

# **Influences on Immunization Decision-Making among U.S. Parents of Young Children: Results from Three Surveys**

**Yunmi Chung, MPH**

**Judith Weiner, PhD**

**Jay T. Schamel, MS**

**Allison K. Fisher, MPH**

**Paula Frew, PhD, MA, MPH**

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# Background

- **Delay and/or refusal of vaccines can put individuals and communities at risk of vaccine-preventable diseases.**
- **The health care provider is parents' most commonly cited source of vaccine information.<sup>1,2</sup>**
- **Many parents also often report obtaining vaccine information from sources other than health care providers, such as family, friends, and online sources.<sup>1</sup>**

<sup>1</sup>Brunson EK. The impact of social networks on parents' vaccination decisions. *Pediatrics*. 2013;131(5):e1397-1404.

<sup>2</sup>Smith PJ, Kennedy AM, Wooten K, Gust DA, Pickering LK. Association between health care providers' influence on parents who have concerns about vaccine safety and vaccination coverage. *Pediatrics*. 2006;118(5):e1287-1292.

# Overview of Parent Survey Research

National Poll	Styles	Longitudinal
<p>Across 2 years</p> <ul style="list-style-type: none"> <li>• January-March, 2012 N = 2,603</li> <li>• June-July, 2014 N = 2,518</li> </ul>	<p>Across 3 years</p> <ul style="list-style-type: none"> <li>• May, 2011 N = 873</li> <li>• March-April, 2012 N = 779</li> <li>• April, 2015 N = 749</li> </ul>	<p>Across 7-time points</p> <ul style="list-style-type: none"> <li>• 2<sup>nd</sup> trimester (n=200)</li> <li>• 3<sup>rd</sup> trimester (n=186)</li> <li>• 3-month PP (n=178)</li> <li>• 5-month PP (n=176)</li> <li>• 7-month PP (n=174)</li> <li>• 13-month PP (n=172)</li> <li>• 19-month PP</li> </ul>
<ul style="list-style-type: none"> <li>- <i>Childhood vaccination decisions (4 groups)</i></li> <li>- <i>Vaccination information source</i></li> <li>- <i>Sources of advice</i></li> </ul>	<p><i>Important sources of information for vaccine decision-making</i></p>	<p><i>Sources for childhood vaccine information</i></p>

# National Poll Survey: Outcome Measures

- **Overall parental vaccine decision on recommended non-influenza vaccines**
  - Participants who reported delaying or refusing at least one vaccine were asked to specify which of the 10 vaccines they chose to delay/refuse
  - Because of different perceptions of the flu vaccine, we created outcome categories for vaccine decisions of non-influenza vaccines<sup>4</sup>

Non-Hesitant Acceptor (Acceptor)	Hesitant Acceptor (Hesitant)	Delayer	Refuser
<ul style="list-style-type: none"><li>• Accepted all, or</li><li>• Actively working to catch up</li></ul>	<ul style="list-style-type: none"><li>• <i>Thought about delaying/refusing vaccine, but</i></li><li>• Accepted all, or</li><li>• Actively working to catch up</li></ul>	<ul style="list-style-type: none"><li>• Delayed, or</li><li>• Unsure of delay</li><li>• Did <u>not</u> refuse</li></ul>	<ul style="list-style-type: none"><li>• Refused, or</li><li>• Unsure of refusal</li></ul>

<sup>4</sup> Allison MA, Reyes M, Young P, et al. Parental attitudes about influenza immunization and school-based immunization for school-aged children. *The Pediatric infectious disease journal*. Aug 2010;29(8):751-755.

## National Poll: Vaccination decision for youngest child

	2012 (N = 2,603)	2014 (N = 2,518)
Non-hesitant acceptor	70.3%	72.5%
Hesitant acceptor	18.9%	18.2%
Delayer	5.5%	5.7%
Refuser	5.4%	3.6%

