INDIA TACKLING THE COVID-19 VACCINE HESITANCY

September 2021

A Dossier of assessments, analyses, activities, partnerships and the way forward

Contents

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- Centre for Social and Behaviour Change (CSBC)
- Clinton Health Access Initiative (CHAI)
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- IDFC institute
- Indian Institute of Technology Delhi
- Population Services International (PSI)
- Project Concern International (PCI)
- PATH
- Quick Sand
- Quilt AI
- Surgo Ventures
- UNICEF
- Uttar Pradesh-Technical Support Unit (UP-TSU)
- World Health Organization

Abbreviations

AEFI	Adverse Event Following Immunization
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
AWW	Anganwadi Worker
BMGF	Bill and Melinda Gates Foundation
COVID-19	Coronavirus Disease-19
CoWIN	Covid Vaccine Intelligent Work
CSOs	Civil Society Organizations
CVC	Covid Vaccination Centres
CSS	COVID-19 Symptom Survey
CFAR	Centre for Advocacy and Research
CSBC	Centre for Social and Behaviour Change
CHAI	Clinton Health Access Initiative
DIO	District Immunization Officer
FLW	Front-Line Worker
GOI	Government of India
HCW	Health Care Worker
IEC	Information Education and Communication
IT	Information Technology
IIT Delhi	Indian Institute of Technology, Delhi
ITSU	Immunization Technical Support Unit
JSI	John Snow Inc
MoHFW	Ministry of Health and Family Welfare
MOiC	Medical Officer In-Charge
NGOs	Non-Government Organizations
PCI	Project Concern International
PHC	Primary Health Center
PSI	Population Services International
PRIs	Panchayati Raj Institutions
RI	Routine Immunization
SAGY	Saansad Adarsh Gram Yojana
WHO	World Health Organization
UTs	Union Territories
UP-TSU	Uttar Pradesh Technical Support Unit
UNICEF	United Nations Children Fund

Executive Summary

On January 16, 2021, India launched the "world's largest vaccination drive" to vaccinate over 900 million eligible beneficiaries. The roll-out happened post a comprehensive planning exercise with operational guidelines and a communication strategy drafted to facilitate the process. The communication strategy specifically stressed upon interventions and approaches to address vaccine hesitancy or eagerness which might have adversely impacted the roll-out. These approaches were built on experiences gained through multiple mass campaigns and vaccine introductions implemented in the country over the past years.

The roll-out of the campaign over the last 8 months has been a learning experience for the country. While the campaign has progressed over these months, population diversity, socio-cultural context and access issues did impede vaccination rates across regions of the country and vaccine hesitancy was identified as a major challenge for the roll out. The situation continues to evolve and though the vaccinations have picked up significant pace over these months, it is imperative that learnings related to vaccine hesitancy and the efforts aimed to address it are documented to aid solutions for subsequent phases of vaccine roll-out.

The Immunization Technical Support Unit (ITSU), under the guidance of the the Immunization Division at the Ministry of Health and Family Welfare (MoHFW), has aggregated information from all states and multiple partner agencies to draft a dynamic "Vaccine Hesitancy Dossier". The objective was to document pan-India activities, gauge the extent of vaccine hesitancy as a public health barrier for vaccine coverage and document the interventions and solutions being undertaken in the field, thereby leading to creation of programmes that would address the issues in a concerted manner. Moreover the dossier will be continuously updated to record developments around vaccine hesitancy.

The dossier has an extensive analysis of available literature mapping the variance in incidence of vaccine hesitancy in different regions of the country. Further, it has mapped the varying reasons for this hesitancy among population sub-groups and the factors that resulted in different vaccine acceptor, hesitator, and ambivalent groups.

The available evidence reflects that different states have dissimilar, distinct levels of vaccine hesitancy with disparate aetiological factors external to the program influencing it. The frequent reasons for vaccine hesitancy are mistrust and fear of vaccines, apprehensions about adverse effects, and perception about stronger immunity from natural infection and tendency to wait for apparently better and effective vaccine candidates.

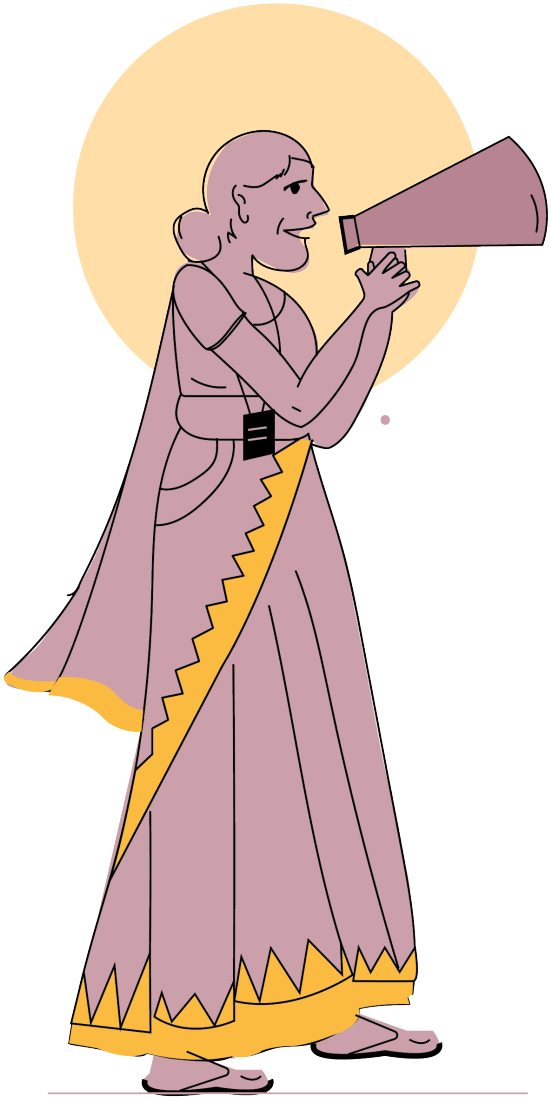
Inaccessibility and lack of availability of vaccines due to remote location is an additional factor while others cite lack of connectivity or inability to register for vaccines as hindering their vaccination.

State governments across the country have undertaken various strategies to address vaccine hesitancy. Political leadership across the states are pro-actively generating awareness about COVID-19 vaccines. State Governments have undertaken state-specific awareness campaigns and village-level/ward level volunteers have been roped in to instil confidence and mobilize beneficiaries. Other measures included coordinating efforts with other ministries/ departments and with schemes like Sansad Adarsh Gram Yojna (SAGY) and engaging with Non-Government Organizations (NGOs). Religious & faith-based organisations were also encouraged to promote and facilitate COVID-19 vaccination. Innovative "Pink Booths" were also effective in ensuring greater participation of women in the vaccination programme.

The principal recommendation that has emerged from this analysis is the need to strengthen existing systems of identifying, analysing and addressing different forms of vaccine hesitancy at the national, state and district levels. This mechanism would take into account the rapidly evolving extraneous factors resulting in vaccine hesitancy. Furthermore, such a process would help analyze trends on a bi-monthly basis from collating and analyzing available data and interactions with states. This would enable development of evidence-based strategies and interventions to counter and address vaccine hesitancy across different population cohorts

A mapping exercise at regular intervals is proposed to diagnose causes for vaccine hesitancy in various segments of the population. Regional platforms need to be created in which different states can share data to have a collaborative learning experience. Behavioral insights can and should be leveraged to better analyze issues impeding vaccine uptake.

