

Formative Assessment of COVID-19 Vaccine Hesitancy in the Maldives



Ministry of Health
Republic of Maldives



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A. Introduction

Immunization or vaccination is considered a global health and development success story. It is estimated that vaccines are likely responsible for saving more lives over the past 100 years as compared to any other single medical technological invention —

With the exception of safe water and sanitation, no other modality has had such a major effect on infectious diseases, mortality reduction and population growth. Vaccinations are among the most vital public health tools for decreasing and eradicating the spread and harm caused by dangerous infectious diseases. The World Health Organization (2020) estimates that vaccines prevented at least 10 million deaths between 2010–2015 worldwide. Immunization currently prevents 3.5–5 million deaths every year from diseases like diphtheria, tetanus, pertussis, influenza and measles. At present there are vaccines to prevent more than 20 life-threatening diseases, helping people of all ages live longer, healthier lives (Field, 2008; Plotkin and Mortimer, 1988; WHO, 2023).

Vaccination is a critical part of preventative health care, the backbone of public health, a key component of primary health care and an indisputable human right. It is also one of the most cost-effective health investments. Vaccines are also critical to the prevention and control of infectious disease outbreaks and an important tool to fight future pandemics. Vaccines underpin global health security and will play an important role in the battle against antimicrobial resistance (Field, 2008; WHO, 2023). Keeping future pandemics and global health security in mind, it is important that people from all parts of the world, all ages, classes and races accept this preventive and protective tool.

Despite considerable evidence showing vaccines are safe, there is increasing skepticism toward vaccination (Horne et al. 2015). As infectious diseases become less common, and the experiences of the serious consequences of preventable

illnesses like diphtheria and tetanus reduces among families and communities, there is more talk about the risks associated with vaccines (CDC, 2023). Recent push-back trends regarding the use (and side effects) of vaccinations have caused an alarming number of people to decline recommended inoculations. Public health officials remain concerned about the consequences resulting from the denial of vaccinations in the near future, and beyond. Vaccine hesitancy has led to a decline in vaccine uptake and to an increase in the prevalence of vaccine-preventable diseases (Dube et al. 2015). The COVID-19 pandemic, when the public faced a new disease and its unknown impacts, opened doors to study vaccine attitudes during a period of high disease prominence.

In Maldives, the government started the national vaccination programme, “COVID-19 Dhifaau” (COVID-19 Defense) on 1 February 2021, with a goal to vaccinate the entire population against the virus. Free vaccination against COVID-19 continues to be open to all residents living in the Maldives, regardless of their nationality or legal status, as an attempt to ensure that no one is left behind on the road to recovery.

The Maldives reached a high vaccination rate for the 1st dose and 2nd dose, but the vaccination uptake has been decreasing especially for the booster doses. This raises the question why does the community demonstrate persistently low vaccine uptake rates, notably booster shots, despite widespread vaccine availability. This formative assessment attempts to answer these questions. The findings are then expected to help design appropriate, context-specific communication/ behavioral strategies and messages that increase demand for COVID-19 vaccines and improve uptake.

Purpose and objectives of the study —

As of 17th September 2022, about 88.14% of the Maldives population had received the first dose of COVID-19 vaccine and 85.02% received the second dose of vaccine, whereas only 35.85% have taken the booster dose (third dose) (HPA 2022). Still, there is a significant group of the population in Maldives who are hesitant to take the vaccine.

FHI 360, a US-based NGO is the technical assistance (TA) partner of the U.S. Agency for International Development (USAID) under the Meeting Targets and Maintaining Epidemic Control (EpiC) project supporting the Maldivian Red Crescent (MRC) to conduct audience consultations, to explore why hesitant and resistant populations, including elderly, international migrants, youth and some islanders are not getting vaccinated, especially the booster doses. The assessment identifies the characteristics (e.g., interests, knowledge, perceptions, behaviors, and needs) that influence the target populations’ decisions and behaviors around COVID-19 vaccinations.

Maldives has been prompt in addressing COVID-19 with timely actions to restrict the virus spread, through suitable precautionary methods pertaining to individual/community behaviors and ensuring timely vaccination. This assessment is an information-gathering exercise to gain a better qualitative understanding regarding COVID-19 vaccines and community needs, which may be used as evidence to base communication/behavioral strategies and messaging to increase COVID-19 vaccine uptake. This exercise aims to explore and understand community perceptions, needs, and realities. It explores vaccine hesitancy, especially for boosters, and its reasons or causes, and tries to understand whether hesitancy varies by social, economic, and demographic groupings and by geographic regions. If globally, the eligibility age for vaccines is likely to be reduced, then it is important to understand attitudes and practices with regards to COVID-19 vaccinations for children. This qualitative exercise also explores parents’ perception towards COVID-19 vaccines for children, besides examining pandemic fatigue. It investigates the factors associated with vaccine hesitancy, especially the hesitancy related to receiving a third dose (booster) or future doses of the COVID-19 vaccine to increase the booster contact rate required to control the COVID-19 pandemic in Maldives.

The benefits of this exercise are that we gain a better understanding of how people in Maldives had perceived the threat of a pandemic such as COVID-19, the communication methods used, how the communication about COVID-19 is perceived and processed. The findings of this exercise will provide Maldives with the basis for a renewed communication strategy that will help increase COVID-19 booster vaccine uptake. Findings are expected to inform on-going Risk Communication and Community Engagement (RCCE) campaigns and efforts, including community engagement strategies and approaches.

Objectives

The overall objective of the MRC scope of work is directly tied to EpiC's mandate in Maldives to reduce morbidity and mortality from COVID-19, mitigate transmission, and strengthen health systems, including to prevent, detect, and respond to pandemic threats through looking into vaccine hesitancy and behavior change communication.

Specific objectives are:

1. To understand the reasons and barriers why the community has low vaccine- booster shots uptake despite widespread vaccine availability; and
2. To identify, based on community needs and perceptions, the potential strategies, communication messaging, approaches, channels, methods, and innovations for increasing COVID-19 vaccine uptake currently and be prepared for future infectious disease outbreaks or pandemic.

Background

Vaccines to prevent Covid-19 infection are considered the most promising approach to mitigate the pandemic and prevent severe SARS-CoV-2 infections and also continue a life with the disease. However, immunological studies have documented a steady decline in antibody levels among vaccinated individuals. (Levin et al., 2021; Naaber et al., 2021). There are concerns that the neutralizing activity of a vaccine may decrease over time, even in individuals who have received two doses of the vaccine (WHO, 2021). Serum antibody levels in vaccinated individuals have been shown to gradually decrease over time, while SARS-CoV-2 is undergoing an evolution toward more transmissible variants, ultimately increasing the risk of breakthrough infections and further virus spread (Ryzymski et al., 2021).

Controlling the spread of SARS-CoV-2 variants of concern requires a booster dose after primary vaccination series (Omer & Malani, 2022; Wald, 2022). COVID-19 vaccine boosters are shown to have immunological benefits, and the vaccines showed acceptable side-effect profiles. COVID-19 vaccine booster shots are said to be necessary to provide durable immunity and stronger protection against the emerging SARS-CoV-2 variants (CDC, 2022).

Vaccine hesitancy is a problem, especially boosters. This has been observed worldwide and is considered a major obstacle in controlling the COVID-19 pandemic (Fisher et al., 2020; Lazarus et al., 2021; Sallam, 2021; WHO, 2019).

The COVID-19 pandemic has also affected the lifestyles and well-being of the public. Pandemic fatigue is an expected and natural response to a prolonged public health crisis (WHO, 2020). The notion of behavioral fatigue associated with adherence to COVID-19 restrictions or pandemic fatigue is a concern with respect to potential spread of disease. Pandemic fatigue is a potential correlate of vaccine acceptance and can impede vaccination intention from turning into behavior (Lindholt et al., 2021). Pandemic fatigue and vaccine hesitancy have been reported as the most challenging current

issues, potentially worsening COVID-19 situation (Ala'a, Tarhini, Akour, 2021). Previous studies have examined the factors associated with vaccine hesitancy. Ethnicity, work status, religion, politics, sex, age, education, and income were reported to be factors associated with COVID-19 vaccine hesitancy (Joshi et al, 2021; Wang & Liu, 2021). However, information on the factors affecting COVID-19 booster vaccine hesitancy among fully vaccinated individuals is limited (Folcarelli et al., 2022; Klugar et al., 2021; Pal et al., 2021; Rzymiski et al., 2021; Yadete et al., 2021).

Social media plays an important role in disseminating health information. The diffusion of social media has opened up an exciting field, capable, at least potentially, of increasing the degree of clarity and democracy in sharing scientific data. In the same way, it has dramatically increased the degree of personal opinions (beliefs, considerations, etc.) being shared widely and allowing them to spread more rapidly.

According to the WHO (2022), an infodemic is too much information including false or misleading information in digital and physical environments during a disease outbreak. It causes confusion and risk-taking behaviors that can harm health. It also leads to mistrust in health authorities and undermines the public health response. With growing digitization – an expansion of social media and internet use – information can spread more rapidly. This can help to fill information voids more quickly but can also amplify harmful messages.

This assessment is expected to provide a better qualitative understanding regarding COVID-19 vaccines and community needs, which may be used as evidence to base communication/ behavioral strategies and messaging to increase COVID-19 vaccine uptake in Maldives.

Theoretical frameworks for understanding vaccine-related behavior

Vaccine hesitancy or vaccine acceptance is conceptualized through the lens of 3Cs of vaccine hesitancy. The 3 Cs are:

Specific objectives are:

- A** Complacency: This is about the threat perception of the problem or disease. Even before the assessment starts, the anecdotal evidence indicates that this is low. People have developed a need to move on and get on with life; 'we are done with it' attitude. Experts have pointed out that there is a perception that the disease is mild (controllable); hence uncertainty is reduced. People even believe that herd immunity is high due to high primary doses. Perception that only those with comorbidities should worry; and perception that the government handled earlier phases well.
- B** Confidence: This is about confidence in the efficacy of the response to the problem, in this case about vaccine efficacy; people's perceptions towards vaccination and the vaccine per se. There are slow, simmering anti-vaccination sentiments; people are asking questions about side-effects, sudden deaths. There is increased questioning of the vaccine quality; (there is questioning of whether it is even required; perceived problem of 'too many jabs')
- C** Convenience: This is about practical issues of accessibility and administration process for vaccination; perceptions about the organizations involved, the overall system and the arrangements made. Access constraints are supposed to be generally low in Maldives; the government has been taking efforts to increase convenience (walk-ins)

Approaching the assessment through the 3Cs allows for analyzing the information using complementary theoretical frameworks such as the Behavioral and social drivers (BeSD) model of vaccine acceptance (WHO 2022); the Health Belief Model (HBM) (Green et al. 2020); and Protection Motivation Theory (PMT) (Normal et al. 2015).

The BeSD model looks at vaccine behavior from a motivation perspective: (1) what people think and feel about the vaccine, its safety and benefits as well as the confidence in the system (2) social processes such as the community and family support for the vaccination (3) practical issues with regard to vaccine availability, accessibility. The constructs used in this model are consistent with the 3Cs.

BEHAVIORAL AND SOCIAL DRIVERS

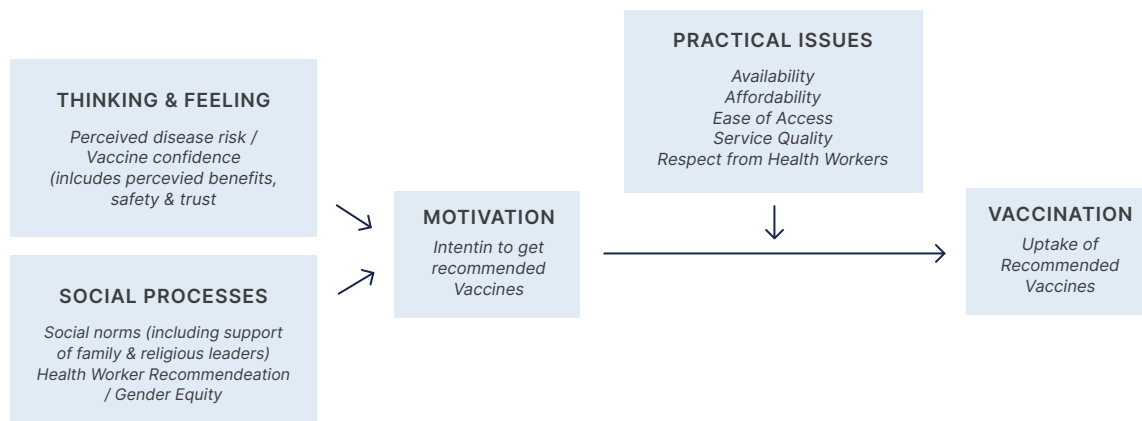


Figure 1: Behavioral and Social Drivers (BeSD) framework (WHO, 2022)

The HBM suggests that individuals will take action to ward off, to screen for, or to control an ill health condition if (1) they regard themselves as susceptible to the condition,(2) they believe it to have potentially serious consequences, (3) they believe a course of action can reduce the susceptibility and seriousness (4) they believe the costs of the action are outweighed by its benefit. Therefore, cues to action play an important part in this model, particularly those that motivate individual behavior. HBM is limited by its focus on the individual and does not address the mediating effects of the society, its values and norms.

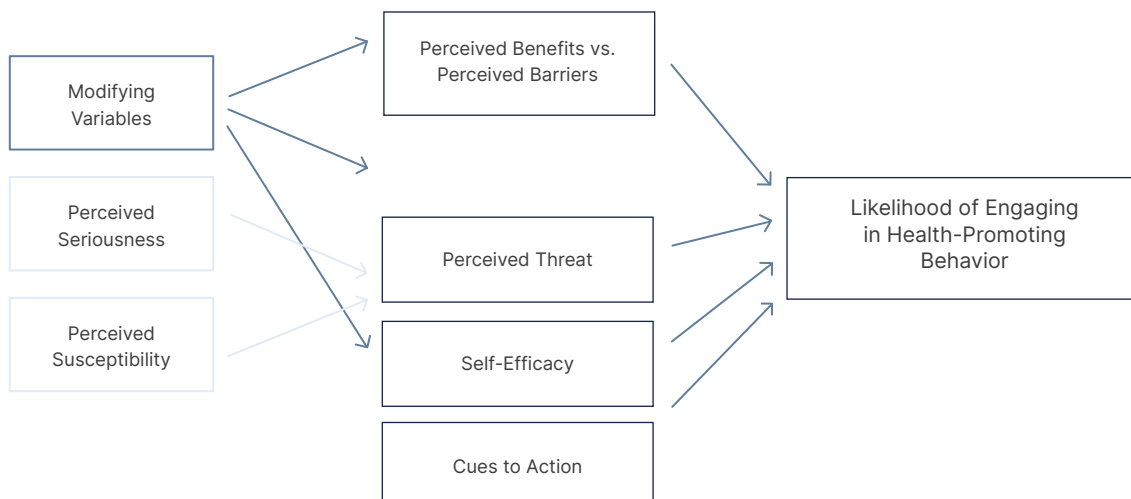


Figure 2: Health Belief Model (Green et al.2020)

PMT includes elements of the HBM (Prentice-Dunn & Rogers, 1986) and also the elements of the BeSD model. It has both individual and socio-cultural aspects and is constructed from threat and coping appraisal perspectives and is most useful for the 3Cs conceptualization. Threat appraisal is influenced by (1) one's belief in the severity of the problem (perceived severity); (2) one's estimation of the chance of being affected by the disease (perceived vulnerability); (3) one's belief in the positive aspects of the undesired / unhealthy behaviors (perceived rewards - internal or external rewards - of continuing with some undesirable behavior). Coping appraisal is influenced by (1) one's evaluation of the efficacy of the protective behavior in coping with the threat (response efficacy); (2) one's belief in one's own capability of managing protective behaviors (self-efficacy); (3) one's estimation of costs (including money, time, and energy) and efforts to perform protective behaviors (perceived response cost). If perceived severity and vulnerability is high, and perceived reward(s) is high, there is stronger motivation for engagement in protection behavior. A high response efficacy and self-efficacy reinforces coping appraisal, while a high response cost reduces it.

