A Passion for Prevention

CRIC Symposium

September 28, 2016

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Disclosures

- I accept no honorarium for providing vaccine talks
- Organizations may choose to donate to Children's instead

- I am an Executive Board member of the National Foundation for Infectious Diseases

- I am a past voting member and current liaison member for the Advisory Committee on Immunization Practices at the CDC

- I am a member of the MN Advisory Committee on Immunization Practices at the MDH

- I have no financial conflicts of interest to disclose

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Objectives

At the completion of this session the learner will be able to:

1. Describe the value of immunization in disease prevented and deaths averted.

2. Gain new skills in talking about the importance of vaccines in keeping children and the community safe

3. Describe our duty to first do no harm

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Vaccines Work!

Immunization Action Coalition 12/14

DISEASE	PRE-VACCINE ERA ESTIMATED ANNUAL MORBIDITY*	MOST RECENT REPORTS OR ESTIMATES† OF U.S. CASES	PERCENT DECREASE
Diphtheria	21,053	0†	100%
H. influenzae (invasive, <5 years of age)	20,000	31‡	>99%
Hepatitis A	117,333	2,890§	98%
Hepatitis B (acute)	66,232	18,800§	72%
Measles	530,217	187†	>99%
Mumps	162,344	584†	>99%
Pertussis	200,752	28,639†	86%
Pneumococcal disease (invasive, <5 years of age)	16,069	1,900‡‡	88%
Polio (paralytic)	16,316	1†	>99%
Rotavirus (hospitalizations, <3 years of age)	62,500**	12,500††	80%
Rubella	47,745	9†	>99%
Congenital Rubella Syndrome	152	1†	99%
Smallpox	29,005	0†	100%
Tetanus	580	26†	96%
Varicella	4,085,120	167,490§§	96%

Vaccine Adverse Events are Extremely Rare

- CDC analyzed 67 different vaccine research studies. April, 2015
  - For kids born in the last decade, 322 million illnesses prevented, 21 million hospitalizations prevented and 732,000 deaths prevented over the course of their lifetimes
- NO evidence vaccines cause autism

- *Pediatrics* Maglione, M and Gidengil, C. 2015
  - Risk of anaphylaxis 1-1.3 in 1,000,000 doses

- *Risk in perspective~*
  - Car accidents = 38,000 deaths in children under 4 yrs in 2012 and 523 deaths

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2016: What makes vaccines a “tough topic”? How did we get here?

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We went from scrambling for life-saving vaccines

to this...

The Vaccine Book: Making the Right Decision for Your Child

Dr. Robert Sears

- Spreads out the approved CDC/AAP schedule
- No more than 2 vaccines at a time
- Offers a “selective” individualized schedule
- Not approved
- Causes delay
- Takes unnecessary risk
- Hard to keep track of
- Now risks loss of MD license for medical negligence

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Sources & perceived credibility of vaccine safety information

Freed et al, Pediatrics Vol 127 Supplement 1, May 2011

- Parents report “a lot or some” trust for receiving vaccine safety information:
- 98% trust their doctor
- 96% trust others in health care
- 84% trust government experts
- 92% trust family/friends
- 73% trust parents who believe their child was harmed by a vaccine
- 26% trust celebrities
- Jan, 2009. On-line survey, rep sample 2521 parents of kids < 17 years old (N = 1552)

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The Spectrum of Vaccine Acceptance or Refusal

Opel, NFID Clinical Vaccinology Course Spring, 2014

PRO Vaccine		Anti-Vaccine
Acceptors	Vaccine- hesitant	Rejector
Agree with or do not question vaccines	Are unsure about, delay, or choose only some vaccines	Completely reject vaccines
Child fully immunized	Child under-immunized	Child un-immunized
Believe vaccines are safe	Concerned vaccine side effects outweigh benefits	Very concerned about vaccine side effects
Believe vaccines work	Concerned vaccines might not prevent disease	Doubt vaccines work
High trust in provider	Desires a trustworthy provider	Low or no trust
Interest in vaccine info from provider	Interest in vaccine info from provider	No interest in vaccine info
~70-90%	~10-30%	<1%

The Architecture of Provider-Parent Vaccine Discussions at Health Supervision Visits

Opel et al. *Pediatrics, Nov 4, 2013* *(Also see Human Vaccines 2011* and *Opel et al. Vaccine 2011)*

- Presumptive ("We need to do some shots today") vs. Participatory conversations ("What do you want to do about shots?")
- Clinicians positively influence parental immunization decision-making
- The start of your immunization conversation will impact the outcome
- Pursue the recommendations as you would other life-saving medical conversations

Douglas J. Opel, MD, MPH
Assistant Professor of Pediatrics
University of Washington School of Medicine
Seattle Children's Hospital

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HOW the provider initiates the plan makes a difference

(N=111) Opel et al. Pediatrics 2013

- Presumptive
- *"It's time to start one year old vaccines…we're going to be doing 2 live vaccines today; the MMR and chicken pox shots"*

- Parent accepts 75%
- Resists 26%

- Participatory
- *"How do you feel about vaccination?"*

- Parent accepts 4%
- Provides own plan 13%
- Resists 83%

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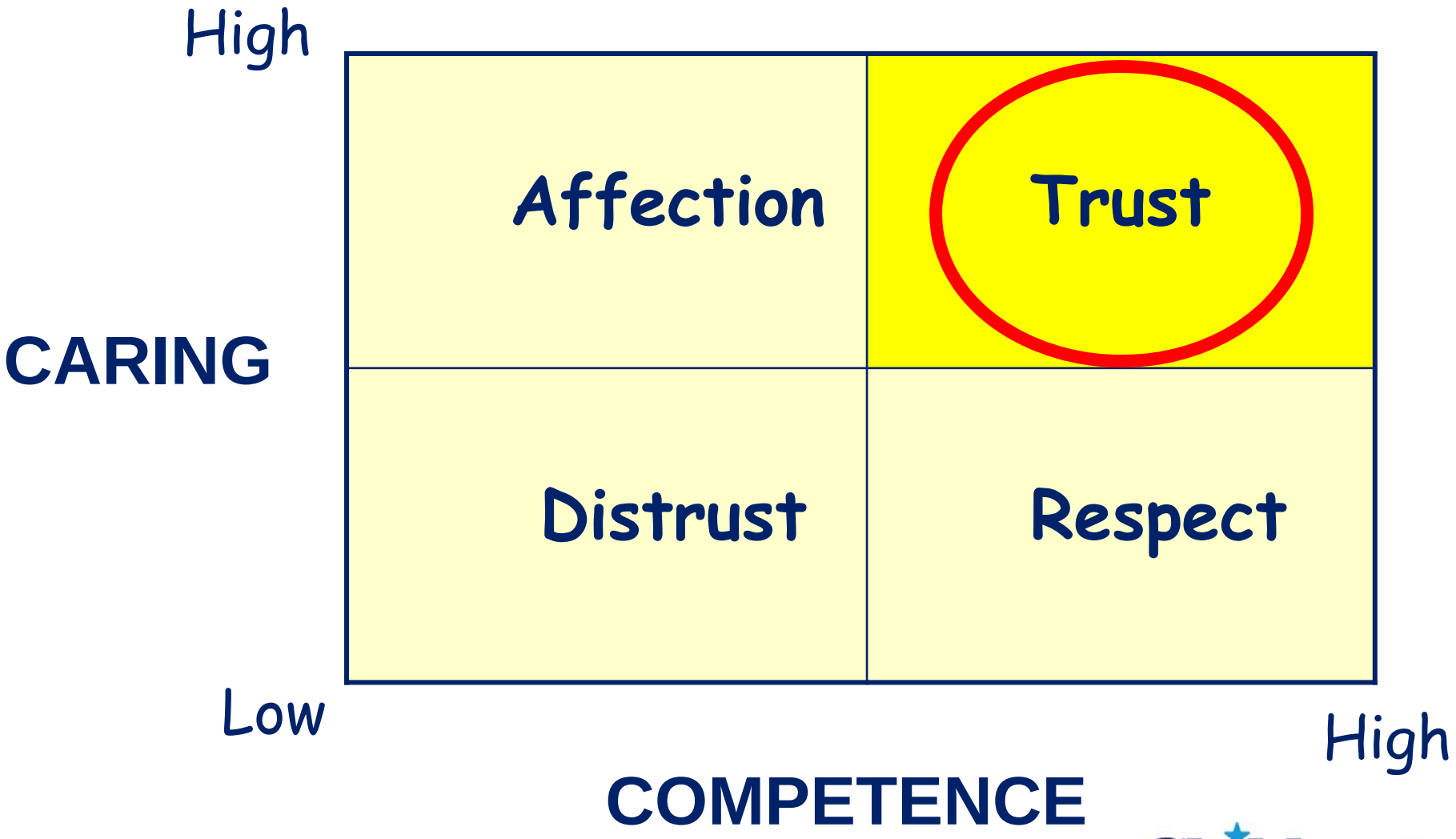
Trust = *Competence* + *Caring*



