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What will it do for my baby: Gain-framed vs. loss-framed messaging for influenza vaccination in pregnant minority women

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By

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An abstract of
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Abstract

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By Heather A. Marsh

Background: Low rates of influenza vaccination among pregnant African American women put them and their fetuses at risk for a number of negative outcomes. Message framing is a method of conveying information in terms of gains and losses depending on whether a certain behavior is carried out or not. Message framing has been shown to be effective at increasing health behaviors, such as vaccination.
Methods: Semi-structured in-depth interviews were conducted with pregnant African American women who had not received an influenza vaccine at urban OB/GYN clinics. Interviews were transcribed and content analyzed to identify common factors related to acceptance of the influenza vaccine and preferences for gain-framed or loss-framed messages.
Results: Four major themes were identified. These were communication approaches, normal vaccine behavior, vaccination in pregnancy, and positive framing vs. negative framing. Two strong themes emerged: positively framed messages are preferred over negatively framed messages and the health of the infant needs to be emphasized in messaging. Additionally, previous experiences with vaccines, who provides messages on vaccines, and misperceptions also play important roles in vaccine acceptance.
Conclusions: The majority of women indicated that positively framed messages focusing on the infant's health would encourage them to receive an influenza vaccine, or at least consider getting an influenza vaccine more so than negatively framed messages would. The findings of this study may assist in developing tailored messages that change the intentions, and even behaviors, of pregnant minority women when it comes to getting an influenza vaccine.
Keywords: Influenza Immunization, Maternal Health, Pregnancy, Minority Health

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Table of Contents

INTRODUCTION & BACKGROUND

Influenza epidemiology

Influenza viruses cause significant respiratory illness among humans of all ages (Clark & Lynch, 2011). There are three types of influenza- A, B, and C- with types A and B causing infections in humans; the majority of human infections can be attributed to type A (Clark & Lynch, 2011). The type A influenza viruses are categorized further into subtypes by unique combinations of hemagglutinin (HA) and neuraminidase (NA) proteins on their surfaces, which facilitate entry into and exit from human cells (Clark & Lynch, 2011). The most common subtypes of influenza A affecting humans are H3N2, H1N1, and H1N2 (Clark & Lynch, 2011). The incidence of influenza usually starts to rise in the fall and then decline in the spring (Lagace-Wiens, Rubinstein, & Gumel, 2010). In the Northern hemisphere this corresponds to the months between November and March; in the Southern Hemisphere this corresponds to the months between April and September (Lagace-Wiens et al., 2010). The average attack rates of influenza usually range between 10% and 20%, but have been as high as 50% (Lagace-Wiens et al., 2010). The average influenza mortality in developed countries is 12 per 100,000, however certain populations exhibit higher mortalities, such as children, elderly, people with compromised immune systems, and pregnant women, a newly recognized at-risk population (Lagace-Wiens et al., 2010).

Influenza causes significant morbidity and mortality every year in the United States (Thompson et al., 2003). Between 1976 and 2004, seasonal influenza epidemics were responsible for more than 200,000 annual hospitalizations and more than 30,000 influenza-associated deaths in the United States (Clark & Lynch, 2011). Since September 30, 2012, 48 states, the District of Columbia, and Puerto Rico have reported cases of influenza ("Update:

influenza activity--United States, September 30-November 24, 2012," 2012). Between October 1, 2012 and January 26, 2013 the rate of hospitalization due to laboratory-confirmed influenza was 25.9 per 100,000 population; among 139 women of childbearing age (15-44 years) who were hospitalized for influenza, 32 were pregnant (CDC, 2013). During the 2011-2012 influenza season, 8.6 per 100,000 people were hospitalized for influenza-associated reasons; the percentage of deaths associated with influenza peaked at 7.9% and exceeded the epidemic threshold during the week ending with January 21, 2012 (CDC, 2012). While it is well known that certain populations are at risk for contracting the flu (such as those mentioned above), influenza in healthy adults still causes significant morbidity and mortality- approximately 5 million illnesses, 2.4 million outpatient visits to doctors, 32,000 hospitalizations, and 680 deaths occurred in adults with no medical conditions that would increase their risk of complications (Williams, Lu, Lindley, Kennedy, & Singleton, 2012). In addition to morbidity and mortality, influenza causes significant economic burden due to medical costs, lost productivity, work and school absenteeism, and lost income (Clark & Lynch, 2011).

Influenza vaccination in pregnancy

Vaccines are considered one of the greatest achievements in public health during the 20th century; influenza vaccines are one of the most effective methods of preventing the spread and contraction of the flu (Setse et al., 2011; Williams et al., 2012). During the 2009-2010 influenza season, the estimated national coverage level for combined seasonal or H1N1 influenza vaccination was 48.8% for all persons greater than or equal to six months of age; the level for children between the ages of six months and seventeen years was 55.2% (Setse et al., 2011). In a different study conducted by the CDC, only 28.2% of adults between the

ages of 18 and 64 received a flu vaccine during the 2008-2009 season (Williams et al., 2012). Vaccine scares are one reason often cited for low rates of vaccine uptake (Bauch & Earn, 2004).

Because influenza causes such significant morbidity and mortality, vaccination against influenza is encouraged, especially among populations particularly at risk for contracting the virus (Thompson et al., 2004; Thompson et al., 2003). One of these at-risk populations is pregnant women, who are at increased risk for both morbidity and death related to the flu (Ahluwalia et al., 2010; Creanga et al., 2011). It was found that during the flu seasons between 2005 and 2009, and the H1N1 pandemic in 2009, pregnant women comprised 23.5% of seasonal flu-related hospitalizations and 31.0% of pandemic flu-related hospitalizations (Creanga et al., 2011). Between April 15, 2009 and August 10, 2010 a total of 347 severely ill pregnant women were reported to the CDC surveillance system; of these, 272 were admitted to the ICU and survived, and 75 died from H1N1 ("Maternal and infant outcomes among severely ill pregnant and postpartum women with 2009 pandemic influenza A (H1N1)--United States, April 2009-August 2010," 2011). Additionally, the death rate among pregnant women and children due to H1N1 in 2009 was higher than for seasonal influenza in previous years (To et al., 2010). Infection with influenza has also been associated with poor neonatal outcomes, such as NICU (neonatal intensive care unit) admission, increased preterm birth, and increased still birth (Blanchard-Rohner et al., 2012).

The American College of Obstetricians and Gynecologists (ACOG) and the Advisory Committee on Vaccination Practices (ACIP) recommends that pregnant women (and women who expect to be pregnant during the flu season) receive the trivalent inactivated influenza vaccination (Ahluwalia et al., 2010; Beigi, Wiringa, Bailey, Assi, & Lee, 2009; Moro, Tepper, Grohskopf, Vellozzi, & Broder, 2012). Influenza vaccination not only

protects the mother, but the child as well, with infants up to six months showing decreased risk of contracting the flu (Ahluwalia et al., 2010). Additionally, it has been found that the flu vaccine is a cost-effective measure to prevent the contraction of influenza and reduce the risk of influenza-attributable mortality (Beigi et al., 2009).

