < 3 years of age)		62,500 † †	28,125###	55%
Varicella		4,085,120 †	408,512	90%

<sup>&</sup>lt;sup>†</sup> Source: JAMA. 2007;298(18):2155-2163

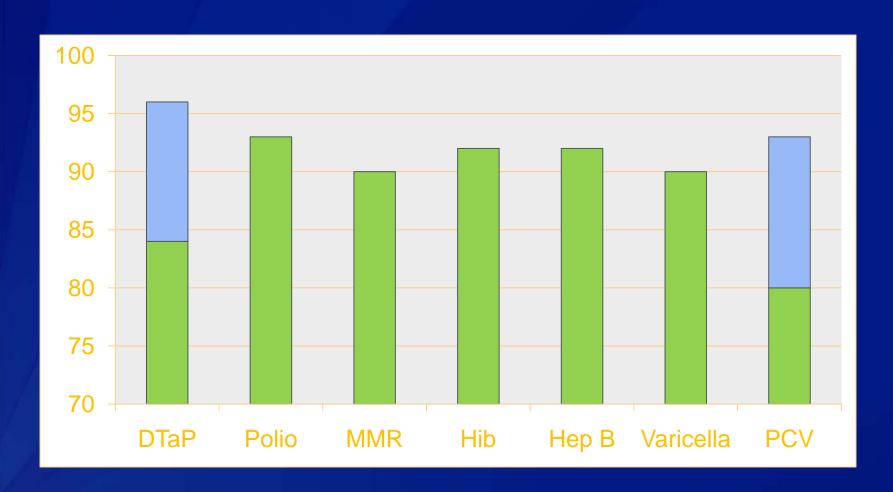
<sup>&</sup>lt;sup>††</sup> Source: CDC. MMWR. February 6, 2009 / 58(RR02);1-25

<sup>#</sup> Source: CDC. Active Bacterial Core surveillance Report; S. pneumoniae 2009. http://www.cdc.gov/abcs/reports-findings/survreports/spneu09.html

<sup>##</sup> Source: 2009 Active Bacterial Core surveillance

<sup>###</sup> Source: New Vaccine Surveillance Network (unpublished)

# At or Near 90% Coverage of Selected Vaccines, 19-35 mo olds, 2009



# **How Diseases Spread**



# Germs and Your Child's Immune System

- Antibodies and cells are produced to find and destroy the specific germ that is causing an infection
- The immune system remembers this germ.
  - If the person is exposed to the same germ again, antibodies can quickly eliminate it before it can make the person sick again. This is immunity.
- In this case, your child has to get sick before becoming immune.

## **How Vaccines Work**

- Vaccines contain the same germs that cause disease but they have been either killed, or weakened to the point that they don't make your child sick. Some vaccines contain only a part of the disease germ.
- The vaccine stimulates the immune system to produce antibodies and cells, exactly like it would if your child were exposed to the disease.
- In this case, your child will develop immunity to that disease without having to get sick.



**What About Herd Immunity?** 

# **Herd Immunity**

- When most children in a community are immune, even if one child gets sick, the disease will probably not spread.
- It will have nowhere to go if the sick child comes in contact only with children who are immune, the disease will not be passed on.
- But when fewer children in a community are immune, it is easier for a disease to spread from person to person and cause an outbreak.



# Understanding Vaccine-Preventable Diseases

# Haemophilus influenzae Type B (Hib)

 Before vaccine, Hib was the leading cause of bacterial meningitis in children < 5 years of age

20,000 cases of very serious
 Hib disease per year







### Hib

- As recently as the mid-1980s, it struck one child out of every 200 under 5 years of age.
  - About 1 in 4 of these children suffered permanent brain damage, and about 1 in 20 died.
- Hib spreads when an infected person coughs or sneezes. So, it can quickly spread in child care situations.
  - Child care increases risk of Hib (and many other vaccine-preventable diseases), if children are not immunized.