Paling J. BMJ 2003; 327:745-748. Alaszewski A, Horlick-Jones T. BMJ 2003; 327:728-731

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Vaccine Opposition is Rare

- "Believers"-Vaccine Aware >90 % rates for longstanding vaccines in toddlers
  - The vast majority of American parents vaccinate according to the recommended schedule
- Vaccine Hesitant <10%
  - A small but growing number of parents are confused and reluctant about vaccination
- Vaccine Opposed (Zero vaccines) <1% none
  - An even smaller, but well-organized and very vocal group of parents are anti-vaccination for a various reasons.

MMWR National and State Vaccination Coverage. US children 19-35 months, 2012 / 62(36);733-757 **Sept 13, 2013**

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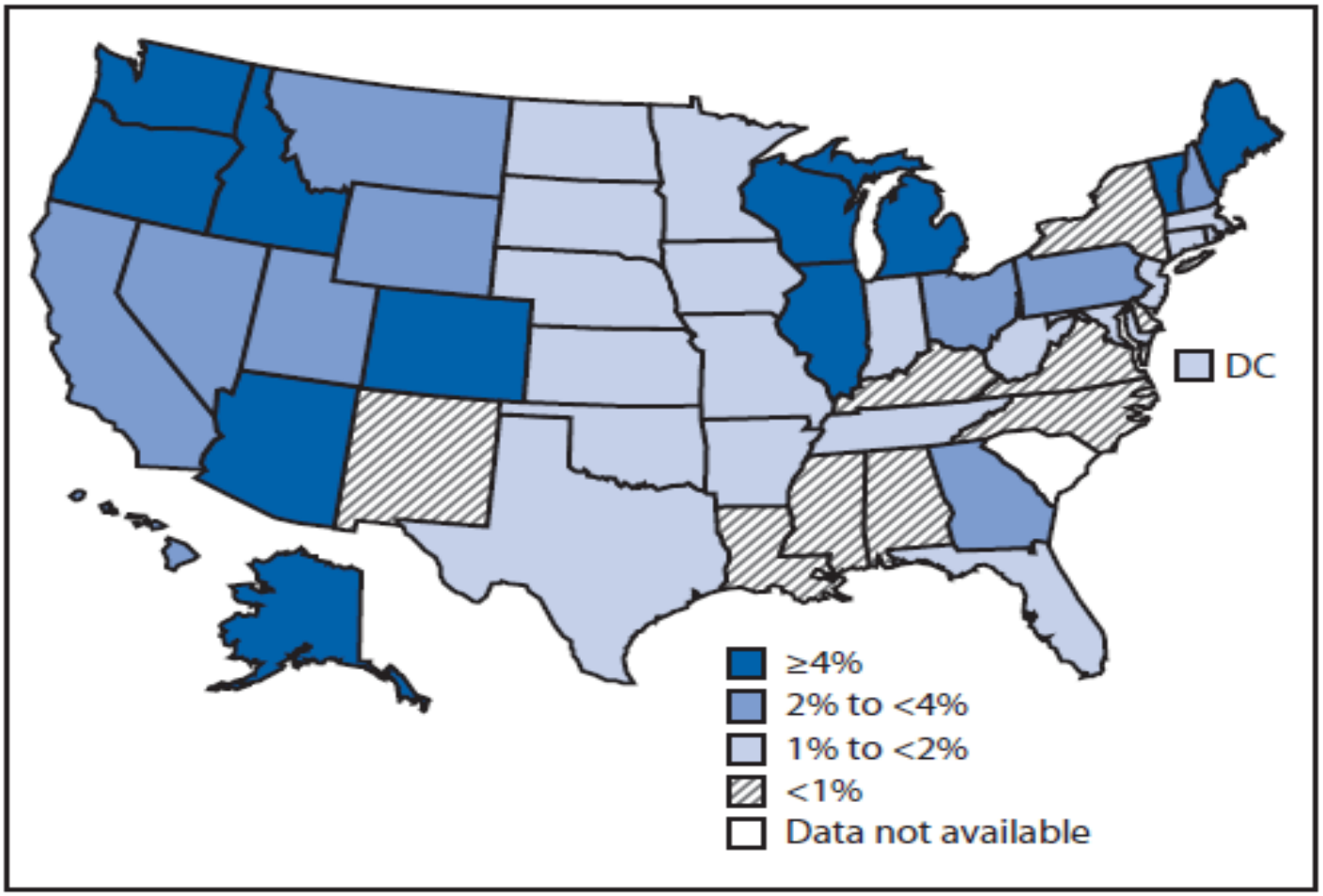
% of kindergartners exempting from 1 or more vaccine 2012-2013 school year

MMWR weekly August 2, 2013/ 62 (30):607-612



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Hazards of exemptions

- Among the 222 US measles cases in 2011, 76% were not vaccinated for NON-medical reasons.
- MN had most cases (24) even with 96% MMR vaccine rate.
- Europe had >30,000 cases with 8 deaths.

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Effective communication keys

- Listen First
- Ask what they are most concerned about
- Be prepared to speak to each concern
- www.cdc.gov/vaccines/spec-grps/hcp/conversations.htm
- Use science, but not science jargon
- Share anecdotes, but not exclusively
- Establish common ground: you both share concern for child safety

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Assess origins of concerns: reasons parents give not to immunize

- **Medical**
  - Contraindications
  - Precautions
- **Safety**
  - -Side effects
  - -Medical accidents
- **Philosophical**
  - Individual rights
  - Alternative health
- **Religious**
  - Not health care consumer
  - Human or animal tissue in vaccines
  - "Good health is achieved through seeking God"

CASE model of communication

http://www2.aap.org/cisp/pediatricians/riskcommunicationvideos.html

- **Corroborate.** Acknowledge the parent's concern. Find a point of agreement that sets respectful tone
- **About me.** Talk about what you have done to build your knowledge base on the topic. Share your experiences.
- **Science.** Share what the evidence says about safety.
- **Explain/Advise.** The call to action to choose to vaccinate