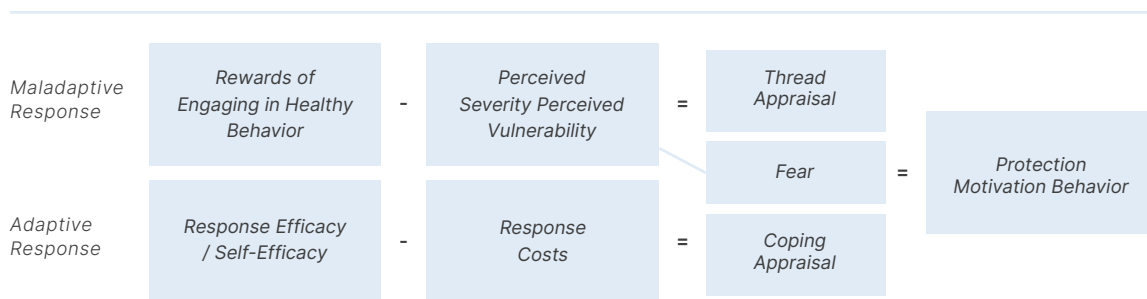


Figure 3: Protection Motivation Theory (Normal et al. 2015)

A summary of the main constructs to understand vaccine hesitancy that will be used as inquiry areas are the following:

- Perceived vulnerability and susceptibility,
- Perceived seriousness/threat,
- Response efficacy,
- Response costs,
- Self-efficacy,
- Trust in the systems,
- Barriers to action, and
- Cues to action.

B. Methodology

Study Design

Qualitative inquiry methods were adopted for the assessment and conducted in two stages. FHI 360 obtained a non-Research determination from FHI 360's Protection of Human Subjects Committee. Stage 1 was classified as assessment and hence the ethics approval was waived. For Stage 2, as per the local requirements in the Maldives, ethics approval was obtained from the National Health Research Council (NHRC) prior to the data collection (NHRC/2022/19).

Stage 1 consisted of the following exercises: a thorough desk review of existing scientific literature, consultations with experts in the country, social media listening, and interaction with youth. Youth, although being a sub-population group for Stage 2, were also included for interaction in this stage as very little information on this category was available in already published literature, and with increasing momentum in the Digital space globally, it was important to gather some understanding about their beliefs and perceptions before we progress to Stage 2. See Appendix 1 for a summary of observations from Stage 1.

The findings from the desk review, consultations, interactions, and social listening are used to define enquiry areas and preparation of tools for the target audience consultations in the Stage 2.

Stage 2 involved primary data collection. This was done in the form of audience consultations or focus group discussions / meetings with small groups of primary audience members consisting of adults, elderly, those with comorbidities, caregivers of elderly or those with comorbidities, youth, parents of very young children, migrants.

Stage 2 also saw in-depth interviews with individual key informants such as frontline health workers, teachers, religious leaders, influencers. The data from two different sets of people in the same communities helped in triangulation of findings.

Study locations

Five locations viz. Male', HA. Ihavandhoo, ADh. Dhigurah, L. Gan and GDh. Madaveli were selected for Stage 2 consultation.

Study population

The target audience for assessment were:

Primary audiences (focus group discussions) —

- Elderly and their caregivers (50 plus years)
- Youth (18-25 years)
- Home makers and parents of children 5-11 years (18-50 years)
- Employed people (25-50 years)
- Foreign migrant workers (all ages)

Secondary audiences (Individual key informant in-depth interviews) —

- Government service providers - health and other frontline workers
- Key influencers – local leaders, teachers, faith leaders, women's development groups, media professionals, youth leaders, social-media influencers

Prospective participants were provided information about the study and their questions clarified prior to the sessions. At the start of each session, written consent of the participants was obtained.

Sampling and Participants

Sampling was purposive. The participants for both focus group discussions and in-depth interviews were reached through the local councils in the islands and in Male' through social media networks and interpersonal social networks. In addition to the prospective participants identified through the local councils and social networks, participants were recruited in the field where the number of participants for the focus group sessions were found to be less than five people. This included field workers approaching target audiences at parks, retail shops near the data collection sites, giving information and motivating them to join the sessions.

AUDIENCE	TARGET SAMPLE PER ISLAND	TOTAL PARTICIPANTS ACTUAL
Primary Audience	4-5 groups (at least 5 people in each audience group – foreign migrants, elderly & caregivers, youth, homemaker /parents, employed)	165 persons Foreign migrants: 32 Elderly & caregivers: 34 Youth: 33 Homemakers/ parents: 38 Employed people: 28
Secondary Audience or Key Informants	3-5 key informants	28 Persons

Table 1A: Sample and participants for overall study

In-depth interviews (IDIs) were conducted with twenty key informants (secondary audience members) in order to understand the reasons and factors underlying vaccine hesitancy. The 20 key informants consisted of two (2) council / local government personnel, two (2) faith leaders, five (5) frontline workers, six (6) teachers, and five (5) local influencers. were interviewed using a semi-structured interview guide covering the above-mentioned enquiry areas. The interviews were carried out with different key informants in Male and other atolls as described in the table below. The enquiry areas in the in-depth interview guide for key informants were similar to those used in the focus group discussion (FGDs) with audience groups. Perceptions of COVID-19 disease in the community, perceptions of the vaccine held by the key informant and their perceptions of the beliefs held by their respective communities or clients served, sources of information about COVID-19 and the vaccines, and actions taken to prevent infection in the initial and later stages of the pandemic were also explored through the interviews.

TYPE OF KEY INFORMANT	LOCATION OR ATOLLS / ISLAND WITHIN MALDIVES					TOTAL
	GDh Madaveli (GDh = Gaafu Dhaalu Atoll)	ADh Dhigurah (ADh = Alif Dhaal Atoll)	L Gan (L = Laamu atoll)	HA Ihavandhoo (HA = Haa Alif Atoll)	Greater Male	
Teacher	1	1	1	1	2	6
Influencer	1	1			2	5
Government / Council personnel	1	1				2
Faith Leader	1					2
Frontline Worker	1	1	2	2	1	5
TOTAL	5	4	3	3	5	20

Table 1B: Sample and participants by location for the key influencer (secondary audiences) interviews component only

Data Collection Methods

At Stage 2, focus group discussions for the primary audiences, and in-depth interviews for the secondary audience groups (key informants) were used.

Focus group discussions or group meetings were used for primary audience groups consisting of the elderly, those with chronic disease conditions (co-morbidities), migrant workers, youth, parents, caregivers of elderly.

In the sites selected for the study, one focus group discussion each with five different primary audience segments were conducted. These meetings were structured using the learning of the exercises conducted in stage-1, of the assessment through flash cards, to elicit participants' reactions and comments; observe reactions and note responses of participants on the hypotheses that were arrived at by the end of Stage-1 exercises. A trained moderator facilitated the discussions while a note taker took notes of the proceedings. The group discussions were recorded with the permission of all participants.

In-depth interviews were conducted with secondary audiences, key informants consisting of frontline workers, faith-leaders, community leaders using a semi-structured guide. The interviews were recorded with permission of the participants.

Instruments and materials:

Instruments were developed based on inquiry areas of interest. A specific interview guide was used for individual interviews with key informants. For group discussions, flashcards were used for stimulus relevant to the selected inquiry areas in the group discussion during the data collection (see appendix 2 for the details of the instruments). The inquiry areas addressed in the flashcards are those aspects that relate to the main constructs to understand vaccine hesitancy as described earlier.

Study team and training

Study team consisted of investigators from MRC and FHI 360, the project consultant and trained moderators for the field work.

The training was conducted for 11 moderators over 3 days in September 2022. The training covered a mix of theory and practical aspects of qualitative data collection, focusing on group discussions, projective techniques, inquiry areas of the flashcards, mock FGDs, hands-on use of the flashcards, providing information about the assessment, obtaining informed consent and other ethical aspects of the study.

Data Management and Analysis:

The assessment conducted is based on data collected indirectly through mixed methods, such as flash cards, and consultative meetings with key informants among stakeholders. All interviews and discussion were audio recorded with permission of the participants and the recordings were transcribed and translated for analysis.

The analysis adopts a descriptive, comparative, and exploratory approach. Content analysis is conducted using the translations and notes taken during the consultative meetings and group interactions. Based on the notes and transcripts, various themes are drawn. These are then interpreted using the constructs of PMT (Ezati et al. 2021).

Validation of the findings followed a three-step process—

- i Validation of themes and interpretation through focused discussion with a smaller group. Audience members were called for a meeting in Male and the analysis was discussed with them to check if researcher interpretation was aligned with how the audience members thought of the problem and proposed solutions or actions.
- ii Triangulation of audience focus group findings with findings from in-depth interviews with key informants.
- iii Advisory Board meetings. Three such advisory meetings were conducted with representatives from agencies who had been working on the problem for some time and also worked closely with audiences and health care workers. Advisory Group suggestions have been incorporated into the recommendations as well. There was consistency of findings of this formative assessment with findings from the various social listening exercises.

Time Period

The field work was conducted from October to November 2022. Up to five focus group discussions and consultations with stakeholders (minimum five key informants) was held in each of the five locations selected for the assessment.

Ethical Considerations

The study team is aware of the challenges that arise when considering the ethical dimensions of the study. Issues arise around the use of participation inducements and/or compensation for the opportunity cost of participation, as well as informed consent, participant recruitment, the risks or stigmatization, coercion, and conflicts of interest. See appendix 2 for the consent form and information sheet used in the study. In line with the national requirement, MRC obtained ethical approval for the assessment from the National Health Research Council, Ministry of Health (Approval ref: NHRC/2022/19).

A written informed consent was sought and recorded for all participants (consent form and information sheet attached in annex). The participants were given the opportunity to withdraw from the study at any point they feel the need to during the data collection. In all circumstances, the confidentiality of participant information was respected. Codes were used for the participants so that they are not identified by name or national identity number. Other personal identification information was not included in the information collected.

MRC ensured that all activities carried-out under the project were communicated with relevant stakeholders and the public. Key milestones of the project were shared via MRC social media channels and through other means of mass communication. All publications, reports, social media posts, graphics or videos produced under the project include the logos of MRC and follow the USAID/EpiC branding and marketing. The data is stored at MRC Office under lock and key and will not be accessible to any person other than the investigators of the project. The data will remain stored for 2 years and discarded safely by formatting all the data in soft form and shredding all the hard copies.

Disclosure: The authors, Maldivian Red Crescent, FHI360 do not have any conflict of interests that need to be declared. The project was funded by USAID.

Quality Control

The data collection was supervised by the investigators of MRC and in the field by the study consultant. For validation, the preliminary findings generated were reviewed independently by another investigator and discussed and resolved where any differences were noted.

Further, the findings were validated in two sessions, one with moderators and another set of 6 people from the primary audience group and one key informant by presenting the findings and having a discussion on their perspectives on the findings.

Limitations and Delimitations of The Study

The main limitation of the study is that it was conducted only in five islands (HA. Ihavandhoo, ADh. Dhigurah, GDh. Madaveli, L. Gan and Greater Male' - Capital City) and thus the responses of participants may not be reflective of other people in the country in general. Since the components for migrant workers are only conducted in Bangla this would be a limitation as migrants from other countries will not be included. This again limits the amount of generalization that can be made for the results. Delimitations include extensive review of the existing communications strategies and the methodology utilizing multiple consultations at different levels and groups in the community qualitatively.

C. Findings and Discussion

The findings are discussed by the inquiry areas used for understanding the vaccine-related behavior followed by a discussion of findings from different primary audience groups and key informant interviews.

The Inquiry Areas and Constructs

A description of the questions used in this study relevant to the inquiry areas is provided first.

- Confidence in the vaccine and safety was explored through questions on people's reaction to messages from health authorities and if the participants know people who are doubtful or hesitant and fearful of the vaccine and discussing their reasons. Attitude to vaccines – response efficacy.
- Trust or confidence in health care and other institutions was explored through questions on common government and social institutions where men and women would go for vaccine/booster related information and the reasons for their preference.
- Self-efficacy in terms of costs, time and opportunity was explored through questions on hesitancy or likely reasons for delaying vaccination among different members of a joint family with different occupations and the reasons for prioritizing the person who gets vaccinated. Decision autonomy was explored with questions on the process a woman would go through in a household to get vaccinated and possible barriers to vaccination.
- Convenience and constraints were explored through questions on the possible reasons a person could not get himself vaccinated and if there were different reasons based on gender. The questions also explored the groups in the community that are likely to have difficulty in accessing vaccination.

- Intention towards vaccination and response costs were explored through questions on reasons why someone's willingness is high, and someone else's is low among different gender and age groups, including opportunity costs.
- Perceived vulnerability, susceptibility and complacency were explored with questions on who in the family is at most risk of getting COVID-19 infection, risk of getting re-infected and who needs to be protected with vaccinations. Susceptibility was also explored with questions on activity that puts one at highest risk of contracting COVID-19, and chances of passing on the infection to others.
- Perceived seriousness, severity and complacency were explored with questions on close contact activities and those in a joint family who are likely to have serious implications of contracting.
- Channels of communications were explored through questions on sources of maximum information, sources by different groups in the community, sources most trusted and sources that provide the most negative and wrong information.
- Motivations for vaccine behavior were explored through questions on different social interactions with influencers in the community, family and work situations and social norms that influence decisions to get vaccinated.

Overall Findings from all audience group discussions and meetings categorized by inquiry areas and constructs

Table 2 presents the themes that emerged from the primary audience consultations in the form of focus group meetings. The section below presents an analysis of narratives and the frequency of utterances relevant to the theme in relation to the inquiry areas and constructs explored.

Inquiry Areas and Themes	No. of people uttering phrases relevant to the theme (out of 165)
CONFIDENCE: RESPONSE EFFICACY (Vaccine Efficacy)	
Not effective for preventing infection	102
Effective in reduce severity of disease	23
Not safe (adverse effects)	118
CONFIDENCE: TRUST IN THE SYSTEMS	
Mistrust in vaccine products (different types of vaccine, 56 mixing vaccine types)	56
Political conspiracy	14
CONFIDENCE: SELF EFFICACY	
Able to access vaccine information and vaccines	83
Social norms and beliefs of elderly as dependents	106
Dependency on employers	47
Undocumented (foreigners)	6
CONVENIENCE: BARRIERS TO ACTION, INCONVENIENCE, ACCESS	
Timing and process not easy	89
Not aware of the need for booster dose	93
Healthcare workers do not reach out with information	76
Stock out at health centre (primary doses)	46
CONVENIENCE: RESPONSE COSTS	
Absence from work, school (opportunity cost)	111
Health care worker shortage and burnout	12
Gender equitable - No difference for men and women	79
COMPLACENCY: PERCEIVED VULNERABILITY /SUSCEPTIBILITY	
Highly susceptible, everyone is at risk of getting the disease	126
Elderly/ people with chronic diseases are more vulnerable	63
COMPLACENCY: PERCEIVED SERIOUSNESS/THREAT	
Not serious, mild disease	117
Some other flus are more serious	37
CUES TO ACTION: SOCIAL NORMS	
Protect vulnerable family members (pregnant women, infants and young children, elderly) – emerged more among young people, caregivers / parents and foreign migrants	112
Religious beliefs – accepts sickness and death as part of life – more among elderly	43
Respect authority of healthcare worker – as trusted source of information and advice	123
CUES TO ACTION: SOCIAL RESTRICTIONS	
Restrictive government rules – travel, workplace, schools	152
CUES TO ACTION: INFORMATION SOURCES	
Advice of healthcare workers (trusted doctor, CHW)	84
Social media as the most common source of information	129
Social media as the most common source of misinformation	135
Groups chats of family and friends (Viber, WhatsApp) as 93 trusted source of information – influence motivation	93

Looking at the findings through lenses of 3 Cs of vaccine hesitancy shows that there is high complacency and low confidence supplemented by low convenience about getting COVID-19 booster doses.

