Vaccine Communication

Noel T. Brewer, PhD
Associate Professor of Health Behavior, UNC
Chair, National HPV Vaccination Roundtable
Disclosures

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American Cancer Society
Centers for Disease Control and Prevention
Federal Drug Administration
GlaxoSmithKline
Merck
National Cancer Institute
Pfizer
Robert Wood Johnson Foundation
What went wrong with HPV vaccine communication?
Adolescent vaccine coverage, U.S.
Adolescents ages 13-17

Healthy People 2020 Goal

Tdap
Meningococcal
HPV (3 doses, females)
HPV (3 doses, males)

Data from National Immunization Survey-Teen
Industry

83% of parents of adolescent girls heard of HPV vaccine from a drug company ad

n=889, Hughes, Brewer, et al., 2009, CEBP
Source
Merck
Gardasil
CDC
ACS
[none]

Industry

Vaccinate today.
Protect him tomorrow.

The HPV vaccine is approved for boys ages 11-18. Ask your son’s doctor about it.

SELECT SAFETY INFORMATION: Anyone who is allergic to the ingredients of the vaccine should not receive the vaccine. The vaccine may not fully protect everyone against genital warts and does not prevent all types of cancer. The vaccine does not treat cancer or genital warts. Side effects include pain, swelling, itching, and redness at the injection site, fever, nausea, dizziness, vomiting, and fainting. Only a doctor can decide if the vaccine is right for your son.
Industry

62% thought non-profits’ ads were from a drug company

n=544, Pepper et al., 2012.
62% thought non-profits’ ads were from a drug company

Source (drug co.) → Trust → Motivation to vaccinate
Source (drug co.) → Liking → Motivation to vaccinate