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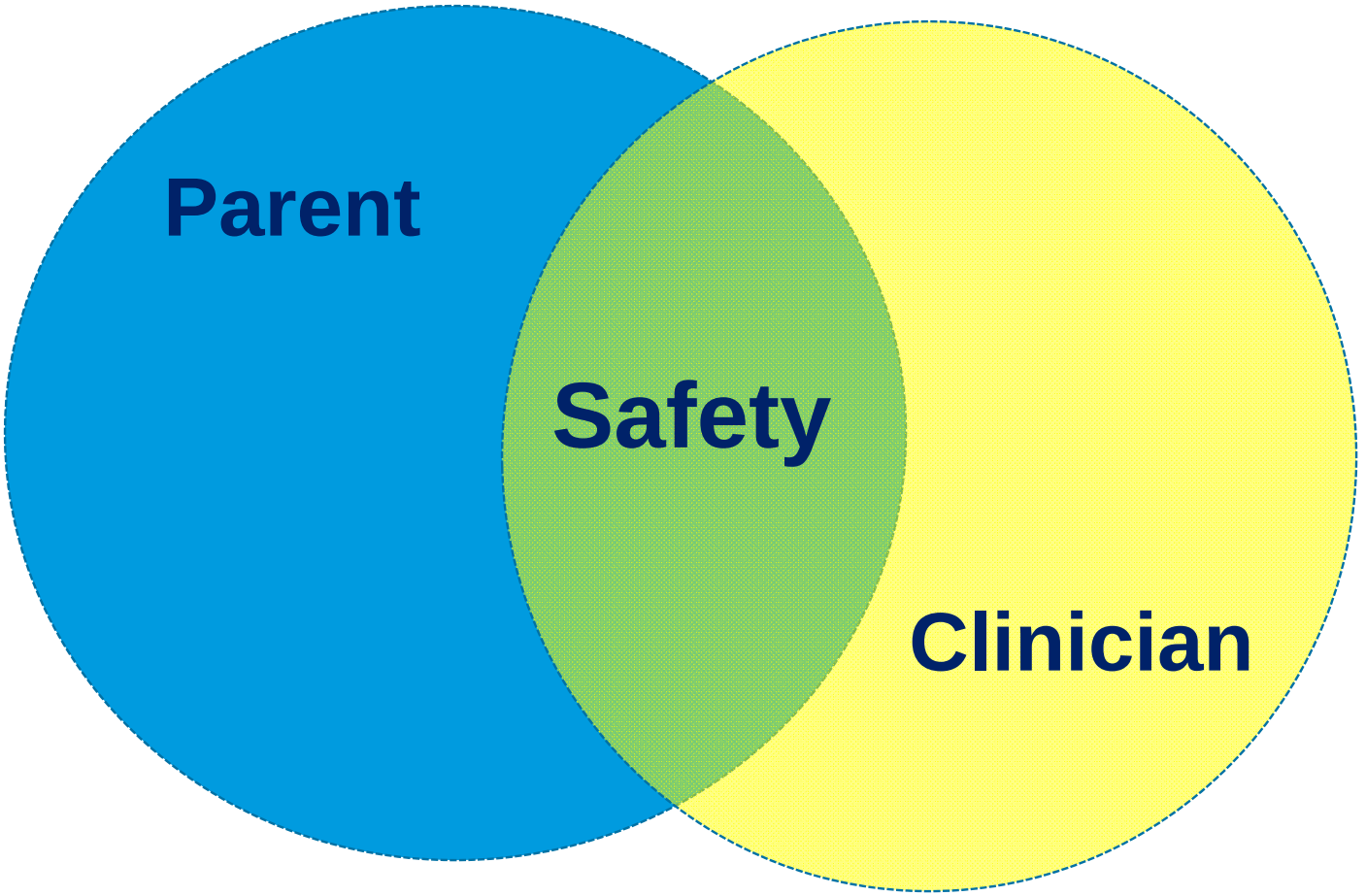
Shared goals in safety



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What is safe?

- SAFE = No Harm from the vaccine?

  No vaccine is 100% safe
- SAFE = No Harm from the disease?

  No vaccine is 100% effective

- Students may define safety as “absent negative effects”
- Have we communicated realistic expectations?
- To do nothing is to take a risk (like skipping your seat belt)
- *“The risk of disease far outweighs the risk of vaccine”*

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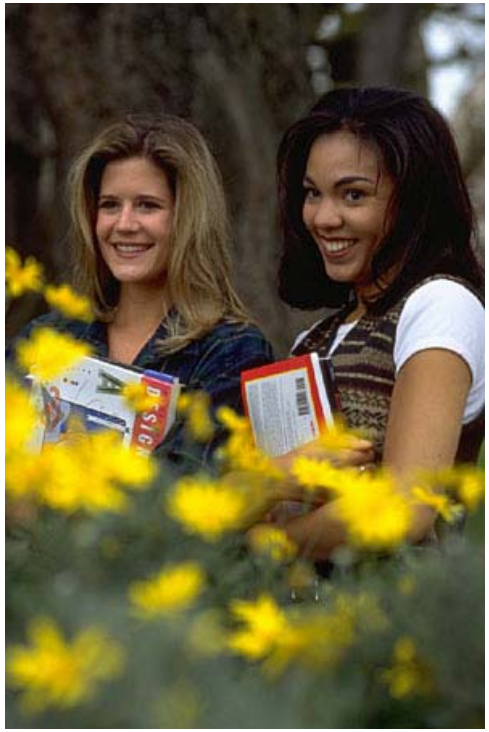
Interventions with young people

Understanding attitudes toward adolescent vaccination and the decision-making dynamic among adolescents, parents and providers. C Gowda, et all. BMC Public Health 2012, 12:509 dol:10.1186/1471-2458-12-509 July 7,2012

- Reminder Recall systems
- Information in advance of the visit
- Use of technology-email notices
- Story telling rather than directives
- Use of Social Media-Tweet flu season facts
- Use of Rewards, recognition, competition
- Mass flu vaccine clinics
- Giveaways
- Food!



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Avoiding vaccines is to take a risk

- By choosing not to vaccinate one takes on the risk of disease, so both vaccinating and not vaccinating carry risks
- Use the car seat analogy of choosing not to strap in
- The unvaccinated against measles are 35 times more likely than the immunized to catch the disease.

Salmon DA, Haver M, et al. Health consequences of religious and philosophical exemptions from immunization laws. *JAMA* 1999;282L 47-53

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Influenza

- Universal recommendation!
- All persons 6months of age and older should get an annual influenza vaccine
- One dose only for 9 and over so good for teens

Flu Vaccines-Do they work?

- Not a single answer
- Depends on age and type of vaccine given
- Intra-season efficacy initially 62% then 56% all ages 2013 and 0 in 2014-15 due to mismatch, 3% LAIV in 2015-16, compared to 63% IIV
- 9% in the elderly
- Measured just 3000 people during January 2013 for reduced clinic visits
- 76% for keeping elderly out of the hospital
- Overall mid-season efficacy is 56% -66%

Lines for vaccines H1N1 2009

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Influenza Took the lives of 154 US Children in 2012-2013 Season

- 90% were unvaccinated
- 50% were normal, healthy children
- Children with neurodevelopmental disabilities, especially those who have difficulty handling secretions, were hard hit

- CDC.gov/flu

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Effectiveness of Influenza vaccine against life-threatening PCR confirmed influenza illness in US children, 2010-2012

Ferdinands, et al Journal of Infectious Disease March 26, 2014

- 44 cases, 172 PICU controls, 93 community controls
- Influenza vaccination is associated with 74% reduction in the risk of life-threatening influenza illness in children
- Receipt of one dose of vaccine among children for whom 2 doses were recommended was not protective
- First ever study in children looking at flu vaccine and critical care

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SBAR example-*your elevator speech*

- **Situation** *Influenza is a dangerous disease. And flu vaccine is our best tool to prevent it.*

- **Background** *We can pass the flu 1 day before we even know we are sick. Getting the flu may mean being out of work for a week or more. Flu vaccine does not cause the flu. Pts die of influenza. We can transmit it to them.*

- **Assessment** *Influenza is a vaccine preventable disease that can be severe for your patients, you, & your family. Flu vaccines are safe and effective to avoid the flu.*

