

HPV Vaccine Messaging

Summary of research findings with Indian parents



Overview

The American Cancer Society's Global HPV Cancer Free program engages local social and behavioral experts and civil society organizations to co-develop evidence-based messages, interventions, and implementation strategies in select countries to increase the demand and uptake of HPV vaccination. Since 2019, we have completed formative research in three countries, including India, to determine barriers, levers, and effective solutions for increasing HPV vaccination rates. Building on previous research, which can be found at PreventGlobalHPVCancers.org, we set out to compile and validate effective messages to reach parents of 9- to 14-year-old girls in India regarding HPV vaccination.

How to use this report

This report presents results from research conducted by Final Mile in India in 2 phases from late 2024 to early 2025. Phase 1 involved a psycho-Behavioral survey to explore themes related to HPV vaccination. Phase 2 included A/B testing of message text, and additional testing of message text with imagery. Each phase includes a brief overview of objectives and methods. Additional details, including survey questions, can be found in the appendix. To skip directly to key research insights, see slides [16 - 18](#) and [22 onward](#).



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1| Country Context



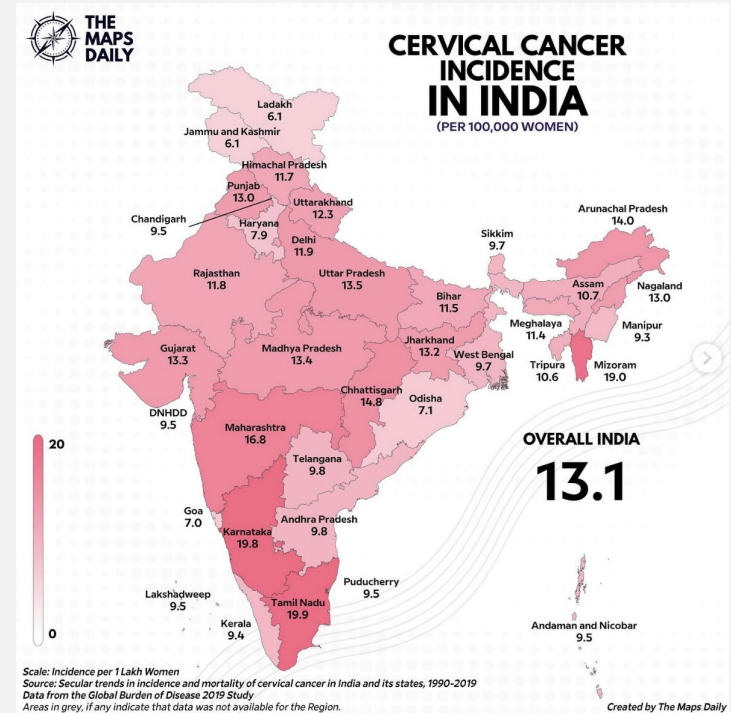
Cervical Cancer & HPV Vaccination in India

Cervical cancer is the second most common cancer affecting Indian women between ages 15 and 44. Each year in India, around 1.2 lakh women are diagnosed, and over 77,000 lose their lives to cervical cancer (HPV Information Centre, 2023).

To prevent this, The National Technical Advisory Group for Immunization (NTAGI) has recommended adding the HPV vaccine to the Universal Immunization Programme (UIP). The WHO recommends giving two doses to girls aged 9 - 14, which can prevent over 90% of cervical cancer cases.

The indigenously produced quadrivalent HPV vaccine (Cervavac) was launched in India in 2023. NTAGI approved Cervavac as a two-dose regimen. Both Cervarix and Gardasil have been approved for single-dose use by NTAGI.

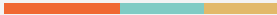
India's move to include the HPV vaccine in the UIP is a major milestone — since India accounts for 1 in every 5 cases of cervical cancer globally. To date, the program has not been rolled out in the UIP, though it is expected within a year.



Cervical cancer incidence in India (2019) by state

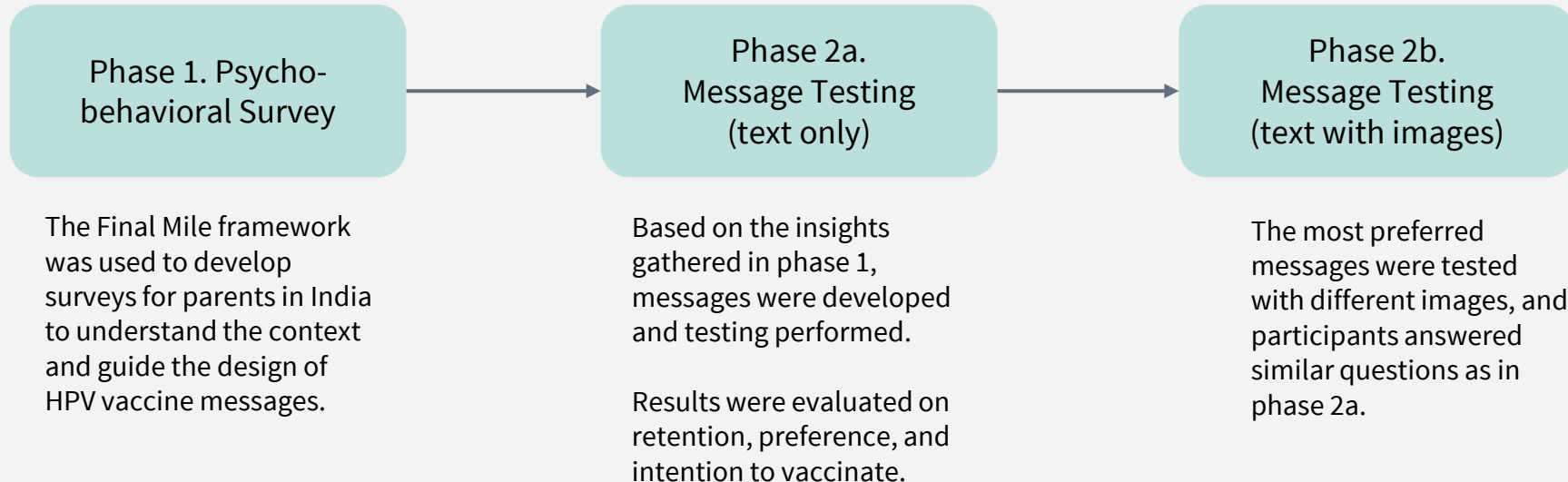
2| Research Project

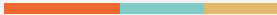




Goal and Phases

This project aimed to understand the behavioral and systemic factors influencing HPV vaccine uptake in India, using a framework developed by Final Mile to identify key elements of vaccine decision-making. The work was conducted in three phases.





Methods and Sampling

The research was conducted in 2 phases with parents/caregivers of 9- to 14-year-old girls.