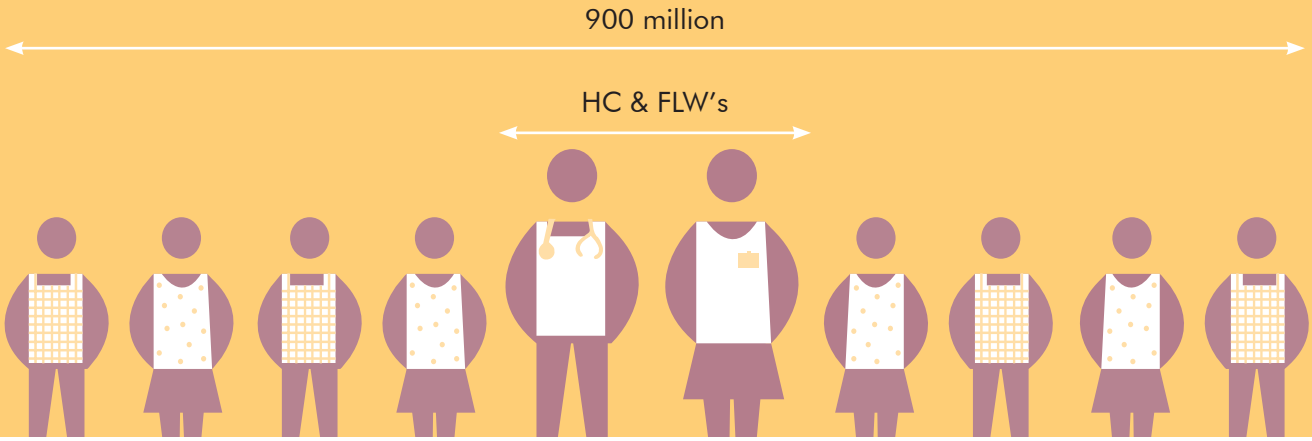
Studies have also indicated that there is a gender gap in accessing vaccines. While increasing supply of vaccines will ensure that women are not pushed to the back of the line, it is necessary to have a communication strategy operating at national, state, district and community levels that promotes gender inclusiveness. The Ministry could look at supporting states in instituting a system for generating localized content that takes into account regional sensitivities, thereby enabling community buy-in and adoption. Regular and comprehensive reviews and evaluation of the communication strategy would result in a flexible approach to devising communication in tune with changing drivers for vaccine hesitancy.



India tackling the COVID-19 Vaccine Hesitancy

Background

After the first phase of vaccination which covered an estimated 30 million healthcare and frontline workers, the subsequent phases have also witnessed a gradual expansion of the target base to different age groups and health conditions, with an overall target currently of vaccinating over 900 million people. The CoWIN app has enabled people to schedule appointments despite the complexity of calibrating availability in Centres with matching demand. The vaccination programme also owes its success to the efforts of healthcare and frontline workers, enhancement of healthcare facilities, deployment of additional human resources, coordination with state government and updated IEC materials and guidelines.



Objectives of the Document

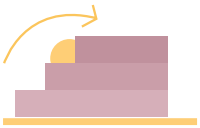
Vaccine hesitancy has been a major challenge for immunization programs across the globe with the World Health Organization in 2019 identifying it as one of the ten major threats to global health. The COVID-19 vaccine roll out has seen hesitancy emerge as a concern across multiple countries, with India also being impacted by it across different regions of the country. The key factors in India causing hesitancy are logistics, access, awareness, and behavioural factors.

This document's key objectives include the following:

Determining the extent of hesitancy towards COVID-19 vaccination at national and state level and identifying the reasons for hesitancy.

Outlining and highlighting multi-level social and behavioural interventions which have been designed and implemented to tackle vaccine hesitancy.

Recommendations on communication strategies, community engagement mechanisms, and interventions which may be implemented to combat vaccine hesitancy.



Methodology

The dossier has been prepared using a two-step process:

1

Literature on COVID-19 vaccine hesitancy was reviewed: A comprehensive review of available literature revealed vaccine hesitancy variations across population groups and regions, reasons for hesitancy and significant factors determining vaccine acceptors, non-acceptors and ambivalent groups.

2

Compilation of primary data from state governments & development partners. A questionnaire was developed to collect information from state health departments, partner organisations and agencies involved in COVID-19 vaccine hesitancy in various states. A structured, self-administered assessment toolkit was developed and distributed among the partners to collate activities conducted to fight vaccine hesitancy.

Analysis of COVID-19 Vaccine Hesitancy in India: The COVID-19 Symptom Survey (CSS) and other Studies

'The COVID-19 Symptom Survey'(CSS) is being conducted by Facebook regularly in over 200 countries in collaboration with notable academic institutions viz. University of Maryland and Delphi Research Group, since April 2020. The survey registers information on various aspects of COVID-19: symptoms, behaviour, testing, mental health, and vaccination. It was launched in India in April 2020 and was adapted to incorporate facets of vaccination in December 2020. The large sample size (320 million) of CSS with robust data architecture provides an opportune framework to probe vaccine hesitancy trends in India. The thorough analysis conducted from Dec.,2020 to June,2021 has a sample size of ~ 1 million survey responses to queries about vaccination hesitancy between December 2020 to June 2021. **(vide Annexure 1)**.

Qualitative evaluation of available literature and studies conducted by development partners revealed insights into vaccine hesitancy in various regions/states. A methodical review of the studies gave a panoramic vista of the factors/ reasons influencing vaccine hesitancy in different population spectra and regions Scrutiny enabled identification and enumeration of potential factors affecting and determining vaccine hesitancy along with their regional variations. **(vide Annexure 2)**.

Low Coverage area/Internet penetration

India is largely relying on digital tools to allocate vaccines. However, a significant proportion of population has limited access to smartphones and internet services. Some of them even lack the basic skill to navigate through the web to register for the vaccination. States like Bihar, UP, Haryana, Jharkhand, MP, Rajasthan and, Odisha, etc. have less than 40% of population with mobile phones (vide annexure 1). A SEWA Bharat study states that "Low or no access to the internet can act as a hindrance to vaccination drives— 47% of the respondents had a smartphone and 1% of the members owning a smartphone did not have access to the internet. 17% of the respondents who didn't have a smartphone or access to the internet individually, had someone else in their household who had both these things. About 29% of the respondents' households had no smartphone." Thus, the very digital tools that made access to vaccination easy for some, also contributed in hesitancy for others. To overcome the technology challenges and deepen the reach, India has started

the walk-in facilities, mobile vans and help-desks for registrations and getting vaccine certificates. **(vide annexure 4)**.

Gender Disparity in COVID-19 Vaccination

The COVID-19 pandemic has, once again, exposed how various inequalities, including gender, have worsened health disparities. Recent evidence suggests that a significant portion of the population in India and globally, are either, unwilling or unable to access the vaccines against COVID-19 infection. These trends are significant as more and more women are lagging behind in accessing vaccination than men, creating a gender-based disparity in utilization of COVID-19 vaccines. For instance, in India, of the 565 million COVID-19 vaccine doses administered as of 18 August 2021, men have received 296 million (53%), while women have received only 265 million (47%)[1].

This gender differential in vaccine rollout is worrying as it is far greater than the official sex ratio, i.e., the extent to which men outnumber women in the population. The adult sex ratio in India is 943:1000. For every 1000 men we have only 943 women, while the COVID-19 vaccine gender gap is 891, which means only 891 women have been vaccinated in India, per 1000 men. On the other hand, in states like Andhra, 1188 doses were administered to women, compared to every 1000 men. This was 16% higher than the state's official female: male ratio of 993:1000. Similarly in Kerala, 1084 doses went to women for every 1000 men. This was equal to the state's official female: male ratio of 1084:1000. However, similar trends were not seen in most other states. From the data from 30 states, 22 states have lower COVID-19 vaccine female: male ratio as compared with official female: male sex ratio. The figure (vide Annexure 3) compares & provides the result of the state-wise adult sex ratio to the COVID-19 vaccine gender gap.

