

Communicating About Vaccination in the United States: A FrameWorks Strategic Brief

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In partnership with the American Academy of Pediatrics

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Introduction

In early July 2021, Gov. Larry Hogan announced that Maryland would award 20 \$50,000 college scholarships to young people who are vaccinated against COVID-19.¹ A month earlier, West Virginia Gov. Jim Justice had announced a plethora of COVID-19 vaccine incentives, including a \$1.5 million cash prize, trucks, hunting rifles, and shotguns.² These decisions illustrate how ubiquitous the issue of vaccine uptake and how to increase it has been in American public and political discourse since the start of the COVID-19 pandemic.

Experts recognize that vaccine uptake is shaped, not only by individuals' level of confidence in vaccines and their willingness to get the shots they need, but also by systemic barriers that only policy and structural changes can address. However, the media, government, and even some stakeholders in the medical community, consistently make the issue of vaccination first and foremost about vaccine confidence and safety. Consequently, strategies are formed to nudge individuals to get their recommended shots. There is no doubt that all vaccine supporters in the field share the same ultimate goal of increasing rates of vaccine uptake across the country. What is much less clear is whether placing individual behavior change and the safety of vaccines at the center of most communications strategies is the most effective way of reaching that goal.

This research project, conducted by the FrameWorks Institute in partnership with the American Academy of Pediatrics, proposes an in-depth exploration of this question. It builds on the premise that rates of vaccine uptake, as well as individual attitudes and behaviors towards vaccination, are importantly shaped by access to quality health care, information and knowledge about the science of vaccines, and structural discrimination and racism in a health care context. Our ultimate goal with this work is to identify framing strategies that can build better public understanding of the science of vaccines, public support for structural measures and policies to improve access to vaccination and vaccine uptake, as well as a sense of collective responsibility for the issue, while still supporting efforts to effect behavior change at the individual level.

This strategic brief is the second step in this project. It follows and builds upon a detailed literature review on the knowledge to date about public beliefs and attitudes about vaccination in the United States.³ In the pages that follow, we present original research that examines and compares expert and public thinking about vaccination in the United States, with a specific focus on childhood vaccination and attention to the recent case of the COVID-19 vaccines.

Identifying what beliefs and attitudes stand in the way of social change ensures that researchers and advocates working to increase rates of vaccine uptake in the United States can use their time and resources strategically to address challenges. It also allows us to highlight important openings in public thinking—the public understandings and attitudes that future communications can actually leverage, rather than attempt to shift. Throughout the brief, we also offer initial recommendations to address obstacles and leverage openings in public thinking to build better public understanding of the science of vaccines and public support for the structural and policy changes that can truly make a difference. We make these preliminary recommendations, however, with the recognition that further research is needed to identify more specific framing strategies that work.

Methods overview⁴

What Are We Trying to Communicate?

To develop an effective strategy for communicating about vaccination in the United States, it is necessary to identify a set of key ideas to get across. To do this, FrameWorks researchers conducted a series of eight (8) interviews and a feedback session with researchers and advocates in the field and reviewed relevant literature on the issue. Below, we summarize the key ideas that emerged from this process, which represent the core points that need to be effectively communicated and the solutions that the field wants to build support for through communications.

Public Thinking About Vaccination in the United States

To explore the public's thinking about vaccination in the United States, researchers at FrameWorks conducted 20 one-on-one, two-hour-long cognitive interviews with members of the American public. These interviews were analyzed to identify the deep, implicit ways of thinking that the public uses to think about vaccines and vaccination.

Research Findings

Finding #1: The public holds helpful beliefs about how vaccines work, as well as problematic ones.

Core ideas from the field

- A vaccine is a product that trains the body’s immune system to protect against a disease it has not yet encountered.
- Vaccines protect children and adults from disease, disability, and premature death.
 - They can help mitigate disease severity.
 - They can protect against serious long-term diseases and disabilities, such as liver cancer (Hepatitis B), cancers caused by the human papillomavirus (HPV), and paralysis (polio).⁵
 - They are especially important for people who have certain medical conditions that make them more vulnerable to complications of a virus, such as the influenza virus for children with pulmonary conditions.

What the public brings to the conversation

Members of the US public have **three main ways** of thinking about what vaccines are and how they work, each of which relies on a different scenario: **instruction, war, and medication**. The image of the trainer within an instructional scenario leads people to a fairly accurate understanding of the science of vaccines. The war and medication scenarios, on the other hand, conflict with the field’s goals in unhelpful ways. In our interviews, people often toggled back and forth between all three approaches to vaccines, depending on which one the discussion cued for them at the time. In the rest of this section, we offer a deeper dive into what each of these scenarios entails and what each means for the field.

The public sometimes sees that vaccines train the human immune system to resist specific viruses.

When members of the public rely on the image of the vaccine as a “trainer” or “teacher” for the immune system, they understand that a vaccine enters the body and teaches the immune system how to recognize a particular disease, so that the body will know what to do when it encounters it. When thinking in this way, participants were able to see that what is actually fighting viruses is the trained-up immune system, not the vaccine itself. They also sometimes recognized that vaccines might need a few weeks to be fully effective, reasoning that the body needs time to learn the “codes” of a specific virus to be able to counter it effectively.