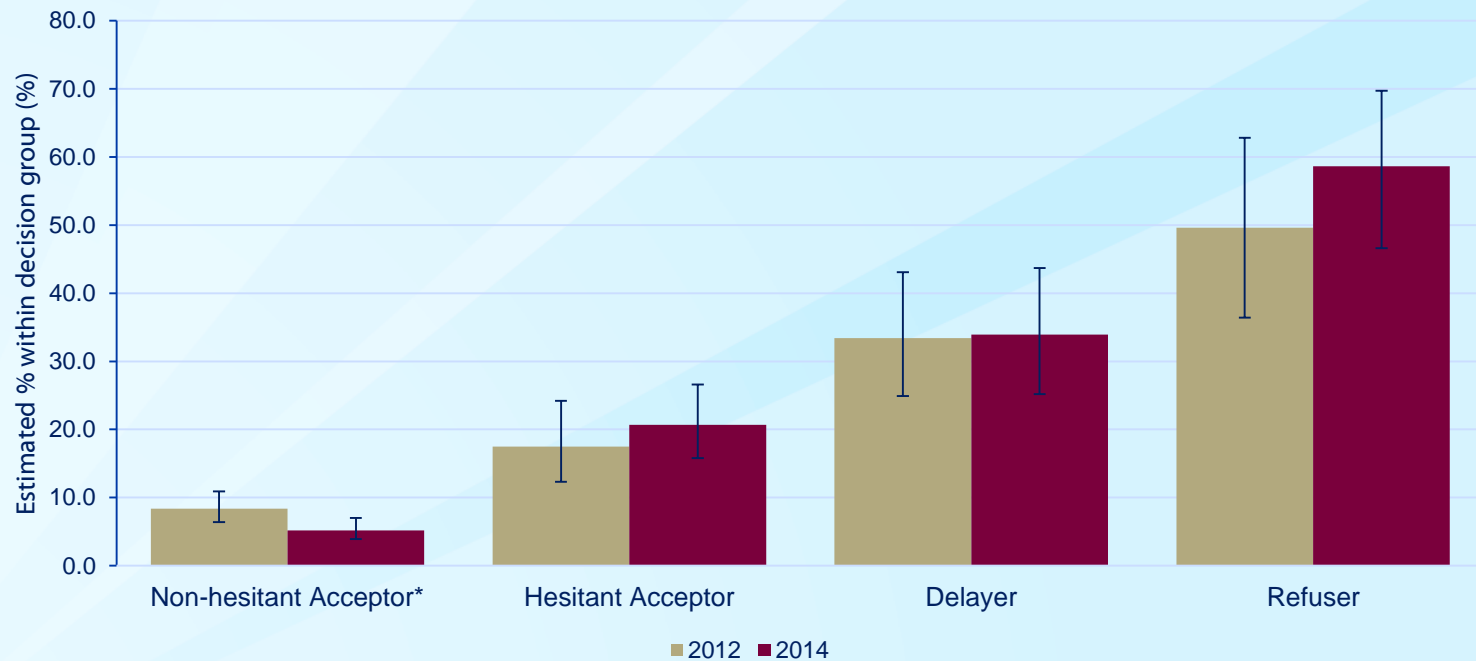
# Hesitant Acceptors

- Of the respondents who reported accepting all recommended non-influenza vaccines (n = 4,406), 19.8% reported that they thought about not getting a vaccine at a particular visit, but then changed their mind and decided to get them.
- The majority of hesitant acceptors changed their mind because a doctor/HCP persuaded them to get the shots

	2012 (n = 467)	2014 (n = 430)
<i>What made you change your mind to get these vaccines?</i>		
Doctor / HCP	43.6%	41.5%
I just thought more about it	37.4%	37.9%
Day care / school / travel requirement	15.0%	18.2%
Convenience / did not want to have to come back for it later	10.2%	7.6%
Friends and/or Family	7.9%	10.9%