Complacency

There is a general acceptance that everyone is susceptible to the disease, that all have the similar risk of getting infected. The predominant perception is that the more interactions a person has, they have a greater risk of getting infected.

“ We are all at risk. Anyone getting in contact with others, even children
— Employed Worker

Although the audience recognized the high susceptibility, there is a perception that COVID-19 is in general a mild disease. There is some recognition that elderly and people with co-morbidities are likely to get sicker and have severe disease.

“ Nothing happens to children. I got it three times, I wasn't vaccinated, and nothing happened to my kids. They just test positive and that's it.
— Parent

“ I guess we all thought it was serious before. It's not as serious anymore.
— Key Informant

“ Elderly and those with chronic diseases can get sick.
— Parent

Elderly has religious and cultural beliefs that sickness and death are part of life, and it is their fate if they get the disease. Younger people also narrated such experiences within their family and noted that it is very hard to convince the elderly family members to get vaccinated.

“ The elderly wouldn't go to hospitals even if they are unwell in some cases

Confidence

Confidence is influenced primarily by information and experiences of primary doses. There is a prevalent conception that vaccines should prevent the disease. Despite the scientific literature, it appears that communication strategies and messaging were not able to deliver the correct knowledge on the primary outcome of vaccination i.e., reduce severity of the disease. It is evident from the narratives that the audience is disappointed that despite vaccination, most of the people had COVID-19 infection, some more than once.

“ I personally got covid after being vaccinated thrice. I don't know what's in the vaccine but I got vaccinated because I was told I should get vaccinated. I don't know what the effects of the vaccine are.
— Parent

“ We have witnessed certain things happening after getting vaccinated. And we know that it's true. — Employed Worker

Misinformation and misinterpretation of messaging has added to this perception that COVID-19 vaccines are not effective. Participants had several concerns regarding safety COVID-19 vaccines and narrated how the government messaging made them question the safety of the vaccine. Findings from other settings indicated that the phrase Emergency Use Authorization triggered mixed responses from risky to suspicious and the need for more information (Quinn et al. 2020). Furthermore, it has been noted that contradictory messages from political and scientific leadership undermine the public's trust and generate misinformation (Sauer et al. 2021).

“ Because the vaccine is a new development and we're not aware of what might happen to us from it.

“ On TV HPA and UNICEF said the vaccine was developed very fast. We were very scared after that. We are not sure if it is safe. — Parent

Conspiracy theories influenced people's confidence to COVID-19 vaccine. Rumors and conspiracy theories lead to mistrust contributing to vaccine hesitancy (Islam et al. 2021). The findings indicate the conspiracy theories to be politically motivated. Since Maldives rolled out three different vaccines during the primary doses that were donated from other countries, the quality (safety and effectiveness) of the donated vaccines were questioned. Although divergent views were present, some participants indicated access to vaccination was also politically influenced.

“ If she is dressed in yellow, she will get her vaccination more quickly. There are members of the opposition party who are still not vaccinated. While the present party is in power, I will not get vaccinated”

Misinformation on adverse events is the most common reason for low confidence. The primary audiences narrated firsthand lived experiences of adverse events among family and friends. These include experiences related to reproductive functions, particularly related to menstruation, pregnancy outcomes affecting mother and the baby. These experiences are further reinforced with disinformation from anti vaxxers on fertility.

“ Many of my friends had problems with periods. We don't know how that will affect us. — Youth

“ I had my wife vaccinated, about a month after that our baby died before birth” – Employed Worker.

Scientific evidence on menstrual changes following COVID-19 vaccination is inconclusive. While some studies have suggested menstrual changes (Rodríguez Quejada et al. 2021) others have not found significant differences (Bouchard et al. 2022). Systematic reviews of studies on COVID-19 vaccination and pregnancy outcomes does not indicate probability of small for gestational age is similar between vaccinated and unvaccinated pregnant women, and the former also had a slightly reduced rate of premature delivery (Carbone et al. 2022)

Perceptions on low response efficacy are also influenced by a lack of understanding of the cardiovascular adverse events following COVID-19 vaccination. Audience narratives indicate that people associated unexplained sudden deaths of young to middle-aged people in the country with

COVID-19 vaccines. There is no information on how the government and public health authorities addressed this concern. Synthesis of available evidence shows that clinical course of mRNA related myocarditis appeared to be benign, although longer term follow-up data were limited (Pillay et al. 2022).

“ We are seeing all these deaths even in young people after vaccination. A very well known Maldivian died abroad after getting vaccinated, it was in the news. — Youth

Confidence is also inflicted by self-efficacy, an individual's own capability of managing protective behaviors. The findings show that self-efficacy is moderate among younger people, but their motivation is influenced by the response efficacy of the COVID-19 vaccine as discussed above and are complacent. Their motivation is to protect other vulnerable members of the family rather than self. Similar findings were observed in other country settings (Fisher et al. 2021). Some of the youth working in retail and food outlets had lower self-efficacy as it affects their ability to access vaccination.

“ It is very hard to find time when we work in shift duty, there is no time to go and get vaccinated, we don't get time off just for vaccination. — Youth

“ Work timing not allowing them to get the vaccine. — Elderly

Self-efficacy is observed to be low among the sick and elderly in the families and foreign migrants. Narratives indicate that sick and elderly are dependent on other family members to support them in accessing vaccination. It has been observed that the caregiver's confidence in COVID-19 vaccine efficacy influences the vaccination of dependent family members (Thanapluetiwong et al. 2022).

“ And there are, for example, people who might not be able to go and get the COVID vaccine on their own, who have been irresponsibly left to their own situations by institutions. I noticed that as such, I had also experienced this.

While the COVID-19 vaccination policy was inclusive of foreign residents their self-efficacy was low as their behavior was dependent on approvals from their employers. Audience consultations with foreign migrants stated.

“ Boss says 2 is fine, no need to get the third one. — Foreign Migrant

Further some foreign migrant residents without appropriate documentation were hesitant of possible penalties if they try to access vaccination.

“ Some don't have the card, is scared to go. — Foreign Migrant

While the foreign residents without appropriate documentation were provided with primary doses of COVID-19 vaccines, they did not have confidence that a similar process would be followed once the public health emergency was no longer in effect. Studies from other countries indicate that undocumented migrants are likely to get vaccinated at trusted places they frequent rather than formal vaccination centres (Deal et al. 2021).

Convenience

The consultations revealed that the process was mostly convenient during the primary dose administration despite some islands facing stockout of vaccines that disrupted quick coverage of the eligible population. Elderly participants noted that health centres actively reached out to bedridden vulnerable people to get them vaccinated.

“ Everyone gets a vaccine, after getting two vaccines they go for the third.
— Foreign Migrant Worker

However, most participants had difficulty in accessing booster doses, particularly in the peripheral islands as they were waiting for the health facilities to reach out to them with details on the dates and times for booster.

“ (went to the hospital) 6 months ago. They said they will message and let us know but they never got back to us. — Foreign Migrant Worker

Even in Male' access to COVID-19 booster doses were noted to be problematic. Participants noted not having information about the location and opening hours of vaccination centres.

“ We don't know where to go now. — Youth

Furthermore, unlike primary doses, there was no active reach out to the eligible persons and most vulnerable people were left behind. Furthermore, participants noted response cost is high due to side effects that made them unable to do their work, absence from work and loss of productivity and pay.

“ Because of the side effects, may affect earning. — Employed Worker

Trust in the health facilities that deliver vaccination was plowed. The participants had a number of complaints with regard to health centres and hospitals, particularly information on vaccination, organizing sessions and the processes that had to be followed.

“ It's not that we don't want the booster dose, it's that the government does not spread awareness to get the booster dose. — Elderly

Cues to Action

Overwhelmingly it was narrated the motivations of vaccination during primary doses were the government-imposed rules and restriction with regard to travel between islands, entering workplaces and schools.

“ I think these people ended up vaccinated because they were forced into that position. — Key Informant

Even for children, the participants are hesitant to give COVID-19 vaccination unless it is made mandatory.

“ We don't know the effects of the vaccine on children. We have seen many negative effects after vaccination in the family and relatives. I will be hesitant to give COVID- 19 vaccine to my child. — Parent

“ If it becomes mandatory to go to school then we don't have a choice. I will not give my boy covid-19 vaccine if I have a choice. — Parent

Social media is identified as the most common source of information and affected motivations to vaccinate. Closed group social media chats are identified as a common source of information and regarded as trustworthy, particularly among parents, workers, older age groups and foreign migrants. Among younger people, social media particularly Instagram and Facebook are the most common source of information while YouTube is the most common source of information for the foreign migrants.

“ Mostly social media, because mixed information and false information given. — Youth

Health care workers are identified as the go-to source for verifying information. One-to- one advice by a healthcare worker is noted to be a motivation factor to get vaccinated.

“ As I said, we will have to check who posted the information, and see if it's fake or original. If a doctor posts, then it won't be false information. — Foreign Migrant Worker

It is notable that in Male' area participants used the word “doctor” in reference to a trusted healthcare worker while the word “health worker” is used more commonly in the other islands when referring to healthcare workers. This difference is likely to be influenced by the lack of community health workers in the health services in Male' area unlike in the other islands.

“ But health centres do not have awareness sessions for us. — Parent

“ Even if we call for an awareness session, people don't come. — Key Informant

Social media is also identified as the most common source of information and participants identified health care workers as the go-to source for verifying information. Facebook and YouTube are particularly identified as sources of misinformation.

“ Facebook and YouTube. Mostly YouTube provides false information. — Foreign Migrant Worker

“ Social media is where most people get information. Twitter, facebook. — Employed

“ There are family Viber groups. People believe the information in these chat groups. — Youth

Findings from Primary Audience Groups —

Youth

Confidence in the vaccine and its safety was low among youth. The youth indicated that the vaccine does not prevent the disease and were concerned with the adverse events. Participants referred to stories of heart disease and sudden deaths among young adults reported in the country.

The youth generally indicated no specific interest in the messages on COVID-19 from health authorities. For instance, when shown a pictorial message from the Health Protection Authority, participants from the youth group stated “I will not give any reaction”. Youth expressed dissatisfaction with the health service providers, particularly noting that they do not have any information on the booster doses, centres and timings for vaccinations.

The findings show that self-efficacy was high among youth being able to navigate social media platforms and to some extent identify correct information sources. Reasons expressed for the delay in getting vaccination include that elderly and workers are prioritized and there are operational barriers such as timings of vaccinations. The participants noted they did not perceive any difference by gender in decision to vaccinate, accessing vaccine information. But noted that some women if they had children may find it difficult to access vaccination centers when the vaccine is offered only during official hours. Similarly, youth noted that foreign migrants are likely to have difficulty in vaccination due to language barriers and their work arrangements.

The discussion among youth on the reasons why someone’s willingness is high is on social norms and moral values rather than individual safety. The most expressed reason for willingness is to protect the vulnerable in the family, particularly the older family members and people with comorbidities at home. Youth perceived themselves to be susceptible and acknowledged that everyone has the risk of getting COVID-19 infection and/or getting re-infected. They identified people with more physical interactions, socially or at work, as those being at a higher risk of getting infected and re-infected. Elderly and those with comorbidities are noted to be population groups that need to be protected with vaccinations.

The youth perceived COVID-19 to not be a serious illness and narrated experiences of their families and friends who had the infection and re-infection. At the same time, they also noted that the disease becomes serious for elderly and those with comorbidities.

Youth relied on social media for information and the most common channels of communications stated were Twitter, Instagram and to some extent Facebook. Social media platforms are also noted to be the most frequent sources of misinformation. A few stated obtaining information from websites of Health Protection Authority, WHO and CDC and identified these as trusted sources. Well-known local medical doctors were noted as the most trusted sources.

Influencers on social media were stated to affect youths’ perceptions towards vaccination. Youth noted that interactions among peer groups influence their motivations and intentions to get vaccinated.

Employed Adults

The employed audience did not have confidence in the COVID-19 vaccine, citing that it does not prevent the disease. Further, the group predominantly felt that the vaccines were not safe and narrated experiences of adverse events they had observed among family and friends from workplaces. However, the working people viewed the messages on COVID-19 from health authorities positively, expressing that they would give a “like” to messages from the Health Protection Agency.

Self-efficacy was moderate to low among workers, citing limited information about vaccines and criticizing the health services on the vaccination operations. They stated that there is very limited awareness generation activity on booster doses and some employers do not facilitate vaccination. The working audience stated that it is particularly difficult to go and get vaccinated while working in the retail and food service businesses as the timing of vaccination centers and their work hours clash. The workers noted that both men and women face the same barriers.

The working audience indicated that the motivation for vaccination during primary doses were the government restriction and the rewards for travel and work when vaccinated. They noted that at present there is no reason to get vaccinated except for the protection of the people with long-term illnesses in the family.

Working people perceived themselves to be susceptible and noted that almost everyone is at the risk of getting infected with COVID-19. They stated that workers involved in directly serving the community are at a higher risk of getting infected and re-infected. Workers noted that people who have chronic diseases and low immunity are likely to get infected more easily and should get vaccinated. However, the common perception is that COVID-19 is not a serious illness although some participants expressed and narrated experiences of their families and friends who had severe infection.

Working population relied on social media for information and the most common channels of communications stated were Twitter, Facebook and close chat groups of family and friends on WhatsApp and Viber. Social media is noted to be the most available and frequented source of misinformation. The most trusted source stated was a doctor or community health worker followed by family chat groups. They noted that when in doubt they will ask the local health worker or a local well-known medical doctor. Influencers on social media and colleagues are noted to influence the workers' perceptions towards vaccination.

Foreign Migrants

The foreign migrants in general have low confidence in the COVID-19 vaccine. They expressed that the vaccines caused adverse events among many of their peers at the workplaces.

Self-efficacy was low among the foreign migrants and noted that they did not receive information on vaccines and its effects from government sources or health centres. Foreign migrants narrated that vaccination for primary doses were easy as employers wanted them to get vaccinated. The motivation for vaccination during primary doses for migrant workers includes fear of falling sick and not being able to go back to their families, and the government restrictions on travel. Nevertheless, they have limited information on booster doses and are dependent on their employers for information on vaccination, vaccine centers and timings. They are dependent on the employer's permission for accessing vaccination.

Foreign migrants perceived themselves to be at risk of getting infection and noted that everyone is at risk of infection. They had little information on severity of the disease and are of the view that the disease was serious before but now it is no longer serious.

Social media is the most common and preferred source of information and the most common channels of communications stated were Facebook, YouTube and close chat groups of family and friends on Iloilo. Some foreign migrants also accessed information from the home country TV channels through the internet. They noted that social media and YouTube are also where they see most misinformation and when in doubt, they validate with information shared by doctors (including those on social media) or if possible, ask the doctor at the island health facility.

Parents of Young Children

Confidence in vaccines and safety was low among parents and/or homemakers. While the parents generally received messages on COVID-19 from health authorities positively, they are hesitant to receive the booster doses. For instance, when shown a pictorial message from the Health Protection Authority, participants from parents' group stated, "I will select a heart (emoji)". At the same time the parents were unsure about the safety of the vaccine as they had experiences of adverse events, with COVID vaccines, related to pregnancy, menstruation and cardiovascular condition among their family or friends.