There was some evidence of scientific accuracy in this way of thinking. People displayed some basic, though vague, familiarity with the terminology of antibodies, proteins, and genetic information stored in a person's DNA when talking about vaccines in this way.

The public also often thinks about vaccines in the context of a war between the body and invading viruses.

When, instead of placing vaccines within an instructional context, members of the public rely on a war scenario between the body and viruses, they view vaccines either as weapons or as shields. This leads them to more inaccurate and less helpful conclusions.

When they assume that vaccines are like weapons activated to defeat an invading virus that has entered the body, they can often see that vaccines provide effective protection from illness. The problem with this assumption is that it also leads people to reason that it is the vaccine, not the immune system itself, that "fights" the virus from within the body.

When people think of vaccines less as weapons and more as shields or armors, they often assume that vaccines protect from disease by keeping viruses from entering the body altogether. In the interviews, this then led participants to reason that only vaccines that have been able to fully defeat (i.e., eradicate) a disease could truly be deemed effective. For example, participants frequently cited the polio vaccine as the prototype of an effective vaccine, based on the recognition that the disease has been fully eradicated.

The public often relies on what they know about medication to reason about vaccines.

Members of the public generally know more about prescription drugs and over-the-counter medications than they do about vaccines, not only because they rely on them more frequently, but also because of how ubiquitous advertising for these products is in the media. People therefore often use their knowledge of medication to make sense of what vaccines are and how they work, which can lead to unhelpful conclusions as well.

Within this broader "medication" scenario, participants' logic differed depending on the type of remedy that was top-of-mind for them. When they primarily thought of medicines that target specific illnesses, like taking pain relievers for headaches or decongestants for nasal congestion, they understood that vaccines, similarly, are intended to target a specific illness. On the other hand, when vitamins and other types of dietary supplements were particularly salient in participants' minds, they assumed that vaccines are intended to give the immune system a general boost, rather than target any specific virus.

There are also common elements to all versions of the “medication” scenario. The first is grounded in people’s knowledge that most medication is reactive rather than preventive. As a result, when people draw a parallel between vaccines and medication, they logically reason, even implicitly, that taking a vaccine is a sign that there is a health problem to be solved, and that if there isn’t, then the vaccine might not be needed. Additionally, because of the sheer volume of commercial advertising for prescription drugs most people are exposed to on a daily basis, people tend to assume that the series of warnings included in these ads is also applicable to vaccines. This explains why, when the “medication” scenario was salient for participants, even those who had very positive attitudes towards vaccines in general ended up expressing concerns about short- and long-term side effects (most likely inspired by the oft-repeated phrase “side effects may include”), potential allergic reactions, problematic drug interactions, or risk of overdose.

Focus on childhood vaccination: “Too much, too soon”

People’s reliance on the “medication” scenario helps make sense of a recurrent concern expressed by vaccine-hesitant parents who are often worried that their children (who typically have a more frequent and routine vaccination schedule than adults) might be harmed by receiving too many vaccines at once. This “too much, too soon” assumption appears to be shaped by the knowledge that too much of any prescription drug or medication can cause an overdose, and that different drugs interacting with each other could result in permanent damage or death. When combined with widespread assumptions that children are more physically vulnerable than adults because they are still developing, this assumption could even sometimes lead participants to raise concerns that children might be permanently harmed by the vaccine schedule recommended for their age group.

What this means for the field

The **instruction scenario** and the image of vaccines as trainers should be leveraged as much as possible by the field. It leads people to understand how vaccines work in ways that are fairly aligned with the science: vaccines target a specific virus, stimulate the immune system to produce specific antibodies that “remember” how to fight that disease in the future, and disappear within a few days after teaching the body to respond to the virus. This approach is flexible and universal enough to implement across different types of vaccines and vaccination efforts.

Focus on individual attitudes

As the instructional scenario helps people understand that a vaccine does not stay in the body after it has effectively “trained” the immune system to recognize a specific virus, it is also unlikely to trigger problematic concerns about long-term or permanent side effects of vaccination.

The **war scenario**, on the other hand, can more easily stand in the way of building better public understanding of the science of vaccines. Because it leads people to equate vaccine effectiveness with disease eradication, it makes it harder for people to see that vaccines are still highly beneficial when they mitigate the severity of the disease they are designed to prevent. This way of thinking about vaccines is, for instance, likely to raise doubts among the public about the effectiveness of the recent COVID-19 vaccines, given that it is still possible to contract less severe forms of the disease after getting vaccinated. This is all the more relevant as war metaphors have been used widely in the context of the COVID-19 pandemic, which makes this way of thinking even more likely to be top of mind in the current moment.⁶

Focus on individual attitudes

Thinking about vaccines as weapons can also fuel concerns about long-term or permanent side effects. If vaccines are assumed to lay dormant in the body in preparation for a virus invasion, it becomes more likely that they can continue to interact and affect the body long after injections have occurred.