The widening gender gap in COVID-19 vaccination is a cause of concern and should be monitored regularly. There is an immediate need to identify the geographies and the factors contributing to rising gender gap. For instance, as per the CSS, 20% of women in India are vaccine hesitant due to reasons like adverse side-effects and have concerns about the safety and efficacy of the vaccines. In West Bengal, a pulse poll conducted by IDFC revealed that the gender gap in Vaccine Hesitancy has widened from March 2021 to May 2021 (vide Annexure 1). Similarly, a primary survey conducted[2] with 1500 women across the 9 states[3] showed (overall) a 17% willingness to take the vaccine. 44% of the respondents informed that they might take the vaccine and around 34% of the respondents denied taking the vaccine.

Evidence on Impact of COVID-19 Vaccines: Building Trust

Multiple studies and assessments conducted by the Indian Council of Medical Research (ICMR), the Armed Forces Medical Services (AFMS), National Institute of Epidemiology (NIE) and Christian Medical College (CMC) Vellore have demonstrated the effectiveness of COVID-19 vaccines. However, parallel assessments have also highlighted that lack of trust in the efficacy of the COVID-19 vaccines as a dominant cause of hesitancy among a large section of the population. Building faith in the newly developed vaccine is important to address hesitancy among the population.

While the national government has been proactively communicating about the benefits of COVID-19 vaccines contextual adaptation of the messages to different regions of the country needs to be undertaken. The role of state and district health administrations in proactive communication of these messages remains instrumental.

State interventions to address vaccine hesitancy

Given that there are no quick fixes of COVID-19 vaccine hesitancy, most states have made interventions to address the concerns particular to their individuals, families, and communities. The Union Health Ministry has assisted all states and shared communication prototypes for media (print, social and electronic) for customised adaptation at individual levels. The encouragement to states and Union Territories has resulted in greater focus on building awareness on COVID-19 vaccines and COVID-19 appropriate behaviour. State-level interventions that have worked in addressing vaccine hesitancy need to be identified and replicated in the future. Annexure 4 captures some of the strategies adopted by the states to combat vaccine hesitancy

[1] *https://www.cowin.gov.in/*

[2] *In the first three weeks of April*

[3] *Bihar, Delhi, Gujarat, Jharkhand, Nagaland, Punjab, Rajasthan, Uttarakhand, and West Bengal*

Implementation strategies recommended at National, State and District level

At National Level

MoHFW could look at:

- Identifying, analysing and addressing different reasons for vaccine hesitancy. Such an exercise also needs to take a granular approach to identify geographies with high socio-economic backwardness or those where vaccine supply outstrips demand or other areas where supply side issues have potentiated hesitancy.
- In depth analysis of the program and coverage data at the state and district level to identify specific pockets showing vaccine hesitancy. For instance, in states and districts with optimal vaccination coverage the strategies to address the vaccine hesitancy will be different to state and districts with low vaccination coverage. Hence more nuanced and region-specific intervention will be required. Cohort segmentation and more nuanced approaches will be needed going forward.
- Consider and factor-in the rapidly evolving extraneous factors determining vaccine hesitancy. Trends need to be analyzed bi-monthly based on data distillation, along with intensive two-way interaction with states.
- Devise, guide and implement evidence-based strategies and interventions to counter and alleviate vaccine hesitancy. The Media War Room which is currently located in the Ministry may be strengthened to take up these activities. These remedial measures will eventually be incorporated into routine immunization services, ensuring sustainability. The war room can also assist states in developing localised content to remedy vaccine hesitancy.
- Peruse communication strategies, regularly modify them requisitely and develop collaterals and campaigns.
- Support the Information Education and Communication (IEC) Division in exhaustive review of social media campaigns, reiterate unequivocal, affirmative messaging regarding vaccination, and counter rumours, myths, misinformation concerning vaccination.
- To enhance women's access to the vaccines, gender-related barriers must be addressed in the planning and rollout of vaccine distribution. As shown in the analysis above, the gender gap in COVID-19 vaccination is worrying and should be monitored regularly to identify the geographies and the factors contributing to vaccine hesitancy in all such areas. The state must devise/adopt innovative approaches for enhancing vaccination among women by working with the whole range of stakeholders, including health workers, frontline workers, local government officials, women self-help groups, etc.
- A gender responsive communication and advocacy strategies and approaches could motivate people to give equal weightage to vaccination priorities of both genders in a family.
- Continued proactive dissemination of evidence on the effectiveness of vaccine on reducing severe illness and breakthrough infections will ensure continued faith in the vaccines. Collection and dissemination of evidence on the impact of COVID-19 vaccines in reducing severe illness as well as providing information on breakthrough illnesses would strengthen faith in vaccines. This could be done through a public portal that provides relevant data on breakthrough infections. Correct and nuanced information about the risk and frequency of getting COVID-19 infections and AEFI will help to alleviate vaccine efficacy and safety concern.
- As coverage improves and vaccine supply further stabilizes, possibly there will be a better comprehension of vaccine hesitancy and resistant populations. It is thus imperative to shape up the communication and social mobilization efforts to address these specific population groups. In addition focused efforts aimed at optimizing second dose coverage can be undertaken.
- Documentation and concurrent dissemination of successful strategies and innovations, to scrutinise & decide on feasibility & scale of replicating these proper measures.

At State Level

- IEC Units at the state level will work synergistically with the Health Ministry to devise robust community engagement strategies to resolve vaccine hesitancy. It will augment community influencers as trusted messengers to disseminate messages regarding vaccine safety & efficacy.
- The Ministry will further strengthen the state IEC Units, in collaboration with development partners, for enhancing the capacities of existing state & district level human resources to prioritise vaccine hesitancy redressal.
- Identification of vaccine hesitant zones &/or districts and execute thematic campaigns based on behavioural insights.
- Coordinate with the MoHFW to create evidence-based campaigns, including social media campaigns.
- Development of post vaccination strategies: mobilisation of vaccinated beneficiaries to convince their vaccine-hesitant peers/ friends/family to get vaccinated.
- Documentation and publicizing of success stories to motivate hesitant beneficiaries to be compliant.

At district level

- The district level officials/staff will work in close collaboration with states and grass root level functionaries to develop and implement innovative community engagement strategies. They will also ensure incorporation of such strategies into district programmes. Further, they will also explore alternative media channels viz. community radios, folk media etc.
- Bolstering IPC in conjunction with community-level functionaries to allay myths, misconceptions at the community level.
- Co-development of innovative community mobilisation blueprints with grass root level functionaries. This shall ensure participation of local influencers and leaders and hence augment vaccination coverage. Communication with the community via personal interaction (calls/ WhatsApp) and varied approaches like community radio to address misinformation. Promotion of vaccine acceptance by mitigation of concerns about adverse effects during RI & COVID-19 vaccine sessions.
- Initiatives to organize vaccination centres near homes of beneficiaries dwelling in inaccessible regions and with low internet connectivity &/or smartphone unavailability.


