



Mobile Immunization Messaging: Using Text4baby to Improve Immunization Awareness in Pregnancy and First Year of Life

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Context: Influenza and Pregnancy

- “Flu is more likely to cause severe illness in pregnant women than in women who are not pregnant.”¹
- “Before 2009, estimated influenza vaccination coverage among pregnant women had been consistently low (approximately 15%). Vaccination levels increased substantially in response to the 2009 influenza A (H1N1) pandemic.”²
 - “A recent CDC Internet Panel survey found that 49% of women pregnant any time during October 2010 – January 2011 had received an influenza vaccination.”³
 - “The top five “main” reasons for not receiving influenza vaccination were ‘I am concerned about possible safety risks to my baby if I got vaccinated’ (20%), ‘I am concerned that the vaccination would give me the flu’ (17%), ‘I don’t think the vaccination is effective in preventing flu’ (14%), ‘I am concerned about a possible safety risk to myself if I got vaccinated’ (11%), and either ‘I don’t think I would get very sick if I got the flu’ or ‘I think if I get the flu, I will just get some medication to treat it’ (14%).”⁴

Text4baby Overview

Text4baby is the first national free-to-end-user health education texting service. Users opt in to receive. A user who registers her due date receives pregnancy messages (pregnancy protocol) timed to her stage in pregnancy. A user who registers her baby’s birthday receives infant messages (new baby protocol). Text4baby content covers a range of issues, including nutrition, safety, breastfeeding, mental health, developmental milestones, access to care, and more. As part of routine protocol for text4baby, the service sends immunization messages during pregnancy and infancy, including seven messages specific to influenza focused on prevention, signs and symptoms, treatment, and vaccination. Since the service launched in February, 2010, more than **306,000** individuals have enrolled.

Text4baby Flu Module Overview and Methods

Text4baby identified influenza as both a critical health issue as well as an issue that is fairly easy to address through enhanced technology. In October 2011, text4baby introduced an interactive flu module which provided users with additional immunization messages above and beyond what is included in the standard text messages.

Goals of the flu module included:

- Introduce interactivity into the text4baby system.
- Provide additional audience insights around the barriers users face in obtaining flu shots.
- Reduce barriers to influenza immunization by providing educational messages and appointment reminders.

Methods & Overall Response Rate:

90,070 active text4baby users were asked via text message if they were planning to get a flu shot (see Figure 1).

- 30.5% (29,316) responded
 - 62.4% (18,291) of users in the pregnancy protocol responded
 - 37.6% (11,025) of users in the new baby protocol responded

Respondents who responded “no” were offered an option to provide an explanation for why they were not getting a flu shot. A tailored educational follow up message was sent to respondents responding to their explanation (N=8841). A follow up flu shot message (“Have you gotten a flu shot?”) was sent to all of these respondents one month post baseline (see Figure 2).

- 26.8% (940) of pregnancy protocol respondents who received the follow up flu shot question (N=3510) responded

