

Flu vaccination reminder via text messaging improves rate of vaccination among low-income children

24 April 2012

A text messaging intervention with education-related messages sent to parents increased influenza vaccination coverage compared with usual care in a traditionally hard-to-reach, low-income, urban, minority population of children and adolescents, although coverage overall remained low, according to a study in the April 25 issue of *JAMA*.

"Timely vaccination is the cornerstone of influenza prevention through vaccination of susceptible populations before illness becomes epidemic in communities. The effectiveness of the [influenza vaccine](#) in children and adolescents ranges from 66 percent to 95 percent, depending on age, vaccine type, and season," according to background information in the article. Children and adolescents ages 6 months to 18 years are at increased risk for influenza illness and death, and influenza is one of the most common causes of hospitalization in children and adolescents. Influenza [vaccine coverage](#) nationally remains low; only 51 percent of those ages 6 months to 17 years were vaccinated in the 2010-2011 season according to parental report. "Coverage is lower in low-income populations who are at higher risk of influenza spread due to crowded living conditions," the authors write. "Traditional vaccine reminders have had a limited effect on low-income populations; however, text messaging is a novel, scalable approach to promote influenza vaccination."

Melissa S. Stockwell, M.D., M.P.H., of Columbia University, New York, and colleagues evaluated the effect of targeted text messages for low-income, urban parents to promote influenza vaccine receipt among children and adolescents. The [randomized controlled trial](#) included 9,213 children and adolescents ages 6 months to 18 years who were receiving care at 4 community-

based clinics in the United States during the 2010-2011 [influenza season](#). Of the 9,213 children and adolescents, 7,574 had not received influenza vaccine prior to the intervention start date and were included in the primary analysis. Parents of children assigned to the intervention received up to 5 weekly immunization registry-linked text messages providing educational information and instructions regarding Saturday clinics. Both the intervention and usual care groups received the usual care, an automated telephone reminder, and access to informational flyers posted at the study sites.

The children and adolescents in the study were primarily minority, 88 percent were publicly insured, and 58 percent were from Spanish-speaking families. As of March 31, 2011, a higher proportion of children and adolescents in the intervention group (43.6 percent) compared with the usual care group (39.9 percent) received the influenza vaccine. Of all children and adolescents vaccinated by this date, 93.9 percent of the intervention group were vaccinated outside of the Saturday clinics compared with 97.2 percent of the usual care group.

At the cohort-based fall review date, 27.1 percent of the intervention group vs. 22.8 percent of the usual care group had received influenza vaccine.

The authors note that the intervention effect was greater in a subgroup analysis accounting for delivery of text messages, lending support to the inference that text messaging was effective in promoting the behavioral changes leading to increased vaccination. "Using text messaging (especially when linked with electronic health records [EHRs] or registries) to identify and notify large patient populations in need of vaccination could be an efficient means for improving influenza vaccination rates in adults as well as [children](#) and

[adolescents.](#)"

Text messaging to increase vaccination coverage has numerous strengths, the authors write. "It can reach large populations, and for vaccines like [influenza](#) recommended for the majority of the population, even small increases in vaccination rates can lead to large numbers of protected individuals. It may also be cost-effective. Once the system is set up, the only variable cost is the sending of the text messages, which, even using commercial platforms, usually cost pennies per message. Therefore, depending on the size of the population, even amortizing upfront and monitoring costs, text messaging is inexpensive on a per individual basis."

Provided by JAMA and Archives Journals

"Underlying [vaccination coverage](#) overall remained low, as they do nationally, and further studies are recommended to identify ways to maximize the potential of text messaging," the researchers conclude.

Peter G. Szilagyi, M.D., M.P.H., of the University of Rochester School of Medicine and Dentistry, Rochester, New York, and William G. Adams, M.D., of the Boston University School of Medicine, Boston, write in an accompanying editorial that the "study by Stockwell et al is a modest step forward in an important area of public health."

"Modest steps are the norm when complex behaviors and systems are targeted such as receipt of preventive services. Nonetheless, these systems have substantial potential, particularly when the technologies are tailored to individual patients and families, delivered in an actionable way, and driven toward important health behaviors. There can be little doubt that in the next decade there will be an increasing use of such systems and their application to additional services. As recently as 10 years ago, e-mailing patients was considered novel and text messaging did not exist. Within the next few years, the novel findings presented in this study will also become a routine component of the complex system of health care delivery."

More information: *JAMA*.

2012;307[16]:1702-1708.

JAMA. 2012;307[16]:1748-1749.

APA citation: Flu vaccination reminder via text messaging improves rate of vaccination among low-income children (2012, April 24) retrieved 14 November 2019 from <https://medicalxpress.com/news/2012-04-flu-vaccination-text-messaging-low-income.html>

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