VACCIN
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ANNEXURES

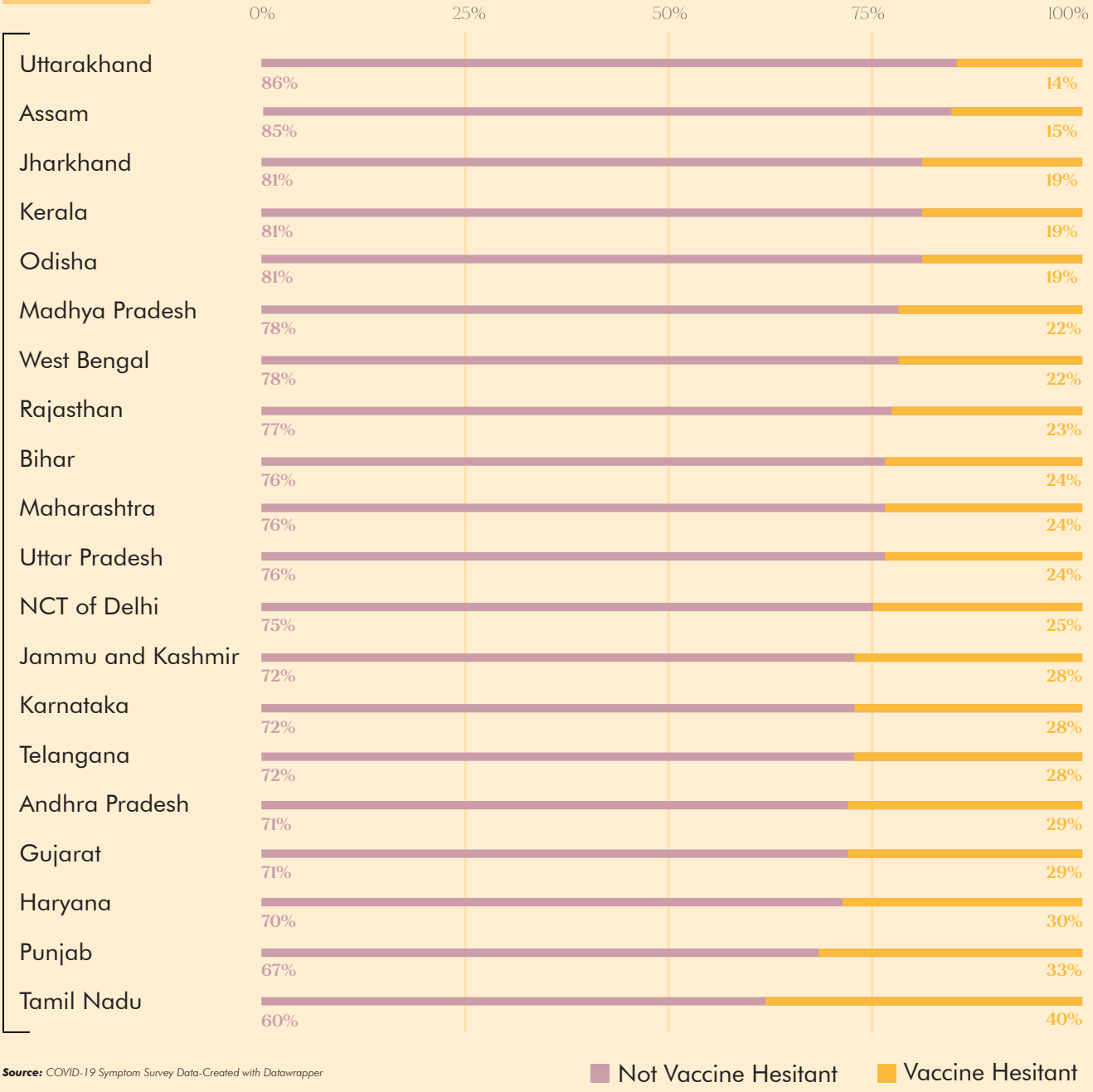
ANNEXURE 1

Analysis of COVID-19 Vaccine Hesitancy in India

Findings from The COVID-19 Symptom Survey (CSS)[4]

The analysis in this section is based on a sample size of approximately one million survey responses collected between December 2020 to June 2021. State level estimates indicate wide variance in vaccine hesitancy. A significant population ratio across states demonstrated hesitancy. The chart below provides state-wise data on vaccine hesitancy. The five most vaccine-hesitant states are Tamil Nadu (40%), Punjab (33%), Haryana (30%), Gujarat (29%), and Andhra Pradesh (29%). Lowest vaccine hesitancy is in Uttarakhand (14%), Assam (15%), Jharkhand (19%), Kerala (19%), and Odisha (19%).

COVID-19 Vaccine Hesitancy in Indian states



Source: *COVID-19 Symptom Survey Data-Created with Datawrapper*

[4]**Note on Methodology**: *Facebook, in partnership the University of Maryland and Delphi Research Group, has been conducting the CSS survey in more than 200 countries, including India. Facebook invites the users from its global database to take the survey which is designed and collected by the University of Maryland, USA. The participants are randomly selected from the sample frame of 2.85 billion Facebook Active User Base. The surveys are daily repeated cross-sections, with similar user characteristics across days. To improve the representation in a country, including people not covered by Facebook users, the survey uses two-step Post-Stratification (PS) methodology using benchmarks weights. The samples are post stratified by measures like state, age, and gender using benchmarks obtained from the United Nations (UN) Population Division 2019 World Population Projections.*

A. Reasons for not accepting Vaccines

The CSS survey investigated the aetiological factors for vaccine hesitancy. In the sample set of 11,21,693 respondents. Five commonest reasons were: "waiting others to get vaccinated first " (42%), "others need it more than myself" (35%), "fear of adverse effects" (34%), "vaccines won't work" (21%) and "don't believe in vaccines" (11%). Minor reasons included "high price of vaccines" and "religious belief".

Reasons for not taking COVID-19 Vaccine

Figure 1: Among those who responded ''Definitely Not'', Probably Not'' & ''Unsure'' of taking Vaccines.

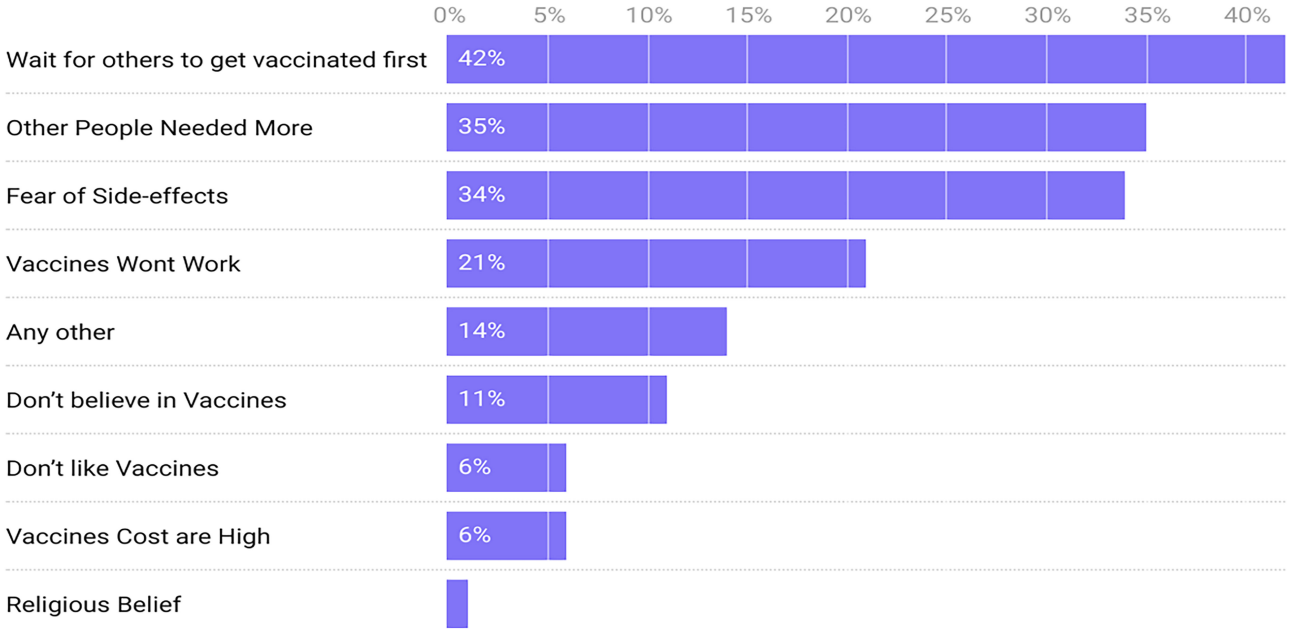
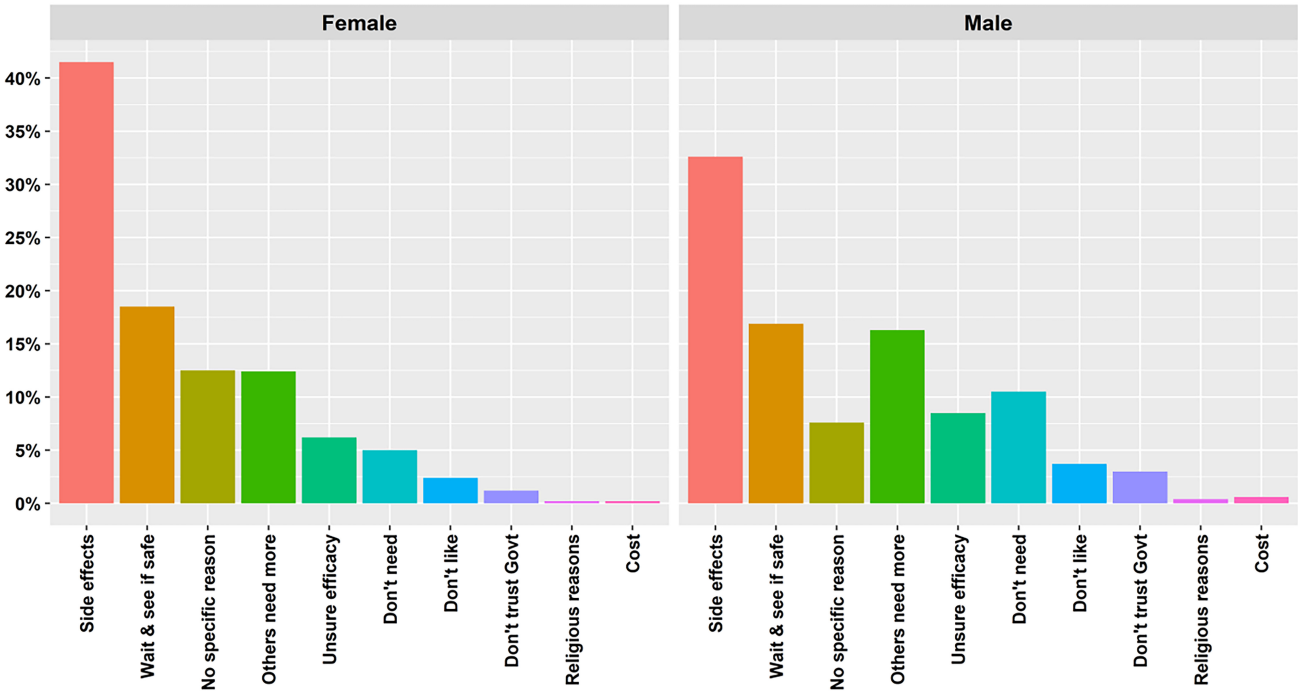


