

# Supplemental Information

## SUPPLEMENTAL METHODS: EXPERIMENTAL PROCEDURES

### Messages

In the experiment, we evaluated 28 messages pertaining to the 7 topics about HPV vaccination (4 messages per topic; Table 1). We developed these messages from a library of 267 unique messages that were identified in an environmental scan of educational materials about HPV vaccination.<sup>7</sup> To develop our brief messages, we used an iterative process that included several rounds of consultation with health communication scientists and vaccine-prescribing physicians and text refinements to produce brief messages that were accessible to people with lower levels of educational attainment. Once the messages were finalized, we coded them on the following 5 indicators: (1) the readability of the message, which was defined as the reading grade level averaged across 5 widely used measures (median grade 7; grade range 4–10)<sup>39</sup>; (2) the length of the video message in seconds (mean 8.9 seconds; range 5–12 seconds); (3) whether the message was focused on cancer prevention (10 of 28 messages); (4) whether urgency to get vaccinated was expressed in the message (ie, phrasing used to suggest not delaying vaccination; 7 of 28 messages); and (5) whether the message contained first-person or second-person pronouns (I, me, my, we, us, our, you, or your; 20 of 28 messages). Messages were coded as no (0) or yes (1) for the last 3 indicators.

**SUPPLEMENTAL TABLE 6** HPV Vaccine Messages That Parents Evaluated in the Study

Topic	Evaluated 4 Messages on This Topic, <i>n</i>	Wanted Information About Topic, %
Safety and side effects	163	93
Diseases prevented by HPV vaccine	177	97
Age to start HPV vaccine series	170	92
Vaccination for boys and girls	174	89
Vaccination for children who are not sexually active	168	90
School requirements for vaccination	167	93
National recommendations for HPV vaccine	177	94

<1% of data are missing.

### Randomization

The survey first assessed how much parents would like to know from their children's health care providers about 7 different HPV vaccination topics. Four topics were related to lack of knowledge or needing more information (about diseases prevented by HPV vaccine, the age to start the HPV vaccine series, vaccinations for boys and girls, and national recommendations for HPV vaccine), and 3 topics were related to concerns (safety and side effects, vaccination for children not sexually active, and school requirements for vaccination). The 3-point response scale was defined as "none," "a little," and "a lot." The survey also assessed which topics parents most wanted to learn about from their children's health care providers. The survey software then randomly assigned parents to receive video messages about 1 of the topics according to the following logic process:

1. For responses of a little or a lot to any of the 7 questions, the survey software placed the parent in 1 of those topic conditions randomly without replacement.
2. For responses of none to all of the 7 questions, the survey software

randomly assigned the parent to 1 of the topic conditions without replacement.

Once randomly assigned, parents watched 4 prerecorded video messages about that topic in random order, all of which were delivered by a board-certified female pediatrician (K.T.). Parents then answered questions about how it affected them. The sample size of each topic condition ranged from 163 to 177 parents; 92% of parents (1106 of 1196) wanted to learn more about the topic to which they were randomly assigned (Supplemental Table 6). After being randomized to conditions, the samples did not differ on key demographic characteristics in 9 of 9 tests ( $\chi^2$  tests and analysis of variance all  $P > .05$ ).

**SUPPLEMENTAL REFERENCE**

39. WebFX. Available at: [https://www.](https://www.webpagefx.com/tools/read-able/)

[webpagefx.com/tools/read-able/](https://www.webpagefx.com/tools/read-able/).

Accessed February 22, 2018

**SUPPLEMENTAL TABLE 7** Correlates of Parents' Confidence in and Motivation to Get HPV Vaccine for Their Children Stratified by Child's HPV Vaccination Status After Message Exposure

Characteristics	Confidence in the HPV Vaccine		Motivation to Get the HPV Vaccine	
	No Doses, Adjusted <i>b</i>	Initiated Series, Adjusted <i>b</i>	No Doses, Adjusted <i>b</i>	Initiated Series, Adjusted <i>b</i>
Message characteristics (level 1)				
Topics				
Lack of knowledge	0.18*	0.06	0.24**	0.07
Concerns	Reference	—	—	—
Reading level required	0.02*	0.02	0.01	0.01
Message length, seconds	0.04**	0.02*	0.03**	0.03*
About cancer prevention				
No	Reference	—	—	—
Yes	0.09**	0.14**	0.07*	0.09*
Urgency was expressed				
No	Reference	—	—	—
Yes	-0.07*	-0.04	-0.06*	-0.04
Contained first-person or second-person pronouns				
No	Reference	—	—	—
Yes	0.01	0.03	-0.03	-0.01
Parent and child characteristics (level 2)				
Parent's sex				
Male	Reference	—	—	—
Female	0.10	0.23*	0.06	0.26*
Parent's age, y	0.00	0.00	0.00	0.00
Parent's race and/or ethnicity				
Non-Hispanic white	Reference	—	—	—
Non-Hispanic black	0.36*	0.22	0.33*	0.18
Non-Hispanic multiracial or other	0.18	0.13	0.15	0.20
Hispanic	0.16	0.03	0.15	0.04
Parent's attitude toward vaccines	0.37**	0.40**	0.38**	0.41**
Parent's trait reactance	-0.14*	-0.02	-0.16*	-0.04
Child's age	-0.05**	-0.02	-0.06**	-0.02
Intercept	1.02*	0.84	1.28**	0.94*

All reported regression coefficients (*b*) are unstandardized. Confidence and motivation had 4-point response scales of 1 (not at all) to 4 (a lot). Topics for lack of knowledge were: diseases prevented by HPV vaccine, age to start the HPV vaccine series, vaccination for boys and girls, and national recommendations for the HPV vaccination. Topics for concerns were: safety and side effects, vaccination for children not sexually active, and school requirements for HPV vaccination. —, not applicable.

\* *P* < .05; \*\* *P* < .001.