Further there was mistrust towards the health care institutions delivering the vaccine. The reasons expressed by parents relate to dissatisfaction of the operational procedures at the health facilities. Participants across the audience groups were unhappy with the access to information and the awareness generation interventions from the health facilities. Parents indicated that unlike during the primary doses, health facilities have not given them any information on the timings of the booster doses and have not reached out to them for the booster doses. They indicated they are not aware of the need and availability of the booster doses.

The findings show that although vaccination was free, opportunity costs of vaccination for the parents were high. Parents indicated that they had side effects from the primary doses, and many were not well for one to two days and that affected their household work as well as income earning activities. The common reasons for not getting vaccinated were time constraints, and the feeling that there is no need to get vaccinated. Parents noted that they got vaccinated with primary doses as there were many restrictions and they were not able to even enter school to pick up their children, if not vaccinated. The second most common reason for getting vaccinated was that there were elderly people with comorbidities and pregnant women at home that may get severe disease. Parents indicated that both men and women had equal decision-making autonomy and possible barriers to vaccination are the information gaps on the safety of the vaccine and convenience of getting the vaccine. Parents however noted that elderly have less autonomy to make decisions on getting vaccinated as they are dependent on the family.

Parents had perceived that everyone is vulnerable and susceptible to the disease and those going out and involved in physical interaction with others are more at risk of getting infected. Parents felt that elderly, pregnant women, and those with low immunity are likely to be at a higher risk and more vulnerable. However, they were complacent towards getting vaccinated with booster doses. The main reasons expressed are that the disease is not severe and narrated the experience of getting re-infections without severe disease.

The maximum information was sought from social media, Twitter, Facebook and group chats of family and friends through Viber and WhatsApp. Some parents noted that at island level there were Viber groups set by the health facility to provide information on vaccination delivery. Parents noted there was misinformation most commonly on social media while the most trusted source of information is from well-known local doctors on social media. Social media influencers and group chats are other sources cited to influence vaccine behavior among the parents.

Elderly and People with Comorbidities

Elderly and people with comorbidities expressed low confidence in the vaccine. There is a perception that the vaccine should prevent people from getting infected. At the same time, some elderly also noted that the disease became less severe when vaccinated. However, there were concerns on the safety of the vaccine. The elderly noted that with vaccination many family members and friends got sick due to side effects and narrated incidences of death among some elderly.

The elderly, and those with comorbidities, accepted the messages on COVID-19 from health authorities and healthcare workers. However, they expressed that health care workers do not reach out to them to provide information directly to them.

The findings show that self-efficacy was high among elderly but low among those with comorbidities, since they have difficulty in accessing correct/useful information. Further, many were not able to go to the vaccination centers as they were dependent on their family's support even when they did not have financial limitations. They noted that some elderly and disabled people were not able to go to the centres because of mobility limitations and hence the vaccinations were delayed. They also noted that while for the primary doses, there was outreach done to homes, for booster doses there were no home visits made. Some elderly narrated that there was no need to get vaccinated as they were already ill and accepted death as a natural process and part of life.

The elderly noted that most people got vaccinated for primary doses because of the fear and government restrictions. They expressed that now it is over and no longer a problem; even the health facilities do not test people for COVID-19 virus anymore, and people do not have to wear masks.

Elderly noted that everyone is susceptible and that workers are more vulnerable to getting infected. They also noted that older people and those with comorbidities will have low immunity and are more vulnerable to diseases. They expressed that many had serious disease and have lost some of their friends during the peak of the pandemic and noted that older people must be protected with COVID-19 vaccines.

Elderly commonly relied on local TV and radio for information on the disease and vaccine. Some of the elderly also access information through group chats of family and friends on Viber and WhatsApp. The most trusted source of information for the elderly was doctors advising them directly during their consultations followed by information from well-known doctors through the media. Doctors, family, and friends were key influencers for elderly's perceptions towards vaccination.

Similarities and differences between the different primary audience groups

Foreign migrant workers were observed to be motivated by moral values of protecting the family and appear to have a higher threat appraisal, fearing loss of income if they get the disease. Further, they had lower self-efficacy and higher dependency on the employer for accessing vaccination. International migrant workers also accessed information most commonly from social media particularly Facebook and groups chat application IMO.

Elderly and their caregivers displayed low protection motivation behavior and tended to accept sickness and death as part of life. They have low self-efficacy and are dependent on their family members for getting vaccinated. Caregivers noted that they too are not able to make the vaccine accessible to the elderly who are bedridden as there is no outreach for booster doses. Elderly relied on TV and radio for information on vaccination and family groups chats, commonly on Viber.

Home makers and parents had low threat appraisal and low motivation to get vaccinated themselves. Further, they expressed reluctance to give vaccination to children unless made mandatory. The main reasons expressed include low efficacy of the vaccine in preventing the infection and concerns about safety of the vaccine. Parents voiced experiences that infection in children are mild while adverse events are serious. Parents also accessed information mainly through social media, and family and friends' chat groups on Viber and Whatsapp.

Employed workers have low motivation and identified that response costs are high for them through loss of workdays due to side effects. Further, they had lower self-efficacy, particularly those working in retail and food service businesses, as they are not given off hours to go and get the vaccine. Furthermore, accessibility is noted to be a challenge as they do not have information on vaccination centres and if they are open at off-hours. Employed people too accessed social media most commonly for information.

Youth also demonstrated moral values and expressed that vulnerable family members, particularly grandparents and elderly relatives, as a motivation to get vaccinated. They had high self-efficacy in accessing correct information and vaccination centers. However, they noted there is a lack of information on vaccine availability, centers and service hours. Further, youth noted that misinformation and disinformation are circulated widely and there is limited government action to spread correct information. Social media and social platforms are the main sources of information for youth.

Across the groups there is high perceived susceptibility but low threat appraisal. This is coupled with the low response efficacy of COVID-19 vaccine (in preventing the disease) and a high concern for safety with COVID-19 vaccination.

Perceptions	Youth	Employed People	Foreign Migrant	Homemaker / Parent	Elderly & people with comorbidity
Susceptibility	High	High	High	High	High
Severity	Low	Low	Low	Low	Low
Fear	Low	Low	Low	Low	Low
Vaccine Effectiveness	Low	Low	Low	Low	Low
Vaccine Safety	Low	Low	Low	Low	Low
Access to Vaccine (primary)	High	High	High	High	High
Access to Vaccine (booster)	Low	Low	Low	Low	Low
Trust in the System	Low	Low	Low	Low	Low
Opportunity Cost	High	High	High	High	Low
Self Efficacy	High	High	Low	High	Low
Information on Vaccine Availability	Low	Low	Low	Low	Low
Information Sources	Twitter, Facebook, Instagram	Twitter, Facebook, Closed Chats (Viber / WhatsApp)	Facebook, YouTube, IMO chat, Employer, TV (home country)	Twitter, Facebook, Closed Chats (Viber / WhatsApp)	TV, Radio, Closed Chats (Viber / WhatsApp)
Trusted Source of Information	Healthcare Worker (Doctor)	Healthcare Worker (Doctor / CHW)	Healthcare Worker (Doctor / CHW)	Healthcare Worker (Doctor / CHW)	Healthcare Worker (Doctor / CHW)
Protection of Family as a Motivator	High	High	High	High	High
Protection of Self as Motivator	Low	Low	Low	Low	Low
Restrictions as Motivator	High	High	High	High	High

Table 3: Similarities and Differences by Audience Groups

Attitudes towards COVID-19 Vaccination of Children —

The protection motivation behavior with regard to COVID-19 vaccination for children was found to be low. As discussed above, the threat appraisal of COVID-19 is low among all audience groups including parents. The audience groups also have low confidence in the vaccine. When specifically asked about vaccination of children, parents raised concerns about the safety of the vaccine. Parents stated,

“ The disease is not severe. With the vaccine there are many adverse effects. We still don't know what effects it will have on children, in the long term. Why should we take the risk?

“ COVID-19 vaccine does not prevent the disease. We give other vaccines (referring to routine immunization) to our children, because we know that they prevent the disease. Our children are protected from getting infected with diseases like polio and measles.

When enquired about cues to action for vaccinating children, the parents identified mandatory requirements as the only motivation for them to get their children the COVID- 19 vaccine.

“ If I have a choice, I will not vaccinate my child, but if the schools make it mandatory for children to have COVID-19 vaccine, then we don't have a choice.

Findings from in-depth interviews with key informants or secondary audiences by inquiry areas and constructs

The key informant or secondary audience member interviews have been analyzed in a similar fashion as the primary audience groups and the findings are presented according to the 3C Model of Vaccine Hesitancy¹. This 3C's model was developed by the SAGE Working Group to map three main factors that influence vaccine uptake: complacency about the problem or disease; confidence in the response to the disease, in this case the vaccine; and convenience issues or practical barriers such as difficulties in access due to time, distance, social factors, among others. The SAGE working group concluded that vaccine hesitancy refers to a delay in acceptance or refusal of vaccination despite availability of vaccination services. Vaccine hesitancy is complex and context specific, varying across time, place and type of vaccines. It is influenced by factors such as complacency, confidence, and convenience.

The key informant interviews were conducted in order to get an understanding of how influential community leaders were thinking about the problem, what these leaders perceived as the thinking and mood of the primary audience and as a form of triangulation and validation of findings from the primary audiences. It is important to note that there is near complete consonance between the findings of key informant interviews and what was reported from primary audience focus groups, especially for the constructs of complacency and confidence in vaccine response. The focus groups conducted with the primary audience gave better insights into practical or convenience issues.

1. Complacency

Complacency barriers refer to when people believe that the risk from contracting the disease, in this case COVID-19, is not very high, and that catching COVID-19 shall not negatively impact their own and their loved ones' lives.

Several key informants stated that at the start of the pandemic people were very afraid of the COVID-19 disease and diligently took measures to prevent infection, whereas there is increasingly lesser concern regarding the disease in the present time. In the early phases of the disease, people used to follow steps such as handwashing, wearing masks, and maintaining a distance of 3 feet between people. In the present times, people seldom followed such measures, and did not get themselves tested on experiencing COVID-like symptoms, and likened COVID-19 to the common flu.

Respondents also stated that people hardly discussed COVID-19 in the present time, and considered it to be a thing of the past; in fact, importance and priority was being given to diseases like dengue which are spreading fast and causing health problems. One respondent wanted to know from the interviewer if COVID-19 was still circulating in Maldives.

“ I guess we all thought it was serious before. But it's not as serious anymore. People used to test a lot before. We don't test as much anymore. Since we don't test as much anymore I guess we don't know the real COVID numbers anymore either. ...It feels like it was a long time ago. People are focused on diseases that are spreading right now like dengue. COVID-19 is not as important to people on this island anymore.
— Government Official, ADh. Dhigurah

“ Now we are not talking about the vaccine or the COVID-19. I want to know if COVID-19 is no longer there because we are not talking about it, that's my biggest question.
— Faith Leader, L. Gan

It was opined that people did not take as many proactive measures as before to protect themselves from infection. Most people believed that they were sufficiently protected from COVID-19 with two primary doses and did not consider it necessary or useful to follow through with third and fourth booster doses.

“ Booster shot is now a personal preference. I think for a health-conscious person to get the booster shot is okay but honestly – I'm not against vaccination, but I would not get the booster shots because I think that's unnecessary.
— Influencer, Greater Male

“ As long as you are double vaccinated everything is fine.
— Government Personnel, ADh. Dhigurah

¹ MacDonald, N. E. (2015). Vaccine hesitancy: Definition, scope and determinants. *Vaccine*, 33(34), 4161–4164. <https://doi.org/10.1016/j.vaccine.2015.04.036>

Some respondents felt there was greater awareness about the disease now, and that people took greater care. Thus, while there was complacency about COVID-19 as a disease, there was also some awareness of transmission of respiratory diseases. The key informants thought this might be leveraged for future programs.

“ Now we do not send our kids near those who have colds even now. When we go out, hand washing has also become a part of our routine. Then sanitizers— previously its use by everyone was not so common right? Now even when we travel, families too, sanitizers are carried. These are the measures taken now (after COVID-19).
— Teacher, L. Gan

Whereas some respondents stated that all people, regardless of age or health status, were at equal risk of the disease, most others felt that vulnerable populations such as the elderly, newborn, children, those having chronic illnesses, and those undergoing health treatments could be severely affected if they were infected. Some respondents even mentioned migrants as being vulnerable populations.

When asked about precautions taken after getting vaccinated, the respondents once again gave different answers. Whereas some respondents stated that people did not need to take any precautions or even take the booster shot after getting the primary two doses of vaccination, others said that it was imperative to continue taking precautions even after taking the two vaccine shots and the booster.

“ Getting the vaccine is not the only solution, we are also getting the vaccine for others' safety. And if I get infected, I need to do everything to protect others from the virus. ... People need to pay a lot of attention to things like this. ... People who get tested need to increase as now there are very few who do within the community. We just stay home with all the symptoms without testing it for COVID. It might be something small, but you never know when the situation can escalate.
— Government Personnel, GDh. Madaveli

2. Confidence

Confidence barriers are related to people's beliefs that the response to the disease, the vaccine, is in itself ineffective or unsafe; and the system and personnel who deliver the vaccine are not reliable or competent, or that the motivations of the authorities cannot be trusted.

When asked about the effectiveness of the vaccines in preventing infection, there were mixed responses. Some respondents stated that the vaccines and booster had strengthened people's immune systems towards the virus.

“ Now we see after the vaccine everyone's immune systems are stronger, there are people who have taken 3-4 doses, and the people are not getting admitted in hospitals. ... People with prolonged diseases will still be continuing their medications so they are still at risk. But after the vaccine it can be seen these vulnerable groups also have become stronger. I think that is with the vaccine.
— Faith Leader, GDh. Madaveli

Many respondents felt that whereas the vaccine could not prevent the infection, it could reduce the severity of the infection.

“ There is a huge difference between someone with the vaccine and someone without. If a vaccinated person gets COVID, that person’s symptoms are less – even if it is an elderly person. ... A 65-year-old non-vaccinated woman was very critical and had to be shifted to Male for further treatment while her husband who also tested positive was above 65, but because he had completed his doses his symptoms were not bad..

— Government Personnel, GDh. Madaveli

Key informants mentioned two types of notions regarding the COVID-19 vaccine which deterred people from getting vaccinated: one was, lack of conviction in the effectiveness of the vaccine, and the second was the vaccine being perceived as actually harmful to the health. Since the COVID-19 vaccine was launched within a year of the pandemic, the time duration taken to develop the vaccine was too short, and therefore the vaccine was not developed properly using the right process and procedures, or after adequate research and testing. People hence felt that the vaccine was not fool-proof, and that they were being made into test subjects for the vaccine, which could still be in an experimental development phase.

“ At first, I heard that it was fake. It is not a disease that exists. It is a word spread by different governments/foreign countries for the purpose of population control. I have then heard that the vaccines were free donations, and they were to be used for testing - gene mutation will occur. I have heard such stories.

— Teacher, L. Gan

There was also information circulating that the vaccine was harmful to health and could cause various side effects, infertility, health complications such as heart disease, and even sudden death. Some people felt that there was a hidden government agenda behind the vaccination drive. Respondents also mentioned “anti-vaxxers” who were completely opposed to vaccines and believed vaccines, in general and for any type of disease, are dangerous. Some people also lacked trust in the vaccines because they were manufactured and imported from other countries.

“ I have heard many theories. One is population control. That one went hard, because of the mortality rate, it went pretty hard on people. People weren’t very convinced. And some of them still aren’t. And some people say that there are those who were fit, who had not become ill at all health-wise, on getting vaccinated, have died — by cardiac arrests.

— Influencer, Greater Male’

“ In today’s situation — there are some anti-vaxxers — I know some people here who have not even vaccinated their kids. Even when the whole family is vaccinated, the child is not. That is, for example, if they are suspicious that the child might have autism, down syndrome, or another condition — without any diagnosis. That is the mentality— this is what has come to my notice.