- **Recommendations** *Get vaccinated every year in the fall before the flu season begins and strongly encourage everyone 6 months of age and over to get vaccinated.*

- *IHI Patient Safety Communication Method*

Emphasize ongoing safety monitoring

- Many ways that vaccines are monitored on an ongoing basis:
- Vaccine Safety Datalink (large HMO data analysis)
- VAERS (Vaccine Adverse Event Reporting System through the CDC & FDA, relies on providers) http://vaers.hhs.gov/
- CISA centers (6 centers for immunization safety assessments)
- Ongoing post-marketing surveillance by manufacturers

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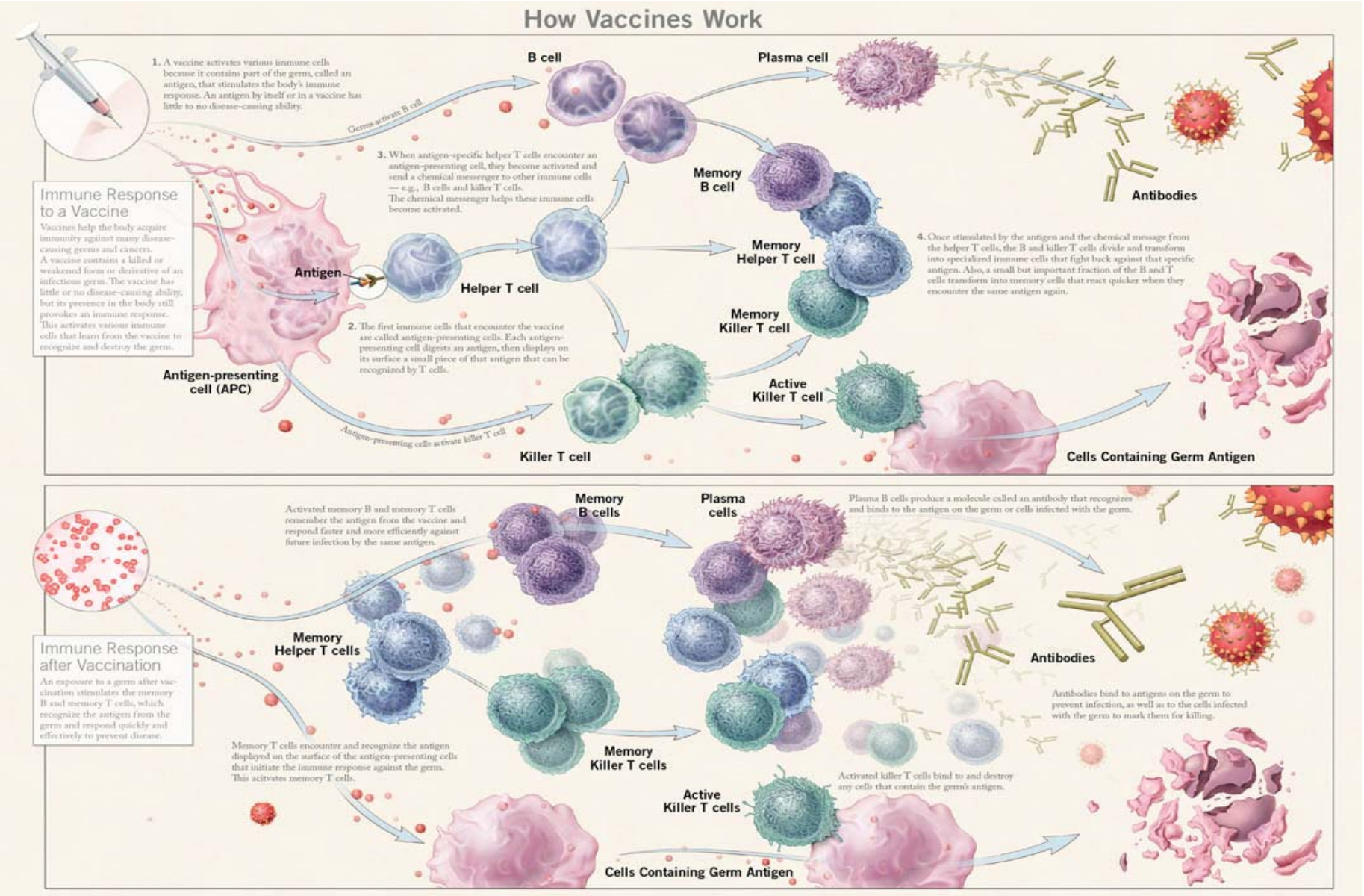
Studying the Science~
The power of human immunity



Will vaccines overwhelm my baby's immune system? They are powerfully prepared for vaccines

- The immune system has the capacity to respond to extremely large numbers of antigens; possibly 10,000 or more
- 2 billion CD4 T lymphocytes can be replenished daily
- T and B lymphocytes are abundant in a "lock and key" ability to deal with antigens individually; therefore no "immune system overload"
- All 14 vaccine combined hold ~150 immunological proteins
- The "thimble of water in an ocean" analogy

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Example of why we keep fostering champions
Hib epiglotittis at Children's of Minnesota in 2012

- 4 year old, unvaccinated girl, 14 intubation attempts
- nearly died
- Ventilated in the PICU for days
- Mom said:

"All I heard about vaccines were that they cause autism. I didn't want that so I didn't vaccinate. If I knew this could happen I would never have skipped vaccines. I wish someone would have told me instead of saying 'OK' when I refused the Hib vaccine."

She survived and was started on her catch-up schedule prior to discharge from the PICU.

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AAP new policy statement on vaccine refusal *Pediatrics on line* 8/29/16

- In a member survey from 2006-2013:
  - Concerns about vaccines have shifted
  - Refusal increased >10% from 75% to 87% ('not necessary')
  - Pediatricians perceive the reasons parents delayed vaccines (pain and immune system overload) differed from the reasons they refused vaccines (considered vaccines unnecessary).
  - However, some reasons for vaccine refusal significantly declined in frequency, including the concern about autism and/or thimerosal (74 percent in 2006 versus 64 percent in 2013).
  - Pediatricians "always" dismissing patients for continued vaccine refusal doubled to nearly 12 percent.

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AAP policy statement on vaccine refusal
Pediatrics on line 8/29/16 "*Countering Vaccine Hesitancy*"

- States should enact day care and school laws with medical exemptions only. Eliminate all non-medical exemptions.
- If after counseling efforts are exhausted, parents decline immunizations, pediatricians may request that they sign a vaccine refusal form and/or seek care from a different health care provider.
- AAP advises pediatricians to:
  - have compassionate dialogues with parents to clear up misconceptions around vaccines,
  - provide accurate information about the safety and importance of vaccines, and
  - strive over time to help parents make the decision to vaccinate their child.

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How do you handle vaccine refusers in your clinic?

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Public Policy for the greater good

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Ethical principles impacting vaccine discussion

- First do no harm--non-maleficence
- Utility—greatest benefit and least harm
- Duty to protect- both parental and clinician duty
- Autonomy—individual decision making without coersion
- Beneficence- advance the common good
- Justice—be fair and treat like cases alike

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Measles

More than 1000 cases in Swansee Wales, 2013

Millions of children susceptible

www.gaurdian.co.uk accessed 6/8/13M

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Morbidity and Mortality Weekly Report (*MMWR*)

MMWR

Notes from the Field: Measles Outbreak --- Hennepin County, Minnesota, February--March 2011

Weekly
April 8, 2011 / 60(13);421

On March 2, 2011, the Minnesota Department of Health (MDH) confirmed measles in a Hennepin County resident aged 9 months. As of April 1, investigation of contacts and heightened surveillance had revealed a total of 13 epidemiologically linked cases in Hennepin County residents. Of those cases, 11 were laboratory confirmed, and two were in household contacts of confirmed cases and met the clinical case definition for measles.