n=544, Pepper et al., 2012. STI
## Legislation

### Table 1. HPV Vaccination-Mandate Bills and Orders in the States, 2006–2008.

<table>
<thead>
<tr>
<th>State</th>
<th>Bill or Order No.</th>
<th>Date of Introduction</th>
<th>Date of Last Action</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>SB 954</td>
<td>March 5, 2007</td>
<td>March 27, 2007</td>
<td>Withdrawn by author</td>
</tr>
<tr>
<td>California</td>
<td>AB 16</td>
<td>December 4, 2006</td>
<td>September 30, 2008</td>
<td>Transformed into mandate for insurance coverage; passed but vetoed by governor</td>
</tr>
<tr>
<td>Colorado</td>
<td>SB 80</td>
<td>January 15, 2007</td>
<td>April 5, 2007</td>
<td>Postponed indefinitely in Senate appropriations committee</td>
</tr>
<tr>
<td>Connecticut</td>
<td>HB 697</td>
<td>January 25, 2007</td>
<td>March 2, 2007</td>
<td>No further action after public hearing</td>
</tr>
<tr>
<td>Florida</td>
<td>SB 660</td>
<td>January 18, 2007</td>
<td>May 4, 2007</td>
<td>Referred to Senate health policy committee; no further action</td>
</tr>
<tr>
<td>Georgia</td>
<td>SB 151</td>
<td>February 14, 2007</td>
<td>January 14, 2008</td>
<td>Referred to Senate committee on health and human services; no further action</td>
</tr>
<tr>
<td>Illinois</td>
<td>SB 10</td>
<td>January 31, 2007</td>
<td>December 3, 2007</td>
<td>Referred to Senate committee on rules; no further action</td>
</tr>
<tr>
<td>Kansas</td>
<td>HB 2227</td>
<td>January 25, 2007</td>
<td>January 26, 2007</td>
<td>Referred to House health and human services committee; no further action</td>
</tr>
<tr>
<td>Kentucky</td>
<td>HB 345</td>
<td>February 7, 2007</td>
<td>March 1, 2007</td>
<td>Referred to Senate appropriations and revenue committee; no further action</td>
</tr>
<tr>
<td>Kentucky</td>
<td>HB 396</td>
<td>January 29, 2008</td>
<td>March 24, 2008</td>
<td>Referred to Senate appropriations and revenue committee; no further action</td>
</tr>
<tr>
<td>Maryland</td>
<td>SB 54</td>
<td>January 18, 2007</td>
<td>February 7, 2007</td>
<td>Withdrawn by author</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>SB 102</td>
<td>January 30, 2007</td>
<td>February 25, 2008</td>
<td>Referred to joint committee on health care financing; no further action</td>
</tr>
<tr>
<td>Michigan</td>
<td>SB 1416</td>
<td>September 12, 2006</td>
<td>November 14, 2006</td>
<td>No further action after House reading</td>
</tr>
<tr>
<td>Michigan</td>
<td>SB 132</td>
<td>January 31, 2007</td>
<td>January 31, 2007</td>
<td>Referred to Senate health policy committee; no further action</td>
</tr>
<tr>
<td>Minnesota</td>
<td>SF 243</td>
<td>January 25, 2007</td>
<td>January 25, 2007</td>
<td>Referred to Senate health, housing and family security committee; no further action</td>
</tr>
<tr>
<td>Mississippi</td>
<td>HB 895</td>
<td>January 12, 2007</td>
<td>January 30, 2007</td>
<td>Referred to House Appropriations committee; no further action</td>
</tr>
<tr>
<td>Missouri</td>
<td>HB 820</td>
<td>February 7, 2007</td>
<td>April 24, 2007</td>
<td>Voted out of Senate rules committee; no further action</td>
</tr>
<tr>
<td>New Mexico</td>
<td>SB 1174</td>
<td>February 15, 2007</td>
<td>April 6, 2007</td>
<td>Passed, but vetoed by governor</td>
</tr>
<tr>
<td>New Mexico</td>
<td>SB 244</td>
<td>January 17, 2008</td>
<td>February 8, 2008</td>
<td>Voted out of Senate judiciary committee; no further action</td>
</tr>
<tr>
<td>New York</td>
<td>AB 5810</td>
<td>February 23, 2007</td>
<td>February 23, 2007</td>
<td>Referred to Assembly health committee; no further action</td>
</tr>
<tr>
<td>Ohio</td>
<td>HB 703</td>
<td>December 12, 2006</td>
<td>December 14, 2006</td>
<td>Referred to House health committee; no further action</td>
</tr>
<tr>
<td>Ohio</td>
<td>HB 81</td>
<td>February 28, 2007</td>
<td>March 6, 2007</td>
<td>Referred to House health committee; no further action</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>SB 483</td>
<td>February 5, 2007</td>
<td>February 8, 2007</td>
<td>Referred to Senate rules committee; no further action</td>
</tr>
<tr>
<td>South Carolina</td>
<td>HB 3136</td>
<td>January 9, 2007</td>
<td>April 18, 2007</td>
<td>Died on House floor</td>
</tr>
<tr>
<td>Texas</td>
<td>RP 65</td>
<td>February 2, 2007</td>
<td>May 8, 2007</td>
<td>Executive Order 65 issued by governor but overridden by HB 1098</td>
</tr>
<tr>
<td>Texas</td>
<td>SB 110</td>
<td>January 29, 2007</td>
<td>April 25, 2007</td>
<td>Referred to House committee on public health; no further action</td>
</tr>
<tr>
<td>Vermont</td>
<td>SB 139</td>
<td>February 26, 2007</td>
<td>February 27, 2007</td>
<td>Referred to Senate health and welfare committee; no further action</td>
</tr>
<tr>
<td>Virginia</td>
<td>HB 2035</td>
<td>January 30, 2007</td>
<td>April 4, 2007</td>
<td>Passed and signed into law, with liberal opt-out provision recommended by governor added</td>
</tr>
<tr>
<td>Washington, DC</td>
<td>DC 830</td>
<td>January 9, 2007</td>
<td>July 12, 2007</td>
<td>Passed and signed into law</td>
</tr>
<tr>
<td>West Virginia</td>
<td>HB 2835</td>
<td>February 5, 2007</td>
<td>February 5, 2007</td>
<td>Referred to House health and human resources committee; no further action</td>
</tr>
</tbody>
</table>

School entry requirements

Modest support

- 44% (25%-62%)
- 8 studies ($n=4,811$)

High support w/opt-out

- 84% (64%-92%)
- 3 studies ($n=1,423$)
- CA, MA, NC

Brewer & Gilkey, 2012. JAMA
Impact of school requirements

Embargoed data redacted: Analyses examined the impact of school entry requirements on HPV vaccination

Moss, et al., under review
AHA! THE SURE SIGN OF PROMISCUITY!!!
Sexual disinhibition

- No studies show SD.
- Few parents believe in it: 10% (3-26%). 8 studies, $n=4,597$
- This belief is a result of vaccination, not a predictor of it

Brewer et al. 2011; Schuler et al. 2011
Retardation

“Well, I will tell you that I had a mother last night come up to me here in Tampa, Florida, after the debate. She told me her little daughter took that -- took that vaccine, that injection, and she suffered from mental retardation thereafter.

It can have very dangerous side effects. The mother was crying when she came up to me last night. I didn't know who she was before the debate. This is the very real concern. And people have to draw their own conclusions.”