Even with substantial literature proving the safety of the influenza vaccine for pregnant women and the proven risk of severe influenza-related complications, vaccination among pregnant women is low (Ahluwalia, Singleton, Jamieson, Rasmussen, & Harrison, 2011). In the 2005-2006 flu season it was estimated that only 24.2% of pregnant women received the flu vaccine and in the 2008-2009 flu season only 11.3% of pregnant women received the vaccine; the most cited reason for not receiving the flu shot was being worried about the safety of the vaccine (Ahluwalia et al., 2010; Ahluwalia et al., 2011). A report by the CDC found that among 29 states and New York City, the median coverage level was only 47.1% for the seasonal flu vaccine and 40.4% for the H1N1 vaccine for women who had live births between September 2009 and May 2010 ("Influenza vaccination coverage among pregnant women - 29 States and New York City, 2009-10 season," 2012). Furthermore, younger women are less likely to get a flu vaccine compared to older women- during the 2011-2012 flu season 42.3% of pregnant women aged 18 to 24 compared to 49.4% of pregnant women aged 25 to 49 received a flu vaccine ("Influenza vaccination coverage among pregnant women - 2011-12 influenza season, United States," 2012). Women with education beyond college were more likely to get a flu vaccine compared to women with a college degree or women with less than a college degree ("Influenza vaccination coverage among pregnant women - 2011-12 influenza season, United States," 2012).

Health Disparities

In addition to being low in pregnant women, vaccination rates have historically been low in minority communities, with only 51% of African Americans and 55% of Latinos over the age of 65 being vaccinated in 2002 (Chen, Fox, Cantrell, Stockdale, & Kagawa-Singer, 2007). In the 2009-2010 influenza season, the vaccination coverage rate was only 40.5% for non-Hispanic blacks and 43.5% for Hispanics, compared to a rate of 49.5% for non-Hispanic whites (Setse et al., 2011). Fisher et al. found that among their sample of pregnant women, only 37% of African American women received a flu vaccine, which is significantly lower compared to Whites (57%) (Fisher et al., 2011). During the 2011-2012 flu season, only 39.8% of pregnant non-Hispanic black women received a flu vaccine compared to 48.8% of pregnant Hispanic women and 47.9% of pregnant non-Hispanic white women ("Influenza vaccination coverage among pregnant women - 2011-12 influenza season, United States," 2012). The percentage of African American and Hispanic women receiving a flu shot actually decreased from the 2010-2011 season to the 2011-2012 season by 7.3% and 4.4% respectively ("Influenza vaccination coverage among pregnant women - 2011-12 influenza season, United States," 2012).

The main reasons cited for such low rates of vaccination for Latinos were cost and access barriers, while the main reasons cited for African Americans were mistrust and concern that the vaccine causes influenza (Chen et al., 2007). Numerous reasons for mistrust of the medical community by African Americans have been given, including limited access to medical care; historical segregation of hospitals; discourteous treatment, and even maltreatment, by healthcare professionals (Brandon, Isaac, & LaVeist, 2005). Additionally, racial differences in care suggest racial bias in medical care practice (LaVeist, Nickerson, & Bowie, 2000). Frew et al. found that low uptake of the influenza vaccine among the minority

community may be due to negative vaccine attitudes, poor experiences with healthcare providers, and general concerns about vaccine safety and effectiveness (Frew et al., 2012).

Minority women may be more at risk for contracting influenza because they are less likely to receive a flu vaccine. A woman who contracts influenza while pregnant can transmit the virus across the placenta, which can potentially have adverse effects on the fetus (Rasmussen, Jamieson, & Uyeki, 2012). While this is rare, when a mother contracts influenza it can still affect the fetus, by inducing spontaneous abortion, causing stillbirth, and leading to preterm delivery (Rasmussen et al., 2012). Infants less than six months of age who contract influenza are at risk for hospitalization for cardiopulmonary conditions, complications related to influenza infection, and even death (Rasmussen et al., 2012). Antenatal immunization has been found to improve intrauterine growth, reduce preterm deliveries, and reduce the risk of contracting influenza for the infant (Steinhoff & Omer, 2012). In addition to low vaccine uptake among pregnant minority women, this group also faces poorer birth outcomes compared to whites. 11.1% of non-Hispanic white babies are born pre-mature compared to 17.5% of non-Hispanic black babies (Hogue, Menon, Dunlop, & Kramer, 2011). Non-Hispanic blacks exhibit a 2.4-fold excess in occurrence of very preterm babies compared to non-Hispanic whites (Hogue et al., 2011).

Vaccine uptake and provider recommendation

Many factors play a role in the acceptability and uptake of vaccinations. Non-vaccinated pregnant women have mentioned varying reasons for not getting vaccinated, such as being insufficiently informed, believing that the vaccine carried a risk, being concerned about using vaccines during pregnancy, and believing that the vaccine was not very effective (Blanchard-Rohner et al., 2012; Kharbanda et al., 2011). Another study found that pregnant

women who did not get a flu vaccine were worried it would affect their health or the health of the fetus, or they did not know where to go to get a vaccine (Fisher et al., 2011). However, these same authors found that the biggest barrier to vaccination was not being offered the flu vaccine by a healthcare provider (Blanchard-Rohner et al., 2012). Conversely, reports conducted by the CDC found that pregnant women who reported that their healthcare provider offered them the flu vaccine or recommended them to get it were more likely to be vaccinated than those who did not receive an offer or recommendation ("Influenza vaccination coverage among pregnant women - 29 States and New York City, 2009-10 season," 2012; "Influenza vaccination coverage among pregnant women - 2011-12 influenza season, United States," 2012).

While it appears that healthcare provider recommendation is important in flu vaccination rates, very few physicians recommend or provide the flu vaccine outside of the normal flu season (Davis, McMahon, Santoli, Schwartz, & Clark, 2002). Almost half of the physicians surveyed in this study also reported feeling hesitant or neutral towards administering the flu vaccine after local influenza activity began and were more likely to report stopping flu vaccine administration before the national peak of influenza activity (Davis et al., 2002). Wu et al. found that 6% of the obstetricians surveyed in their study believed pregnant women should not get a flu vaccine and that the majority of the rest of the physicians felt a flu shot should be withheld until the second trimester of pregnancy (Wu et al., 2006). This goes against the ACOG and CDC guidelines that state that it is safe for a woman at any gestational age to receive a flu vaccine (Wu et al., 2006).

Message framing for vaccination

One method that has been studied extensively as a way to change health behavior is message framing, which is backed by prospect theory. Prospect theory posits that messages can be framed in terms of either gains, which will result if an action is taken, or losses, which will result if an action is not taken (Cohen, 2010; Gray & Harrington, 2011). This theory is a model of choice that explains violations to expected utility theory when the choices have risky prospects as well as few outcomes (Tversky, 1992). This theory was further developed into cumulative prospect theory, which applies to both uncertain and risky prospects, and to any number of outcomes; it better approximates how health decisions are made (Tversky, 1992). The same information can be presented in different ways, highlighting either benefits or costs, which can ultimately alter people's preferences, perspectives, and actions (Abhyankar, O'Connor, & Lawton, 2008; Toll et al., 2008). Studies have found that people tend to avoid risks when considering gains and prefer risks when considering losses (Abhyankar et al., 2008).