— Teacher, L. Gan

One of the frontline workers narrated how people's lack of confidence in their motivations behind their work made their duties during COVID difficult to carry out:

“ We were frontliners – I worked in RRT (Rapid Response Team), in surveillance. I used to collect random samples on the streets, and we were asked to collect a certain number of samples per day by the authorities. Sometimes when we stopped passers-by, they said that we get paid a certain amount for each sample we collect, that we do not ask for samples for surveillance purposes but because it pays us money. ...So, they did not really believe it was done for surveillance, or because a disease was actually going around. People have said that WHO also donated free vaccinations in a container, so for the purpose of emptying this container, this activity was done.
— Frontline worker, Greater Male’

Some respondents mentioned that having too many different brands of vaccines created some issues for people. There were some people who wanted a specific brand of vaccine, and would not get vaccinated if that vaccine brand was not available to them. Too many vaccine-brands also created doubts and raised questions in people's minds about the efficacy.

Some respondents mentioned that having too many different brands of vaccines created some issues for people. There were some people who wanted a specific brand of vaccine, and would not get vaccinated if that vaccine brand was not available to them. Too many vaccine-brands also created doubts and raised questions in people's minds about the efficacy.

“ A fool proof vaccine that can shake the beliefs of such a person needs to be made and I do not believe that these vaccines should cost you a lot, whether it be from your local insurance. There shouldn't be a bunch of other vaccines, you know? There shouldn't be a bunch of vaccines, comparing to one another, saying we are better, Pfizer is better, AstraZeneca is better — that creates havoc. That proves that it's still in trial and error and not everybody wants to be a lab rat.
— Influencer, Greater Male’

3. Convenience

Convenience refers to the accessibility, affordability, and practical ease of getting vaccinated. The respondents reported that largely people did not experience difficulties in accessing the first two doses of vaccine within their islands. When it came to convenience and practical issues, we found that the primary audience group discussions provided richer narratives.

4. Sources of information about COVID-19 and its vaccine and cues to action

Key informants reported that the main sources of information about COVID-19 and vaccination were social media channels such as Viber and Facebook. Even government personnel and frontline workers disseminate COVID-19 related information received from the Maldivian Health Ministry and WHO through channels such as Viber.

“ We have health awareness group chats (on Viber) on this island. There are two main group chats we use to disseminate information on this island. There’s a community group chat where everyone can talk and there’s a health awareness group chat where only specific health professionals can send out their messages. Council handles both of these groups.
— Government Council Personnel, ADh. Dhigurah

Respondents opined that whereas social media had a wide reach amongst the population, one could not have constructive or meaningful two-way dialogues or conversations with the population through such channels. The inability to have dialogues and conversations often left scope for confusion among people, and their doubts could not be answered adequately. The Health Protection Agency (Maldives) was stated to be the best option for getting information about the vaccine booster dose.

When asked if all the people in the community had enough information about COVID and vaccination, there were divergent views: whereas some respondents stated that there has been something of an information “overload”, others opined that not all people were adequately informed. Whereas one government personnel stated: “I don’t really know any updates about COVID now. I don’t know whether people get tested now. There are no details about COVID in the media.” Another government personnel stated:

“ Everyone who needed information got information. I don’t think people on this island require any more information regarding Covid or the vaccine. Everyone on this island including little children was bombarded with enough information so everyone is pretty much aware.
— Government Personnel, GDh. Madaveli

Another aspect which was pointed out was that there were people, primary audiences, who were not on social media and some different types of communication activity had to be undertaken or different channels used to get across the necessary information to them. However, one of the respondents, a teacher from L. Gan, mentioned a concern she faced with newspapers, and stated that she did not read information related to COVID in the news because she stated that such information was usually incorrect. She also mentioned inaccuracies in the translation of English documents or information in the newspapers. Respondents thought NGOs and women’s groups could help in disseminating information about the vaccine. Some respondents opined that in islands where the population numbers were lesser, door-to-door communication was the best way to convey the message. Other methods such as press conferences, pathological testing labs, bus-stops, stalls at children’s evening fairs, and parents’ waiting areas in schools as avenues for disseminating information.

“ Most of the people in the island are linked to the school, and if you plan out the awareness activity with the school it might work better.
— Frontline Worker, ADh. Dhigurah

Some respondents also mentioned that influential people could be brought on-board to convey the right information. However, one message that stood out was that different communication channels and methods had to be used for different types of audience groups.

“ Power is power and people mostly listen to those who are powerful... For example, there are some religious scholars and people would believe information communicated by them.
— Frontline Worker, Greater Male

The MRC too was suggested as influential in communicating health-related messages effectively:

- “ *The thing is this, when MRC comes and gives any message to the community it carries a lot of weight. But when I (council person), someone they see every day, go and inform them with COVID they would say straight to my face that I have done this and that, but when MRC gives it, they listen because you are from that field..*
— Government Personnel, GDh. Madaveli

Respondents stressed that there was a need to differentiate untruth from truth. In their observations, people in the community heard different stories and anecdotes or received diverse information from diverse sources about COVID-19 vaccines. All the information pieces they received were not necessarily true, and this made people fearful of the vaccine. Some respondents also mentioned the need to make information accessible to populations of all age groups.

- “ *I think elderly, people who do not have access to a cell phone, who do not know how to access the internet... I think information is very limited to them. ...So, 12 to the age of let's say, 50 - 55, 60, they have access to many sources of information. But below 12 and above 60, information-access is very limited, due to age and resources, and inability to harness other information.*
— Influencer, Greater Male

5. Motivation for Taking Vaccines

In the initial stages of the pandemic, vaccines were in demand because people feared the virus and the disease.

- “ *Earlier I mean we all saw the news and how fast it was spreading in other places. We saw the deaths. Everyone wanted to get vaccinated to avoid that. It was the only choice. So, the stocks also used to run out (earlier).*
— Government Personnel, ADh. Dhigurah

Several respondents reported that vaccine shots were taken to circumvent the COVID-19 related restrictions such as restrictions on travel and visiting certain places, and also going to work. Without the first and the second dosages, people were not allowed to travel, and hence they took the dosages out of desperation; the booster dose on the other hand is not compulsory for travel and hence people are not taking it.

- “ *There are some people who have chosen to not get vaccinated for different reasons. ...Some people were forced to get it even though they didn't want to because they needed to travel and all.*
— Government Personnel, ADh. Dhigurah

People also reported taking vaccines to protect their loved ones who may be particularly vulnerable to the disease, such as the elderly or very young children.

- “ We have all taken the booster. We have elderly people in the house, so we have to protect them from COVID even if we don't get it.
— Influencer, GDh. Madaveli

6. Other findings

Some cultural beliefs were cited as preventing people from getting the vaccine:

- “ I guess there are some individuals who are against getting vaccines, and some people use religion in justifying it by saying it's not outlined in Islam to get vaccinated. — Frontline Worker, ADh. Dhigurah

One frontline worker remarked on how the virus had mutated or evolved, owing to which it could not be picked up through the available COVID detection tests; this implied that even though the COVID was circulating, people were not aware about their infection status:

- “ The other is the virus itself has changed a lot, it has evolved, it does not get detected by the kits like it used to. The kits that were used earlier cannot detect the evolved virus anymore, that is how it is now.

When respondents were asked if they knew people who had not taken the vaccine, most respondents thought that everyone in their circle were vaccinated, there were frontline workers who said that not all people had received the two shots of the vaccine:

- “ Yes, it is true (that there are people who have not completed the two doses). I know by looking at the records, the records that I have personally seen, it shows. — Frontline Worker, ADh. Dhigurah

Some respondents also remarked on how as a consequence of the pandemic, precautionary measures had become a part and parcel of daily life now:

- “ Some things have improved due to COVID, like people's hygiene. People have picked up on new behaviours like using hand sanitizers, washing hands frequently, and masking up. This has prevented the spread of other diseases as well. I think these practices should carry on to the future. — Government Personnel. ADh. Dhigurah

Summary

Analysis of the findings using the constructs relevant to vaccine related behavior reveals that the motivation for protection behavior is low in the communities interviewed. Perceived severity and vulnerability to Covid-19 is low, and perceived reward is low indicating low threat appraisal and the lack of fear about the consequences of the threat (COVID-19). Response efficacy of the vaccine (as a response to the threat) is low, self- efficacy is low, especially among vulnerable groups such as elderly and foreign migrants, while the response cost is perceived as high resulting in low coping appraisal.



Figure — Protection motivation behavior among the audience

The main issues that emerged through the qualitative exercises are:

1. There is no perceived need to vaccinate (no serious consequences of diseases).
2. The vaccine is not effective for preventing infections.
3. There are adverse effects including unexplained deaths.
4. There are practical barriers such as timing of the vaccine center, lack of proper information on where the vaccines are being offered and so on.
5. Social media is the most common source of Info. However, do not trust the information on social media as much.
6. Health worker's advice is most trusted.
7. Group chats of family and friends are trusted and motivational.
8. The vulnerable within families (chronic patients, elderly) need protection and as of now they are not so well protected.
9. Many participants stated that one of the big pushes for getting vaccinated in the first two rounds was the restrictions of the government.

The main causes of these issues that emerged from the data are::

1. There is no perceived need to vaccinate - While everyone is susceptible to the disease; the disease does not have serious consequences - there are other more severe flus that can have more serious consequences.
2. The vaccine is not effective (for preventing infections) - Vaccines, such as those for polio and measles, they effectively prevent the disease from ever happening. In the case of Covid-19 vaccines, despite taking the vaccine many people got the infection.
3. There are adverse effects including unexplained deaths - There are many rumors and anecdotes floating around on social media about the vaccines and the potential dangers of taking the vaccine. In addition, in Maldives, the vaccines of different companies were mixed together and that is perceived to have possibly led to adverse effects.
4. There are practical barriers such as timing of the vaccine center, lack of proper information on where the vaccines are being offered and so on - Either people have not accessed the information properly in recent times or the information has not been offered in adequate dosage and frequency.

The recommendation ahead arises from these main issues and teh causes of these issues that emerged from the mutliple qualitativte interactions.

D. Conclusion and Recommendations

So how does this formative assessment help us in navigating through this tricky problem and ensuring people continue to vaccinate and use adequate protective measures in the current and future pandemics? What lessons can be learned from the current experience of COVID-19 that could help in better preparedness for future outbreaks and pandemics, especially from a demand-generation perspective?

This formative assessment used the 3 Cs framework to explore, examine, and understand COVID-19 related vaccine hesitancy among different audience groups in Maldives. In general, there is a high level of complacency about COVID-19 disease itself with most people perceiving it as a mild disease and without much knowledge about the long term consequences of the disease. At the same time, confidence about the vaccine itself is very low. People perceive the consequences of taking the vaccine to be more harmful than getting the disease. Currently perceptions about the problem of COVID-19 are driven by low threat appraisal and low confidence in using vaccination as a response to the problem. This situation, high complacency and low confidence, indicates that motivation to take vaccination as a protective measure is low among the public as shown in Figure 4 above. These are significant challenges for health and communication experts working to improve vaccine coverage and demand-generation.

Some of the practical barriers under the 3rd C of Convenience such as timings and proper identification of vaccine centers could be addressed. However, one of the factors, which is of the country using and mixing multiple brands of vaccines, which might be a practical barrier, but impacts the confidence of people in the solution might be hard to resolve and calls for global action and cooperation.

Furthermore, the increase in anti-vax sentiments and the infodemic problem, which was seen globally in the case of COVID-19, is also a growing problem

in Maldives, where a large proportion of the population rely on social media for news, information, and communication. With growing digitization – an expansion of social media and internet use – information can spread more rapidly. This can help to more quickly fill information voids but can also amplify harmful messages (WHO, 2023). An infodemic is too much information including false or misleading information in digital and physical environments during a disease outbreak. It causes confusion and risk-taking behaviors that can harm health. It also leads to mistrust in health authorities and undermines the public health response. People are unsure about what they need to do to protect their health and the health of people around them (WHO, 2023; Zacostas, 2020).

The findings also provide evidence that most likely motivations that drove high rates of vaccine coverage in primary rounds were restrictions imposed by authorities and the fear of an unknown disease. These motivations were not sustained as the disease progressed. As soon as restrictions were lifted, the pressure to get vaccinated dropped considerably.

There is one motivational trigger that emerged from these formative exercises, and that is of wanting to protect loved ones in the family. This is driven by moral values of Maldivian society where family is an important and primary institution for Maldivians. This is an important lesson for future communication campaigns that must be considered as the country continues to build its capacity for future pandemic readiness. While restrictions might drive short term gains, a long-term approach is required.

The formative assessment threw up various possible actionable ideas. These potential actions to address vaccine hesitancy are drawn from the findings and have been categorized under four factors which we term as 4 Cs approach to addressing vaccine hesitancy in Maldives.

The 4 Cs of recommendations as per this formative assessment are listed below and each one is explained in bulleted points below. They are: (A) Communication strategy; (B) Cultivating or coaching for vaccine and health literacy; (C) Capacity building and (D) Collaboration and stakeholder engagement.

- A** (Culturally appropriate and context-specific) **Communication strategy and positioning.**
- B** **Cultivating** a climate of **or coaching** people for **vaccine literacy** embedded within a larger **health literacy platform** (starting with schools). Readiness for future pandemics, especially demand-generation side for vaccines and protective measures.
- C** **Capacity building** of health workers, health department and other departments for current and future challenges.
- D** **Collaboration mechanisms and stakeholder engagement** in order to achieve a state of future pandemic readiness through health and vaccine literacy of the entire population. The collaborations are required between different government departments, including non-health ones, public sector and private sector companies from different sectors, civil society organizations, schools and local leaders and influencers.

These 4 Cs of recommended measures could be further classified into short-term and medium to long-term measures as shown below

Short-Term	Medium to Long-Term
A. Communication Measures (Strategic and Positioning)	B. Cultivate or Coach Vaccine and Health Literacy
C. Continued Capacity-Building for both short-and-long term	
D. Collaborative mechanisms and stakeholder engagement for future pandemic preparedness	

The recommendations are discussed in some detail below —

A. Communication strategy, positioning and actions / interventions —

1. To design a strategic communication plan – defining activities, messages, media and the frequency.
2. To design and implement a persuasive communication campaign for COVID-19 vaccine that creates better knowledge, greater commitment, reinforces and rewards the correct behavior. In the first round, the incentive to get COVID-19 vaccination (first and second doses) was to overcome the disincentive of restrictions. In addition, the perception existed that COVID-19 was a serious problem. However, during the time of this formative assessment, people did not feel COVID-19 has serious consequences or that the vaccine protects from infection and therefore do not feel an urgency to take it. Therefore, persuasive campaigns may have to shift or re-position (in people's minds) the reasons and motivations for taking the vaccine - to protect loved ones - the elderly and vulnerable in their own families.
3. Reposition the communication about the need for vaccination.

Strategic Positioning for vaccination is the perceptions about vaccine products and services in the minds of the end-users. Currently people see vaccines as ineffective in preventing infections and do not see its usefulness in limiting severe disease because severe disease (related to COVID-19 infections) usually happens in elderly and those with comorbidities. Using 'Positioning' in the communication strategy will be about creating or re-creating a new image, an idea in the minds of the end-user. Positioning, in this case, is about understanding and touching what is already in the end-user's mind, which is to protect loved ones. This need to protect family and loved ones is part of the cultural consciousness of Maldivians. Communication positioning in this renewed strategy will simply help the end-user make connections that already exist and then formulate these beliefs in a communication package such that the users listen and pay attention to the message. With respect to vaccination, there is already a positioning that has been done in people's minds over the past 2 years. How do we re-position this? People believe that vaccines should prevent infections. However, COVID-19 vaccine often reduces the severity of disease if infected. This is one kind of repositioning that is suggested. Another is that governmental restrictions have stopped me from moving around and forced me to take the vaccine. Now that there are no restrictions, I do not need to take the vaccine. This has to be repositioned from saving oneself to helping and saving loved ones. The motivation of wanting to protect loved ones is strong in Maldivians. This would have to be leveraged in the new re-positioning of "take the vaccine to protect loved ones and keep your family and loved ones healthy and happy."