Phase 1 involved 75-minute psycho-behavioral surveys with a sample size of 40 respondents across peri-urban and semi-rural locations in Maharashtra, India - Vasai, Boisar, and Nala Sopara.

Phase 2 involved A/B testing done in 2 rounds with a total sample size of 300 respondents – 200 respondents in round 1 and 100 respondents in round 2, of which the survey was run remotely through WhatsApp with 240 respondents and in-person testing conducted with 60 respondents.

The sample size distribution and research locations for Phase 2 are on the next page.



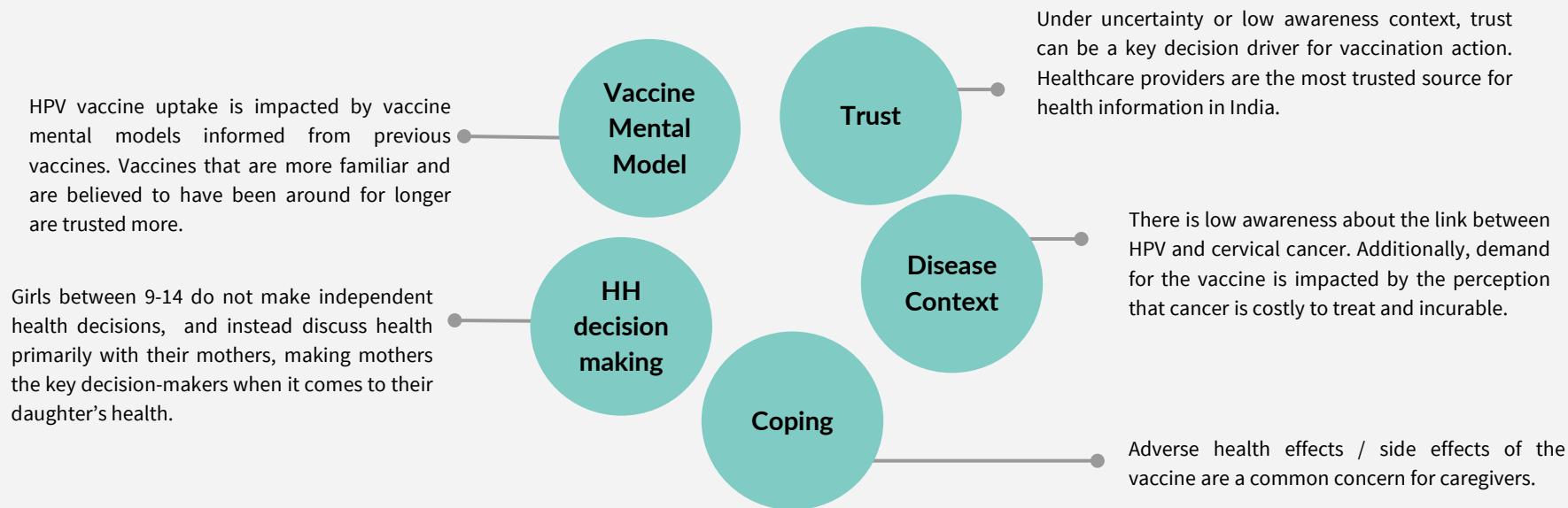
Sample in Detail

Sample Size Distribution for Phase 2

Round 1	Location	Participants		Semi-Rural	Peri-Urban	Urban
	Chennai (Tamil Nadu)	67	Of which	23	22	22
	Lucknow (Uttar Pradesh)	67		23	22	22
	Bhuvaneshwar (Odisha)	66		22	22	22
Round 2	Visakhapatnam (Andhra Pradesh)	50	Of which	17	17	16
	Patna (Bihar)	50		17	17	16

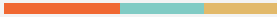
Final Mile framework for HPV vaccination

The decision and uptake of the HPV vaccine is more complex than other child vaccines, as it has been launched only recently in many countries and is primarily for young girls aged 9-14, for an infection that can cause cancer in the future. Given the decision complexity, which involves a 9- to 14-year-old girl and her caregiver(s), there are several interrelated factors that affect HPV vaccine decision-making and uptake that we consider under our framework.



3| Phase 1. Psycho-Behavioral Survey





Phase 1. Psycho-Behavioral Survey

Methodology

1. Literature review to identify key themes and define them
2. Creation of survey for caregivers (as per identified themes)
3. Identify recruitment criteria and prepare recruitment screener
4. Conduct field-testing
5. Analyze data and interpret results
6. Use interpretation to develop communication strategy and messages



Phase 1. Psycho-Behavioral Survey

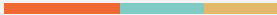
Thematic Areas and Objectives:

1. Household Decision-Making

- Identify who is primarily in charge of decision making for the health of the household, specifically daughters, and how related factors (cost, gender of the child) might affect these
- Identify who might be involved in the HPV vaccine decision making process (considering that HPV and cervical cancer might be taboo topics to discuss)

2. Vaccine Mental Models

- Understand engagement with the health system in general - preferred places and people to interact with
- Influence of accessibility and logistical factors - distance of the health centre, availability of vaccines, behaviour / mental models of health staff/medical professionals
- Understand experiences with COVID vaccine and routine immunizations
- Myths and misinformation about vaccines



Phase 1. Psycho-Behavioral Survey

Thematic Areas and Objectives:

3. Trust

- Identify trusted sources of information about the HPV vaccine (e.g. medical professionals, family members, other parents, government, public figures, etc.)
- Understand levels of trust in government and ministry of health / universal immunization program and health system, ASHAs, etc

4. Disease Context (Awareness, Knowledge)

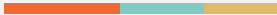
- Understand the level of awareness of HPV, cervical cancer, and sentiment towards HPV vaccine

5. Coping

- Understand parental attitudes towards perceived long-term effects of the vaccine

6. Service Delivery

- (For positive deviants) Understand experience of those whose daughters were vaccinated - clarity of information, ease of access, clarifying misconceptions
- Understand preferences for location of vaccination and perceived agency in the process



Phase 1. Psycho-Behavioral Survey

Thematic Areas and Objectives:

7. Social Influences (Social Proof & Social Norms)

- Understand how social factors/influences impact attitudes towards vaccines (community attitudes, neighbours/family members, other parents)
- Understand if caregivers and medical professionals feel hesitant to talk about HPV and cervical cancer

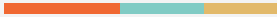
8. Aspirational Framing (Parental Goals)

- Identify goals of parents for their daughters (aspirational, protective, high/low risk perception, etc.)

- Identify if parental goals are influenced by social environment

9. Channels

- Identify existing channels and preferred sources for parents on information about adolescent health



Survey Key Results – Understanding Barriers

There are several high level **BARRIERS** that may address HPV vaccine uptake

Low Awareness and Knowledge

Awareness and information about HPV and cervical cancer are low, and the link between them is not clear.