The patients included children aged 4 months--4 years and one adult aged 51 years; seven of the 13 were of Somali decent. Eight patients were hospitalized. Vaccination status was known for 11 patients: five were too young to have been vaccinated, and six (all of Somali descent) had not been vaccinated because of parental concerns about the safety of the measles, mumps, and rubella (MMR) vaccine. The most recent rash onset was March 28. An additional, unrelated case of measles was confirmed in a Hennepin County resident aged 34 years who was exposed in Orlando, Florida, sometime during March 1--10.

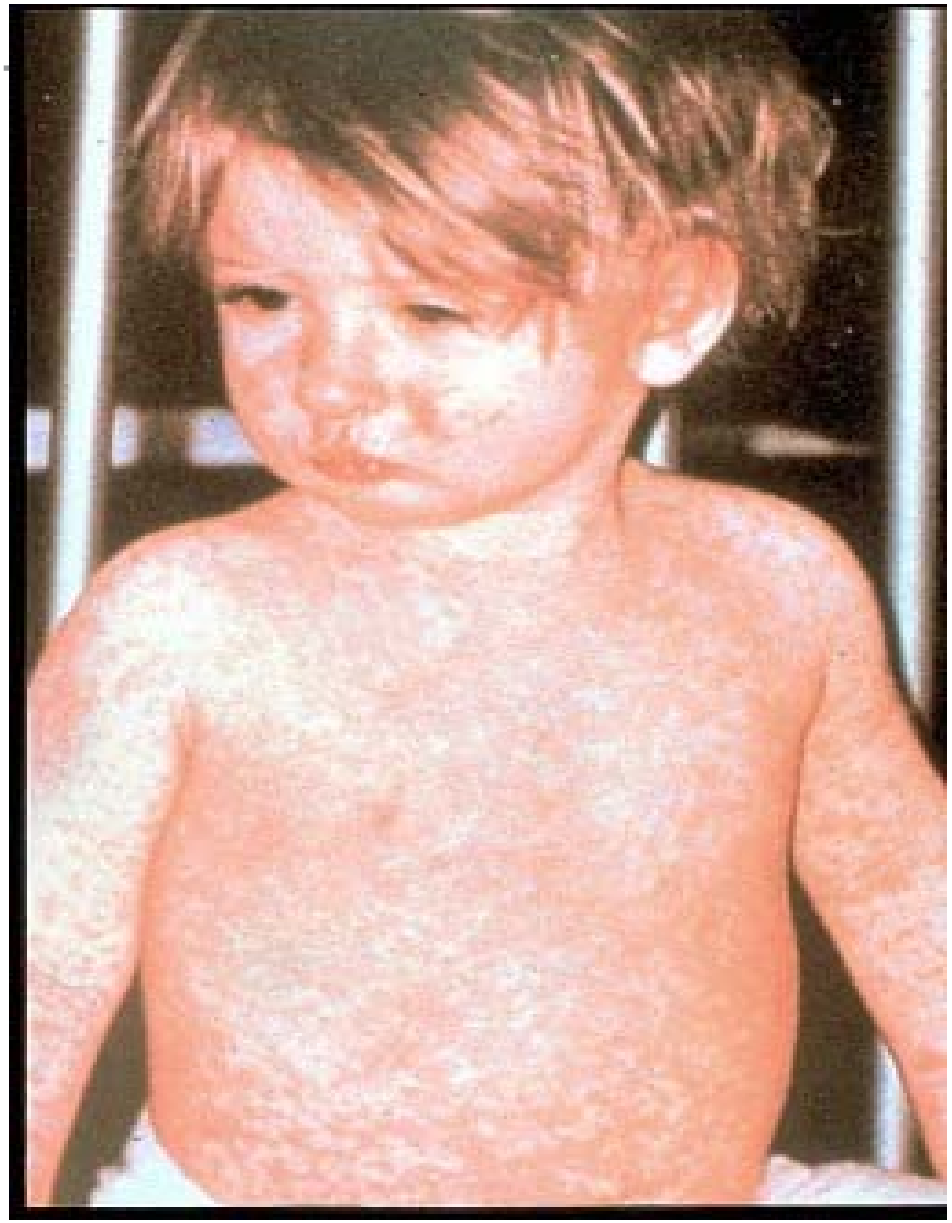
The investigation determined that the index patient was a U.S.-born child of Somali descent, aged 30 months, who developed a rash February 15, 14 days after returning from a trip to Kenya. The patient attended a drop-in child care center 1 day before rash onset; measles developed in three contacts at the center and in one household contact. Secondary and tertiary exposures occurred in two congregate living facilities for homeless persons (four patients), an emergency department (two patients), and households (two patients). A virus isolate from the index patient was genotyped at CDC as B3, which is endemic in sub-Saharan Africa.

Outbreak control efforts have included following up with potentially exposed persons, providing immune globulin to persons without evidence of immunity, and recommending that persons without evidence of immunity who have been exposed to measles not leave their residence while potentially infectious (21 days). Multiple vaccination clinics have been held or scheduled at community venues and in the congregate living facilities.

In the United States, MMR vaccine normally is given as a 2-dose series, with the first dose at age 12--15 months and a second dose at age 4--6 years.* However, this series may be accelerated during outbreaks. In response to the current outbreak, MDH has recommended that children aged 6--11 months living in selected congregate living facilities receive a dose of MMR vaccine,† and that older children and adults in these facilities receive vaccine if they are susceptible and have had less than 2 doses of MMR vaccine. MDH also has recommended an accelerated vaccination schedule (a total of 2 doses of MMR vaccine separated by at least 28

Resurgence of measles 1990, 2011

- Mostly imported and spread in under-immunized pockets
- In 2011, MN had most cases in US since mid 1990's
- No deaths, but multiple hospitalization with pneumonia
- Health care settings a common site of transmission
- Remember: Rash +3 C's
  - Cough
  - Conjuntivitis
  - Coryza



Measles worldwide today

CDC & WHO measles websites

- 20 million new cases a year
- 146,000 deaths every year (2.6 million in 1980)
- 400 deaths every day
- 17 deaths per hour

- Measles vaccine prevented 15.6 million deaths between 2000-2013

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Special Article

An Outbreak of Measles in an Undervaccinated Community

Pamala Gahr, MPH[a], Aaron S. DeVries, MD, MPH[a], Gregory Wallace, MD, MPH[b], Claudia Miller, MPH[a], Cynthia Kenyon, MPH[a], Kristin Sweet, MPH[a], Karen Martin, MPH[a], Karen White, MPH[a], Erica Bagstad, MPH[c], Carol Hooker, MS[c], Gretchen Krawczynski, MPH[c], David Boxrud, MS[a], Gongping Liu, PhD[a], Patricia Stinchfield, MS, CPNP[d], Julie LeBlanc, MPH[d], Cynthia Hickman, MPH[a], Lynn Bahta, RN, PHN[a], Albert Barskey, MPH[b], and Ruth Lynfield, MD[a]

+ Author Affiliations

ABSTRACT

Measles is readily spread to susceptible individuals, but is no longer endemic in the United States. In March 2011, measles was confirmed in a Minnesota child without travel abroad. This was the first identified case-patient of an outbreak. An investigation was initiated to determine the source, prevent transmission, and examine measles-mumps-rubella (MMR) vaccine coverage in the affected community. Investigation and response included case-patient follow-up, post-exposure prophylaxis, voluntary isolation and quarantine, and

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Published online June 9, 2014
PEDIATRICS Vol. 134 No. 1 July 1, 2014
pp. e220 -e228
(doi: 10.1542/peds.2013-4260)

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Measles Cases at Children's Hospitals and Clinics of Minnesota 2011