Message framing is a way to provide information, most particularly health information, in terms of either gains or losses, and has proven effective in many instances, such as for promoting sunscreen use or mammography (Gerend, Shepherd, & Monday, 2008). Gain-framed messaging puts forth information by explaining the benefits of engaging in a health behavior, while loss-framed messages tell of the possible costs or risks of not engaging in the behavior (Bartels, Kelly, & Rothman, 2010). Additionally, it has been found that gain-framed messages are most persuasive when they are advocating for behavior that prevents the onset of a health problem (e.g., getting a vaccination), while loss-framed messages are most persuasive when advocating for a behavior that detects a health problem (e.g., getting a Pap smear) (Bartels et al., 2010; Gallagher & Updegraff, 2012). A meta-

analysis conducted by Gallagher and Updegraff showed that gain-framed messages were more effective in promoting prevention behaviors and that context plays a larger role in the effectiveness of loss-framed messages (Gallagher & Updegraff, 2012). The crucial difference between going through with a prevention behavior vs. a detection behavior is the degree of perceived risk associated with engaging in the behavior (Abhyankar et al., 2008).

For example, a detection behavior, such as getting a mammography, is seen to be risky because it could potentially show that a woman has breast cancer. Risky options tend to be preferred when someone is considering losses, so loss-framed messages should be more effective at encouraging someone to perform a detection behavior. Conversely, a prevention behavior, such as getting a flu vaccine, is not seen to be risky since it is done to prevent a future health problem, like contracting the flu. It would make sense that gain-framed messages are more effective at encouraging someone to perform a preventive behavior, since it is less risky. Therefore, it can be hypothesized that convincing someone to receive a flu vaccination would be more successful when using gain-framed messages. It is important to note, however, that meta-analytic research has shown mixed results when it comes to the effectiveness of framed messages at reaching their intended outcomes (Nan, Xie, & Madden, 2012).

Numerous studies have looked at the effects of message framing on a wide range of health behaviors. For example, Gray and Harrington tested the persuasiveness of gain- and loss-framed messages related to exercise and found that gain-framed messages were more effective at increasing positive beliefs and intentions towards exercise (Gray & Harrington, 2011). Among a study population containing individuals at risk for influenza (patients with chronic respiratory or cardiac disease) gain-framed messages increased expectations related to the benefits of the vaccine and decreased expectations of vaccine side effects (O'Connor,

Pennie, & Dales, 1996). Schneider et al. found multicultural loss-framed messages were more likely to persuade low-income women, especially Anglo and Latina women, to get mammograms (a detection behavior) six months after the study occurred (Schneider et al., 2001).

Jung, Ginis, Phillips, and Lordon found that gain-framed messages promoting the consumption of calcium (a behavior to prevent osteoporosis) among young women did increase their calcium intake (Jung, Martin Ginis, Phillips, & Lordon, 2011). Targeting the materials to the specific population (i.e. young women not consuming adequate amounts of calcium) also increased the success of the intervention (when compared to the control group who received standard care materials) (Jung et al., 2011). These examples support the findings that gain-framed messages are more effective at motivating preventive behaviors while loss-framed messages are more effective at motivating detection behaviors.

While gain-framed messages tend to be more effective at motivating preventive behaviors and loss-framed messages at motiving detection behaviors, perceptions must be taken into consideration as they can alter how a message is internalized. For example, a study conducted by Toll et. al found that women who had a high perceived risk associated with quitting smoking relapsed quicker than women with a low perceived risk (Toll et al., 2008). Additionally, gain-framed messages were more effective with women who had low perceived risks of cessation (with effectiveness being measured as the number of days to relapse) (Toll et al., 2008).

In another study conducted by Gallagher, Updegraff, Rothman, and Sims, perceived susceptibility of breast cancer acted as a moderator on message framing (Gallagher, Updegraff, Rothman, & Sims, 2011). Women with average or higher than average perceived susceptibility were more likely to get a mammogram after viewing loss-framed messages as

compared to gain-framed messages (Gallagher et al., 2011). These women viewed their chance of getting breast cancer as more risky and were therefore more likely to go through with a behavior that would detect this health condition. This same trend (where perceived risk acts as a moderator of message effectiveness) occurred when messages promoting HIV testing were shown to women- participants with higher perceived risk were more likely to get tested after being shown a loss-framed message (Hull, 2012).

Message framing and perceptions studies have also been conducted with prevention behaviors, however less has been done and many only provide weak evidence for the effectiveness of gain-framed messages. Nan, Xie, and Madden conducted a study on message framing and perceived vaccine safety and efficacy among older adults in the U.S for the H1N1 vaccine. They found that the persuasiveness of loss-framed messages were stronger among participants with low vaccine efficacy and that the persuasiveness diminished among adults with high vaccine efficacy (Nan et al., 2012). Furthermore, the loss-framed message lead to more favorable attitudes and greater intentions among participants with low confidence in the effectiveness of the vaccine (Nan et al., 2012). Both gain-framed and loss-framed messages were beneficial for participants with high vaccine efficacy (Nan et al., 2012).

Motivation to perform a health behavior, such as receiving an HPV vaccine, has been found to interact with message framing as well. Loss-framed messages were more persuasive for avoidance-oriented individuals (those who respond to punishment, threats, or negative outcomes), whereas loss-framed and gain-framed messages were equally persuasive for approach-oriented individuals (those who respond to rewards, incentives, and positive outcomes) (Nan, 2012). A meta-analysis conducted by O'Keefe and Nan found no significant differences between gain-framed and loss-framed messages for promoting

vaccination; it must be noted that this conclusion was based on just four studies (O'Keefe & Nan, 2012).

Purpose of the study

The current study is significant because message framing among pregnant women in relation to influenza vaccination has not been conducted before. Many studies have been conducted to determine the effectiveness and persuasiveness of gain-framed and loss-framed messages; results of these studies are mixed, making the current study even more warranted. This is a potentially promising, feasible, and cost-effective intervention to increase vaccination rates among an at-risk population. The authors hypothesize that gain-framed messages are more persuasive at encouraging pregnant women to receive influenza vaccines since this is a preventive health behavior.

METHODS

Participants and Procedures

The study protocol was approved by the Emory University institutional review board. The persons eligible for this study included women ages 18 and older, who self-identified as African American or Hispanic, who could read and write English and were able to provide written informed consent. In 2011 and 2012, a project staff member conducted purposive venue-based sampling. She arbitrarily approached women to participate in this qualitative study at multiple OB/GYN clinics in Atlanta. Recruitment occurred during normal business hours and at various times and days of the week. Women were approached after checking in for appointments or after leaving their clinic visits. Those who were amenable to a discussion about the study engaged in a preliminary conversation with the

interviewer about the study protocol. The interviews were conducted in the waiting room of the clinic. Those who met the eligibility criteria and agreed to participate (n=21) were interviewed that day and were compensated $60 for time and inconvenience.