Trust & Social Factors

Social norms around the HPV vaccine have not yet been established due to low awareness and availability.

Lack of Knowledge about Cancer Prevention

People feel that cancer cannot be prevented, let alone by a vaccine. The fear associated with cancer also stems from the perception that it cannot be cured.

Complex Decision Making

Girls have limited involvement in health decision making. While mothers lead health decisions, they often need validation / confirmation from other family and community members. Fathers not living in the same household can also add to delays and uncertainty in decision making.

Unfamiliarity with HPV Vaccine

While some hold the misconception that the HPV vaccine is new, the big barrier is limited awareness and information. Concerns are shaped more by fear of side effects and confusion - often influenced by past experiences with the COVID vaccine - than by distrust in the vaccine's newness itself.



Survey Key Results – Understanding Enablers

There are several high level ENABLERS that can be leveraged to increase HPV vaccine uptake

Trusted Sources of Information

Doctors are viewed to be the most trusted sources of health advice, while front-line workers like ASHAs serve as influential messengers.

Adherence to Government Vaccine Programmes

The adherence to existing government-recommended immunization programmes is high.

Prevention of Cancer as a Motivator

Cancer is seen as an expensive and feared disease, so the idea of prevention by a low-cost vaccine can serve as a strong motivator.

Desire for Long-Term Protection & Future Security

Parents wish to secure their daughter's health and future, therefore, messages that are protection-based or highlight future goals are effective.

Community Influence

The community builds confidence in the vaccine when community members vaccinate their daughters and trusted figures like doctors and family friends endorse the vaccine.



Vaccine Beliefs – Varied Sentiments

Overall, views on vaccines were positive and favorable - Parents have positive attitudes and confidence in vaccines as they associate vaccines with protection, not harm. Vaccines are trusted as they are considered to be safe and tested.

However, varied sentiments towards vaccines were also captured during the study.

- In the initial psycho-behavioral survey, participants expressed positive attitudes and a willingness to learn about vaccines they were previously unaware of. They showed interest in awareness campaigns and in gaining information about HPV vaccine benefits, recommended age, and potential side effects—as key motivators to get their daughters vaccinated.
- In the message testing phase, however, several participants said that they would not get their daughters the HPV vaccine due to negative experiences with the COVID vaccine. They felt/experienced that:
 - They were coerced to get the COVID vaccine
 - They had either personally experienced, or heard of others experiencing, negative health effects after getting the COVID vaccine

Additional learnings from the psycho-behavioral survey are in the appendix on [slides 38 - 40](#)

4 | Phase 2: Message Testing (text only)





Phase 2: A/B Testing

Methodology

Round 1

- In the first round, we tested a total of 10 text messages with 200 participants.
 - For 160 respondents, the survey was run remotely through WhatsApp
 - For 40 respondents, the messages were tested in person
- The messages were tested in pairs
- A phone survey with 5 questions was conducted 2 days post sending the pair of text messages

Round 2

- In the second round, we tested 4 complete messages (image & text) with 100 participants.
 - For 80 respondents, the survey was run remotely through WhatsApp
 - For 20 respondents, the messages were tested in person
- Complete messages were tested in pairs, with each participant seeing either messages 1 & 2 OR messages 3 & 4
- A phone survey with 6 questions (4 quantitative, 2 qualitative) was conducted 2 days post sending the messages

Total unique respondents in both rounds: 300. Same respondents were not repeated in the first and second rounds.



Effective Message Elements

The following are key elements of the messages that tested well in India

Core Message Themes

- Prevention and protection for daughters
- Doctor recommended (trusted health information source)
- Aspirational / future-focused
- Available through government

Key Information

- Link HPV vaccine to cervical cancer
- HPV vaccine is for girls aged 9-14 years
- Available in public clinics / schools
- Free / no cost

Call to Action

- Complete vaccination schedule
- Ask trusted health practitioner
- Promote immediate action (“get your daughter vaccinated TODAY”)
- Use endowment effect: Specify there is ‘a vaccine waiting for her’

*Note: we tested messages that apply to the future state after rollout in the UIP, though that is still in process (vaccines currently not available through government, for free, or in schools).



Top Ranked Messages

Below are the messages that tested the highest

1

Protect your daughter from cancer of the cervix by getting her the vaccine against HPV virus between the ages of 9 to 14 years. Don't wait to vaccinate.

2

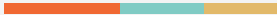
Doctors recommend that you protect your daughter from cancer of the cervix by getting her the vaccine against HPV virus. There is a vaccine waiting for her at the nearest health center.

3

The government has added the HPV vaccine to the routine child immunization schedule for girls. The vaccine protects against 5 types of cancers. Complete this important immunization for your daughter today!

4

Protect your daughter's future from cancer of the cervix by getting her the vaccine against HPV virus. Talk to your doctor to get her the vaccine.



Top Ranked Message Detail – 1

Protect your daughter from cancer of the cervix by getting her the vaccine against HPV virus between the **ages of 9 to 14 years**. Don't wait to vaccinate.

The mention of ages (9-14 years) stood out and made the message more relevant / relatable to respondents

The themes of protection and prevention were shared as key elements that participants positively identified.

Participants also called out the 'ages of 9 to 14 years.' Sharing the specifics of the age to vaccinate provides a clear direction that parents appreciated.

Top Ranked Message Detail – 2

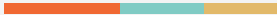
Doctors recommend that you protect your daughter from cancer of the cervix by getting her the vaccine against HPV virus. There is a **vaccine waiting for her** at the nearest health center.

“Vaccine waiting for her at the nearest health centre” can make the process of getting vaccinated seem easy, convenient, reachable

The theme of protection and doctor recommendation were shared as key elements that participants positively identified.

The endowment effect, which is a behavioral bias in which people value something more when it ‘belongs to them’, was also leveraged through stating there is ‘a vaccine waiting for her’.

Parents liked the included details about where to get the HPV vaccine through the mention of ‘nearest health center.’



Top Ranked Message Detail – 3

The government has **added the HPV vaccine to the routine child immunization schedule** for girls. The vaccine **protects against 5 types of cancers**. Complete this important immunization for your daughter **today!**

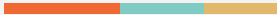
Messages with numbers were found to be retained better

The theme of continuity/familiarity was used as a key element that participants identified.

Respondents highlighted the protection against 5 types of cancers, appreciating the broad scope of the vaccine.

The call to action drew attention to the importance of immunization and encouraged immediate action

*Messages were tested as if the vaccine had already been rolled out in the UIP to ensure that we have evidence-based messaging to use once that takes place.



Top Ranked Message Detail – 4

Protect your daughter's future from cancer of the cervix by getting her the vaccine against HPV virus. Talk to your doctor to get her the vaccine.

The themes of protection and aspirational / future-focused framing were shared as key elements that participants positively identified.

The call to action encouraged talking to a trusted doctor / healthcare provider.