I didn't want to wake him up to vaccinate him…and now all I want him to do is wake up…

August, 2011
Children's Measles Index Case Summary

- Unvaccinated, US born 12 month-old
- Recently returned from a three-month stay in Kenya
- Offered early MMR prior to travel but family declined
- Modified measles clinical presentation with prolonged prodrome (9 days)
- Non-classic rash first noted on trunk prior to hospitalization
- Developed pneumonitis and required ventilator support for 15 days
- Hospitalized for 27 days

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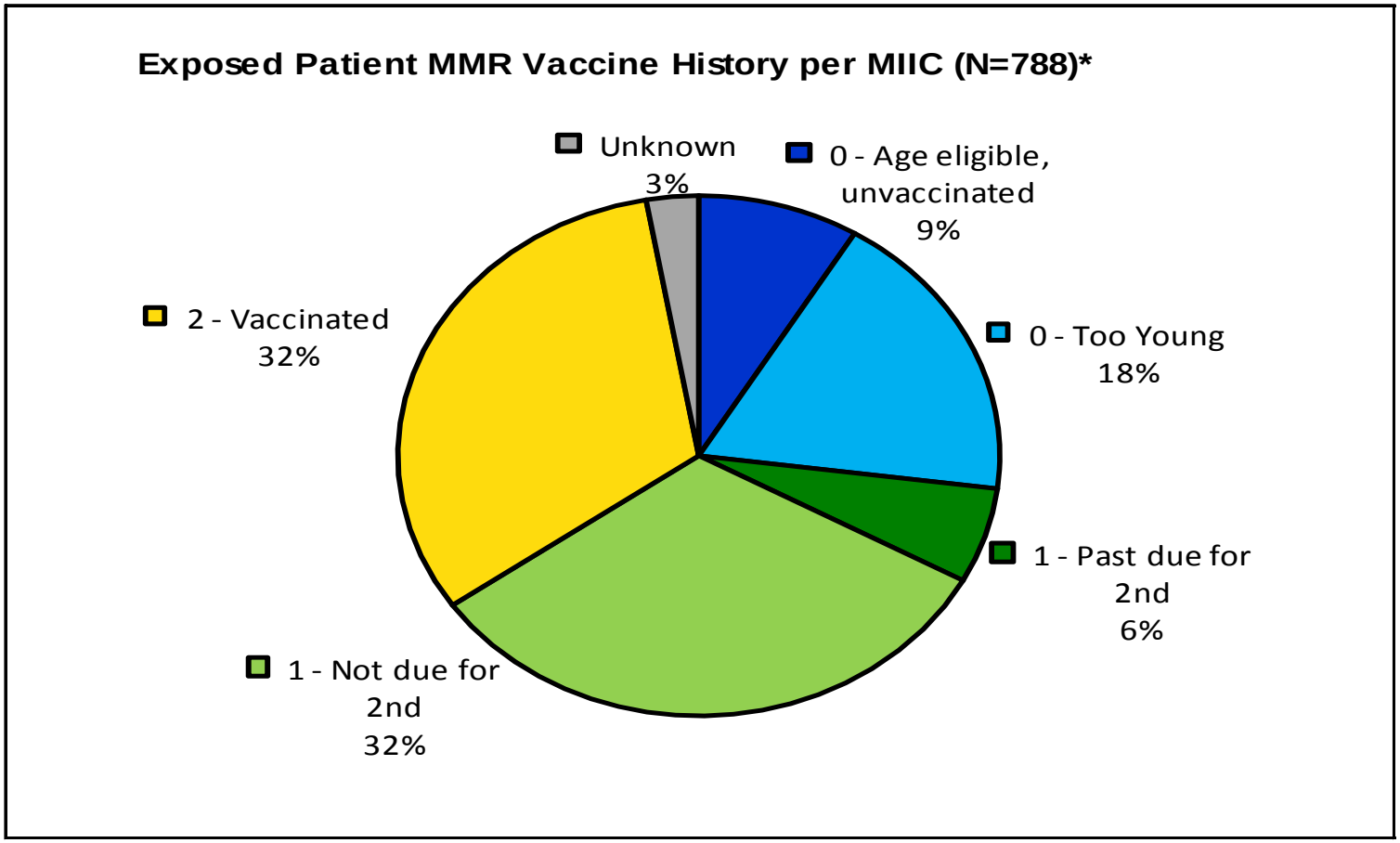
Exposed Patient Follow-up MMR Vaccine History



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"When you protect your child, you protect my child"
-Ben's Mom

LATE SCORES INSIDE

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Tiger out: Anyone can win

Phil Mickelson is in the running, with possibly 40 others, 1, 6C

USA TODAY

A GANNETT COMPANY

REVIEW

Finally, Spidey soars

Long-awaited Spider-Man "2.0" is a Broadway picaser, 2D

2D

WEDNESDAY, JUNE 15, 2011 USA TODAY

Biggest barrier to immunizations is fear, not cost

Continued from 1D

cough and a life-threatening bacterial infection called Hib. All can be deadly.

Although overall vaccine coverage remains high, 40% of parents say they have deliberately skipped or delayed a shot for their children.

COVER STORY

In some ways, vaccines are a victim of their own success. Today's parents have never seen the diseases that terrified their grandparents, says Paul Offit, chief of infectious disease at Children's Hospital of Philadelphia. "We've not only eliminated these diseases; we've eliminated the memory of these diseases," Offit says.

Parents who decline vaccines may not realize that they're gambling with the lives of not just their kids, but all the children around them, says Patsy Stinchfield, director of pediatric infectious disease at Children's Hospitals and Clinics of Minnesota, where Landon was treated. Measles can kill by causing pneumonia, brain inflammation and other complications, Stinchfield says. Babies too young to be vaccinated and people with compromised immune systems, such as those with cancer, are especially vulnerable. They rely on others around them to keep the virus out of circulation, a phenomenon known as "herd immunity," which protects even those who can't be vaccinated, she says.

And Offit notes that measles — which killed 3,000 to 5,000 Americans a year in the pre-vaccine days — continues to kill. More than 164,000 people died of the disease in 2008, the World Health Organization says.

In January, Erica Fiederstein-Parker lost her daughter, Emmalee, 8, to long-term neurological complications of measles. Emmalee got measles in an orphanage in India before being adopted and brought to the USA.

"This is not just a personal choice, a case of 'I choose not to vaccinate my child, and this only affects my family.' It affects your whole community."

— Erica Fiederstein-Parker, whose daughter died from measles

Potentially fatal: Ben Bredesen, who has leukemia, was exposed to measles when he went to the hospital for a spinal tap.

"This is not just a personal choice, a case of 'I choose not to vaccinate my child, and this only affects my family.' It affects your whole community."

— Erica Fiederstein-Parker, whose daughter died from measles

across the country, doctors say, and poor children can get them for free. The biggest impediment to vaccinating kids today is not cost, but fear, says William Schaffner, a spokesman for the Infectious Disease Society of America and professor at Vanderbilt University School of Medicine in Nashville. Around the world, millions of parents began skipping or delaying vaccines because of an infamous (and since retracted) 1998 study in the British medical journal The Lancet. The study's author theorized that a combined measles-mumps-rubella shot caused autism.

It became one of the greatest myths in modern medicine, says Offit, author of Deadly Choices: How the Anti-Vaccine Movement Threatens Us All. He points to nearly two dozen studies showing no link between vaccines and autism. Last year, The Lancet issued the retraction after learning that information had been falsified. British health officials also stripped the study's author of his ability to practice medicine in England because of professional misconduct.

Still, myths about vaccines and autism persist.

"It's very easy in our media-driven, easy-access-to-information society to scare people," says Tanya Remer Altmiers, a doctor and spokeswoman for the American Academy of Pediatrics. "It's much more difficult to unscare them."