Interview Format

A semi-structured interview's guide was developed in collaboration with health communication and behavioral experts. Particular care was taken in crafting a script that facilitated a conversation in the vernacular of the participants, but was detailed in its potential probes for all questions.

Face-to-face interviews were conducted by project staff members who were trained to conduct the interviews. During the course of the interviews, participants' responses were routinely read back to them to ensure correct interpretation of responses (member checking process). Interviews were audiotaped and notes were taken. A member of the research team later transcribed the tapes.

Several standardized questions elicited information about the individual's Sociodemographic characteristics, such as age and race, as well as how many weeks pregnant the individual was, whether she had been pregnant before, and whether she had gotten a flu shot during any of those pregnancies. The following statements preceded interviewer-read open-ended questions:

We are interested in learning about the best way to tell pregnant women about the flu shot and want to know your thoughts on how to best present the flu shot information to increase pregnant African-American or Hispanic/Latina women's interest in getting the flu shot.

The interviewer then asked whether the participant thought women in their community would be more likely to get a flu shot after being told the benefits of getting a flu shot or the risks of not getting a flu shot. They were asked what information they would want to know before they got a flu shot. Some participants were then asked to look at a list of facts about the flu shot and pregnancy and choose which ones they would want to be in a message tailored to pregnant minority women. Other participants were asked to think about the items they would want in an informational message about the flu vaccine and to rank these in order of importance.

They were then asked where they get health information, whether they will/will not get the flu shot during their pregnancy, and why they would/would not get the flu shot during their pregnancy. Finally, participants were asked if they had anything to add in relation to making flu vaccination messages for pregnant minority women.

Code Sheet Development and Procedures

A detailed code sheet and coding scheme were developed to capture relevant details from the transcripts such as attitudes, beliefs, and opinions about influenza vaccination in pregnancy, the influenza vaccine in general, and where information about the influenza vaccine is found. The thematic categories and coding scheme were developed through independent content review of all transcripts, followed by discussion among the research team about emergent themes. The final code sheet contained 15 variables organized within the following rubric of five major themes: communication approaches (e.g., trust, sources, channels), positive (gain) framework (e.g., infant's health), negative (loss) framework (e.g.,

getting vaccine, not getting vaccine), vaccination in pregnancy (e.g., benefits, risks), and normal vaccine behavior (e.g., no benefit to self, pediatric vaccination).

Two coders were trained on the code sheet and corresponding definitions. In the initial coding process, these team members reviewed a small sample of printed materials and independently coded the materials in an effort to establish pretest reliability and refine any unclear areas of the code sheet and corresponding definitions. Once reliability was established, coders began to work with the transcripts. Analyses utilized the constant comparative approach within the grounded theory process model, which employ both deductive and inductive methods to identify patterns or themes. The interviews were coded using themes that emerged from an initial review of the transcripts. Codes were refined in a series of iterative cycles using methods developed by investigators at the Centers for Disease Control and Prevention (CDC) for team-based qualitative analyses(MacQueen, 1998).

Intercoder Reliability Assessment

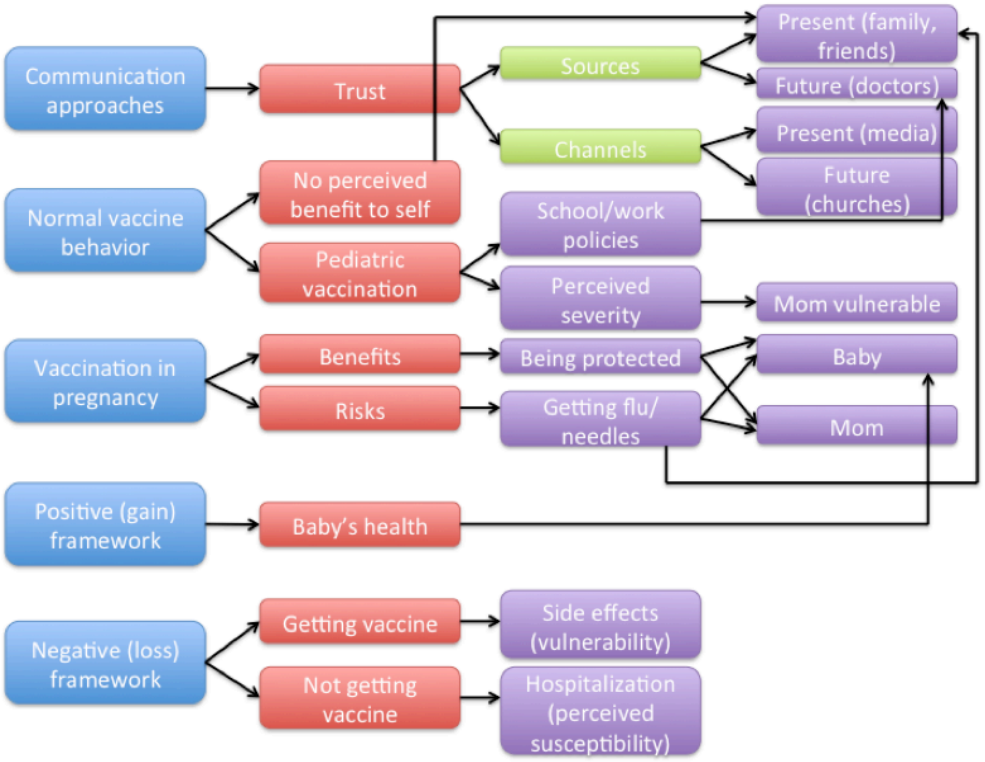
Random samples of transcript sections (20%) were cross-coded for reliability. Intercoder reliability was established by comparing the presence or absence of codes in a subsample of text from each interview. The overall reliability of the sample was 97.3%, (which is above the suggested 90% agreement level) (Carey, 1996). The individual codes achieved a high level of agreement, ranging from 78.5-100% with a median of 98.3% and a mode of 100%. The coding was completed from September 2012 to February 2013.

RESULTS

All participating women were between 19 and 39 (mean age around 24.5), identified as African-American, were pregnant (gestational age between 8-36 weeks) during the 2012-

13 influenza season, and had not received influenza or Tdap vaccines during their pregnancies since we were interested in discerning why women did not receive these vaccines. Four major thematic areas, with eight overlapping sub-categories were identified. These were communication approaches, normal vaccine behavior, vaccination in pregnancy, and positive framing vs. negative framing. Sub-categories covered trust/mistrust, vaccine accessibility/availability, risks related to getting or not getting the vaccine, misconceptions, perceived 'need' for vaccination, and concerns about the vaccine – especially related to the infant's health. Examples of quotes demonstrating major emergent themes are presented in Table 1. A concept map of codes and emergent themes was also developed (Figure 1).