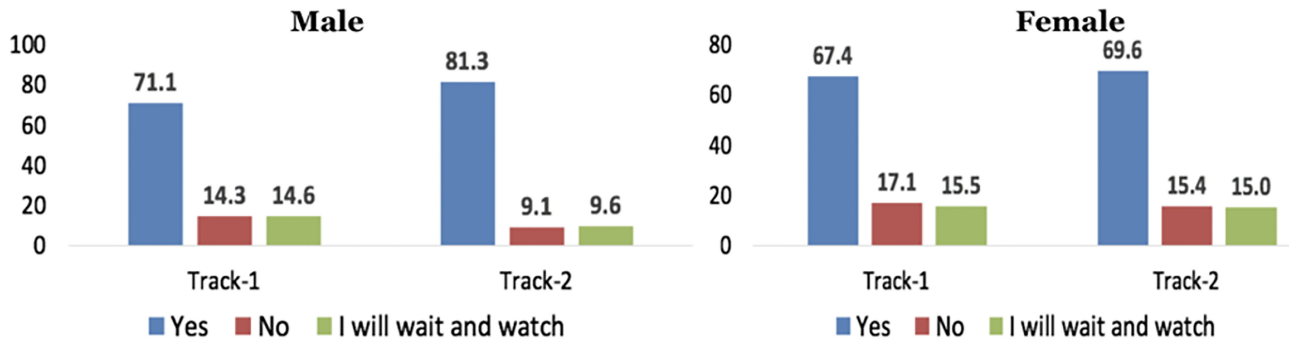
Chart: Authors calculation from survey responses
Sources: COVID-19 SYMPTOM SURVEY, Facebook and University of Maryland | created with Datawrapper

Figure 2: Potential reasons of vaccine hesitancy ("No, probaly not" & "No, definitely not"): Difference across



Sources: Facebook COVID-19 Symptom Survey. Weighted estimates based on combined data from 2020-12-21 to 2021-02-10

Figure 3: COVID-19 Vaccination Hesitancy from a Gender Lens



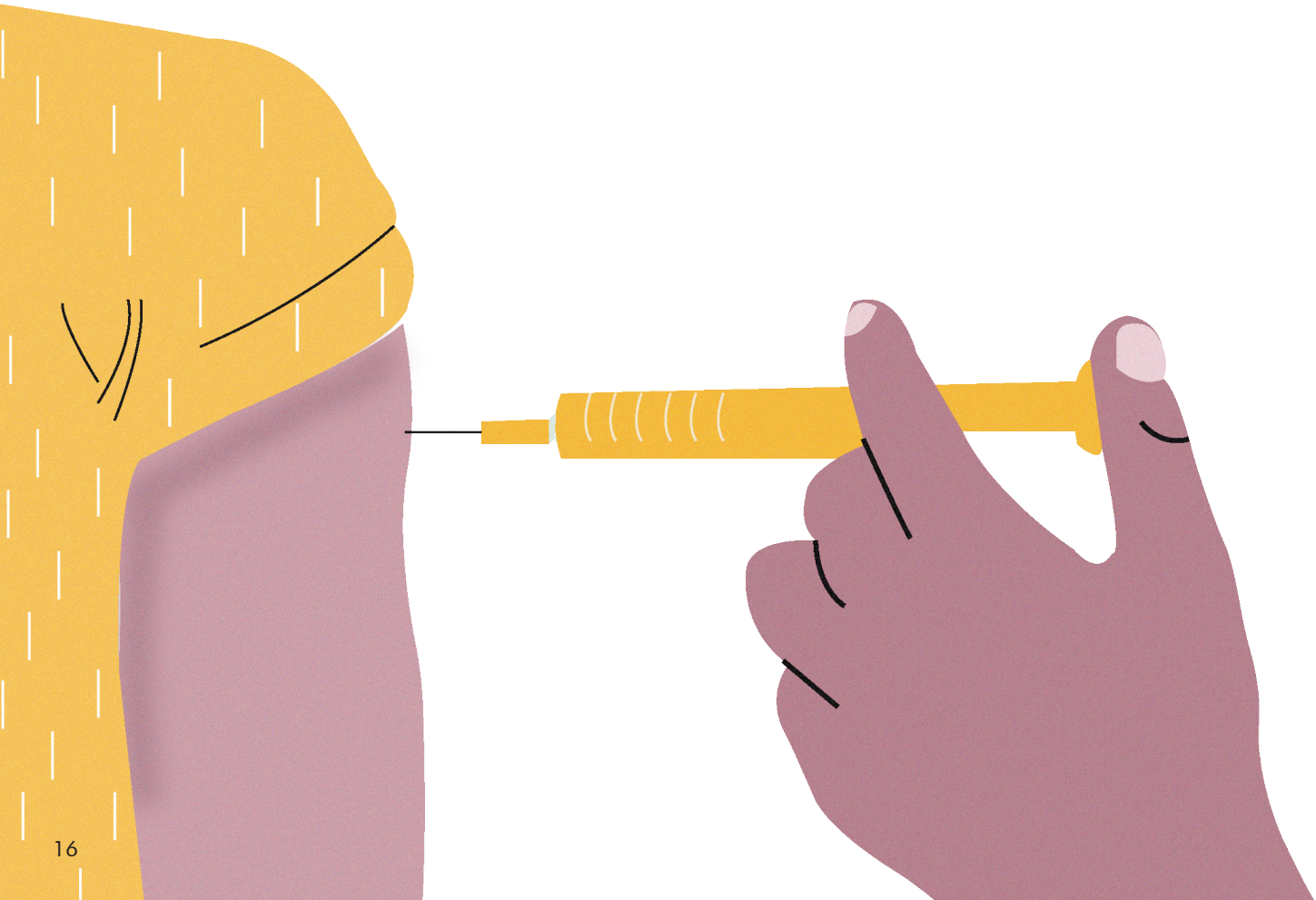
Sample Size	Gender	Track1	Track 2
	Male	6994	6553
	Female	2038	1937

Track 1: Date of feild work: 24th Mar 21 to 30th Mar 21
Track 2: Date of feild work: 16th May 21 to 23th May 21

Would you take the COVID-19 Vaccine if offered to you?