Acknowledgements

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Select Flu Module Content

Figure 1. Flu Shot Text Message Flow Chart

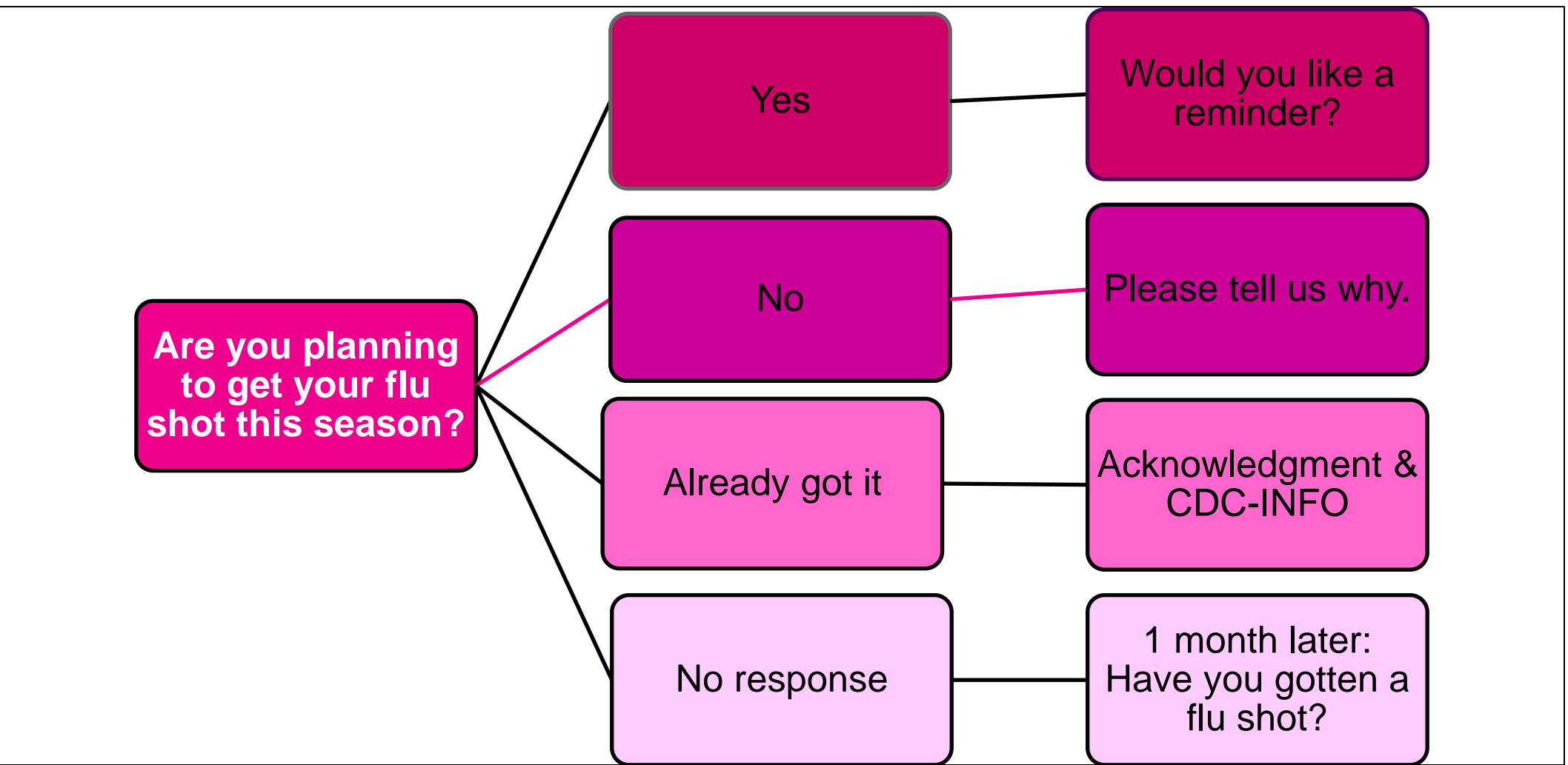
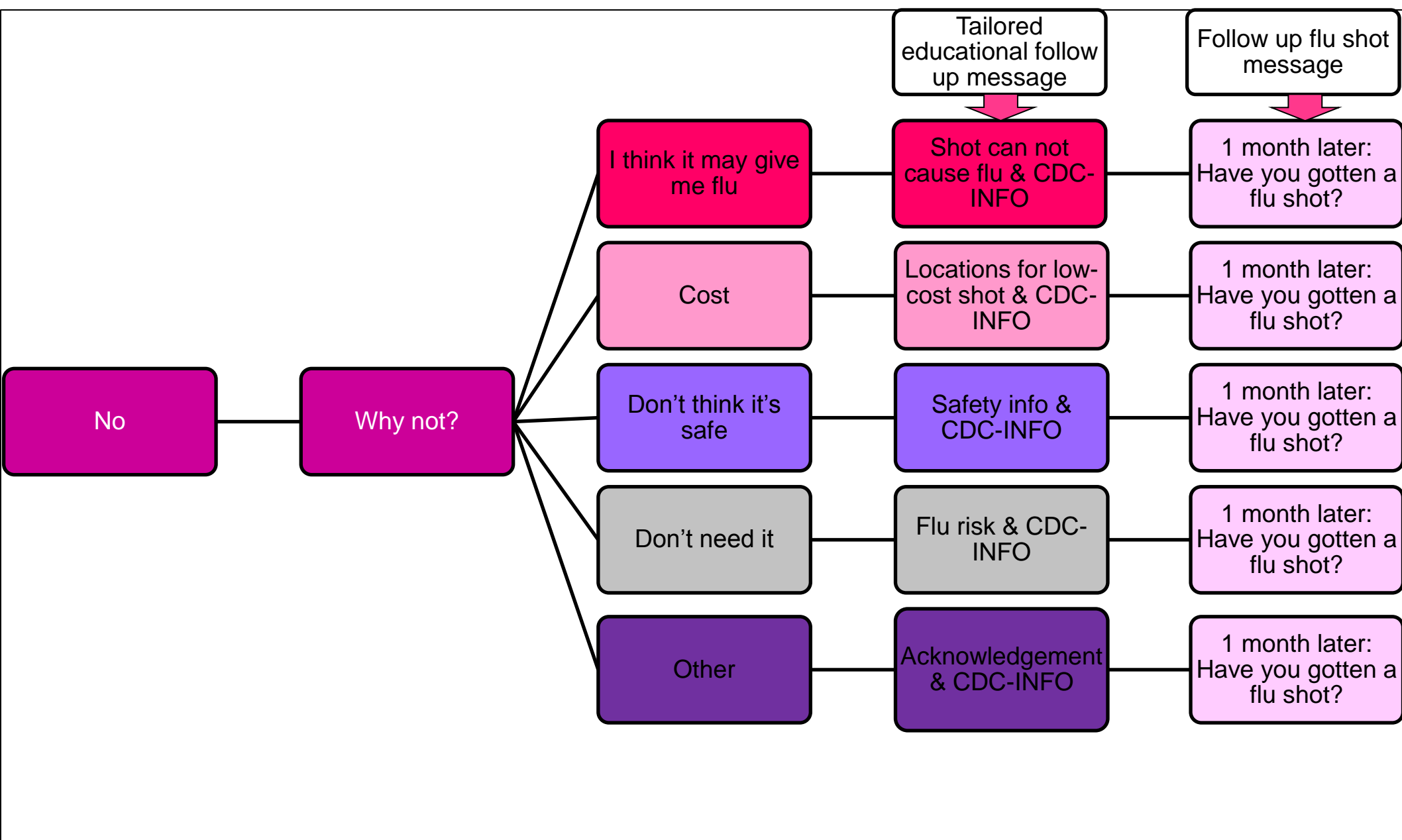