## Provider Selection

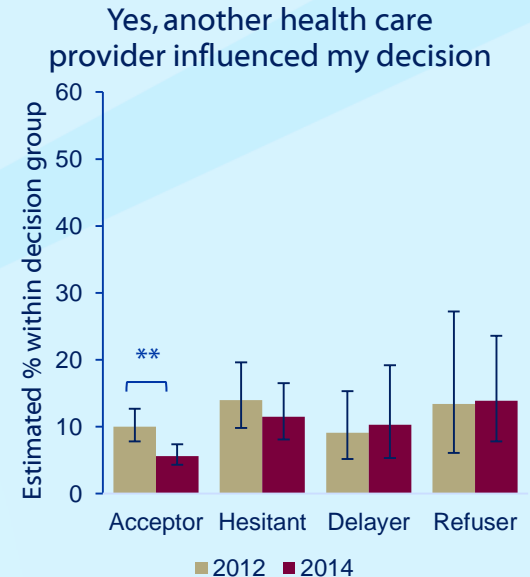
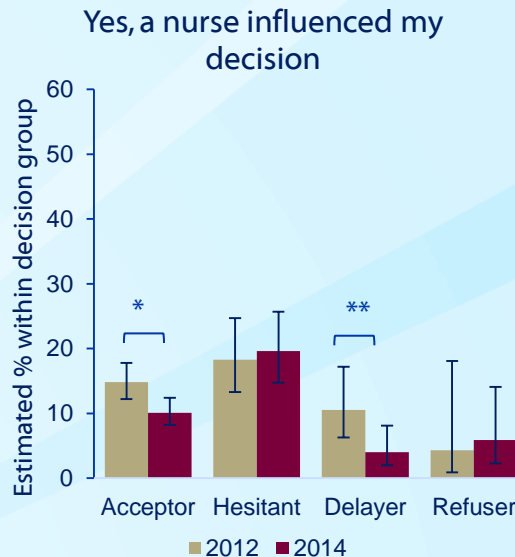
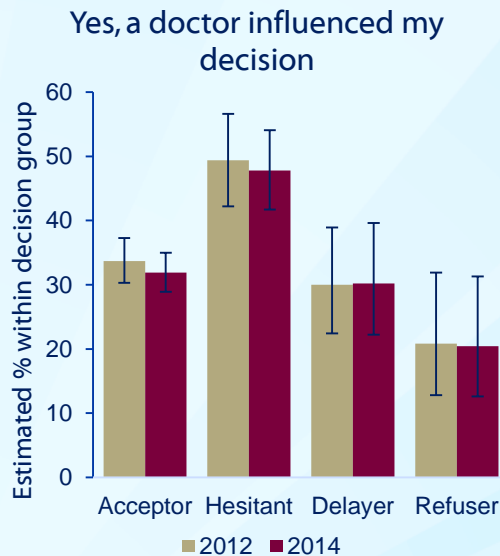
- The proportion of “non-hesitant acceptors” who reported selecting a provider based on their vaccination tolerance decreased significantly from 8.4% to 5.2%
- The inverse pattern emerged for “refusers” (increased from 49.6% to 58.6%)



\* p-value = 0.02

# Provider Influence

- Participants more often reported doctors as having influenced their vaccination decision for their youngest child, compared to nurses or other health care providers.



\* p<0.05; \*\* p<0.01



## Provider Influence (continued)

*positive/negative healthcare provider influence by non-influenza vaccine decision for youngest child in 2014*

	Non-hesitant Acceptor	Hesitant Acceptor	Delayer	Refuser
<b>A doctor made me _____ to vaccinate</b>	<b>(n=487)</b>	<b>(n=215)</b>	<b>(n=57)</b>	<b>(n=23)</b>
More likely	97.4%	91.6%	92.5%	25.4%
Less likely	2.6%	8.4%	7.5%	74.6%
<b>A nurse made me _____ to vaccinate</b>	<b>(n=144)</b>	<b>(n=74)</b>	<b>(n=10)</b>	<b>(n=6)</b>
More likely	89.4%	88.4%	67.2%	13.8%
Less likely	10.6%	11.6%	32.8%	86.2%
<b>Another HCP made me _____ to vaccinate</b>	<b>(n=89)</b>	<b>(n=54)</b>	<b>(n=18)</b>	<b>(n=15)</b>
More likely	94.4%	83.5%	16.5%	2.1%
Less likely	5.6%	16.5%	83.5%	97.9%

# Vaccine Information Source

*Who or what are your top-three most trusted sources for information on vaccines for your youngest child?*

Vaccine decision group	2012		2014	
	Top-three trusted source of vaccine information		Top-three trusted source of vaccine information	
Non-Hesitant Acceptor	1. Baby's doctor or HCP	98.9%	1. Baby's doctor or HCP	98.9%
	2. Family members	49.4%	2. Family members	49.9%
	3. Internet	38.5%	3. Internet	28.2%
Hesitant Acceptor	1. Baby's doctor or HCP	94.0%	1. Baby's doctor or HCP	94.1%
	2. Family members	49.3%	2. Family members	45.8%
	3. Internet	47.9%	3. Internet	39.0%
Delayer	1. Baby's doctor or HCP	83.0%	1. Baby's doctor or HCP	89.7%
	2. Internet	60.4%	2. Family members	42.8%
	3. Family members	40.1%	3. Internet	41.2%
Refuser	1. Baby's doctor or HCP	71.0%	1. Baby's doctor or HCP	77.4%
	2. Internet	62.7%	2. Internet	48.2%
	3. Family members	42.4%	3. Books	41.8%

# Vaccine Advice Source

*To whom do you look for advice when you are trying to understand which vaccines are recommended for your youngest child and when s/he should get them? (Select top three sources)*