# Hib Cases in Minnesota, 2008

Age	Complication	Outcome	Vaccination Status
7 months	Meningitis (infection of the covering of the brain and spinal cord)	Died	0 doses
20 months	Epiglottitis (life threatening infection that can block the windpipe and lead to serious breathing problems)	Survived	0 doses
36 months	Pneumonia (infection in the lungs)	Survived	0 doses
5 months	Meningitis	Survived	2 doses (but too young to develop immunity)
15 months	Meningitis	Survived	2 doses (but immune compromised)

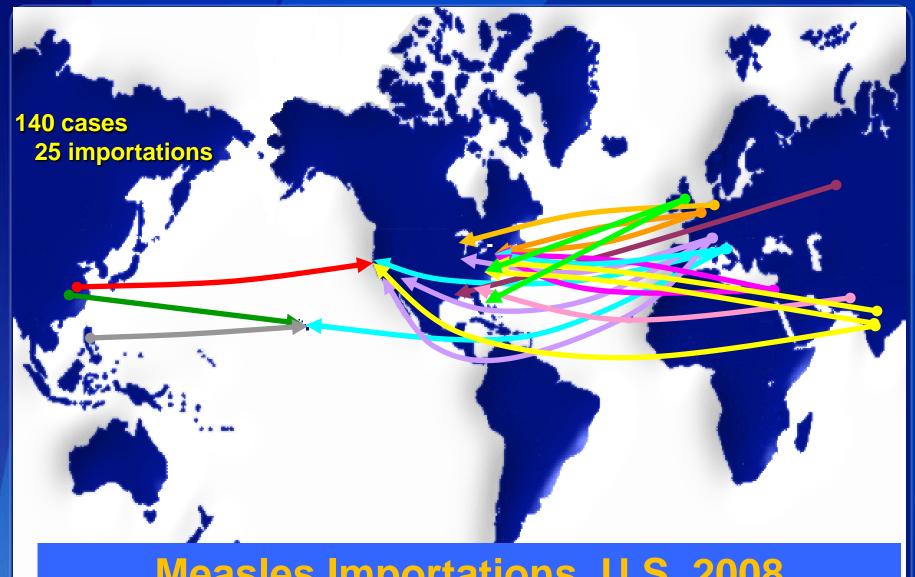
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm58e0123a1.htm

# Measles Disease and Measles in the U.S.





- Spreads easily through coughing and sneezing
- Before vaccine, every year:
   3-4 million cases
   48,000 hospitalizations
   500 deaths
- Illness more severe in young children
- Due to the success of the vaccination program, measles in much less common in the US



Measles Importations, U.S. 2008

## **Measles**

- Can spread quickly in a child care setting
- Example: Alabama day care center in 2002
  - 11 infants attended the same day care center and shared the same room (attack rate: 100%).
  - Among the 11 infants, the median age was 11 months (range: 10 -13 months)
    - Most were too young to have been vaccinated though the first case was potentially preventable if infant had been vaccinated prior to international travel

# **Measles in Minnesota 2011**

- Unvaccinated child 30 months old developed measles after returning from a trip to Kenya
- He attended a drop-in child care center 1 day before developing a rash
- Three unvaccinated children (9, 11 and 23 months) attending the center got measles, all were hospitalized
- In total, there were 21 cases in Minneapolis including in the child care center, people exposed at home, in group living facilities, and in emergency rooms

# **Pertussis**

- Also known as whooping cough
- Highly contagious respiratory disease
  - A person can spread the disease while he or she has cold-like symptoms and for 2 weeks after coughing starts.
- Symptoms include uncontrollable, violent coughing which often makes it hard to breathe.
- Most serious complications and deaths occur in babies less than 1 year of age.
- An increase in cases and localized outbreaks occurred in 2010



# Adults, Pertussis, and Tdap

- Many babies and young children get whooping cough from adults or older brothers or sisters who don't know they have the disease.
  - Adolescents and adults, including parents, grandparents, and caregivers, should get the Tdap vaccine to protect themselves and babies too young to be fully immunized

# Vaccine Safety Overview

- The United States has the safest, most effective vaccine supply in its history.
- Before the FDA licenses a vaccine, the vaccine is tested extensively in people.
- Most common side effects of a vaccine are usually pain and redness at the injection site. These side effects are usually identified in studies before the vaccine is licensed.
- The U.S. vaccine safety system continuously monitors for adverse events (possible side effects) after a vaccine is licensed.



**Top Parent Vaccine Questions** 

# Why So Many Vaccines?

- To protect your children from as many serious diseases as we can
- Before 1985, the recommended immunization schedule included only 7 vaccines. Today, we can protect children younger than 2 years of age from 14 potentially serious diseases with vaccines
- Need all doses of each vaccine for best protection

# Is It Okay For My Little Baby To Get So Many Vaccines?



- Yes, vaccines have been tested at the recommended ages, so we know they're safe to get at those ages
- We also know the ages when diseases are most common, and we want to protect your child before he/she is exposed to them

# Won't Multiple Vaccines In One Day Overload My Baby's Immune System?

 We know a great deal about the body's immune system, and we know that a healthy baby's immune system can handle getting all vaccines when they are recommended.