Figure 1. Concept map of codes and emergent themes



Positive Framing (Benefits) vs. Negative Framing (Risks)

Positive framing of vaccination uptake messages was highly preferred as illustrated by this one woman:

> *…your emotions are already all over the place and last thing you want to hear is…not getting this could cause serious complications, might kill you, might kill the baby…*

Three of our respondents discussed vaccines in pregnancy with their OB/GYN while still talking to us and scheduled to get an influenza vaccine as soon as they were available. One of these women said:

> *…I don't typically get flu shots, mainly because I just believe…I don't think they're necessary, but I did want to make sure that I didn't put myself in a position that if I were to get sick that it would harm my baby or potentially kill my baby.*

Strong willingness was shown to get vaccinated if the benefits to the infant were clearly communicated:

> *I'm taking it now because my baby doesn't have the immunity that I have of any sort so sheltering my child of that immunity would be selfish of me. I need to put his health first instead of mine…*

Many emphasized the need to be clear about the risks related to getting or not getting the vaccine so that they can weigh them against benefits.

Communication Approaches

Women identified their community networks – specifically 'other women's experiences,' media, and primarily their doctor as 'trusted' sources of information. Almost all women mentioned that their personal or family experiences and word of mouth from their

friends is a more reliable source of information for them as compared to "someone on the TV". One woman shared:

> *The main reason I would decide not to get it is because you know, my past experiences from hearing my mother go through it and when I was younger, what I went through.*

Another stated that:

> *You hear it from your mom; she can't be wrong. It's mom telling you. You know you hear from your girlfriend; she can't be wrong. It's your girlfriend.*

Women's social networks seemed to have a strong influence on understanding and uptake of the influenza vaccine. Such women get and trust almost all of their health information coming from other family and friends who can afford to see the doctors:

> *So I think when you dealing with minority communities you have to take that into account…the social network that we have and who we identify as people that we'll listen to.*

Women expressed general ambiguity about the influenza vaccine, especially in pregnancy. One participant stated, "I don't know what it does?" She explained that when health campaigns on media present messages, they are not clear:

> *You'll hear about a flu outbreak and then they'll say…go get your flu shot but they're really not providing information…*

Participants mentioned that public messages in media do not do a good job of explaining who is at risk and who should get vaccinated as a priority:

Usually when you hear about it in the news…it's a flu

outbreak or what not they won't say, you know, pregnant.

They'll just be like…elderly…

Some preferred to get information from the news media or the Internet - one such respondent told us how she shields her Autistic nephew from vaccines as she is convinced that vaccines are responsible for his condition.

Health care providers, primarily doctors, were perceived to be the most reliable and respected source of information on influenza vaccines. Women had mixed opinions, however, in terms of what and how much information they currently receive from their doctors. Few women said that they were asked by their doctors to get the influenza vaccine; they were mainly told to get the influenza vaccine for their young children, and they got it:

…you would trust them with the care of yourself and your baby.

So you have to trust your physician.

Another participant insisted on the need to get more information:

My doctor just said get it cause it's flu season, but I didn't

know nothing about it…and every time I get shot I like to ask,

what, how it helps me…and my doctor didn't tell me.

Almost all pregnant women said they would prefer vaccine information to come from their doctors. They expressed need for a more interactive way of receiving information on the influenza vaccine as one suggested:

Maybe if the doctors would verbally inform their patients more.

Sit down and talk to them more instead of only getting

pamphlets that no one bothers to read.

Normal Vaccine-Related Behavior

The majority of participants felt that adults do not need vaccination as much as children do. The most common reason for not receiving an influenza vaccine as an adult was the perceived 'need' to be vaccinated. The majority of our respondents said they used to have vaccines as kids but do not get them as adults. As one said:

> *Um I've never really been sick with the flu or nothing…so I just didn't see the purpose.*

Many mentioned concerns about the vaccine's side effects as a reason to not get vaccinated:

> *Yeah cause they say if you have never gotten the flu, then if you get the flu shot it'll end up bringing on the flu the next year.*

Women also showed concern about how much an influenza vaccine protects an individual:

> *I just chose not to get it and then as I got older I started watching other people that got it and…like they would still get sick like the rest of us.*

Responses related to normal vaccination behavior were mainly concentrated around younger children. Most women acknowledged that they think vaccines are safe and necessary for children and they are particular about vaccination schedules mainly because pediatricians insist on it:

> *…especially my pediatrician. She doesn't really go into it. She'll just say…your child is due for this vaccine and this vaccine and this vaccine.*

School vaccine mandates were also cited as a reason to get children vaccinated. Women weighed the benefits of influenza vaccination, especially for school-aged children and rated

them higher. As one woman explained that if a child in class falls sick, he can infect others too:

> *…Some kids, you know, they don't get vaccinations period…what effect that has on children as well and being around other kids who are sick.*

Women also related child's sickness to lost work time for parents who have to take care of the child at home, which most families cannot afford. A couple of women did not agree and said since they do not fully understand how influenza can be so severe or how vaccines work, they just stay away from them:

> *…But with children specifically until their bodies are mature enough I can't even consider giving them…flu shots and stuff.*

Vaccination in Pregnancy

None of the women we interviewed had gotten an influenza vaccine in pregnancy:

> *Yeah, but I ain't get the flu shot in my first pregnancy…I don't know why though. Cause I wasn't educated on it.*

Most women considered influenza vaccination in pregnancy either harmful or unnecessary. One woman explained in these words:

> *Well it was a couple people that I read and they were saying that sometimes it could mess up something in the baby, sometimes it can mess up the development…so I don't want to try it.*

Women also equated avoiding the influenza vaccine to being careful:

> *…it's kind of like you feel like any medicine that you take, you know is going to be harmful cause…they tell you do not take anything except for Tylenol so it kinda makes it seem like you probably shouldn't be getting vaccines.*

Pregnant women showed interest in knowing more about influenza vaccination during pregnancy:

> *I didn't know anything about how important it is to have a flu vaccine during pregnant so if um, do you know? Is it important?*

Pregnant women's concerns and interest about the influenza vaccine overwhelmingly revolved around the vaccine efficacy and risks and benefits for the fetus rather than themselves. The fetus's health was the most important focus:

> *A pregnant woman's main concern is the baby. If anything else is happening you want to know, is the baby okay? That's always the first thing…that's the main concern before themselves.*

Women showed strong willingness for influenza vaccine uptake during pregnancy if their doctors explained to them the benefits and risks for the infant:

> *…The benefits that it has for the babies, to protect them. Cause you know, you need to do everything that you can possibly do to make sure your babies have the best start…Getting that flu shot will help them, then that's most certainly what I would do.*

Women's questions related to how influenza vaccination functions in a pregnant body; biological effects on the infant; what strands this vaccine covers and what are the chances of getting sick with what is not covered; why and how it affects the infant when it is born; and why don't doctors talk about it with pregnant women.

DISCUSSION

Among this sample of pregnant African American women from a major city in the South, we found 4 major themes related to receiving the influenza vaccine during pregnancy. These women preferred positively framed messages that emphasized the benefits to the infant. While they trust their family and friends for most health information, they would prefer to hear about the influenza vaccine from their obstetrician. Previous experiences (good and bad) with vaccines affected their decisions to get vaccinated as adults, and the decision to get vaccinated while pregnant revolved around the health and safety of the fetus. Related to these major issues is whether the obstetrician tells the pregnant woman about the influenza vaccine. All of these findings provide insight into the uptake of the influenza vaccine by African American women, which warrants further attention and investigation.