5 | Phase 2: Message Testing (image & text)

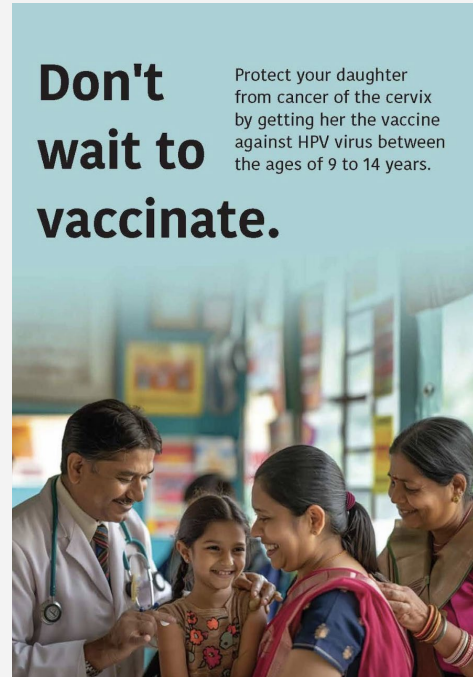


Image & Text Messages – Key Elements

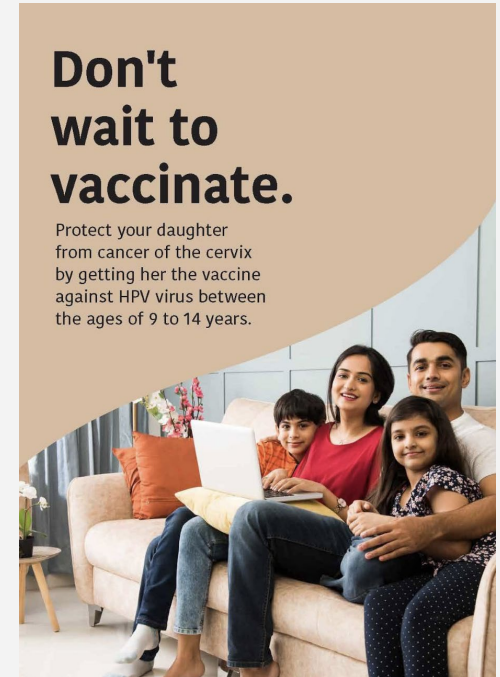
Pair 1

Goals behind selecting these images:

- Low socioeconomic household (*M1*) vs. middle/high socioeconomic household (*M2*)
- Action of getting the vaccine, indicated by the doctor holding a piece of cotton against the girl's arm (*M1*)
- Subtle aspirational cues (e.g. laptop) and full family picture (*M2*)
- Trusted source of medical advice and action - doctor (*M1*)



Message 1 - *M1*



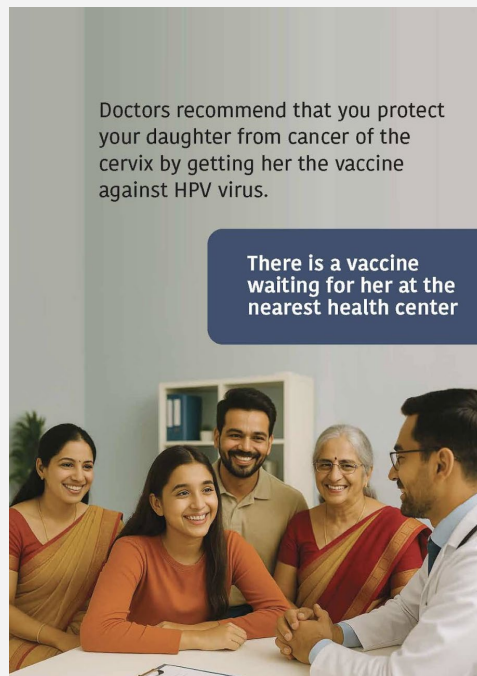
Message 2 - *M2*

Image & Text Messages – Key Elements

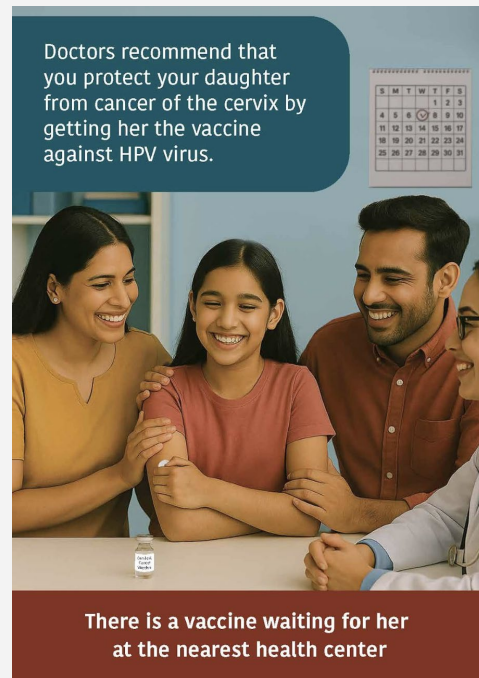
Pair 2

Goals behind selecting these images:

- Extended family (with grandmother) consulting a doctor (M3) vs. nuclear family consulting a doctor (M4)
- Calendar and vaccine vial as subtle cues to vaccination (M4)
- Action of getting the vaccine, indicated by the girl holding her arm and holding a piece of cotton (M4)
- Male doctor (M3) vs. female doctor (M4)



Message 3 - M3



Message 4 - M4

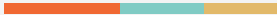


Image & Text Messages – Key Takeaways

From all the messages that included images and text, participants retained the following elements:

- A girl smiling post-vaccination
- The entire family consulting a doctor
- Presence of the grandmother in a doctor consultation

Text elements

- Prevention and protection from cancer
- “Ages of 9 to 14 years”
- “Nearest health centre”

Attention and retention of textual elements was greater than that of the images. For some, attention had to be drawn to the images as they were only focusing on the text.

Participants liked certain messages for the following reasons:

- “Happy faces” of the entire family reassured participants and built confidence
- Presence of a doctor made parents feel supported
- Pictures showing the girl getting the vaccine were preferred because participants found them relevant and easy to understand
- Presence of the full family, including the grandmother, showed all key decision-makers supported vaccination
- Mention of “nearest health centre” highlighted the ease and availability of the vaccine and made them feel like they could “get the vaccine anywhere”

Image & Text Messages

What worked in message 1 (from participant responses):

- Action of the vaccine having been administered is shown
- Girl is smiling after getting the vaccine
- Family is happy
- The grandmother of the girl is present for vaccination of her granddaughter
- Mention of the age - “9 to 14 years”

**Don't
wait to
vaccinate.**

Protect your daughter from cancer of the cervix by getting her the vaccine against HPV virus between the ages of 9 to 14 years.