 Today's vaccines have less antigens compared to many other exposures that your baby encounters each day.

# Is There a Link Between Vaccines and Autism?

- No. Scientific studies and reviews continue to show no relationship between vaccines and autism.
- CDC and other agencies and organizations are conducting research to learn more about the causes of autism. Many doctors believe that genetics likely play a strong role.

# What Should You Do To Make Sure Your Child Is Protected?



## Stay on Schedule

- Talk to your child's doctor or nurse to make sure he or she is up-to-date on all vaccinations.
  - Keep a record of your child's immunization record in a safe place
- Infants and young children who follow the recommended immunization schedule are best protected against vaccine preventable diseases.
  - Spreading out vaccines—or leaving out vaccines—puts children at risk of developing diseases during the time the vaccines are delayed.

# Make the Most of Your Well Child Visits



- Come prepared to talk to your child's doctor or nurse about vaccines and how they work to protect your child's health, if you have any concerns.
- Help soothe your children immediately after a shot by:
  - Breastfeeding
  - Swaddling
  - Skin-to-skin contact
- Follow up with your child's doctor or nurse if you have any concerns after you leave the doctor's office.

# Make Sure You Ask Your Child Care Provider about Vaccines...



# Questions to Ask Your Child Care Provider

- Do they accept children who have not been vaccinated?
- What happens if a child has a vaccinepreventable disease or an outbreak occurs?
- Do they regularly follow up with parents to ensure they are keeping their children upto-date with vaccinations?
- Are vaccinations required among the staff?

## **Need Help Paying for Vaccines?**

- The VFC program is a federally funded program that provides vaccines at no cost to children who might not otherwise be vaccinated because of inability to pay.
- Children through 18 years of age who meet at least one of the following criteria are eligible to receive VFC vaccine:
  - Medicaid eligible
  - Uninsured
  - American Indian or Alaska Native
  - Underinsured http://www.cdc.gov/vaccines/programs/vfc/

#### For More Reasons to Vaccinate...

- Talk to your child's doctor or nurse
- Consult credible websites
  - www.cdc.gov/vaccines
  - www.familydoctor.org
  - www.healthychildren.org
  - <a href="http://www.pkids.org/">http://www.pkids.org/</a>
  - http://www.ecbt.org/parents/
  - www.shotbyshot.org



**More Helpful Tools for Parents** 

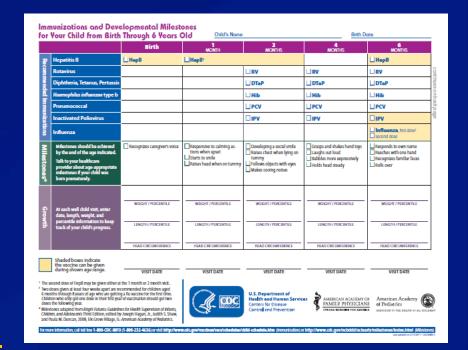
## Catch-Up Tool

- Missed a vaccine? Use the Catch-Up Tool to quickly get your child back on schedule.
  - http://www.cdc.gov/vaccines/recs/scheduler/catchup.htm



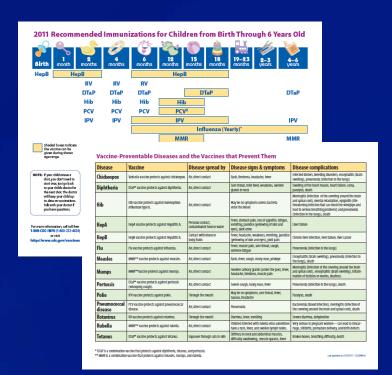
#### Well Child Visit Tracker

- Need help keeping track of your child's vaccines? Use our Well Child Visit Tracker.
  - http://www.cdc.gov/vaccines/spec-grps/infants/downloads/milestones-tracker.pdf



## Parent-Friendly Immunization Schedule

- Want to know more about the recommended immunization schedule and vaccine-preventable diseases? Look at front and the back sides of the parent-friendly immunization schedule.
  - http://www.cdc.gov/vaccine
     s/spec grps/infants/downloads/par
     ent-ver-sch-0-6yrs.pdf



### **Question and Answer Session**