Source: IDFC Pulse Polling Vaccine Intention Measurment: West Bengal (May, 2011)

In West Bengal, a pulse poll conducted by IDFC noticed that the gender gap in Vaccine Hesitancy has widened from March 2021 to May 2021.

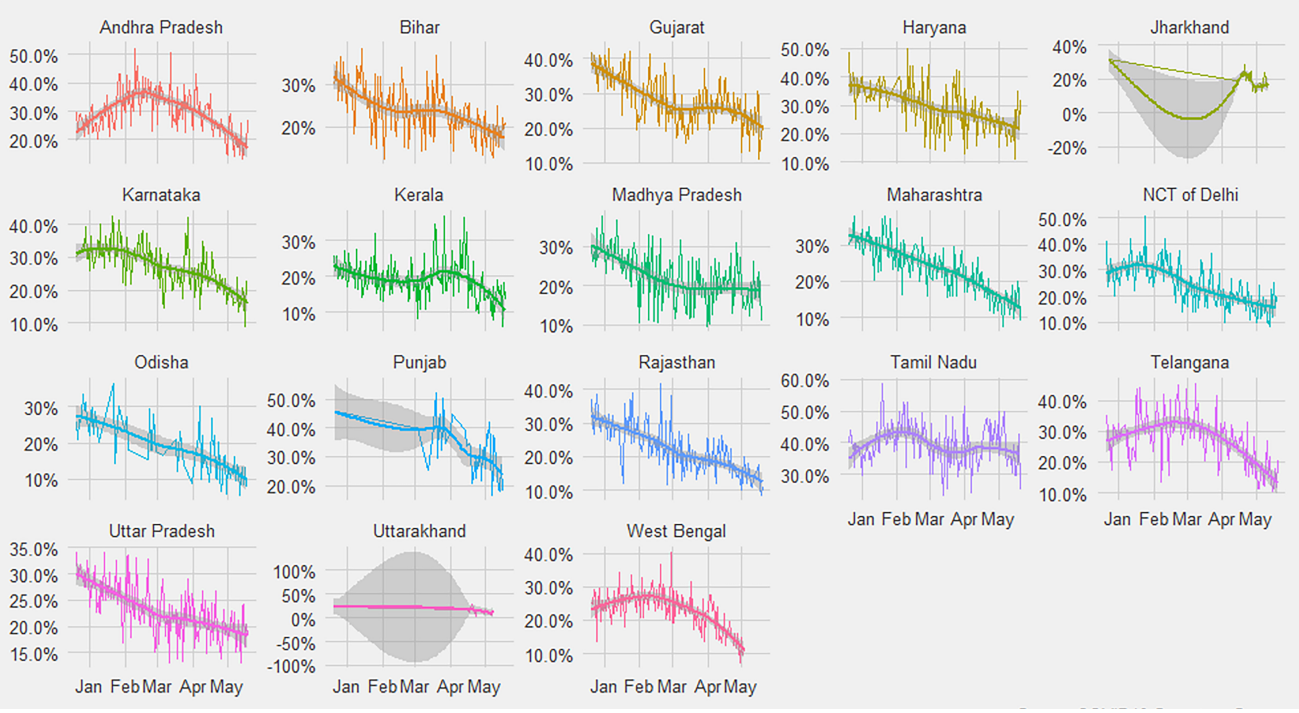


B. Temporal Trends in Vaccine Hesitancy

CSS collected responses from a total of 4,68,197 samples between January 2020 to June 2021 for evaluation of temporal trends in vaccine hesitancy. During this same period, India rolled out the COVID-19 vaccination program and experienced a massive surge of COVID-19 cases and deaths. Both these events resulted in a profound impact on people's behaviour towards the COVID-19 vaccines and, hence, the temporal trends. Overall, the proportion of the population hesitant to COVID-19 vaccines has decreased in all the states like Assam, Bihar, Kerala, Maharashtra, Odisha, etc. Even significantly vaccine-hesitant states like Andhra Pradesh, Punjab, Haryana and Gujarat have displayed a sharp decline. The CSS data from January, 2020 to June, 2021 further highlighted that lack of information about COVID-19 vaccination was the primary cause for apprehension. The information deficit about vaccines was lowest in states such as Tamil Nadu, Karnataka, Andhra Pradesh, Assam, Haryana, and Punjab and highest in Goa, Delhi, Odisha, Madhya Pradesh, West Bengal, etc.