4. Establish a Reward and Recognition system. Those who take the vaccine (in order to protect their family members) could be recognized and rewarded. These role model stories could be forwarded through family chats and social media messages. Awards, special dates, and special event camps could be created with reminders on social media to join in the vaccination camp, get vaccinated and protect one's family.
5. Address, through clear communication and actions, the practical barriers to vaccination – clarity of timings, when and where to take the vaccine.
6. Increase health communication activities that emphasize the perceived need to get vaccinated and that protection from COVID-19 is a continuous process.
7. Improve and rectify knowledge and understanding about COVID-19 vaccines. They prevent progression to severity and from severe disease rather than preventing the infection.

8. Explain and dispel doubts about adverse effects of COVID -19 vaccines.
9. To ramp up the health education and communication activity on social media spaces. Go where people are – in terms of media use. Most commonly used source of information and media is social media. Therefore, it is important to have an important and near-constant presence on social media. Replicate the high-level efforts carried out in Maldives during the first phase of COVID-19 pandemic.
10. Use health workers to conduct sessions in the community on protection from infections and discuss the different methods of preventing infections.

B. Cultivate sensibility or coach people for vaccine and health literacy —

11. To create a long-term strategy to increase pandemic-readiness from the demand generation side (which is to increase acceptability and adoption of vaccines in future outbreaks (if applicable)). The cultivation of a sensibility or coaching of people to attain certain ideational, attitudinal, and behavioral traits that help in faster adoption of vaccines. This is one of the long-term actions that could help Maldives in the fight against future outbreaks and pandemics.
12. To design and implement a ‘vaccine literacy’ program, embedded within a larger **health literacy** platform, in the long term that not only helps people understand and accept vaccines as a method of prevention and protection but also empowers them on how to access and appraise information obtained from internet and social media and apply critical thinking to such information.
13. Schools have to be included as partners in this endeavor for universal health literacy in Maldives. Children represent the future, and have been found to influence the views of their parents and family members.
14. How do we visualize vaccine and health literacy?

Vaccine literacy is defined as “not simply knowledge about vaccines, but also developing a system with decreased complexity to communicate and offer vaccines as sine qua non of a functioning health system”. (Ratzan. 2011)

The concept of vaccine literacy is built on the same idea as that of health literacy. WHO defines health literacy as the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health. Health literacy means more than being able to read pamphlets and successfully make appointments. By improving people’s access to health information and their capacity to use it effectively, health literacy is critical to empowerment.

We recommend Nutbeam’s (2000) 3-tier view of health literacy—functional, interactive, and critical health literacy—whereby critical health literacy is considered the highest order of health literacy cognition and skill. Basic/functional literacy—sufficient basic skills in reading and writing to be able to function effectively in everyday situations, broadly compatible with the narrow definition of ‘health literacy’ referred to above.

Communicative/interactive literacy—more advanced cognitive and literacy skills which, together with social skills, can be used to actively participate in everyday activities, to extract information and derive meaning from different forms of communication, and to apply new information to changing circumstances.

Critical literacy—more advanced cognitive skills which, together with social skills, can be applied to critically analyze information, and to use this information to exert greater control over life events and situations.

Such a classification indicates that the different levels of literacy progressively allow for greater autonomy and personal empowerment. Progression between levels is not only dependent upon cognitive development, but also exposure to different information/ messages (communication content and method). This, in turn, is influenced by variable personal responses to such communication—which is mediated by personal and social skills, and self- efficacy in relation to defined issues.

The WHO definition reflects elements of the two other types of literacy described above interactive and critical literacy. It also significantly broadens the scope of the content of health education and communication, indicates that health literacy may have both personal and social benefits, and has profound implications for education and communication methods.

Critical health literacy, which is understood as individuals' ability to reflect on complex health issues and critically assess the information available, can be an important piece in the puzzle on how to promote, enhance and encourage behaviours that are (more)

15. To establish measures for infodemic management.

WHO has recommended the systematic use of risk- and evidence-based analysis and approaches to manage the infodemic and reduce its impact on health behaviors during health emergencies. Infodemic management, according to the WHO, aims to enable good health practices through 4 types of activities: The first one (i) listening to community concerns and questions which was done through various rounds of social listening exercises in Maldives; However, the remaining three activities need to be strengthened (ii) Promoting a better understanding of risk and health expert advice; (iii) Building resilience to misinformation; and (iv) engaging and empowering communities to take positive action (WHO, 2023; Zacostas, 2020).

C. Capacity-building for communication and for health and vaccine literacy as well as infodemic management —

- 16.** Design communication capacity-building workshops in order to increase health workers' capacities to conduct communication and education sessions on social media.
- 17.** To build capacity of the Health Protection Agency for continuous training and upgradation of health promotion and communication skills of the health workforce.
- 18.** Build capacity of the institutions and public for future pandemic-readiness (from the demand-side).
- 19.** Build capacity of the Health Protection Agency and health service providers to conduct such vaccine literacy programs.
- 20.** Obviously, the question comes up: How do we develop these skills and this elaborate concept of vaccine literacy and health literacy among health care workers (who will then take it to the people)? Here are some examples from existing literature that could help provide initial groundwork for thinking about this issue in Maldives.

Some authors (Rubinelli et al., 2021) have proposed a rational approach to counter the infodemic. Inspired by approaches from "Argumentation theory," these authors provide some examples of rational argumentation skills that could be adapted to train health care workers and help them address arguments and objections (related to vaccination) they encounter on the field. The authors also propose methods to help healthcare workers think

about the different competencies and skills they need to develop personally and also foster in the populations served.

Some articles that provide examples of actual health literacy training for health professionals. These articles provide the module / session headings, brief explanations and session timings. Writing to the authors could help us get more details too. These could be then adapted to the context of Maldives. For instance, Hsieh et al (2022) propose a six-week course with 90 min class once a week. The course content covers four teaching modules: introduction to Health Literacy, oral communication skills, written communication skills and community health literacy intervention, and two case discussion sessions.)

Kaper et al (2018) developed and piloted a comprehensive health literacy communication training with health professionals of three European countries. Five evidence-informed training-components were selected. Professionals expressed positive and consistent opinions regarding training- components and educational techniques. They reported strengthened knowledge and patient-centred skills to address functional, interactive and critical health literacy.)

Mackert et al (2011) describe a training session designed to educate healthcare workers of all kinds about health literacy. The remainder of this paper describes study methods, training evaluation results, and a discussion of implications for research and practice.

Along with Communication and Epidemiology skills, the program will also help health care workers develop Infodemiology skills (which are critical for any future pandemics and outbreaks).

D. Collaborative Mechanisms and Stakeholder Engagement —

- 21.** To create collaborative platforms for health ministry, development partners and civil society agencies to work together on vaccine demand generation as well readiness for future pandemic-readiness through programs and platforms for building a health-literate and vaccine literate population.
- 22.** Collaborations and stakeholders engaged in this process could be from other ministries such as those of Internet Safety and Information, Communication and Environment, Education and those related to youth and community or religious affairs. In addition, private sector companies from marketing, research, communication & advertising, internet-based, social-listening and media companies could become collaborators. In addition, audience groups have also suggested partnering with women's groups, faith-leaders and faith-based agencies, community-based organizations. Schools and school-systems are important collaborators for establishing the health literacy platform.
- 23.** It is important to follow the correct principles and practices of stakeholder engagement and coalition-building in order to establish this collaborative mechanism on which the platform of readiness for pandemics and outbreaks is built.
- 24.** Various development partners, other governments and global organizations could help in this unique endeavor in Maldives and set up an example of readiness for future pandemics.

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Appendices

Appendix 1: Summary of Findings from Stage 1

1.1. Literature and Data Review —

A rapid review of existing data/literature to understand the identified community's demographics, health status, and how individuals have been impacted by COVID-19 was conducted. The literature review included published studies or documents, print /electronic media – news/articles, YouTube media videos, digital magazines and digital newspapers related to Maldives and the primary audience groups.

Desk review also shows that as time has passed with respect to COVID-19, the importance of sociodemographic differences in explaining hesitancy is diminished. While gender and low income or low literacy predicted low uptake of the vaccine in earlier phases, the differences reduced over time and with the advent of booster. It seems that currently people's perceptions of the epidemic and the vaccines have stronger power in explaining vaccination behaviours than demographic and socio- economic characteristics. Perceptions include individual's perception toward COVID- 19, perception toward vaccines, and perceptions of transparency.

The key messages from the literature on vaccine hesitancy are that in contrast to collective or altruistic behaviour or other prosocial motivations to promote vaccine acceptance, various studies find that potential risks and benefits to personal well-being feature much more prominently in LMIC respondents' reasoning, suggesting that appeals about personal protection could be more effective in these countries. Most stated reason in the literature for vaccine refusal was concern about vaccine safety (and side effects). Trust in authorities, risk perception of COVID-19 infection, vaccine efficacy, current or previous influenza vaccination affected vaccine acceptance. It is noted that concerns about vaccine efficacy could also reflect a lack of information about vaccines. Intensive media coverage of adverse events is noted to exacerbate concerns about side effects.

1.2. Consultations with Experts —

Seven experts from Maldives were interviewed. The experts were from the Ministry of Health, Health Protection Agency, Medical doctor from the national referral hospital in Male', UNICEF Maldives and an independent consultant who worked in the pandemic response. Online platform Teams was used to conduct these interviews.

Majority of the experts noted that people's perceptions in Maldives about COVID-19 have changed since the problem began in 2020. At the beginning of the pandemic, people were very fearful as it was a new and unknown disease, and there was much uncertainty. Further, with the lockdowns and restrictions on movement and constant media messages on how people could protect themselves from the virus and vaccination there was high interest in getting vaccinated. In the current situation, the experts voiced that people are not as afraid of the disease and are not worried about being hospitalized if they contract the disease as there is a perception that the disease is not severe. Further, presently there are no government-imposed restrictions on movement and there is little media coverage about COVID-19 related aspects and cues to protect oneself from the disease. There is currently no visibility of masks, and people are not interested in getting tested for the virus.

The key message from discussions with experts, one factor that emerged as an influencer of high uptake of primary rounds of COVID-19 vaccination (shots 1 and 2) were the government-imposed restrictions on travel within Maldives or between islands that required people had to show evidence of having taken the shots in order to travel. However, these influences are not there in the booster dose phase. However, there is one perception among people that persists, that influence booster dose uptake. This perception is the worry about vulnerable individuals at home; people continue to feel that if they get infected, they might infect and put at risk children, elderly, or family members with co-morbidities

1.3. Youth Group Interactions

Five offline interaction events with 22 youth as groups and individuals in Male' in August 2022 were conducted. An online event on different social media platforms (Facebook, twitter, Instagram) where up to submissions in the form of drawings, posters, poems, songs, story writing etc.) on COVID-19 and barriers to vaccination were solicited.

The youth consultation offers insight into how the youth perceive COVID-19 vaccinations and their impact on our community. Most participants indicated that a substantial number of people are unwilling to get vaccinated due to various reasons. The primary reasons for not getting vaccinated were concerns about side effects, misinformation, and uncertainties regarding the different brands of vaccines. However, youth voiced that a substantial number of people are unwilling to get vaccinated due to various reasons. A key message from the youth consultations was that people's attitudes are greatly influenced by community beliefs and social media. An overwhelming amount of people tend to place blind faith in these sources rather than relying on information provided by the health protection agency, i.e. trustworthy sources. It was also noted that sometimes even the health protection agency fails to address pressing concerns, which leaves room for panic and doubt. If effective communication strategies/methods were utilized, there would not have been as much hesitancy towards the vaccinations as there is now. Migrants were mostly impacted as the language barrier made it difficult to convey essential information to them, which resulted in vaccine hesitancy.

1.4. Social Listening

In collaboration with UNICEF Maldives social listening exercise was conducted over the period August to September 2022. This exercise monitored online and/or social media for prevalent perceptions regarding vaccines, tones of discussion, barriers to vaccination or reasons for hesitancy.

The preliminary findings show predominantly negative sentiments towards COVID-19 vaccination. Significant increase in traction and engagement across misinformed individuals creating doubts, misperceptions and vaccine hesitancy was observed.

Appendix 2: Data collection guides

2.1. Primary Audience Discussion Guide

Concept Card 1 — Enquiry area - Convenience and Constraints of Getting Vaccine

(This story/image depicts inability despite intention for vaccination)



Illustration —

Speed boat in the background, two men standing at the ticket counter. The person at the counter has two docs in front one with a cross mark and one with a right tick.

Story —

Two friends P1 and P2 were planning a holiday trip to an island on the weekend. On further enquiry, they found out that the island allows only booster-dose vaccinated people to enter. P1 and P2, both, had taken only the primary doses and had not taken the booster. They wanted to enjoy this fun trip. Therefore, they decided to get the booster done. However, P1 could get it done but P2 could not.

Stimulus 1: What do you think are the possible reasons P2 could not get himself vaccinated?

Stimulus 2: If P2 were a girl or a woman, would the same reasons still apply, or would the reasons be different?

Stimulus 3: Who in the community seems to have the most difficulty in getting the vaccination done?

Concept Card 2 — Enquiry Area: Costs, Psychological, Time, Opportunity

(This story depicts hesitancy/delay in a joint family scenario, different occupation)



Illustration —

Image of a large family in the living room of a house. Show images of husband and wife, with 3 children. The father-in-law and mother-in-law. The husband's sister is in the uniform of someone who works in a fast-food restaurant and the younger brother in football gear as he plays football in college.

Story —

An economically weaker (joint) family living together – Husband, wife, father-in-law, mother-in-law, three children (Daughter 12 years old, two sons- 8 and 3 years old respectively). The children go to school. The husband's unmarried sister who works in a fast-food joint and the younger brother who is in college also live with them. The younger brother is on the college football team and goes for practice after college hours. Almost everybody in the house is engaged in some form of income generation. Even the father-in-law has a part-time job at the marketplace. Husband and wife go out daily for work, sister works part time. All in the family need to get vaccinated to protect from COVID-19 but are unable to plan. Each has their own reasons to not get the COVID-19 vaccination.

Stimulus 1: What do you think are the likely reasons for delaying for each one of the persons mentioned above: For Husband, for wife, for mother-in-law (MiL), for father-in-law (FiL), For unmarried sister, for eldest daughter...? (Show image of each character and ask reasons for specific to each one as listed above)

Stimulus 2: Who in the family will get vaccinated first? Why do you think so?

Stimulus 3: Who is likely to be the last to take the vaccine? Why do you say so?