Arguably the most important finding from this study is the awareness and concern for the infant's health. The majority of the participants (N=20) wanted to know how the influenza vaccine would affect their infants. Pregnancy was the one and only time participants said they would set aside their own health for the health of their infants. The main reason cited for not getting an influenza vaccine was worrying that it would adversely affect the infant, a belief which has been found in previous research (Blanchard-Rohner et al., 2012; Fisher et al., 2011; Kharbanda et al., 2011). Participants made it clear that messages about influenza vaccines would need to address how it would affect the infant for them to

not only pay attention to the messages, but for them to actually think about getting an influenza vaccine.

Many women talked about receiving conflicting messages surrounding the influenza vaccine. Influenza vaccine messages would need to convey that the most effective way to prevent influenza is to receive the vaccine. Additionally, some participants spoke of just not being informed about the influenza vaccine, which is consistent with other studies (Blanchard-Rohner et al., 2012; Kharbanda et al., 2011; Marczinski, 2012). The women expressed trust in the information given by their family and friends. Because African American women seem to trust their family and friends over what they see and hear from the media it is important that any messages be tested with the targeted population to ensure they are salient and reflect the attitudes and values of the group (Rice & Atkin, 2001). Previous experiences with the influenza vaccine, and vaccines in general, such as having a negative reaction to a childhood immunization, appear to play a major role in our participants' decision to receive an influenza vaccine.

Another important theme that emerged was that positively framed, or gain-framed, messages related to influenza vaccination were preferred over negatively framed messages. Many participants said that they already worry about their infant so they do not want to hear messaging that presents negative information. Messages for this audience would need to emphasize the benefits associated with influenza vaccination, and more specifically how it would help the fetus. It is also important to note that some participants stated they valued that information be presented for independent decision-making. Therefore, it is important that influenza vaccine messages tailored to this population provide accurate information in a tone that makes the message salient and personally relevant (i.e., the infant's health) (Rice & Atkin, 2001).

One additional factor that emerged from the discussions with our participants that would encourage them to get an influenza vaccine is provider recommendation. While some women spoke of mistrust of the overall medical community, a few women said they trusted their OB/GYN and that recommendations from their doctors would persuade them to get the vaccine. Previous research found that the biggest barrier to vaccination was not being offered the influenza vaccine by a healthcare provider (Blanchard-Rohner et al., 2012). Similarly, studies conducted by the CDC have found that pregnant women who reported that their healthcare provider offered them the influenza vaccine or recommended them to get it were more likely to be vaccinated than those who did not receive an offer or recommendation ("Influenza vaccination coverage among pregnant women - 29 States and New York City, 2009-10 season," 2012; "Influenza vaccination coverage among pregnant women - 2011-12 influenza season, United States," 2012).

Limitations

There are some limitations to this study. Purposive sampling of minority women from one southeastern city was used, which may not be representative of other cities in the United States. Additionally, a convenience sample was used, with women who were agreeable to participating in the study included, which may not be representative of the actual population of pregnant African American women.

This study is formative in nature. We asked women what types of messages would encourage them to get an influenza vaccine, which reflects intention as opposed to actual behavior. Further research is needed to determine if actually seeing messages that are positively framed and that focus on the infant's health would lead to pregnant African American women receiving influenza vaccines. Findings from this study were used to

develop a message framing-focused intervention for pregnant women, which is currently being evaluated with a randomized controlled trial

CONCLUSION

Pregnant women are a group at risk for contracting influenza and experiencing negative outcomes associated with the virus. Pregnant African American women are less likely to get the influenza vaccine as compared to white women putting them at risk for complications from contracting influenza. This is a population that would benefit from receiving tailored messages related to influenza vaccination. Using in-depth qualitative methods, this study adds to existing message-framing literature by focusing on a population that little research has been conducted with. The study findings contribute to the evidence base for effective messages to inform influenza vaccination coverage in pregnant African American women.

Future research should test messages using the criteria developed from this study to determine if they actually change intention and even behavior. Additional influenza vaccination acceptability among other minority populations, such as Hispanic/Latina and American Indian communities, may reveal different sociocultural issues surrounding vaccine uptake and decision-making. Additionally, research similar to this should be conducted among larger numbers of African American women in settings across the U.S. in order to determine if similar factors play a role in vaccine acceptance. Findings from this study may prove useful in creating tailored messages aimed at promoting influenza vaccination among pregnant minority populations.

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Emory University and Grady Healthcare Consent Form to be a Research Subject & Authorization to Use or Disclose Health Information that Identifies You for a Research Study

Title: Vaccine Acceptance in Pregnant Minority Women

Principal Investigator: Saad B. Omer, MBBS MPH PhD; Emory University Rollins School of Public Health

Co-Investigators: Paula Frew, PhD, MA, MPH; and Fauzia Malik, MSc; Emory University Schools of Medicine & Public Health
Lisa Flowers, MD, Emory University School of Medicine and Grady Health System
Bob Davis, MD MPH, Kaiser Permanente Georgia

Sponsor's Name: Kaiser Permanente Georgia

Introduction/Purpose:
You are being asked to be in a research study. This form was made to explain what you need to think about before you decide to be in the study or not to be in the study. It is entirely your choice. If you decide to take part, you can change your mind later on and withdraw from the research study. The purpose of this study will be to test different vaccine education strategies to increase the rates of flu and pertussis (Tdap) vaccination among pregnant African-American women in Atlanta. For the initial phase of this study we will interview up to 15 pregnant women recruited from prenatal clinics in the Atlanta Metro Area.

Why am I being asked to do this study?
We plan to use the information we collect from interviews to learn about pregnant women's willingness to receive flu and Tdap vaccines. Your answers will give us facts on community awareness, attitudes, and beliefs about these vaccines and which types of educational messages may increase the number of women who want to get vaccines.

Procedures:
If you agree to join this study, you will be asked to take part in an interview that will take about 60 minutes. We will ask you about your thoughts on the flu vaccine and messages that you feel would make you or other pregnant women want to get the flu shot. Your responses will be audio and/or electronically recorded and the interviewer may also take notes during your interview.

Your participation in this study is your choice.

Will my answers be kept private?
All of your answers will be kept strictly private. Your name and personal information will be kept private and separate from your responses to study questions. No personal information that identifies you will be attached to the final data or included in any published reports. All information will be stored in locked file cabinets in a secure access office. During interviews, we will use code names so that no personal health information (PHI) shared can be linked to you. We will use a unique participant ID number, instead of your name, whenever possible.

What are the risks to me?
The risks for being in this study are likely to be small. There are no foreseeable risks of physical harm. There is always a small chance that confidentiality will be breached. If this happens, we will work with Emory officials to inform all participants and we will take steps to correct the situation. We will keep all information about you private to the extent allowed by law.

Grady Health System Patients Only:
If you are injured by this study, we will give you emergency care. However, Grady Health System and Emory University have not set aside funds to pay for this care or to compensate you if a mishap occurs. If you believe you have been injured by this research, you should contact Dr. Saad Omer at 404-727-9814.