Figure 4: Temporal Trends for Vaccination Hesitancy in States

Population Hesitant to COVID-19 Vaccines

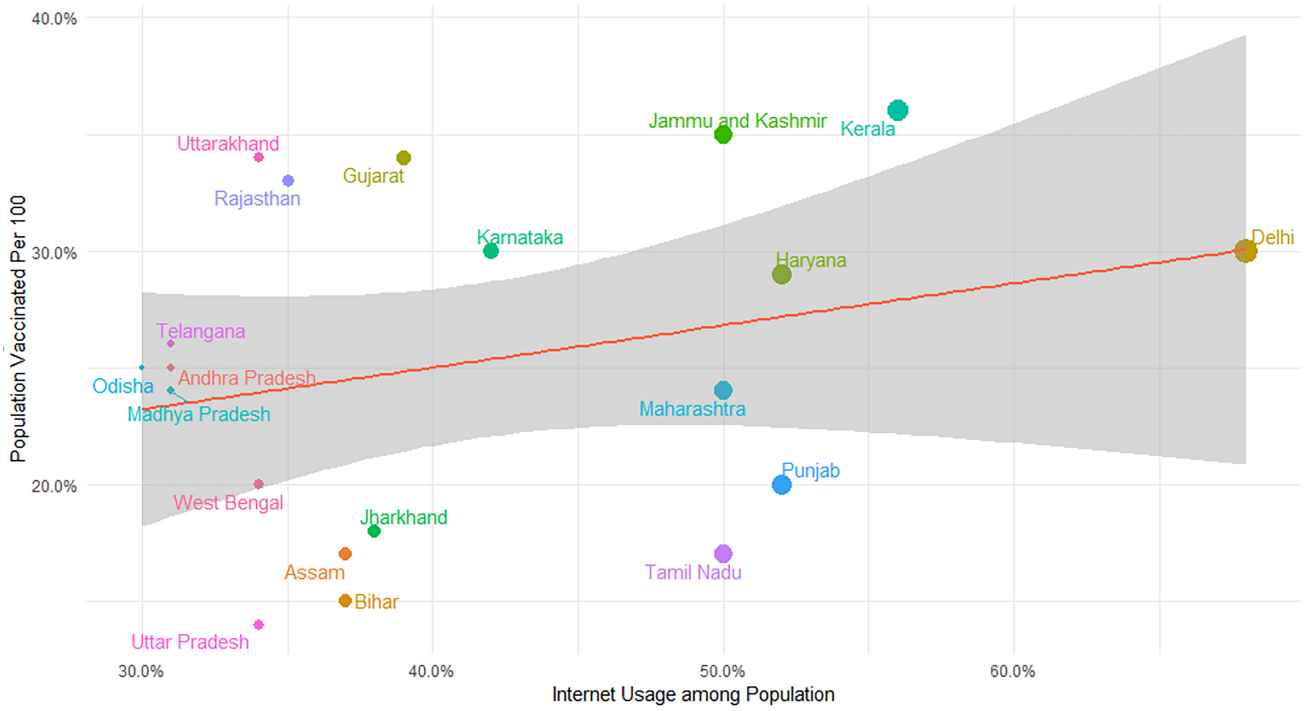


Sources: COVID-19 Symptom Survey

C. How Internet Penetration impacts Vaccination Uptake

We explored the association between vaccine hesitancy due to logistical barriers like lack of internet and actual vaccination coverage in the states. In the above figure, the x-axis represents the proportion of the population with Internet access and the y-axis represents the proportion of the population vaccinated with at least one dose. The scatter plot and regression line suggest a positive association between internet penetration and actual vaccination coverage. On the one hand, states like Delhi, Kerala, Haryana, Karnakata, etc. have both high internet penetration and high vaccination coverage. On the other hand, Jharkhand, Bihar, UP, West Bengal, Assam, etc. have low internet penetration and low vaccination coverage.

Figure 5: Association bw Population Vaccinated & Internet Peneration



Sources: Internet & Mobile Association of India & Covid19india.org

ANNEXURE 2

Findings from the Studies conducted by Partner Organisations

COVID-19 vaccine communication needs assessment study

The IDFC Institute supports the Punjab government in developing a multi-media behaviour change communication campaign to help boost vaccine confidence. It commissioned its first study in February 2021 to identify the barriers and motivators to vaccine acceptance and reported underestimation of risks of COVID-19, ingrained misconceptions/mistrust towards vaccines as chief reasons for hesitancy. Another study conducted by IDFC Institute (June 2021) among urban poor population of Mumbai and Pune, revealed that only 48% of unvaccinated respondents were willing to get vaccinated. Some of the key barriers to vaccination were: fear of side effects and death from the vaccine, lack of information, community or family pressure to not get vaccinated and operational barriers such as cost, transport etc.

Understanding COVID-19 Vaccine Hesitancy

Population Services International (PSI) conducted a study in Bhubaneswar, Ahmedabad, Indore, Mumbai, and Delhi to assess the ambit of vaccine hesitancy. The major reasons for vaccine hesitancy included session time inconvenience; long waiting time, fear of AEFI, shortage of vaccines, inconvenience in booking slots via the website or using smartphones, irregular vaccination sessions.

Assessment of Vaccine Hesitancy in UP

Uttar Pradesh Technical Support Unit (UP-TSU) & Clinton Health Access Initiative (CHAI) commissioned a qualitative study in 22 districts of Uttar Pradesh to investigate vaccine hesitancy in the 45+ community members, ASHAs, ANMs, and MoICs. The study among healthcare workers reported rumours, myths, and misconceptions, fear of AEFI as the major reasons for hesitancy. Additionally, the respondents also cited fear of death following vaccination as a reason for rejecting COVID-19 vaccines. The analyses construed that education and awareness play a major role in influencing the decision to get vaccinated since many unvaccinated personnel are poorly educated.

Assessment of Vaccine Hesitancy in Maharashtra and Tamil Nadu

George Institute highlighted logistical barriers like challenges with registration, lack of knowledge about the registration process or unavailability of smartphones/computers, fear of losing daily income due to post-vaccination malaise/effect and accessibility (distance and travel time) of vaccine centres (especially in bigger cities) as primary barriers to vaccine acceptance. Auxiliary reasons for vaccine hesitancy were fear of side effects, rumours about vaccine effects on social media, lack of clarity about vaccination and its effect on comorbidities, injection phobia, need to follow COVID Appropriate Behaviour (CAB) even after vaccination, and lack of assurance about vaccine efficacy.

COVID-19 and Vaccine Hesitancy

Studies conducted by Center for Advocacy and Research (CFAR) in UP, Bihar, Chhattisgarh Maharashtra, West Bengal, Rajasthan, and Odisha reported that hesitancy is more prevalent in rural and tribal clusters in the 45-60 age group. Factors causing hesitancy included lack of trust in available vaccines and efficacy, confusion about brand of vaccine, denial of the disease, non-availability of vaccine and technical problems of CO-WIN portal, myths and misconceptions, shortage of vaccines, dissemination of misinformation in media/ social media, lack of awareness among urban unorganized workers, difficulty in booking slots, lack of identity proof among migrant workers, lack of proper information about vaccination schedules, and eligibility of beneficiaries.

Drivers of COVID-19 hesitancy evidence and conjecture from Behavioural Insights

Centre for Social and Behaviour Change (CSBC) identified various barriers that affect COVID-19 vaccine hesitancy and grouped them into three categories. Low trust in the safety and the effectiveness of the vaccine; Uncertainty and inconvenience surrounding vaccine registration and administration; beliefs and fears surrounding COVID-19.

Final mile study on COVID-19 vaccine hesitancy commissioned by PATH

PATH commissioned a qualitative study in January and April 2021 to assess COVID-19 vaccine hesitancy, using in-depth interviews (with decision simulations) with a vaccine-hesitant population (identified through a survey) to understand the context, belief, and mental model of this ongoing pandemic, including other vaccination behavior and decision on the COVID-19 vaccine in urban, semi-urban, and rural settings across four regions (north, south, east and west). The study reported four types of barriers among four personas:

- Confused Persona view vaccine as scary and unfamiliar and not able to understand implication of the vaccine for their health.
- Complacent Persona view vaccine as a costly alternative, and have high coping outside the vaccine through compliance actions.
- Indifferent Persona view vaccine as irrelevant, as they have low risk internalization, and belief in health and immunity.
- Sceptical Persona view vaccine as untrustworthy, as they have deep mistrust in the government or pharma companies or believe COVID-19 is a conspiracy.

ANNEXURE 3

State-wise Gender Disparity in COVID-19 Vaccine vis-à-vis Official Sex Ratio

Figure 6: Gender Disparity in COVID-19 Vaccination

Vaccination Sex Ratio Vs Population Sex Ratio

Created by Datawrapper

ANNEXURE 4

The state-wise scenario of Vaccine Hesitancy: Reasons & Strategies Adopted

The analysis in this section is based on an in-depth review of existing literature on COVID-19 vaccine hesitancy, multiple media reports, and information received from the State governments & Partners Organisation.

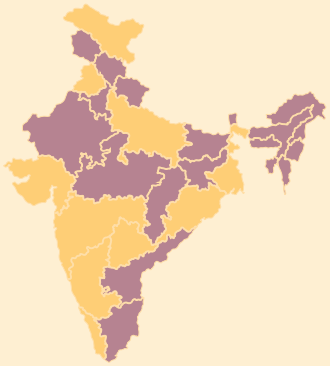
Reasons for Vaccine Hesitancy

1 Fear of Vaccination Side-effects (long term and short term)

- Vaccines lead to fever, headaches, chills, pain in the arms, etc.
- COVID-19 vaccines causing death.
- Loss of daily wages due to side effects.
- Vaccination may lead to health complications in the future.
- Fear of contracting the virus despite vaccination

States Reporting

Gujarat, Karnataka, Kerala, Ladakh, Maharashtra, Odisha, Punjab, Telangana, Uttar Pradesh, West Bengal



Strategies Adopted to Counter Hesitancy

1 Multimedia (electronic, print, and social) campaigns involving politicians, bureaucrats, NGOs, PRIs, etc. to spread awareness regarding the safety and efficacy of COVID-19 vaccination.

