## Text Messages Improve On-Time HPV Vaccination

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SEATTLE – Text message reminders improve timely receipt of the human papillomavirus vaccine, according to results of a study of more than 1,500 girls who had started the three-dose series.

About a third of parents offered the reminders signed up for them, and girls whose parents signed up were twice as likely to receive their next dose of vaccine within a month of when it was due, compared with their counterparts whose parents did not sign up.

"We found that text messaging can increase on-time vaccination," commented first author Dr. Elyse O. Kharbanda, a pediatrician who was with Columbia University Medical Center, New York, at the time of the study and is now with the Health Partners Research Foundation in Minneapolis. "We recommend these findings should be replicated in a larger and more diverse sample," she added. "And future studies should really explore what our main issue was: How to get more parents to sign up for this type of service."

Although the Food and Drug Administration approved the quadrivalent human papillomavirus (HPV) vaccine (Gardasil, Merck) in 2006, the rate of receipt of all three doses among girls remains low, and receipt of doses on time is also problematic, according to Dr. Kharbanda. Several factors may explain this poor adherence.

"Unlike routine vaccines that we give to infants, this three-dose vaccine series is not aligned with routine adolescent health care visits," she said. Financial barriers and provider factors also may explain some of the adherence problem.

"But what actually I think is the most important barrier is the parents and teens themselves," Dr. Kharbanda commented. "It's not that [the parents] explicitly oppose the vaccine, it's just that they are busy – they have busy lives with competing priorities, and getting their child or their teen in for three visits to get a shot over a 6-month period is just not high on their To-Do list."

There is good reason to believe that use of text messaging to send reminders could help solve this problem. "We thought cellular technology may provide an advantage because of its penetrance: Over 96% of U.S. adults now own a cell phone," she explained. "And especially in low-income populations, cell phone numbers may be even more stable than land-line numbers."

The study, part of the Text4Health study exploring use of this technology among underserved, low-income populations, was conducted in nine clinical sites in New York. It was open to Englishor Spanish-speaking parents with a cell phone who brought daughters aged 10-18 years in for the first or second dose of the quadrivalent HPV vaccine between January and June 2009. The parents were given a recruitment card with instructions in English and Spanish on how to sign up for text message reminders for the next dose of vaccine. Parents who signed up received up to three automated text messages reminding them that their daughter had an upcoming due date for her next HPV vaccine dose. In all, recruitment cards were given to the parents of 434 girls, 29% of whom signed up. The 124 who entered a valid personal identification number were sent text message reminders. The comparison groups consisted of 308 girls whose parents did not sign up for the reminders and 1,080 girls who had received a first or second dose of HPV vaccine in the same clinics in the 6 months before the intervention and served as historic controls. The girls were 14 years old on average, and nearly three-quarters had Medicaid or state Children's Health Insurance Program (SCHIP). Most (84%) received their care in an academic clinic.

Study results showed that the percentage of girls who received their next HPV vaccine dose within 1 month of the due date, the primary end point, was 52% among those whose parents signed up for reminders, 35% among those whose parents did not sign up, and 38% among those who served as historic controls.

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Dr. Kharbanda reported that Vaughn I. Rickert, Psy.D., one of the study coinvestigators, is a consultant to Sanofi Pasteur and receives research funding from and sits on the advisory board of Merck.

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