Figure 2. Barriers to Flu Shot Text Message Flow Chart



Preliminary Findings

Baseline Flu Shot Text Message: Flu season is here & we’re checking in with moms. Are you planning to get a flu shot this season? Reply 1 Yes; 2 No; 3 if you already got it. (Fig. 1)

- **40.3% (11,819) of respondents (N=29,316) reported they already got a flu shot**
 - 43% (4738) of respondents (N=18,291) in the pregnancy protocol
- **29.5% (8656) reported they were planning to get a flu shot**
 - 25.2% (2777) of respondents in the pregnancy protocol
- **30.2% (8841) reported they were not planning to get a flu shot**
 - 31.8% (3510) of respondents in the pregnancy protocol

Barriers Text Message: Pls tell us why you’re not planning to get a flu shot. Reply 1 I think it may give me flu; 2 Cost; 3 Don’t think it’s safe; 4 Don’t need it; 5 Other. (Fig. 2)

- **72.9% (6442) of respondents who reported they were not planning to get a flu shot (N=8841) selected a reason**
 - 72%(2528) of respondents in the pregnancy protocol who reported they were not planning to get a flu shot (N=3510) selected a reason (see Chart 1 for reason breakdown)

Preliminary Findings

Follow up Flu Shot Text Message: Text4baby is checking in again with moms. Have you gotten a flu shot? Reply 1 Yes; 2 No.

- **26.8% (940) of respondents in the pregnancy protocol who received a follow up flu shot message (N=3510) responded**
 - 15.7% (148) of respondents in the pregnancy protocol responded “yes”
 - 84.3% (792) of respondents in the pregnancy protocol responded “no”

Preliminary Findings

Chart 1. Reasons selected for not planning to get a flu shot among pregnancy protocol respondents at baseline (N=2528)