(States- Bihar, Gujarat, Manipur, Maharashtra, Punjab, Telangana, UP).

1.1 Gujarat appointed vaccine ambassadors & councillors to allay fears on COVID-19 vaccination and to mobilize vulnerable communities for COVID-19 vaccination

PSI supported the Gujarat government in the identification of Vaccine Ambassadors and Councillors.

2 Community specific campaigns using culturally relevant methods, localized IECs material & publication of success stories from the vaccination in local languages, etc. to address vaccine hesitancy.

(States: Bihar, Chhattisgarh, Karnataka, Maharashtra, Uttar Pradesh)

3 Training of healthcare workers for community and social mobilization-Healthcare workers and civil society organizations were trained to reach out to the vulnerable communities (tribal, women & children, slum dwellers, etc.) with complete information on COVID-19 vaccines.

(States: Chhattisgarh, Kerala, Maharashtra, Odisha, Uttar Pradesh, West Bengal,)

- **3.1 Centre for Advocacy and Research (CFAR)** supported the state government of Bihar, Chhattisgarh, Maharashtra, Rajasthan in developing community-centric messages & correct information on COVID-19 vaccines.
- **3.2 UP-TSU/CHAI** supported selected district health authorities of Uttar Pradesh and CHAI supported Madhya Pradesh to mobilize the hesitant population by developing podcasts on frequently asked questions on COVID-19 Vaccination.
- **3.3 PSI, UP-TSU/CHAI & UNICEF** supported states like Odisha, Gujarat, MP, UP, and NCT of Delhi, etc. in the training of healthcare workers to communicate the correct information regarding COVID-19 infection and vaccines.

4 Involvement of local influencers (religious leaders, local doctors & community leaders, etc) to spread awareness and counter rumours regarding COVID-19 vaccines.

(Bihar, J&K, Karnataka, Maharashtra & Tamil Nadu)

4.1 IDFC in Punjab started the use of testimonials of Local Vaccine Champions (fully vaccinated village sarpanches and ASHA workers, citizens, etc.) to spread the message of vaccine safety and efficacy.

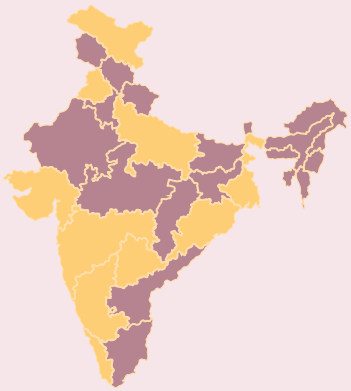
Reasons for Vaccine Hesitancy

2 **Myths, Rumours, and Misconceptions regarding vaccines**

- Rumours about the low efficacy of COVID-19 vaccines.
- Vaccines may cause infertility.
- Vaccination cause problems in menstruation and pregnancy among women.
- Superstition and misinformation about COVID-19.
- Wait-and-watch approach.
- Presumed herd immunity against infection.
- The vaccine is associated with the number 666, which represents the devil in Christianity (Manipur)

States Reporting

Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, J&K, Jharkhand, Karnataka, Maharashtra, Telangana, Uttar Pradesh, West Bengal



Strategies Adopted to Counter Hesitancy

1 **Door to Door Awareness campaign & vaccine help desks to create awareness and counter the misinformation**

(Andhra, Karnataka, & Manipur)

- **1.1 Andhra Pradesh launched** a program called 'Village Volunteers System' to identify the myths/ reasons behind vaccine hesitancy and bring them to the notice of the gram panchayats/local bodies etc.
- **1.2 Manipur** constituted special COVID-19 committees comprising ASHAs, block-level social welfare officials, religious leaders, etc. in its 60 assembly constituencies.
- **1.3 UP-TSU/CHAI in UP,** George Institute in Maharashtra, and IIT Delhi have analysed the negative sentiments & misinformation regarding COVID-19 vaccination and enlisted critical themes surrounding vaccine-hesitant pockets.

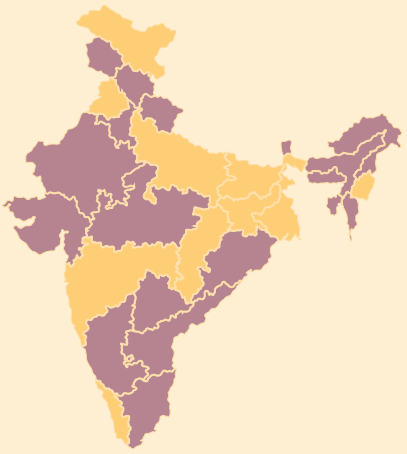
Reasons for Vaccine Hesitancy

3 **Lack of trust in vaccines**

- Frontline and healthcare workers have been avoiding vaccination due to low efficacy.
- The vaccine offers incomplete protection.
- The perception is that the government is sending low-quality vaccines in villages (Jharkhand) while the best ones are being given among urban masses.
- Excuses doctors offered (Agra): Fear of cancer, wait for Pfizer and Moderna vaccines
- Hurried Trials

States Reporting

Bihar, Chhattisgarh, Kerala, Ladakh, Maharashtra, Manipur, Punjab, Uttar Pradesh, West Bengal



Strategies Adopted to Counter Hesitancy

1 **Creation of WhatsApp group to inform public about correct information on COVID-19 infection and vaccines issued by both GOI and the state Government**

(Odisha, Punjab, Telangana, UP)

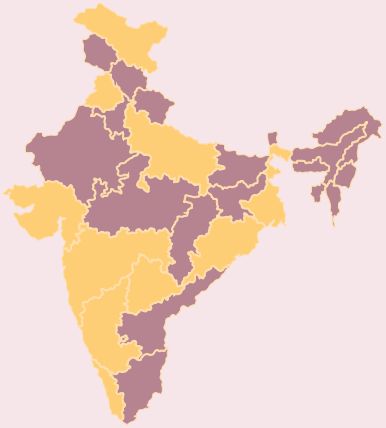
Reasons for Vaccine Hesitancy

4 **Logistical bottlenecks and difficulty in registration**

- The process of getting vaccinated is difficult.

States Reporting

Bihar, J&K, Jharkhand, Karnataka, Kerala, Ladakh, Maharashtra, Manipur, Odisha, Punjab, Telangana, UP, West Bengal



Strategies Adopted to Counter Hesitancy

1 **The state governments launched state-specific portals/apps in regional languages to expand the vaccination drive**
(Punjab-Cova Punjab portal, Kerala state portal, Telangana State Vaccine App, West Bengal- Benvax portal)

2 **Addressing Digital Divide through Registration Help Desks, offline/spot registrations, and deployment of mobile teams**
(States: J&K, Kerala, Maharashtra, Odisha, Punjab, Telangana)

- **2.1** Odisha launched the Janhit Vaani platform to spread awareness and online registration.
- **2.2 Ladakh** deployed mobile teams in difficult-to-reach areas.
- **2.3 CFAR supported** state governments of in UP, Bihar, Chhattisgarh, Maharashtra, West Bengal, Rajasthan, etc. with the setting-up of information helpdesks for registration of vaccination.

3 **Special Vaccination Drives to speed up the vaccinations.**

- **3.1 J&K -** Vaccine fairs or "melas" in various districts.
- **3.2 Bihar -** 'Teeka Express' & 'Teeka Shala' initiative launched. Launched a website to collated best practices and identify champions. (https://jashneteekabihar.com)
- **3.3 West Bengal -** "Vaccination on Wheels", at supermarkets, shopping malls, large residential buildings, etc., "Duare Vaccine" for differently abled, and marginalized tribal populations in the district of Bankura, and "Vaccine Access Initiative" focused on senior citizens.
- **3.4 Ladakh -** Special vaccination camps for marginalized groups like jail inmates, elderly in old age homes, etc.
- **3.5 Manipur -** Special vaccination sessions for the differently abled.

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