What are the benefits to me?
This study is not designed to benefit you directly. This study is designed to learn more about flu and Tdap vaccination among African American pregnant women. The study results may be used to help other people in the future. There may be no direct benefit to you as a participant in this study.

Will I be paid for participating in the study?
After completing the interview, you will be given a gift card valued at $60.

Will my answers be kept confidential?
Certain offices and people other than the researchers may look at your study records. Government agencies, Emory University and/or Grady Healthcare employees overseeing proper study conduct may look at your study records. These offices include the Emory Institutional Review Board, the Grady Research Oversight Committee, Kaiser Permanente (the study sponsor), and the Emory Office of Research Compliance. Emory University and Grady Healthcare will keep any research records we produce private to the extent we are required to do so by law.

Authorization to Use and Disclose Health Information:
If you sign this form, you are giving permission to all health care providers who are connected with this research project at Emory University and Grady Healthcare to use or release your health information that identifies you in the research study described above. The health information that researchers may use or release for this research includes all information gathered during the research described in this informed consent document. The health information listed above may be used by and/or released to all research staff involved with the research described above. In addition, people and committees at Emory and Grady Healthcare who are responsible for making sure that research is conducted correctly will have access to your health information to oversee the study.
Emory University and Grady Healthcare are required by the HIPAA Privacy Rule law to protect your health information.. Those persons who receive your health information may not be required by Federal privacy laws (such as the Privacy Rule) to protect it and may share this information with others without your permission, if permitted by laws governing them. You may change your mind and take back this Authorization at any time, except to the extent that Emory University and Grady Healthcare have already acted based on this Authorization. To take back this Authorization, you must write to Dr. Saad Omer, Emory University School

of Public Health, 1518 Clifton Road, NE Room 7017 (CNR Building), Atlanta, GA 30322. If you take back this Authorization, the researchers may still use and disclose health information they already have obtained as necessary to maintain the reliability of the research study.

Expiration Date: Your permission to use and disclose your PHI will expire. The expiration will be at the end of the research study after data analysis and any required record-keeping period.

Do I have to participate?

The choice to join this study is yours. You may choose not to take part in this study. You do not have to answer questions that you do not wish to answer. You can leave the study at any time. Your decision to take part in the study or not take part in the study will not affect the prenatal care you are receiving.

Who should I contact if I have questions about this study or my rights as a research participant?

- If you have any questions about the study, you may contact Dr. Saad Omer at 404-727-9814 or somer@emory.edu.
- If you have any questions about the study, or your rights as a study subject, you may contact the Emory University Institutional Review Board at 404-712-0720 or 1-877-503-9797, by email at irb@emory.edu.
- If you are a Grady Healthcare participant, you may also contact Dr. Curtis Lewis, Senior Vice President for Grady Health System Medical Affairs at (404) 616-4261.
- You may also let the Emory IRB know about your experience as a research participant through our Research Participant Survey at http://www.surveymonkey.com/s/6ZDMW75.

Consent:

Nothing in this form can make you give up any legal rights. By signing this form you will not give up any legal rights. You are free to take home an unsigned copy of this form and talk it over with family or friends.

Please sign below if you agree to participate in this study.

_____

Name of Subject

_____ _____

Signature of Subject Date Time

_____ _____

Signature of Person Conducting Informed Consent Discussion Date Time

ELM Influenza Vaccination Messages & Pregnant African American Women

Interviewer Script:

Hi, my name is _____ and I will be interviewing you. Thank you for being a part of this interview study. Your participation is completely voluntary. You may choose not to participate or not to answer any specific question. You may ask to skip any question you do not wish to answer.

The purpose of this study is to learn about the seasonal flu and your attitudes regarding vaccination against flu. This information will help us to improve community education programs and health communication strategies created for pregnant women. All of the information that you share with us will only be accessible to the members of our research team. There is no right or wrong answer. Please answer each question as honest as possible. All answers will be kept strictly confidential and will **not** be linked to any personal or contact information.

Do you have any questions before we begin?

Part 1: Introduction through attitude and practice related questions:

1. How many weeks (or months) have you been pregnant?

    a. Have you been pregnant before? If so, how many times?

PREVIOUSLY PREGNANT

    b. How many children do you have? (to account for twin pregnancies or other situations)

2. Did you get a flu shot during any of your pregnancies? Do you normally get a flu shot (not pregnant)?

    a. How/why did you decide to (or to not) get the flu shot?

EVERYONE

    b. What are your opinions about getting a flu shot during pregnancy?

    c. Why do you think some women don't get flu vaccine during pregnancy?

Part 2: Elicitation of Preferred Content for Health Messages within ELM Framework

Interviewer: We are interested in learning about the best way to tell pregnant women about the flu shot and want to know your thoughts on how to best

present the flu shot information to increase pregnant African-American or Hispanic/Latina women's interest in getting the flu shot.

3. Do you think yourself or pregnant women in your community would be more likely to get the flu shot after being told the benefits of getting the flu shot, such as protecting the health of their baby, or after being told of possible danger of not getting the flu shot, such as being hospitalized if they got the flu?
    a. Can you tell me more about why you think one way would be better?

4. Together, I want us to make an information message for pregnant women in your community.

    a. What do you think is most important information for pregnant women in your community to know? What are the concerns they would like to see addressed through a message?
    b. What will motivate them or make them want to get the flu vaccine? What type of information or topics can be put into a message?
    c. Is pain associated with vaccination going to impact your decision to receive/not receive the vaccine?
    d. Are there any costs or access related factors involved?
    e. What is the main reason you would decide (or not) to get the vaccine?

5. Let's do a ranking exercise based on the content of your preferred information message. I would like you to rank the information orientated towards you and your community's needs as it is based on locally accepted criteria, as well as on such externally identified categories as safety, protection, cost, time to benefit, and social and technical feasibility.

6. What would be the best avenue to get appropriate vaccination services that are easily accessible and friendly?

    a. What has been your past exposure (to information on flu vaccination)? Your doctor? Another mother? And who would you prefer to provide you this information?
    b. If vaccination services were offered at the OB/GYN clinic do you think you will get the flu vaccine while you are pregnant?

Thank you for participating in this interview! Your answers will help us create informative and motivational messages for pregnant women.

Influenza Vaccination Messages & Pregnant Minority Women

Interviewer Script:

Hi, my name is _____ and I will be interviewing you. Thank you for being a part of this interview study. Your participation is completely voluntary. You may choose not to participate or not to answer any specific question. You may ask to skip any question you do not wish to answer.

The purpose of this study is to learn about the seasonal flu and your attitudes regarding vaccination against flu. This information will help us to improve community education programs and health communication strategies created for pregnant women. All of the information that you share with us will only be accessible to the members of our research team. There is no right or wrong answer. Please answer each question as honest as possible. All answers will be kept strictly confidential and will **not** be linked to any personal or contact information.

Do you have any questions before we begin?