Michelle Bachman, 9/13/11, NBC's "Today" show
Retardation

Heard comments by presidential candidates

HPV vac causes short-term problems like fever or discomfort

- **No**
  - Fall 2010
  - Fall 2011

- **Yes**
  - Fall 2010
  - Fall 2011

**Figures:**
- **Heard** $p=.005$
- **Time** $p<.001$
- **HxT** $p<.001$

$n=326$

**Note:** $n=327$, Zucker et al., 2015

**UNC Gillings School of Global Public Health**
Anti-vaccination sentiment

Mother.—Pardon me; but I feel a perfect horror creeping over me at the mere thought on vaccination, since my poor Charles has died in consequence of it.

Doctor.—O nonsense! Charles did not die on vaccination; do not believe such a thing. He got dysentery while teething.

Mother.—I beg you to wait another year; Tom is now very delicate indeed.

Doctor.—Only the better! and I have this very moment excellent, fresh vaccine-lymph.

Mother.—In God’s name be it done! But, doctor, the responsibility rests on your shoulders!

Nine days after this conversation and following vaccination, Tom was a corpse, with two vaccine-blisters on each arm.

Nittinger, 1856.

Twitter, 2016.
YouTube

https://youtu.be/jenfrOyeiGw?t=57

Question for Minister for Children on HPV Vaccin... Q A

https://youtu.be/t5GquxhjDRY?t=181

HPV vaccine has done this to my child.
This was a very hard video to post, my 12 yr old daughter was fine before her vaccine, now this is her life. We live in New Zealand and I thought our healthc...
Tweets on HPV Vaccine

30,621 users made
83,551 tweets that reached
51,397,377 followers

Dunn, et al., 2015
Clustering

Vaccine hesitant parents cluster
- Geographically
- In social media

Dunn, et al., 2015
**Confidence continuum**

<table>
<thead>
<tr>
<th>Active Decision—Vaccinated</th>
<th>Passive Decision—Vaccinated</th>
<th>Passive Decision—Not Vaccinated</th>
<th>Active Decision—Not Vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong core health beliefs (Preventative health ideology)</td>
<td>Routine response and competing demands</td>
<td>Communication issues</td>
<td>Personal experiences within the medical system (general medical)</td>
</tr>
<tr>
<td>Personal experiences within the medical system (HPV specific)</td>
<td>Trust issues (trust in authorities)</td>
<td></td>
<td>Trust issues (do not trust authorities)</td>
</tr>
<tr>
<td>Perception of media messages (positive)</td>
<td>Convenience of school delivery</td>
<td></td>
<td>Perception of media messages (negative)</td>
</tr>
<tr>
<td>Concerns related to sex</td>
<td>Fear (of disease and vaccination)</td>
<td>Concerns related to sex</td>
<td>Fear (of vaccination)</td>
</tr>
</tbody>
</table>

**Active Decision—Anti-Vaccination**
- Strong core health beliefs (anti-vaccination)

*Figure 1.* Range of HPV vaccination outcomes with barriers and facilitators (real or potential).

Cooper-Robbins et al., 2010
How do we increase confidence?
HCPs

Parents with a healthcare provider’s recommendation much more likely to vaccinate

- Only 10% of parents had received a provider’s recommendation
- 7 studies; $n=18,955$
  - OR=18 (range 2.2-172)

\[ n=327, \text{Reiter et al., 2013, AJPH} \]
# Introducing vaccines

<table>
<thead>
<tr>
<th>Announcement</th>
<th>Accepted vaccine</th>
</tr>
</thead>
<tbody>
<tr>
<td>“It’s time for shots.”</td>
<td>90%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optional</th>
<th>17%</th>
</tr>
</thead>
<tbody>
<tr>
<td>“What do you want to do about shots?”</td>
<td></td>
</tr>
</tbody>
</table>

$n=111$, Opel, et al., 2015
Introducing vaccines

Emargoed data redacted: Analyses examined the impact of participatory and efficient physician-patient communication styles on HPV vaccination coverage

$n=9,021$, NIS-Teen, Moss, et al., in press
Addressing parent concerns

Ask, Advise, Acknowledge
Henricksen et al., 2015, *Peds*

CASE
(Corroborate, About me, Science, Explain/advise)
Singer

EASE
- Elicit main concern
- Acknowledge
- Share your commitment
- Explain the research
Brewer et al., unpublished
Motivational statements

**Embargoed data redacted:** Analyses examined how well motivational statements motivated parents to want to get HPV Vaccination for their adolescent children
Summary

Clinician communication
- Early, always, high-quality
- Brief

Respected organizations taking charge of communication

Social media
Contact information

Noel Brewer  ntb@unc.edu
UNC Gillings School of Global Public Health

HPV research:  www.unc.edu/~ntbrewer/hpv.htm
References