Concept Card 3 — Perceived Risk or Threat and Complacency

(This story or question tries to find perceived risk by demographic category)

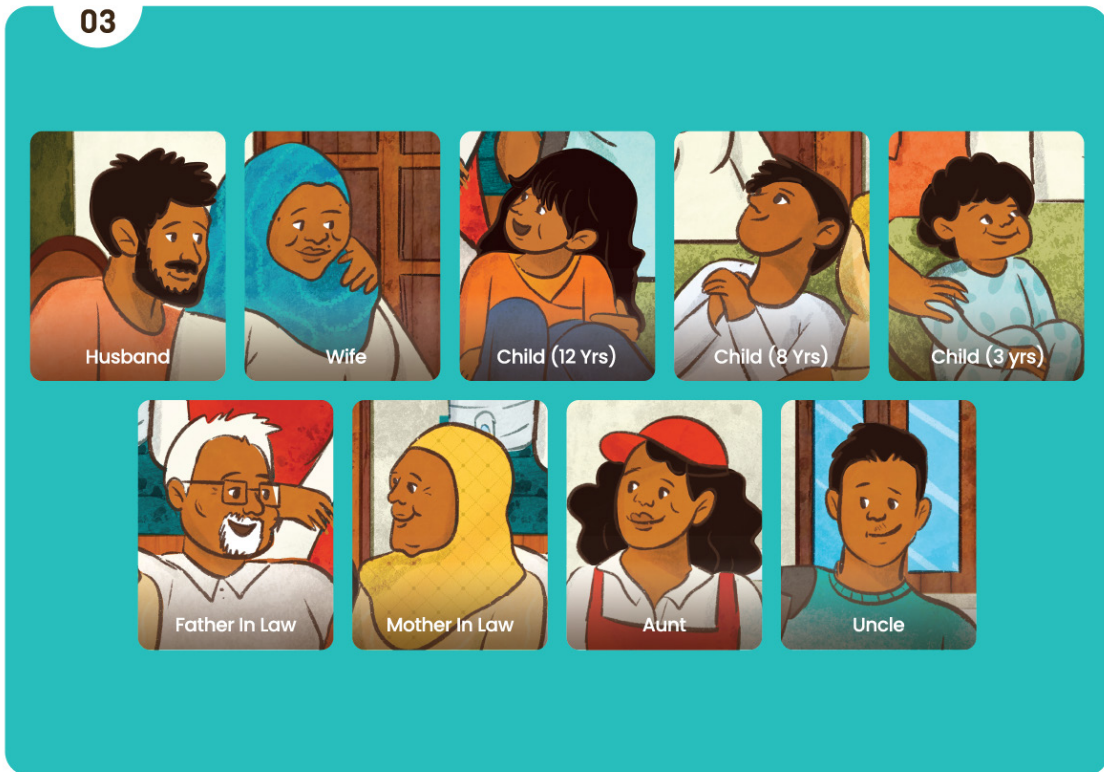


Illustration —

Show the same family (as in Concept Card -2) but draw them in a group photo manner. Indicate age and gender for each person in the group photo.

The moderator will point to each person and then have a discussion with group for each separately (Point to each member of the family. Discuss reasons for each character for each of the questions below.)

Stimulus 1: Who in the family is at most risk of getting COVID-19 infection?

Stimulus 2: Who is at most risk of re-infection?

Stimulus 3: Who needs to stay protected through vaccination? Why?

Concept Card 4 — Perceived Seriousness, Severity, Complacency

(This depicts severity and chances of passing on the infection to others)

MODERATOR: Use the concept card from Number 3 also as required.

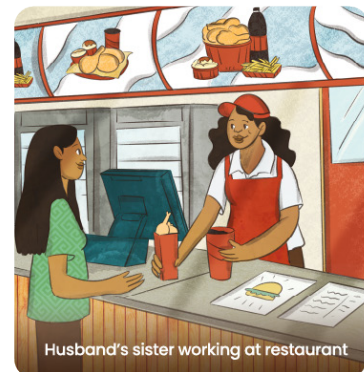
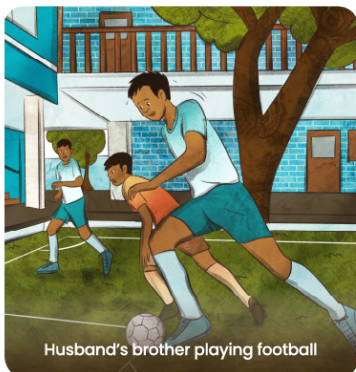


Illustration —

Make five different frames or new drawings on a single card (Members of the same family as in Card 2 in different situations)

(Frame 1) Relatives visiting the family; one of them holding the infant in lap

(Frame 2) Couple buying grocery at market

(Frame 3) Mother-in-law or Father-in-law at a senior citizens' group meeting,

(Frame 4) young brother playing a football game,

(Frame 5) Eldest daughter in school classroom

Stimulus 1: Which activity puts one at highest risk of contracting COVID-19?

(Point to frames 1 to 6)

Stimulus 2: Who is at risk of contracting COVID-19?

Stimulus 3: Who from the family is most likely to pass on the infection to those they have close contacts with?

Concept Card 5 — Confidence in Vaccine and Safety

(This asks participants to express their confidence in the vaccine or vaccination process)

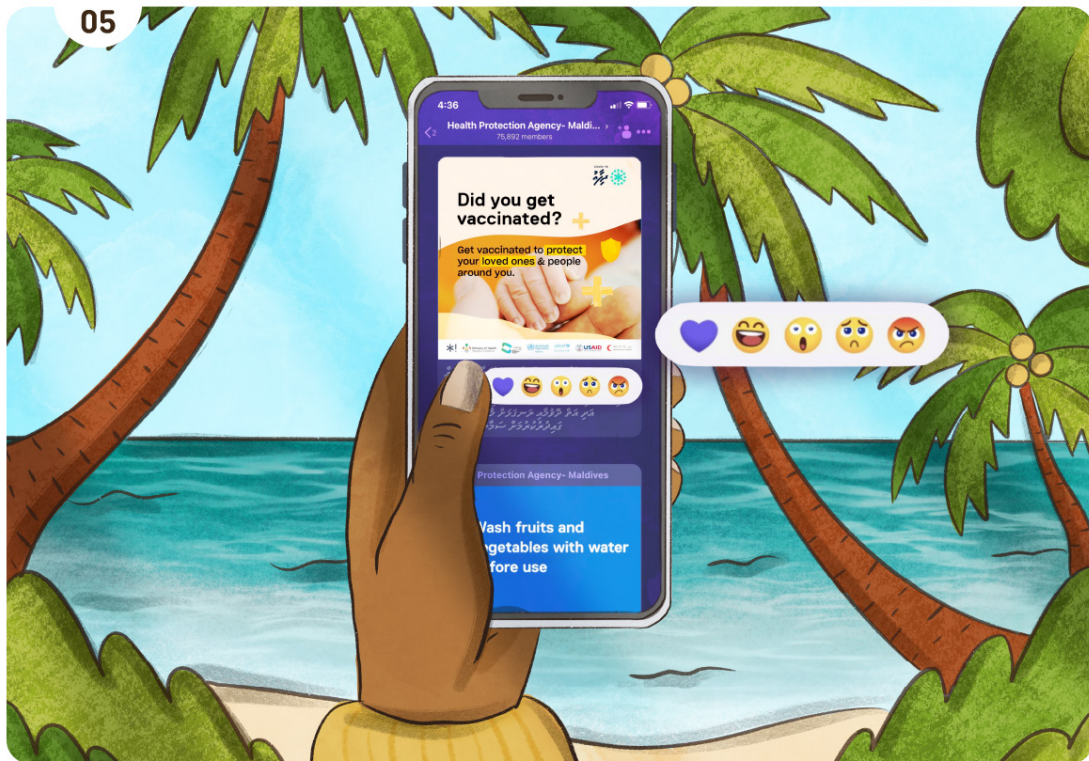


Illustration —

Show a hand holding a smartphone. On the screen of the smartphone shows a WhatsApp message with a message. The message reads: “You must get COVID-19 booster dose. It is good and important”. Show 5-6 emojis next to the smartphone (what is shown below is indicative) (Emojis – agree totally, happy, confident, doubtful, angry, frightened ...)

Stimulus 1: Which emoji would you use to react to the Viber message?

Stimulus 2: Why did you choose a particular emoji?

Stimulus 3: Is there anyone you know that would say they are doubtful or hesitant and fearful of the vaccine? Why would they say so? What do you think are the reasons?

Concept Card 6 — Attitude to Vaccines

(Depicts dissuasion by a friend / relative)



Illustration —

A friend/relative at a distance holding a placard saying 'NO' – This relative or friend is trying to tell the subject that he or she should not take the vaccine. Placard —

P1: I'm thinking of getting the booster dose

P2: I don't think you should get the vaccination; I've heard about the side effects and the increase of sudden death among youth.

Stimulus 1: What should P1 do?

- Whether he should agree with P2, why do you think so?
- Should P1 disagree with P2, why do you think so?

Stimulus 2: Why is this P2 advising against vaccinations?

Concept Card 7 — Intention to Receive Booster, Willingness to Recommend to Others (Depicts intent to take booster for different socio-demographic categories)

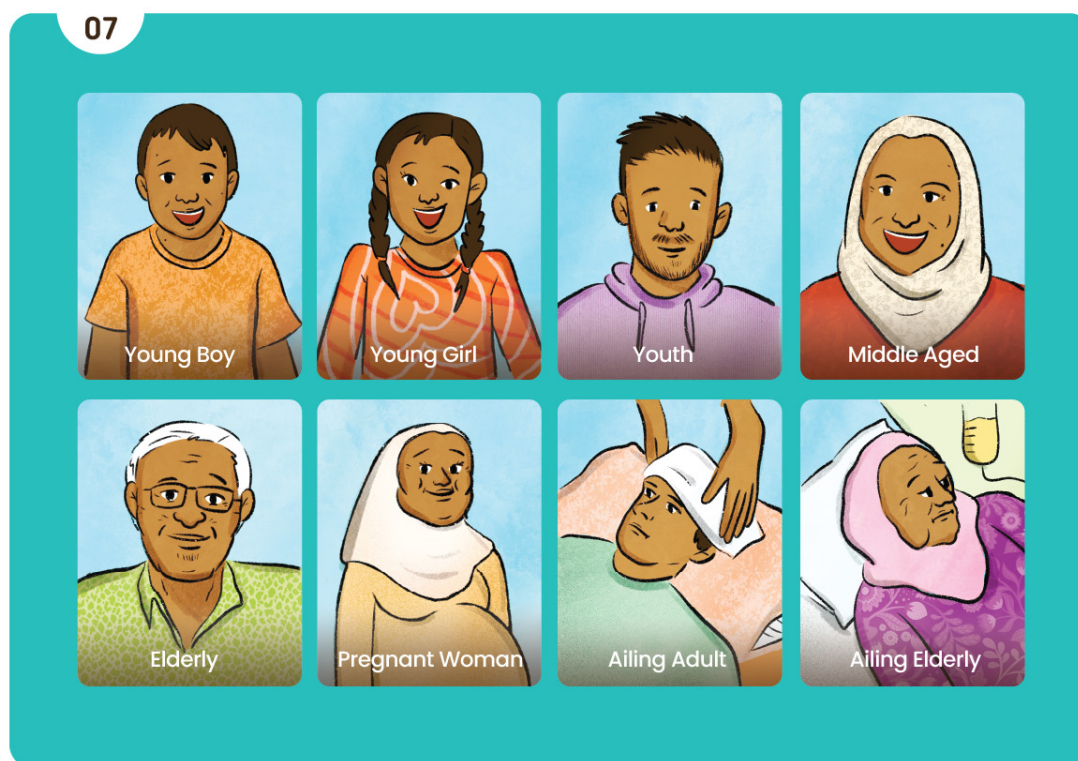


Illustration —

A set of frames showing different gender and age groups – baby, young boy, young girl, youth M/F, Adult, middle aged, Elderly, pregnant woman, ailing adult, ailing elderly.

Stimulus 1: What is the intention or willingness of each of the persons (shown in the different frames) to take the COVID-19 vaccine/booster dose? Indicate on a scale of 1 to 10 for each person.

Stimulus 2: For each person or character shown in frames above, tell us the reasons why someone's willingness is high and someone else's is low.

Stimulus 3: (Point to the youth's picture frame in Card-7) This person does not want to take the booster dose. What could be the possible reasons for not wanting to take, why?

Concept Card 8 — Norms, Descriptive, Social, Workplace

(Depicts social norms in different situations)



Illustration —

Set of frames showing 2 people talking, in different situations (Identify p1 or Person 1 in each drawing)–

- A Two Friends talking in market (Mark one friend as P1)
- B Two Colleagues in office (Mark one colleague as P1)
- C Community leader (Marked as P1) in a public place talking to two or three other people,
- D Faith leader (Marked as P1) talking to a small group of two to three people

Stimulus 1: What do you think P1 (Person 1) is telling the other regarding booster dose?
MODERATOR: Reach a consensus regarding the statement being made by P1 to P2. / *MODERATOR:* Get each participant to agree or disagree with the statement made by P1.

Stimulus 2: What are the reasons for agreement or disagreement with the statement made by P1? *MODERATOR:* Whatever statements were discussed by the group. Try to see if the group can arrive at a consensus statement for P1 in each frame.

Stimulus 3: Is this a commonly held thought or belief in the community or in their circle of friends?

Stimulus 4: What are institutions that people trust the most with respect to COVID-19 vaccination related material?

Concept Card 9 — Gender, decision-making process, decision-autonomy, efficacy

(Depicts autonomy and decision-making process especially with respect to gender issues)



Illustration —

A woman inside the house with husband and other family members. They are talking. The woman has a flyer in her hand. The flyer says "Take your COVID-19 vaccination today." (There is only one woman in the illustration)

Stimulus 1: Is the woman (in the picture) asking for advice OR giving advice on getting the Booster dose? Discuss.

Stimulus 2: What are the chances that this woman (in the picture) has received the booster vaccine? Please reason out why you think so?

Stimulus 3: What was the process this woman had to undergo in order to get the vaccine?

Stimulus 4: If she could not get the vaccine, what are the reasons that were told to her to not take the vaccine?

Concept Card 10 — Channels of Communication

(Depict the Different Channels)

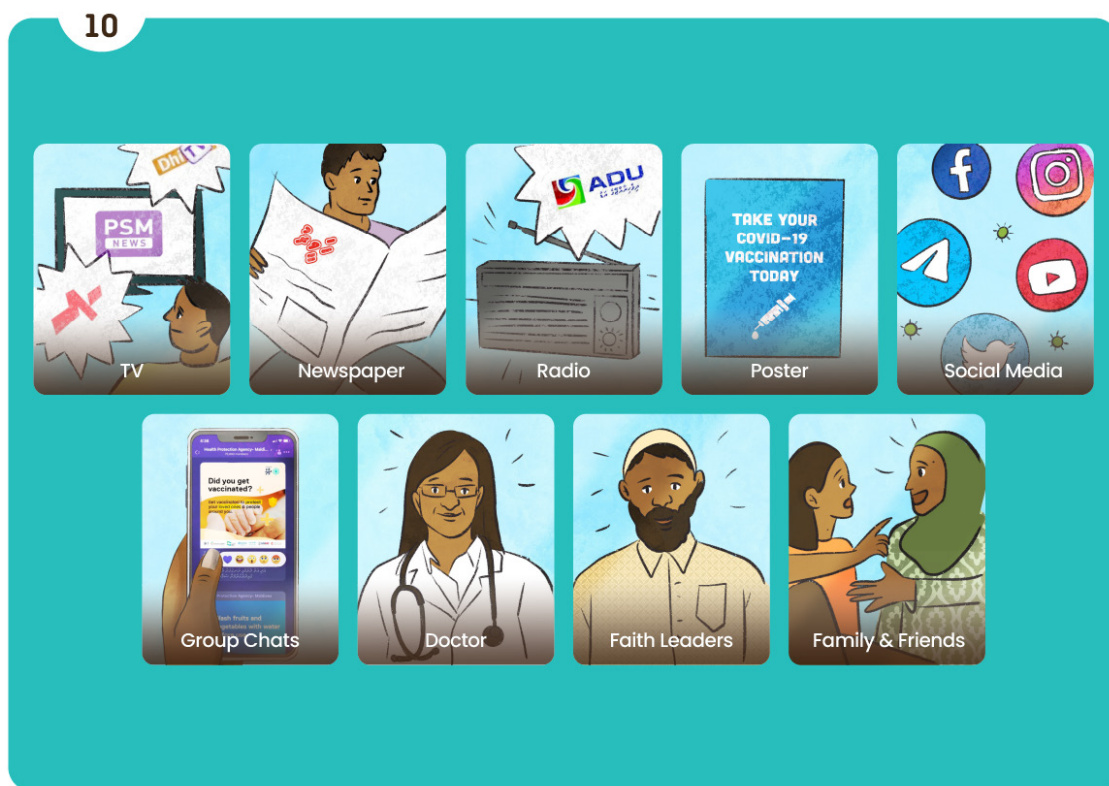


Illustration —

In one card, there are different frames with pictures of different media channels – TV, Radio, Hoarding, Poster, Social-Media, Newspaper, doctor counseling, faith leader counseling, family/friend counseling...