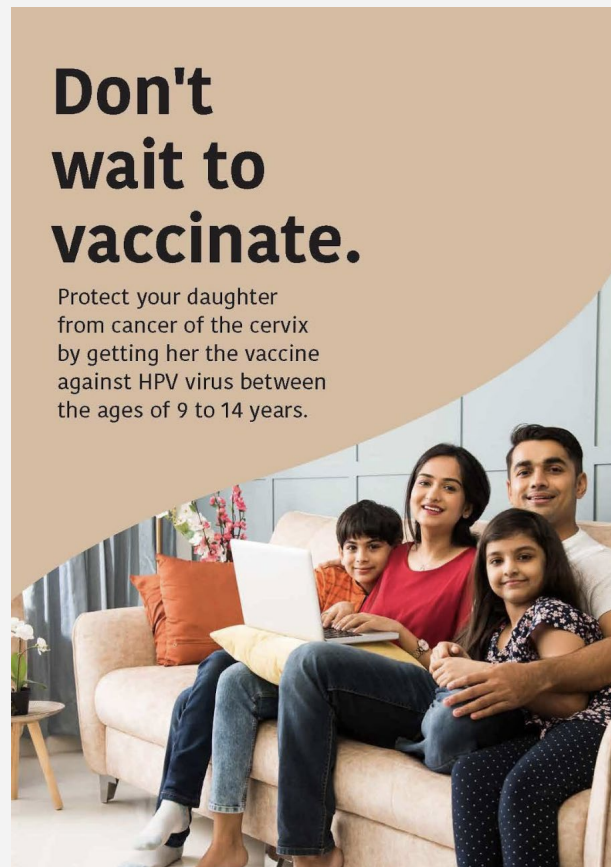
Image & Text Messages

What worked in message 2 (from participant responses):

- A happy family is shown
- The laptop indicates that the children go to school/are learning
- Mention of the age, “9 to 14 years”

What did not work (from participant responses):

- The picture is not related to the HPV vaccine or cervical cancer
- The boy in the picture can be confusing since the message is currently for daughters



Don't wait to vaccinate.

Protect your daughter from cancer of the cervix by getting her the vaccine against HPV virus between the ages of 9 to 14 years.

Image & Text Messages

What worked in message 3 (from participant responses):

- Consulting a trusted source - doctor - for advice on a vaccine they don't know much about
- Full family (with grandmother) at the doctor's clinic
- Their expressions show that they are listening to the doctor and trust the advice being given by him
- Mention of the vaccine being available at the “nearest health centre” makes the vaccine feel easily available and accessible

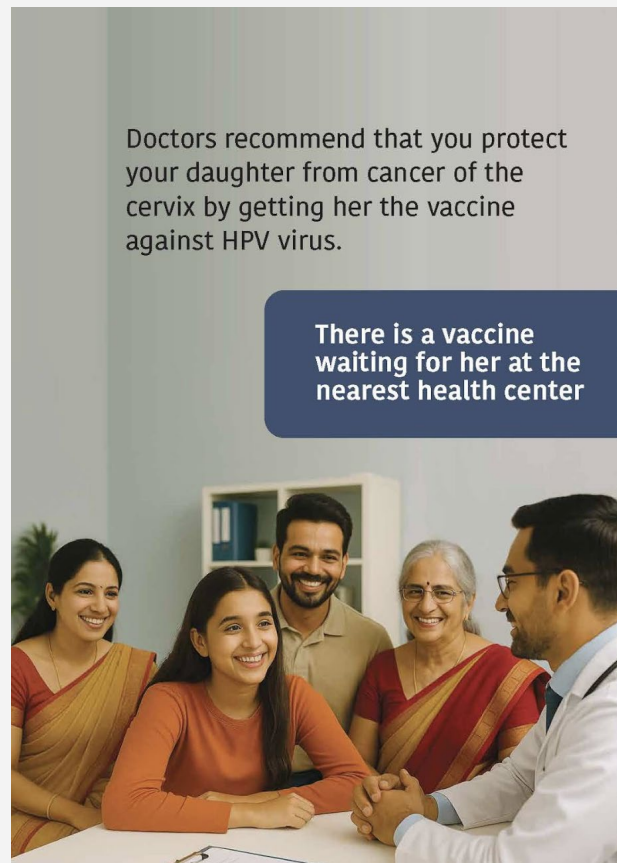


Image & Text Messages

What worked from message 4 (from participant responses):

- Girl is smiling after getting the vaccine. The family is happy as well, showing that there are no side effects

What did not work (from participant responses):

- The presence of the female doctor (vs. male doctor) was only mentioned by 1 respondent, implying that gender of the medical practitioner might not be relevant

Additional details on image testing results are on [slides 43-44](#)

Doctors recommend that you protect your daughter from cancer of the cervix by getting her the vaccine against HPV virus.

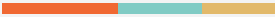
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						1 2 3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31



There is a vaccine waiting for her at the nearest health center

6 | Toolkit for Crafting Messages

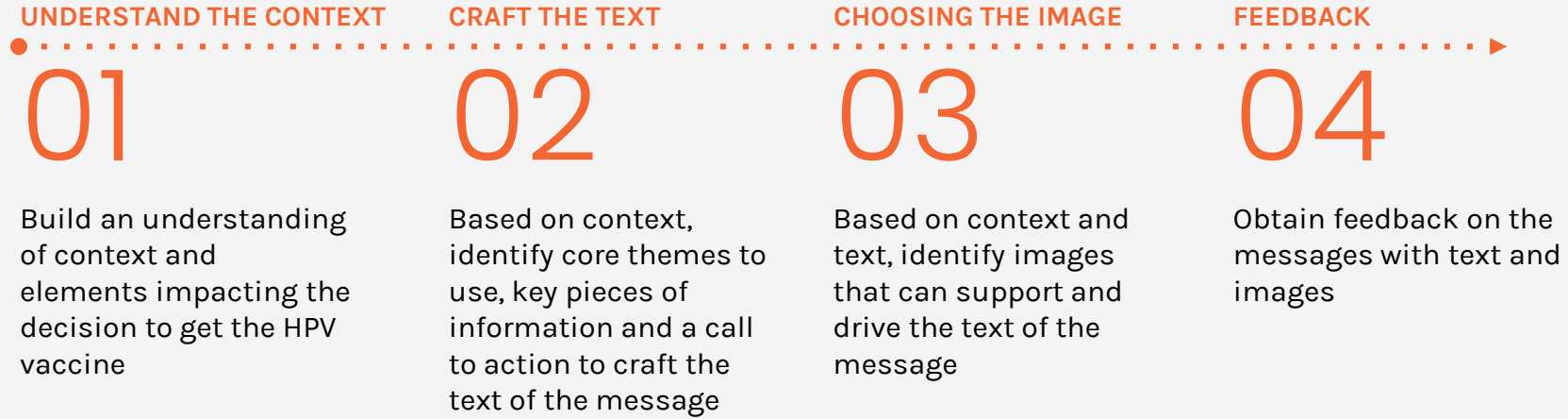




Purpose and Process

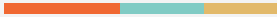
Based on the results of this research, an HPV vaccine messaging toolkit is being created to support the contextualization of learnings to create and validate messages to increase the uptake of the HPV vaccine in any country or community. Check the [PreventGlobalHPVCancers.org website](https://PreventGlobalHPVCancers.org) for the toolkit launch.