7. How many weeks (or months) have you been pregnant?

8. Have you been pregnant before? If so, how many times?

PREVIOUSLY PREGNANT

9. How many children do you have? (to account for twin pregnancies or other situations)

10. Did you get a flu shot during any of your pregnancies?

11. How/why did you decide to (or to not) get the flu shot?

EVERYONE

Interviewer: We are interested in learning about the best way to tell pregnant women about the flu shot and want to know your thoughts on how to best present the flu shot information to increase pregnant African-American or Hispanic/Latina women's interest in getting the flu shot.

6. Do you think yourself or pregnant women in your community would be more likely to get the flu shot after being told the benefits of getting the flu shot, such as protecting the health of their baby, or after being told of possible danger of not getting the flu shot, such as being hospitalized if they got the flu? -Can you tell me more about why you think one way would be better?

7. If you were reading information on the flu vaccine to decide whether or not to get the vaccine while pregnant, would you want the information to be focused on the benefits of the vaccine or what could happen if you don't get the vaccine?

8. What information would you want to know about the flu and flu vaccine before getting the vaccine while pregnant?

9. Together, I want us to make an information message for pregnant women in your community. What do you think is most important information for pregnant women in your community to know and what will motivate them or make them want to get the flu vaccine.

    Information that could be put in the message may include:
    - The flu vaccine cannot give someone the flu because the virus in the flu shot is not alive.
    - Pregnant women are more likely to have a serious illness from the flu than non-pregnant women, which can include severe complications and hospitalization and sometimes even death. This is because a pregnant women's immune system is less able to fight off infections.
    - Getting a flu shot is the most important step in protecting against the flu
    - When the flu shot is given during pregnancy, it has been shown to protect both the mother and her baby (up to 6 months old) from the flu.

10. Do you think you will get the flu vaccine while you are pregnant?

11. What is the main reason you would decide to get the flu vaccine?

12. What would be the main reason you would decide not to get the vaccine?

Thank you for participating in this interview! Your answers will help us create informative and motivational messages for pregnant women.

Table 1. Emergent themes related to flu vaccine messaging

Factors and description	Illustration
Communication approaches (major theme)	"…you'll hear about a flu outbreak and then they'll say, you know, go get your flu shot but they're really not providing an information…" "…usually when you hear about it in the news, you know, if they say, you know, it's a flu outbreak or what not they won't say, you know, pregnant. They'll just be like, you know, elderly…" "…but they're not offered, like the doctors don't bring it up…and I've asked but, they just kind of say like, "Don't worry about it.'"
Channels	"I would rather hear it from, somebody that, you know, in the medicine type field that knows about stuff like this and not somebody that just be on TV, just listen to what other people tell them." "You can't go wrong with the church. People have a fear of hospitals so that wouldn't be an ideal setting. But the church, schools, um…those are the main venues that I do see a lot of African American community being involved in…"

	"…everybody has a TV, you a TV or a radio. If you don't have a radio, you're driving somewhere and you see a billboard. Things like that. There more visual."
Sources	"If it was a decision I make, I probably wouldn't go and get it. I probably would never go get it. But if the doctor say, okay, you know, um you need to get the flu shot before, then I'd get it." "So I think when you dealing with minority communities you have to take that into account…the social network that we have and who we identify as people that we'll listen to." "Well you know in pregnant you got to the doctor often. So I think your, your doctor should be the first one to discuss it."
Normal vaccine behavior (major theme)	"Yeah cause they say if you have never gotten the flu, then if you get the flu shot it'll end up bringing on the flu the next year. That's what I've heard." "No, I've never had the flu so…and um, my family members have had it, or have gotten the flu vaccine. Sometimes they say

	you know, it makes them sicker, it makes you catch it, so I've really been kind of iffy about getting it." "I get it when I'm not pregnant, but when I'm pregnant I don't get it…I don't know, I think the flu shot be harmful to babies. Especially when you're pregnant."
No benefit to self	"Um I've never really been sick with the flu or nothing…no really strong cold or anything like that…I've never really been sick so I just didn't see the purpose." "Because I know a lot of people who decide to get the flu shot and they still get sick…And it seems like it's not helping anything to me. From what I'm seeing so I choose not to get it." "Because that's the reason I didn't get it, because I never had the flu. So I never um, felt like it was important for me to get a flu shot because I have a cold, but it wouldn't go so far as the flu."
Vaccination in pregnancy (major theme)	"See I didn't know anything about how important it is to have a flu vaccine during pregnant so if um, do you know? Is it important? Is it something that really needs

	to happen?" "Yeah, but I ain't get the flu shot in my first pregnancy…I refused. I don't know why though. Cause I wasn't educated on it." "…that's probably something that needs to be stressed because it's kind of like you feel like any medicine that you take, you know is going to be harmful cause when you first come here, like…they tell you do not take anything except for Tylenol so it kinda makes it seem like you probably shouldn't be getting vaccines."
Benefits	"Okay, so the important information that I feel we need to know is that it's helpful. If we get it…it benefits our child…it can stop a lot of stuff from happening. A lot of sickness. So it's better to be careful and get it than not to get it and end up having the flu or anything like that." "So if you tell them about the benefits, then they'll be, you know, they'll be like okay, well you know, it's gonna benefit me and the baby, so they'd be more willing to get it." "I just think it should be focused on the

	benefits or happen when you get the vaccine because if it's discussing, I don't know. I just feel like any literature that's discussing anything negative kind of turn's people away…So I just think that you need more positively oriented and that way it will make people feel like it's something really beneficial for them to receive."
Risks	"I'd wanna know the risk that I'm taking by getting the shot, how would it affect me and my baby." "I also want to know about the positives, but I want to know negatives too. I think they should know the benefits and the side effects. Them the two things they should most know about." "…cause it's two sides to anything. There's an up, there's a down…there's a pro and there's a con, so I don't want to just hear the bad." "I want to know the benefits. I want to know the risks. That way I can make the decision myself…"
Positive (gain) framework (major theme)	"You should have, you know, um, benefits to…the benefits of that vaccination for the

	community." "I just think it should be focused on the benefits or happen when you get the vaccine…so I just think that you need more positively oriented and that way it will make people feel like it's something really beneficial to them to receive." "I'd probably go more towards possibly protecting the baby the versus the side effects. I want to know what the benefits are cause I know they wouldn't necessarily just put something out there."
Baby's health	"Yeah. A pregnant woman's main concern is the baby. If anything else is happening you want to know is the baby okay. That's always the first thing…that's the main concern before themselves…you could just let them know how it will affect or not affect the baby." "I'd say the most important information is…if you gonna address anything, address them leaning towards the unborn child…cause technically it's not about you anymore. You gotta prioritize your child first…"

	"…the benefits that is has for the babies, to protect them. Cause you know, you need to do everything that you can possibly do to make sure your babies have the best start, so year. Getting that flu shot will help them, then that's most certainly what I would do."
Getting vaccine	"I think they will be more concerned with the disadvantages of the flu shot. What exactly will happen if you know, something goes wrong or something like that. The cons of the situation." "The risks. The risk and yeah, I'll just say the risk. Just the whole side effects period. Negative or positive side effects. Just the side effects are the most important." "…but just side effects…they might think they might end up getting sick more they just don't want to do anything to put their health at risk while they're pregnant."