In the USA, one of the most influential voices on vaccines is pediatrician Robert Sears, author of The Vaccine Book, who developed an "alternative" vaccine schedule that delays many shots. Sears says infectious diseases remain a minor threat. "I'm not a proponent of mandatory vaccinations" for schoolchildren, says Sears, the son of well-known pediatrician William Sears. "Overall, in my mind, vaccines should be a parent's choice. Given that these diseases don't pose a large threat to children around us, I think parents have that right."

More parents are exercising their rights to refuse vaccines, research shows. Forty-nine states allow children to bypass school vaccination requirements because of religious objections, and 21 allow philosophical exemptions, Offit says.

From 1991 to 2004, the number of unvaccinated children in states allowing philosophical exemptions more than doubled, found a study in Journal of the American Medical Association. Granting exceptions to vaccine requirements has helped foster outbreaks, research shows. That's partly because like-minded parents tend to flock together, creating enclaves in which relatively few children are vaccinated on time — and viruses have more freedom to spread, says Ari Brown of the American Academy of Pediatrics.

In some counties in Washington state, for example, up to one in four children are exempt from vaccine requirements, according to a 2009 study in The New England Journal of Medicine. One of those under-vaccinated communities, Vashon Island, near Seattle, has been hit with repeated outbreaks of whooping cough, Offit says. Schaffner notes that France, which doesn't strictly enforce school vaccine policies, has had more than 10,000 measles cases and six deaths just this year.

A growing number of unvaccinated travelers are bringing the disease home, the CDC says. And as the summer travel season launches into full swing, "these viral diseases are only a plane ride away," says Schaffner. Cancer survivor Catherine Anderson, 41, contracted measles in March from a fellow passenger on a flight from New York to Vancouver, British Columbia. In spite of having had measles as a child, Anderson got sick because migraine medications suppress her immune system. She was quarantined in her home for a week. "The airline called me," she says, "just as I was starting to wonder, 'Hmm, I wonder what that red rash is?'"

Among the most vulnerable patients are children with cancer, including Ben Bredesen, 3½, who has acute leukemia. He was exposed to measles in March by another child at the Minneapolis hospital where he receives chemotherapy, says his mother, Laura Bredesen of Minneapolis. "I can't tell you how much weight I lost, how sick you feel, checking your child at night to make sure he's still breathing," says Bredesen, noting that infections such as measles could kill her son. "You're looking at every little thing as a symptom."

Ben was lucky this time and didn't develop measles. But he will remain vulnerable during the two years of cancer therapy ahead. "My kid is fighting for his life every single day," Bredesen says. "There is no reason that he should have to fight even harder because other people aren't vaccinating their kids."

Measles outbreaks

As of June 10, 152 cases of measles have been reported across the USA; 53 patients (35%) had to be hospitalized.

Recent incidents

Outbreaks since 2008 have been started or fueled by unvaccinated travelers of children. Number of cases:

152
Measles so far in 2011 (Jan. 1 to June 10)

21,291
Pertussis (whooping cough) in 2010

4,519
Memphis, 2009-2010

140
Measles in 2008

Traveler alert: Here's who should receive measles shot/booster before going abroad

The Centers for Disease Control and Prevention says travelers should consider getting a measles shot if going abroad because of major outbreaks in Europe and Southeast Asia. The CDC's Gregory Wallace explains who needs shots or boosters:

Babies. Infants who will be traveling abroad can get their first measles shot as early as 6 months. These babies will still need their two regularly scheduled measles shots. The first is given at age 12 months to 15 months; the second is given before they start school, at age 4 to 6.

Adults. Adults traveling abroad should consider a measles shot if they had only a single dose of vaccine as a child. Adults don't need a booster shot, however, if they were born before 1957, when measles infection was universal, or if they had measles as a child. People who have had measles once typically don't get it again.

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HPV and Institute of Medicine

- Institute of Medicine Consensus Report Adverse Effects of Vaccines: Evidence and Causality 8.25.11
- Anaphylaxis : exceedingly rare possibility
- Syncope: have patients sit for vaccines, wait and be observed for 15 minutes or more
- Pain/Sting at injection site: Warn about this temporary and manageable fact

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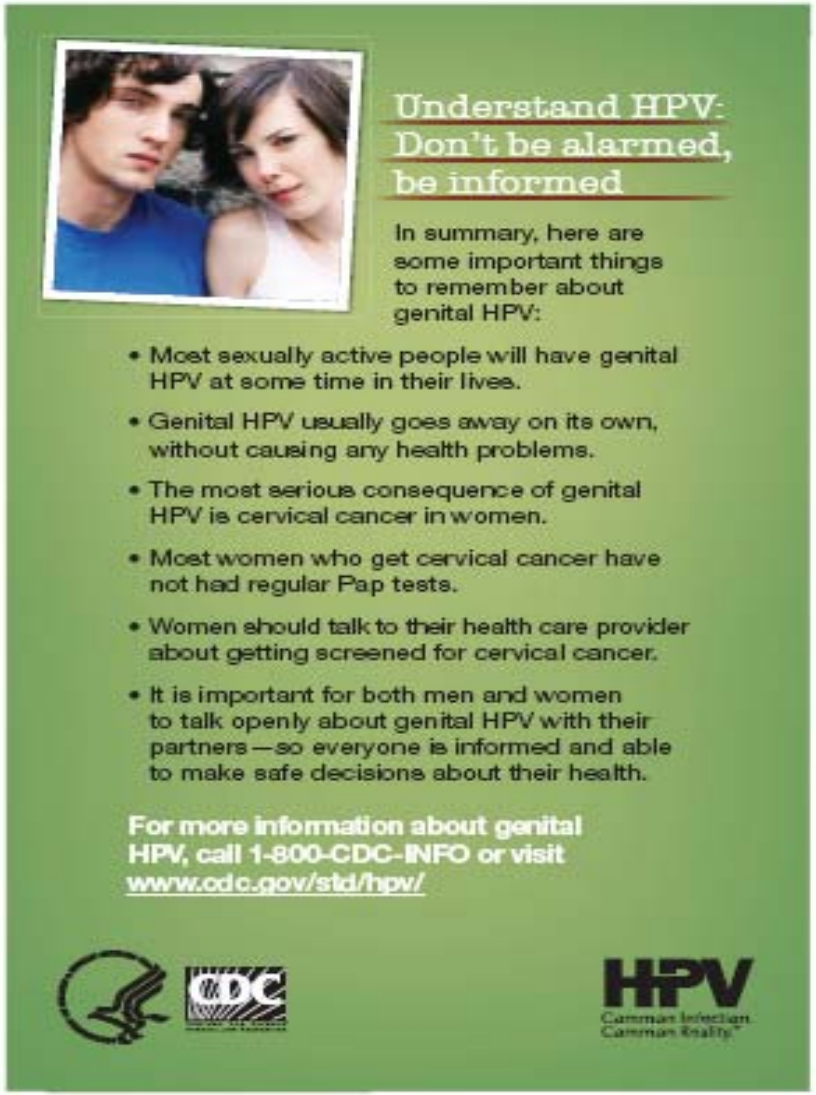
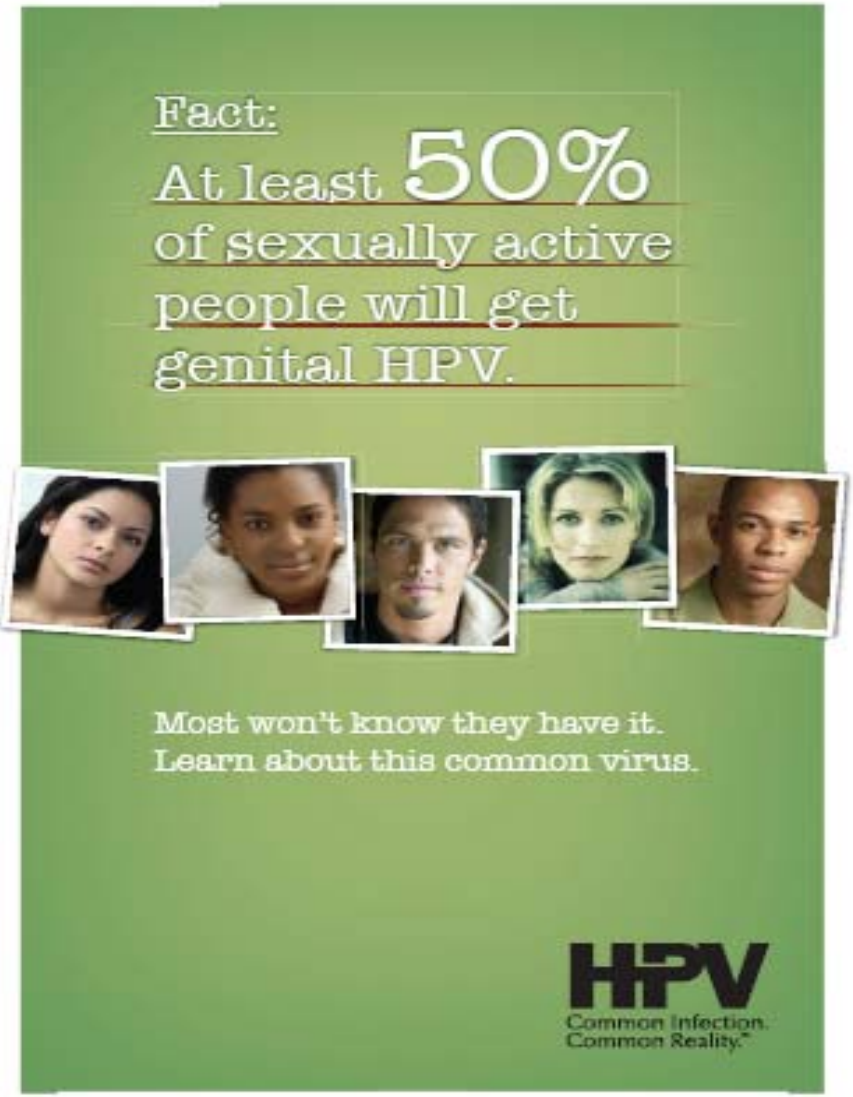
Many HPV Resource Materials at CDC.GOV/vaccines