The toolkit will walk through the following steps:



7 | Appendix: Research Details





Phase 1: Psycho-Behavioral Survey Results

Learnings from the Survey - Overall and Sub-Groups

Decision-making

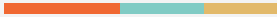
- Fathers not cohabiting in 50% HH.
- Overall, joint decision making about school, but mothers have more say in health decisions and discussions
- Girls much more comfortable discussing health with mother

Health system engagement and vaccine mental models

- Preference for private clinics (chiefly in peri-urban households)
- Proximity, quality, cost play key roles in deciding which facility to visit.
- No significant distrust in new vaccines

Disease context

- Very low familiarity with HPV and HPV Vaccine



Phase 1: Psycho-Behavioral Survey Results

Learnings from the Survey - Overall and Sub-Groups

Trust

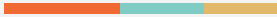
- Healthcare providers are most trusted for health info, followed by community health workers and public messaging

Coping

- Adverse health effects is a concern about vaccines for most

Aspirational Framing

- Aspirational and protection/prevention framing is highly preferred
- Biggest appetite for info regarding vaxx benefits



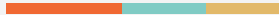
Phase 1: Psycho-Behavioral Survey Results

Sources of information

- Participants were asked how often they receive news about adolescent health from the several sources.
 - Overall the most used sources were social media, sms/whatsapp and internet search.
 - Social Media - 38% said daily with 28% saying sometimes - this was the highest overall;
 - Further understanding can be done to understand which social media platforms
 - SMS/WhatsApp - 28% said daily, 30% said sometimes and 38% said never
 - Internet search - 18% said daily, 40% said sometimes and 35% said never
 - TV - 53% said never with 25% said sometimes
 - Newspapers - 90% said never
 - Radio - 93% said never

Phase 2: A/B Testing Round 1 Messages Tested

Scores Summary	
Message	Rank
Protect your daughter from cancer of the cervix by getting her the vaccine against HPV virus between the ages of 9 to 14 years. Don't wait to vaccinate.	1
Doctors recommend that you protect your daughter from cancer of the cervix by getting her the vaccine against HPV virus. There is a vaccine waiting for her at the nearest health center	2
The government has added the HPV vaccine to the routine child immunization schedule for girls. The vaccine protects against 5 types of cancers. Complete this important immunization for your daughter today!	3
Protect your daughter's future from cancer of the cervix by getting her the vaccine against HPV virus. Talk to your doctor to get her the vaccine.	4
Millions of girls have been protected from cancer of the cervix since 2008 by the HPV virus vaccine. The government is now providing this vaccine free of cost to your daughter. Get your daughter the HPV vaccine now.	5
Prevent cancer of the cervix with the safe and trusted HPV vaccine. Don't wait to vaccinate.	6



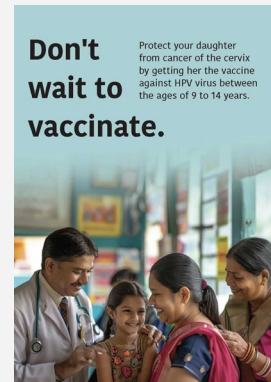
Phase 2: A/B Testing Round 1 Messages Tested

Message	Rank
Every 5 minutes a woman gets cancer of the cervix in India. Protect your daughter's future from cancer of the cervix with the HPV virus vaccine. Don't wait to vaccinate.	7
Some cancers, like cancer of the cervix, can be prevented with a vaccine. Get your daughter the HPV vaccine to protect her from cancer of the cervix and four other cancers.	8
You protected your daughter by getting her childhood vaccines. Now, complete her routine vaccine schedule by getting her the HPV virus vaccine to prevent cancer of the cervix.	9
More and more parents in your community are protecting their daughters from cancer of the cervix with the HPV vaccine. Get your daughter the HPV vaccine today.	10

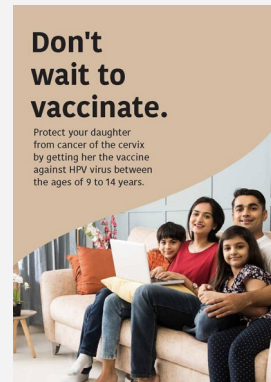
Phase 2: A/B Testing Round 2 Results

Of the first message pair tested (Message 1 V/S Message 2), M1 was chosen by most respondents across all 4 follow-up questions

	Q1 - Retention	Q2 - Understanding	Q3 - Preference	Q4 - Intent
Message 1	82%	76%	74%	72%
Message 2	18%	24%	26%	28%
P value	0.000005614	0.0003059	0.0009362	0.002602



M1

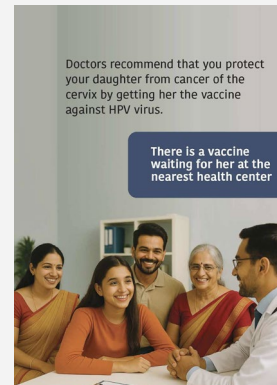


M2

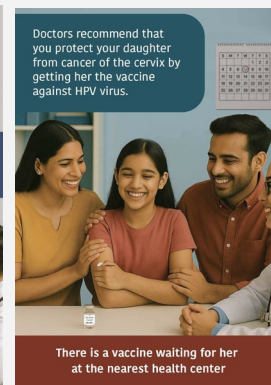
Phase 2: A/B Testing Round 2 Results

Of the second message pair tested (Message 3 V/S Message 4), M3 was chosen by most respondents across all 4 follow-up questions

	Q1 - Retention	Q2 - Understanding	Q3 - Preference	Q4 - Intent
Message 3	56%	62%	64%	56%
Message 4	44%	38%	36%	44%
P value	0.4799	0.1189	0.06491	0.4799



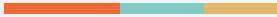
M3



M4

Survey Questions

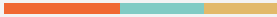




Phase 1: Psycho-Behavioral Survey Questions

1. Household Decision Making

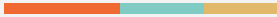
- Who lives in your household?
- How many children are in your household?
- What is the age of the adolescent girl(s) in your family?
- What types of decisions do you have to make for AG? - *probe on decisions around AG's education, nutrition, health.*
 - Who decided on which school or course for your daughter to join?
 - When was the last time your daughter has been to a hospital or clinic? Who decided which doctor/clinic to go to and who accompanied your daughter?
- Who initiates health discussions in the household for the AG?
- Who in the household made the final decision about your daughter taking the COVID (or any other) vaccine ?
- To what extent is your adolescent daughter involved in making health decisions for herself, such as choosing whether to receive a vaccine or not
- Who usually accompanies the adolescent girl to the doctor or health center?
- Who does the adolescent girl feel most comfortable talking to about her health problems or concerns?