Vaccine decision group	2012		2014	
	Top-three trusted source of vaccine advice		Top-three trusted source of vaccine advice	
<b>Non-Hesitant Acceptor</b>	1. Doctors	80.5%	1. Doctors	82.2%
	2. Spouse	35.4%	2. Nurses	27.9%
	3. Nurses	28.2%	3. Child's other parent	21.8%
<b>Hesitant Acceptor</b>	1. Doctors	72.5%	1. Doctors	73.9%
	2. Spouse	45.3%	2. Child's other parent	26.9%
	3. Participant's parents/guardians	22.6%	3. Nurses	20.7%
<b>Delayer</b>	1. Doctors	78.0%	1. Doctors	67.8%
	2. Spouse	44.0%	2. Child's other parent	31.9%
	3. Friends	26.7%	3. Other family members	20.6%
<b>Refuser</b>	1. Doctors	58.7%	1. Doctors	47.0%
	2. Spouse	47.2%	2. Child's other parent	43.6%
	3. Other	18.2%	3. Other healthcare providers	21.3%

# Styles Survey: Vaccine Information Source

*What are the three most important sources of information that have helped you make a decision about your youngest child's vaccinations?*

	2011 (N = 873) <i>Missing: n = 7</i>	2012 (N = 779) <i>Missing: n = 3</i>	2015 (N = 749) <i>Missing: n = 0</i>
1	My child's HCP (66.0%)	My child's HCP (76.0%)	My child's HCP (82.4%)
2	Family (44.8%)	Family (53.2%)	Family (45.4%)
3	My child's other parent (22.7%)	My child's other parent (29.7%)	My child's other parent (30.9%)
4	AAP (18.8%)	AAP (24.2%)	CDC (30.1%)
5	Friends (16.8%)	Friends (23.8%)	AAP (29.1%)
6	Internet (15.9%)	CDC (22.3%)	Internet (16.4%)
7	CDC (15.8%)	Internet (20.8%)	Friends (15.9%)
8	Traditional media (4.4%)	Traditional media (5.5%)	Traditional media (7.2%)
9	Complementary HCP (0.7%)	Complementary HCP (3.5%)	Complementary HCP (6.1%)

# Longitudinal Survey: Vaccine Information Source

*What are the three most important sources of information that have helped you make a decision about your youngest child's vaccinations?*

	Wave 1 (N = 124)	Wave 2 (N = 141)	Wave 3 (N = 132)
	N (%)	N (%)	N (%)
<b>Internet Search Engines (e.g., Google, Yahoo)</b>	72 (58.1%)	72 (51.1%)	57 (43.2%)
<b>Family</b>	54 (43.5%)	53 (37.6%)	52 (39.4%)
<b>My healthcare professional (such as a primary care professional or OB/GYN)</b>	45 (36.3%)	46 (32.6%)	15 (11.4%)
<b>Online pregnancy or parenting site (e.g., BabyCenter or The Bump)</b>	38 (30.6%)	57 (40.4%)	30 (22.7%)
<b>Friends</b>	34 (27.4%)	36 (25.5%)	28 (21.2%)
<b>Internet Health Site</b>	27 (21.8%)	24 (17.0%)	33 (25.0%)
<b>My child's doctor</b>	19 (15.3%)	44 (31.2%)	101 (76.5%)
<b>My child's other parent</b>	15 (12.1%)	9 (6.4%)	15 (11.4%)
<b>Internet Social Media (e.g., Facebook, Twitter, message boards)</b>	9 (7.3%)	7 (5.0%)	7 (5.3%)
<b>Internet News Site</b>	7 (5.6%)	8 (5.7%)	7 (5.3%)
<b>My child's nurse</b>	2 (1.6%)	6 (4.3%)	16 (12.1%)

## Summary

- **Most parents are accepting of recommended childhood vaccines.**
- **Of vaccine acceptors, approximately 1 in 5 parents have at one point thought about not getting a vaccine.**
  - Many of these parents report having changed their mind because a doctor/HCP persuaded them to get their child vaccinated.
- **Parents who delay or refuse at least one vaccine are more likely to report having selected a health care provider who is open to their decision not to follow vaccine recommendations.**

## **Summary (Cont.)**

- **Parents more often report doctors as having influenced their vaccination decision, compared to nurses or health care providers.**
- **Regardless of vaccine decisions, all parents reported that doctors are a top trusted source for vaccine information and advice.**

**For more information please contact Centers for Disease Control and Prevention**

1600 Clifton Road NE, Atlanta, GA 30333

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