Giving a strong vaccine recommendation

Some Do's

- Listen first
- Start with the shared goal
- Be evidence based
- Emphasize disease risk
- Show photos of diseases
- Share your clinical experiences
- Share your personal story
- Make more time
- Be prepared to speak to each concern
- Use analogies
- **www.cdc.gov/vaccines/spec-grps/hcp/conversations.htm**

Some Don'ts

- Flood with statistics
- Review the myths
- Use jargon
- Get preachy
- Lecture
- Shame or blame
- Compress risk
- Oversell efficacy
- Give up

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The importance of recognition

- Measure and report vaccine rates
- Be the change you want to see
- Goal is clear
- Competition is healthy
- Know where you stand among your peers
- ‘Winners” have a meaningful thank you recognition
- Celebrate successes

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We are one world

Accessed from Twitter 9.216

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Malaysia-vaccine refusals up, “homeopathy” instead 27 cases of diphtheria, 5 deaths

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WHO wants every child protected

Access from Twitter 9.2.16 World Health Organization

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Keep up the good work
Vaccine hesitancy cannot be ignored

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Prevention trumps treatment every time

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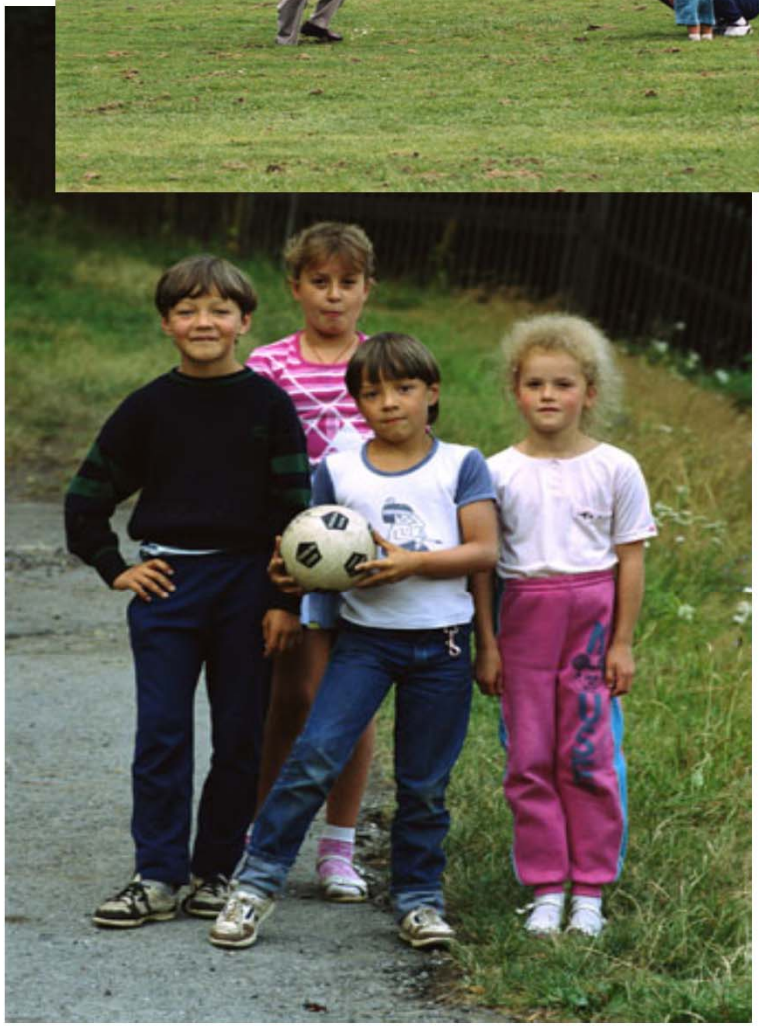
This is what prevention looks like!
Thank you for all you do!!



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- *Life is for service.* Fred Rogers

- *Protect your enthusiasm from the negativity and fear of others. Never decide to do nothing just because you can only do a little. Do what you can. You would be surprised at what "little" acts have done for our world.*

  - Steve Maraboli, Author of *Unapologetically You: Reflections on Life and the Human Experience*

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Questions?

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Vaccine communication resources

- Provide current resources for timely information

- **WEBSITES:**
  - www.immunizationinfo.org (NNii)
  - www.dovaccinescausethat.com/
  - www.immunize.org (Immunization Action Coalition)
  - www.cdc.gov/vaccinesafety/
  - www.vaccines.gov/conversations
  - www.fda.gov/cber/safety/
  - www.ecbt.org/
  - www.vaccinateyourbaby.org/
  - www.vaccine.chop.edu
  - www.voicesforvaccines.org

- **BROCHURE;**
- *Reliable Vaccine Resources: A guide for parents.* Children's website.
- **HOTLINES:**
- CDC Immunization Hotline 1-800-232-2522
- **BOOKS:**
- *Vaccines: What Every Parent Should Know* by Paul Offit and Louis Bell 2007
- *Do Vaccines Cause That?!* By Martin Myers, MD and Diego Pineda, MS 2008

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- Freed, G. et al. Sources and Perceived Credibility of Vaccine-Safety Information for Parents *Pediatrics* April 18, 2011
- www.vaccines.gov/conversations

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