Phase 1: Psycho-Behavioral Survey Questions

2. Health System Engagement and Vaccine Perception & Mental Models

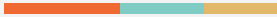
- When you or the adolescent girl require medical attention, where do you usually seek care?
- How would you rate your experience with government healthcare services and the staff there (e.g., government hospitals, free clinics)?
- How would you rate your experience with private healthcare services and the staff there (if you have visited private clinics and nursing homes)?
- What factors influence your decision to visit a government hospital/clinic or private healthcare provider? (Select all that apply)
- Do you face any difficulties when trying to access healthcare for the adolescent girl?
 - If yes, what difficulties do you face in accessing healthcare?
- How confident are you in the healthcare providers' ability to address the adolescent girl's health needs?
- Has your adolescent girl received any health-related services at school (e.g., health check-ups, vaccination drives)?
 - If yes, what kind of healthcare services were provided at school?
 - If not, do you think it is helpful for your adolescent girl to receive healthcare services through school?



Phase 1: Psycho-Behavioral Survey Questions

2. Health System Engagement and Vaccine Perception & Mental Models (Cont.)

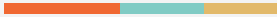
- Has your adolescent girl received all the vaccines recommended by the government health system (e.g., tetanus, polio, measles, etc.)?
 - If yes, how likely are you to recommend these vaccines to your family and friends with children? (*probe about experiences with medical professionals, accessibility of health centre, after-effects of the vaccine, etc.*)
 - If not, what are the reasons?
- How do you feel about the government vaccination programs (e.g., immunization drives, school vaccination)?
- Did you and your family get the COVID vaccine? Did any of the below have an influence on this decision
- Has your adolescent girl received the COVID vaccine?
 - If yes, did you recommend COVID vaccine to your family and friends with children? (*probe about experiences with medical professionals, accessibility of health centre, after-effects of the vaccine etc.*)
 - If not, what are the reasons?
- Thinking about new vaccines, tell me whether you agree or disagree with each statement. Please answer with yes, no, or unsure.
 - New vaccines are more risky than older vaccines
 - New vaccines are more effective than vaccines developed long back
 - New vaccines are developed too quickly, without the caution and time that was taken for older vaccines
 - New vaccines are developed by companies that just want to make quick money
 - New vaccines are safe and tested
 - No vaccine is totally safe until we have at least 30 years of safety data
 - My generation was just fine without the new vaccines



Phase 1: Psycho-Behavioral Survey Questions

2. Health System Engagement and Vaccine Perception & Mental Models (Cont.)

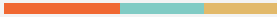
- What would make you more willing to have your adolescent daughter vaccinated?
 - More awareness campaigns about vaccine safety
 - Free vaccines recommended by the government
 - Support from trusted healthcare workers
 - Assurance of no side effects
 - Better accessibility and convenience
 - Other (Please specify): _____
- Tell me whether you agree with the statement. Please answer with yes, no, or unsure.
 - Cancer cannot be cured
 - Households can lose all their money just to treat cancer
 - Cancer can be caused by viral infections
 - When I think of cancer, I feel scared
 - There is no vaccine for cancer
 - A vaccine given to prevent cancer can also cause cancer
 - A vaccine given when a girl is 10 years old cannot protect her for life
 - Even the best vaccines must be given once every 10 years to be effective
 - It is better for the body to be exposed to viruses so it can build natural immunity
 - A vaccine to protect against a sexually transmitted virus will just make girls more promiscuous



Phase 1: Psycho-Behavioral Survey Questions

3. Disease Context (Awareness, Knowledge, Misconceptions)

- Which of the following infectious diseases have you ever heard of?
 - ☐ Tuberculosis TB
 - ☐ Malaria
 - ☐ Polio
 - ☐ Cholera
 - ☐ HPV
- Which of the following infections can cause cancer?
 - ☐ Tuberculosis TB
 - ☐ Malaria
 - ☐ Polio
 - ☐ Cholera
 - ☐ HPV
- Do you know anyone who has gotten...
 - ☐ Breast cancer
 - ☐ Cervical cancer
 - ☐ Colon cancer
 - ☐ Lung cancer
 - ☐ Prostate cancer



Phase 1: Psycho-Behavioral Survey Questions

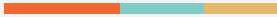
3. Disease Context (Awareness, Knowledge, Misconceptions) (Cont.)

- Have you heard about HPV and cervical cancer vaccine?
 - If yes, where/from whom?
 - Did any of the below suggest that you get the cervical cancer vaccine for your daughter/adolescent girl? Select all that apply.
 - Family members/household elder
 - Parents of other children
 - Girl's school authorities/school teacher
 - Medical professional
 - ASHAs
 - Government departments

Probe: What impact did their conversation have on your views on cervical cancer vaccine and why? (did you feel pressured, trusted the other person, did it because of social pressure)

- Now I'm going to read you a story about a parent/caregiver with an adolescent daughter.

Jaya was recently introduced to the Cervical Cancer vaccine through ASHA. Her <caregiver> had some apprehensions about encouraging/allowing Jaya to take the vaccine. Let's listen to some reasons the caregiver could have had for this



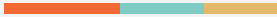
Phase 1: Psycho-Behavioral Survey Questions

3. Disease Context (Awareness, Knowledge, Misconceptions) (Cont.)

- <Caregiver> worries that the vaccine could potentially lead to side-effects and fertility issues for Jaya in the future, and so shouldn't take the vaccine
 - <Caregiver> worries that if relatives or friends come to know about *Jaya* taking the vaccine, they will be judged and gossip about her character
- Which is most likely the reason that <caregiver> does not allow Jaya to take the Cervical Cancer vaccine?

4. Trust

- Do you trust the following for health-related information? Select all that apply.
 - Government/ govt. departments)
 - Doctors / Nurses
 - Religious leaders
 - Teachers
 - Community Health Workers (ASHAs)
 - Family members and relatives
 - Social media



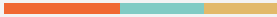
Phase 1: Psycho-Behavioral Survey Questions

4. Trust (Cont.)

- If the Government recommended a vaccine for your AG, would you feel the need to seek additional validation or information before making a decision?
- If your physician recommended a vaccine for your AG, would you feel the need to seek additional validation or information before making a decision?