Stimulus 1: How much information about COVID-19 have you obtained from each of these sources? *MODERATOR: Go one by one.*

Stimulus 2:

- Which channel is the source of maximum information according to you?
- Which one can you trust the most?
- Which ones provide the most negative information?

Stimulus 3: Which media channel/ method is most suitable to reach the particular demographic moderator is addressing that moment?

Stimulus 4: (negative information about the vaccine) Can you recall a situation where any negative information influenced some people you know? Where did that person get this negative information from?

Concept Card 11 — Accessibility and awareness on vaccination - migrants

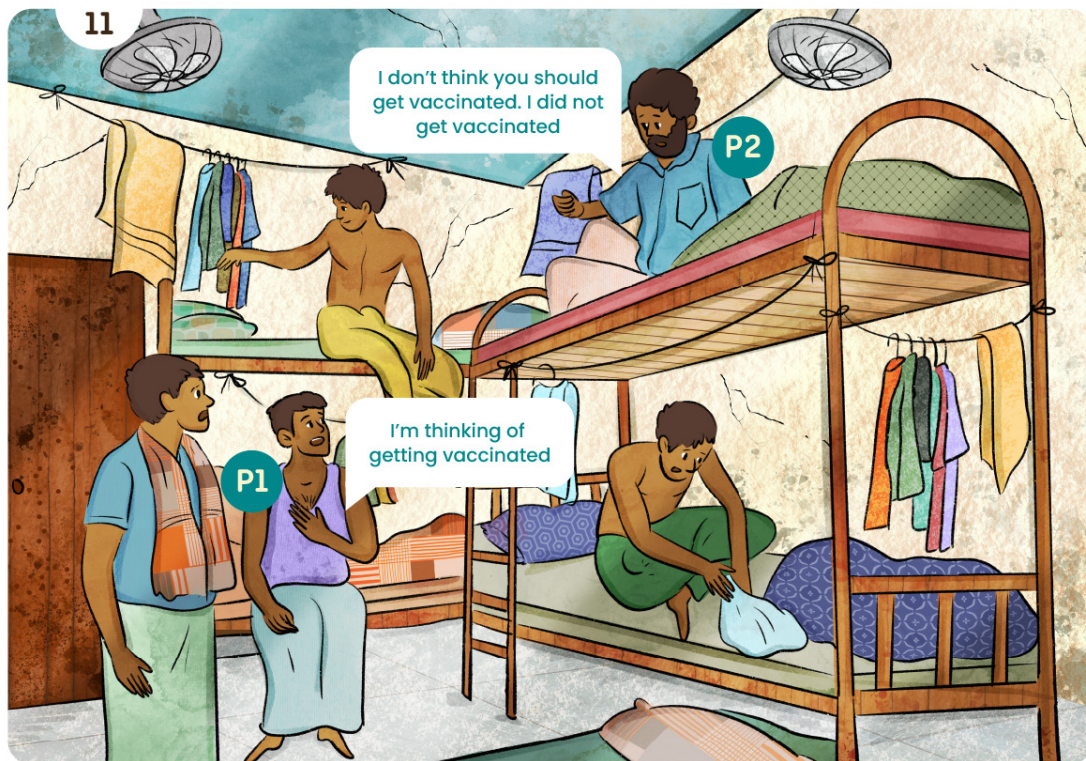


Illustration —

Migrants group, on their break in their living quarters. Few of them sitting and eating together, while some are sleeping or on a call with their family. One migrant tells his roommate that his colleague has COVID and he would like to get vaccinated. The other migrant shares his opinion saying the vaccination hours are challenging, and that it has a lot of side effects, and they might not allow them to go for work for a few days.

Stimulus 1: What will P1 do?

Stimulus 2:

- What is P1 thinking?
- What is P2 thinking? Why is P2 telling him not to get vaccinated (booster dose included)

Stimulus 3:

- What are the sources of information for P1?
- What are the sources of information for P2?

Stimulus 4: Which agencies/persons could P1 look to for support to achieve his goal of getting vaccine/booster.

Concept Card 12 — Motivations for taking vaccine includes pro-social
(Show options for likely motivation)



Illustration —

Four frames or pictures on one card– 1st is of the workplace.

2nd is of the family setting (nuclear) 3rd is of elderly care

4th is for Maldives (make the country great).

A Man and Woman (enlarged) are standing next to each frame.

Stimulus 1: Keeping this man in the picture in mind, what (out of the four frames) would motivate him the most to take the COVID-19 vaccine? *MODERATOR: If anything, other than the four frames then discuss further with participants.*

What are the main incentives for this man to take the vaccine? What are the key motivational factors (external or internal). Discuss.

Stimulus 2: Keeping the woman in the picture in mind, what (out of the four frames) would motivate her the most to take the COVID-19 vaccine? *MODERATOR: If anything, other than the four frames then discuss further with participants.* What are the main incentives for this woman to take the vaccine? What are the key motivational factors (external or internal). Discuss.

Stimulus 3: What was the motivation for most of the people you know to take the primary rounds of COVID-19 vaccine?

Stimulus 4: What is the motivation for most of the people you know to take the Booster vaccine?

2.2. Secondary Audience Consultation Guide

A GENERAL QUESTIONS ABOUT COVID-19

- 1 What have you heard about COVID-19 infection and disease?
Please list responses – including if people have not heard of it.
- 2 Where and from whom did you first hear about COVID-19?
Please list the answers.
- 3 Is there a difference in your ideas of COVID-19 from when it first started in 2020 March/April and now that is August 2022?
Discuss how they thought it was transmitted when it first started and how is it transmitted today. / Probe: In your opinion, in today's scenario, how is COVID-19 transmitted/passed from one person to another?
- 4 What do you think will happen to someone who gets COVID-19 today (August 2022)?
- 5 In your opinion, is there a group of people who are more vulnerable than others?
Explore: risks to different groups e.g. children, elderly, people with underlying health conditions, migrants and refugees, people with disabilities, men, women etc / Probe: Is this group different today compared to when it started in March/April 2020.
- 6 What about protective actions and behaviors taken by you or family members and friends? Is there a difference between the actions you took in March/April 2020 and today August 2022? If yes Why and if no, why?
Listen to what people say about protective actions and why they think there is a difference between March 202 and now.
- 7 Thinking of today's situation, how can we protect ourselves and our families against the new coronavirus?
Explore: use of vaccinations, wearing a mask, handwashing, physical distancing, covering mouth with a tissue or elbow when sneezing or coughing, cleaning surfaces regularly to kill germs, not attending events in crowded places, ensuring proper ventilation in meeting rooms, different home or traditional remedies, etc.

B VACCINATION FOR COVID-19

- 1 Now I am going to read out a few statements. These statements will help us understand how you and people in your community feel about the COVID-19 vaccinations? After I read each statement, we will discuss how you feel about each one.
 - 1A There are still some people in Maldives who are not fully vaccinated with primary doses. Discuss the reactions of people and ask them to commit to a response. Ask why they believe the statement is true or false.
 - 1B I know someone in my family, friends or neighborhood who is not fully vaccinated Discuss as mentioned in 1A above.
 - 1C i. Before I go to the next statement could you please show me by raising your hands – How many people in this room are aware off booster dose for COVID-19 vaccination. Please do a simple show of hands. Write down the number.

Now I want your reaction to this statement.
 - 1C ii. There are many people in Maldives who are to yet to receive the booster dose
Discuss the reactions. Ask each one to think of ten adults in their network and make a rough approximation of how many have received the booster dose. Ask why these people have taken or not taken the booster?
- 2 Do you think that people in your community will get the booster dose? Why yes, or why no?
(Please probe the reasons for their answer.)
- 3 What do you or your community see as the benefits of getting vaccinated against COVID-19?

- 4 What do you or your community see as the downsides of getting vaccinated against COVID-19?
Probe: Does your community feel the vaccine or booster is safe?
- 5 What information have you and people within your community heard about the COVID-19 vaccine?
Probe: What kind of stories have you heard about the COVID vaccine? Probe: What does it contain and how does it work?
- 6 What is your understanding of the side effects of COVID-19 vaccine and/or booster?
- 7 What happens once you receive the vaccine? Do you still have to wear a mask or keep distance and use other protective measures? Why yes, or why no? *Please probe and ask Why? Do not stop at a Yes or No answer. Try to understand the thought process underlying their response.*
- 8 What would prevent you and members of your community from getting the vaccine, especially the booster? *Probe: What concerns do you/ your community have about the vaccine?*
- 9 What barriers could keep you from getting the vaccine? *(e.g., access, childcare, transportation, etc.)*
- 10 For people in your community who might be hesitant about getting the vaccine, what would encourage them to get it? *Probe: What would make [your community] feel safe about getting a COVID-vaccine? / Probe: What information do people in your community wish they had about the vaccine?*
- 11 We would like to ask you about the ease or difficulty of accessing vaccination or your experience of accessing vaccination? *For example, please tell us how easy or how difficult was it for you to get COVID-19 vaccination? Please explain your experience with a concrete description of your specific experience. Was there a long waiting time or long lines? Was it readily or easily available? What could have been done differently to improve the user experience of accessing vaccination?*

C INFORMATION AND COMMUNICATION

- 1 What are the main sources of information available to you on the new coronavirus prevention and treatment?
Please list all the answers (indicate which ones are repeated using tally marks or frequency count.
- 2 What about COVID-19 vaccination? Where do you and people in your community get information about COVID-19 vaccination? What are the main sources of information available to you on COVID-19 vaccinations?
Please list all the answers (indicate which ones are repeated using tally marks or frequency count.
- 3 What would you recommend as the best way to communicate information about COVID-19 vaccines to your community? *Probe: Who would be the best person to share information about the vaccine or help teach people about a COVID vaccine? Healthcare provider, family, friends, religious leaders? / Probe: What are the best ways to reach people in your community? (e.g., face-to-face, WhatsApp, Facebook, email, mail, phone/text, YouTube?)*
- 4 What information would you like to know about COVID-19 vaccination? *Please list all the answers (indicate which ones are repeated using tally marks or frequency count.*
- 5 Are there any specific groups of people who are struggling to access this information? *Please list all the answers (indicate which ones are repeated using tally marks or frequency count.*
- 6 In your opinion, what are the main questions, doubts and fears about COVID-19 vaccination in your circle of friends or family? *Please list all the answers (indicate which ones are repeated using tally marks or frequency count.*
- 7 Do you recall any specific communication material or message on COVID-19 vaccination? Ask them to recall without any prompt or support? *Probe and discuss what they remember (even if it is vaguely)? What was unique about that material or message? After this Moderator/Facilitator can show them specific materials and discuss them.*

- 8 What is the best way for the Red Crescent to share information in your community?
Explore: what languages should we use? Which channels are trusted/not trusted? How regularly should we share information? / Please list all the answers (indicate which ones are repeated using tally marks or frequency count.
OR another way to ask the above question about preferred sources of getting information / If you needed information about COVID-19 vaccination, then what would be your preferred method of getting this? Probe: Does your community prefer information to be written or spoken? / List of possible ways of communicating (add as per local situation: Radio, television, newspapers, face-to-face with a health worker, with a Red Crescent staff/volunteer, through a community representative, hotline, SMS, community meeting, social media, OTHERS. / Please list all the answers (indicate which ones are repeated using tally marks or frequency count.

D PARTICIPATION

- 1 In your opinion, what community activities do you think are most effective for the prevention of COVID-19?
- 2 In your opinion, what community activities do you think are most effective for the promotion of and encouraging people to take vaccinations or boosters for COVID- 19?
- 3 How could the Red Crescent involve your community in planning these activities? *Probe and Explore: strengths and capacities of different groups, institutions and agencies in that community, what has worked well in the past for other outbreaks of disease? How can different groups be involved? Community meetings? Community committees? Group meetings like this?*
- 4 If you had a question or wanted to provide feedback to the Red Cross/Crescent about COVID-19 what would be your preferred way to do this? *Face-to-face with a health worker, with a Red Crescents staff/volunteer, through a community representative, hotline, SMS, social media, community meeting etc.*
- 5 Have you got any questions for us? Is there anything else that is important to know and you would like to share about how your community understands the disease and the vaccination process? *We would like to end this meeting here. Thank you very much for your time and participation.*

2.3. Consent Form & Information Sheet

Consent Form

Audience Consultations in Maldives to inform design of communication to address COVID-19 Vaccine hesitancy

I participant name, agree to participate participant name in the research project titled Audience Consultations in Maldives to inform design of communication to address COVID-19 Vaccine hesitancy, conducted by Maldivian Red Crescent and FHI360 who has discussed the research project with me.

I have received, read, and kept a copy of the information sheet. I have had the opportunity to ask questions about this research and I have received satisfactory answers. I understand the general purposes, risks, and methods of this research.

I consent to participate in the research project and the following has been explained to me:

- the research may not be of direct benefit to me
- my participation is completely voluntary
- my right to withdraw from the study at any time without any implications to me
- the risks including any possible inconvenience, discomfort or harm as a consequence of my participation in the research project
- the steps that have been taken to minimise any possible risks
- public liability insurance arrangements
- what I am expected and required to do
- whom I should contact for any complaints with the research or the conduct of the research
- I am able to request a copy of the research findings and reports
- security and confidentiality of my personal information.

In addition, I consent to:

- audio-visual recording of any part of or all research activities (if applicable)
- publication of results from this study on the condition that my identity will not be revealed.

(please print)

Name:

Signature:

Date:

Information Sheet

Audience Consultations in Maldives to inform design of communication to address COVID-19 Vaccine hesitancy

Meeting Targets and Maintaining Epidemic Control (EpiC) is a five-year global project funded by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and USAID, dedicated to achieving and maintaining epidemic control. Currently, EpiC and its consortium members implement COVID-19 activities in more than 60 countries across the world. The project delivers high-quality technical assistance at the community, facility, district, regional and national levels, and builds relationships with relevant partners working to address COVID-19.

In Maldives, EpiC has been extending technical assistance to the Ministry of Health (MOH) since July 2020 in the COVID-19 response. FHI 360 is the technical assistance (TA) partner of the U.S. Agency for International Development (USAID) under the EpiC Project: Pillar-2 COVID-19 funding to prevent, prepare for, respond to and bolster health systems to address COVID-19 and its re-emergence. Under the American Rescue Plan Act (ARPA) funding for Maldives, MRC is supported to find knowledge, attitude and perceptions among different segments, and reasons for vaccine hesitancy among populations, especially in the remote islands.

MRC with FHI360 is conducting consultative meetings in selected locations. In each of the four islands, MRC will conduct one consultative meeting each with five different audience segments viz. island dwellers, international migrants, youth, parents of young children and key influencers. Through multiple smaller group meetings (total consultations 5 audience segments x 4 islands = 20 groups) covering around 5-8 persons per group, MRC moderators will brainstorm on the problem and possible solutions. These meetings will be structured using the learning of the exercises conducted in stage-1, through flash cards, to elicit participants' reactions and comments; observe reactions and note responses of participants on the hypotheses that were arrived at by the end of Stage-1 exercises. A trained moderator will facilitate discussions while a note taker will take notes of the proceedings. The session / discussion may also be recorded with the permission of all participants. MRC will prepare reports for each segment of audience (deliverable 4) interpreting the responses from the flash cards. Reports will include recommendations for RCCE policy and programmatic implications.