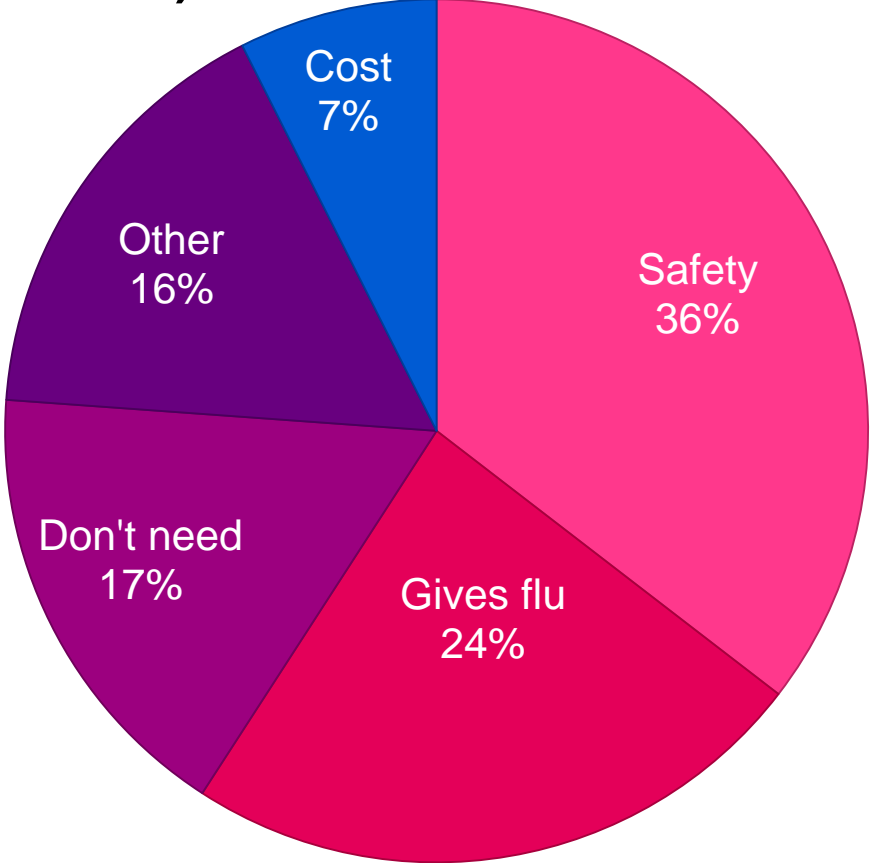
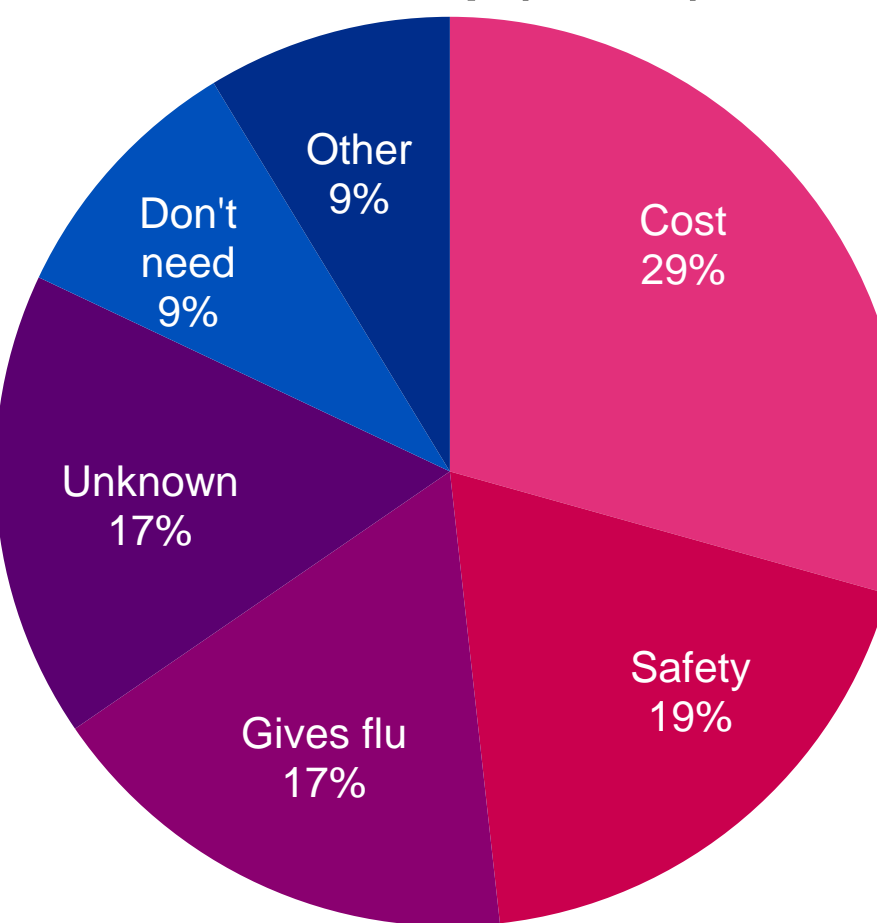


Chart 2. Reasons selected for not planning to get a flu shot among pregnancy protocol respondents who reported at baseline they were not planning on getting a flu shot and then reported receiving a flu shot at follow up (N=148)



Conclusions

- Similar to the CDC Internet Panel survey, “safety” followed by “I think it may give me flu”, were selected by the highest percentage of respondents in the pregnancy protocol (36% and 24%, respectively) as reasons for not planning to get a flu vaccine.
- Educational messaging may have played a role in text4baby user decision-making regarding the flu vaccine; 15.7% of respondents in the pregnancy protocol who initially reported they were not planning to get a flu vaccine reported one month post baseline that they did get the vaccination.
 - A limitation of this conclusion is the relatively low response rate; data is only available for 26.8% percent of pregnancy protocol respondents who reported they were not planning to get a flu shot.
- Among respondents who reported they reversed their flu shot decision (no at baseline, yes at follow up), the highest percentage of respondents initially reported “cost” and “safety”, respectively, as reasons why they were not planning to get a flu shot.

References

1. CDC. Seasonal influenza. Available: <http://www.cdc.gov/flu/protect/vaccine/pregnant.htm>
2. CDC. Prevention and control of influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP), 2010. MMWR 2010;59(No. RR-8).
- 3,4. CDC. Influenza Vaccination Coverage Among Pregnant Women --- United States, 2010--11 Influenza Season. MMWR 2011;60.