5. Coping

- What are some concerns that caregivers may have around vaccines? Select all that apply
 - ☐ Pain
 - ☐ Slow recovery
 - ☐ Adverse health effects
 - ☐ Reproductive difficulties/infertility
 - ☐ Exposure to sexual information at an early age
 - ☐ Low effectiveness/efficacy of vaccine
 - ☐ Lack of trust



Phase 1: Psycho-Behavioral Survey Questions

5. Coping (Cont.)

- When you think about vaccinating your daughter, which of the following actions do you take to deal with any concerns or anxiety you may have?
 - I do additional research or read more information.
 - I talk to medical professionals for advice and reassurance.
 - I discuss my concerns with family or friends.
 - I try not to think about it too much.
 - I rely on my daughter's healthcare provider to make the decision for me.
 - I turn to online forums or social media for support.
 - Others, please specify
 - None
- How do you balance the need between protecting your daughter's health with the potential discomfort it might cause her?
 - I emphasize the importance of the vaccine and focus on the long-term benefits.
 - I try to reassure her and make the experience as comfortable as possible.
 - I discuss the risks and benefits with her to help her feel more informed.
 - I minimize the potential discomfort by avoiding discussions about the vaccine.
 - I find it difficult to balance these two factors.

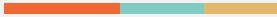


Phase 1: Psycho-Behavioral Survey Questions

6. Service Delivery

Push factors (for positive deviants)

- Before your adolescent girl received the cervical cancer vaccine, did you experience any of the following?
 - Vaccine was given without informing you
 - Felt pressured to consent to the cervical cancer vaccine
 - Felt rushed into making a decision
 - Not enough information was provided about the cervical cancer vaccine
 - Felt angry after the experience
- After your daughter/adolescent girl received the cervical cancer vaccine, did your attitude towards the below change? (4-point scale - favourable, no change (positive), no change (negative), unfavourable)
 - HPV vaccine awareness
 - Accessibility of health centre
 - Clarification of misconceptions
 - Trust in medical practitioners
- Now I'm going to read you a story. <Caregiver> has a 10 year-old daughter. One day, he/she receives information from their physician/ASHA about a new government-recommended vaccine available. Initially, <caregiver> felt confused and unsure about this new vaccine. However he/she decides to have his/her daughter receive it. Why did he/she make this decision?
 - It seemed mandatory, leaving no real choice.
 - All of the other girls were getting vaccinated and he/she didn't want his/her daughter to be left unvaccinated.
 - A trusted community leader reassured him about the vaccine's safety and benefits.
 - Caregiver did additional research about the vaccine by reading and checking with friends and relatives



Phase 1: Psycho-Behavioral Survey Questions

6. Service Delivery (Cont.)

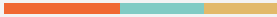
- Would you be more likely to take your adolescent daughter for vaccination if the service were offered in the community setting (e.g. community center, public event, community campaign) ?
 - Yes, more likely
 - Yes, somewhat likely
 - No, less likely
 - No, much less likely
- Would you be more likely to take your adolescent daughter for vaccination if the service were offered in a private clinic or school?
 - Yes, more likely
 - Yes, somewhat likely
 - No, less likely
 - No, much less likely



Phase 1: Psycho-Behavioral Survey Questions

7. Channels

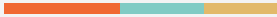
- How often do you see or hear information and news about adolescent health from the following sources? (*Almost every day, At least once a week, Less than once a week, Not at all*)
 - Radio
 - Newspaper/magazines
 - TV
 - Social Media
 - SMS / WhatsApp
 - Internet search
 - If any other, please specify ____
- Have you received any health-related information on your phone (over SMS or WhatsApp)? Please answer with a yes or no. *Probe: Did you trust it?*
- Which of the following would be your preferred way to receive information on the cervical cancer vaccine. Please rank from 1 to 4 with 1 being your MOST preferred way to receive information and 4 being your LEAST preferred.
 - Information sent from school
 - Government notice/website
 - ASHAs
 - Community leaders and elders
 - Phone messages from Government
 - Social media



Phase 1: Psycho-Behavioral Survey Questions

8. Social Influencers (Social Proof and Social Norms)

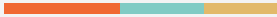
- I am now going to ask you a few questions, please answer with a yes or no.
 - Do you think most caregivers/parents would agree with your beliefs about vaccines
 - Are you hesitant to share your true thoughts about vaccines with others
 - In your interactions with other parents/caregivers, does the subject of cervical cancer vaccine ever come up?
 - (If yes) Do they seem supportive towards this vaccine?
 - (If no) what could be the reasons for them opposing the vaccine?
- If you were given vaccine-related/HPV vaccine-related information, would you discuss it with any of the below? Please answer with a yes or no.
 - Others in the family
 - People in the community
 - Family/community elders
 - Parents of other children who have got this vaccine
 - School teacher
 - Doctors



Phase 1: Psycho-Behavioral Survey Questions

9a. Aspirational Framing

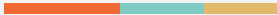
- What would motivate you most to ensure your adolescent daughter receives the cervical cancer vaccine? Please select all that apply
 - ☐ Knowing that the vaccine helps protect her from cervical cancer
 - ☐ To safeguard her future and ensure that she lives a healthy and cervical cancer-free life
 - ☐ Fear of cervical cancer
 - ☐ Other girls of the same age getting the vaccine
 - ☐ The cervical cancer vaccine is included in UIP
 - ☐ The cervical cancer vaccine is free of cost at public clinics
 - ☐ A physician has recommended the vaccine
 - ☐ Among the above options, what is the most motivating factor?



Phase 1: Psycho-Behavioral Survey Questions

9b. Aspirational Framing

- What kind of information regarding cervical cancer vaccination would parents or guardians like to hear to feel they can make an informed decision about whether or not to get their daughter vaccinated? Please select all that apply.
 - Effectiveness/benefits of the vaccine
 - Side effects of the vaccine and how to cope with them
 - Age at which the vaccine should be given
 - Number of vaccine doses needed and gaps between the doses
 - Whether other parents get their daughters immunized
 - Places where you can get adolescent girls immunized
 - Cost of vaccine
 - Recommendations from the Government/Ministry of Health or other groups
 - Other countries where the vaccine is part of the national immunization programs
 - Other (please specify) ____



Phase 2: A/B Testing Questions

Testing questions:

The following are the follow-up questions asked, post sharing the messages in Round 1 and *(Round 2)*

For each of the following questions, think back to the two whatsapp *(picture)* messages about the HPV vaccine you received....

1. Please tell me which of the two you remember?
 - a. *(Probe about the image)*
2. Which of the two would be easier to understand by someone from your community?
3. Which of the two do you like better overall?
4. Which of the two do you think would make other parents like you more likely to get their daughter vaccinated against cancer of the cervix?
5. What do you like about the one you chose?
 - a. *(Probe about the image)*
6. *Based on this message, how likely would other parents like you be to get their daughter the HPV vaccine? (Likert Scale - Less Likely – Unsure – More Likely)*