The **medication scenario** might be the most problematic of the three for the field. It can lead to inaccurate assumptions about how vaccines work. Even more importantly, because of the commercial list of warnings that is almost inevitably top-of-mind for people when thinking about medication, it will likely foreground people’s individual liability, on the grounds that once they have been informed of the risks, no one else can be liable for adverse events.

Focus on individual attitudes

For the same reasons, this way of thinking inevitably leads people to place undue emphasis on the potential risks accompanying vaccines. If they believe that it is generally preferable to avoid medication unless absolutely necessary, they might also conclude that vaccines are better avoided too.

Preliminary recommendations

- **Cue** the “instruction” scenario and the idea that each vaccine “trains” or “teaches” the immune system to respond to specific viruses **as often as possible**. This will leverage productive understandings of the science of vaccines that people already hold.
- **Talk** about vaccines as a “partner” for the immune system, rather than as an immune “booster.”
- **Avoid** cueing the “war” and “medication” scenarios. They will likely foreground unhelpful and inaccurate assumptions about the science of vaccines and lead people to overemphasize risk.
- **Frame** vaccines as a proactive measure that creates better health, to inoculate against implicit associations between vaccines and medications taken in reaction to a health issue.

Finding #2: Risk takes center stage in people’s thinking about vaccines.

Core ideas from the field

- Vaccines are **safe**. They are the most rigorously monitored part of regular medical care and held to the highest safety standard of any medical intervention. Most significant side effects that come with vaccines, experts explained, are short-term and have no long-term consequences. There is no conclusive scientific evidence of long-term negative side effects.⁷
- The recent spread of **disinformation** about vaccines, especially online and on social media, is not grounded in scientific evidence but in vested interests (e.g., business, political, or religious influence).

What the public brings to the conversation

Our interview discussions were disproportionately focused on the risks of vaccines, despite the favorable attitudes and beliefs expressed by most participants. Existing literature⁸ identifies a series of psychological biases that contribute to this overemphasis on risk. Studies have shown that people often struggle to tolerate uncertainty; they tend to be risk -averse, meaning they naturally tend to overemphasize risks and downplay benefits for any given situation; they can also experience “omission bias” (i.e., judging harmful actions as worse than harmful inactions).

Our research brings an innovative perspective on the public’s overemphasis on risk, as we identify deeply ingrained cultural beliefs and assumptions that contribute to people’s focus on vaccination risks in important ways. We identified a disconnect between what participants explicitly said (“the risks associated to vaccines are minimal”) and what they often implicitly thought (“the risks associated with vaccines are a real issue that needs to drive decision-

making”). This was evidenced by people’s frequent reliance on gambling scenarios to describe their decision-making process (e.g., “playing the odds” as to whether a vaccine will prevent them from getting sick, or that it is always a “crapshoot” or “gamble” whether a vaccine will give you harmful side effects).

While the issue of risk is connected to most of this brief’s findings (e.g., the medication scenario or the focus on lived experience in our discussion of people’s relationship to science above), the following three ways of thinking about vaccines and health play a particularly central role in shaping people’s orientation towards it.

The benefits of vaccines are less tangible for people than their assumed risks.

People understand good health as the absence of illness, and reason that absence of illness is the default state of the human condition. As a result, for most people with only lay knowledge of medical science, when vaccines work, their effect is no different than what they expect to be their bodies’ default state. They are, in other words, invisible or imperceptible. In this way of thinking, illness or undesirable side effects of vaccines are, on the other hand, a clear departure from this assumed default state of health. They are perceived as tangible events that are part of most people’s lived experiences.

The public’s consumerist approach to health puts the potential “cost” of vaccines in the spotlight.

Members of the public are very much aware of the high cost of health care in the United States. American society, more generally, is built on capitalist foundations, which fosters a strong consumerist mindset among the public in every aspect of their lives. It is therefore unsurprising that the public predominantly thinks about health as a consumer good that can be acquired with the right amount of money, and health care as a business in which patients should be catered to as paying customers. This deeply ingrained way of thinking shapes the public’s perspective on vaccination in important ways.

When people rely on this consumerist mindset, they assume that individuals are responsible for making the “right” choices about their health and health care, in the same way that customers are expected to weigh their options carefully as they are ultimately assumed to be responsible for what they decide to spend their money on, and how. When applied to the issue of vaccines, this logic leads people to assume that individuals are responsible for doing their due diligence before deciding to get a vaccine to ensure that they will get what they “pay” for. In other words, individuals, viewed as consumers, are expected to do a cost-benefit analysis before deciding to get vaccinated. In this scenario, people determine if the literal and metaphorical “cost” of vaccination (e.g., time, convenience, possible side effects) is outweighed by the benefits they can expect from getting vaccinated. In the interviews, participants relying on this cost-benefit logic seemed particularly concerned about vaccine effectiveness and vaccine safety. Even when

they explicitly acknowledged that the risk they were taking was minimal, they still described the decision to get vaccinated as weighing cost and benefit, which inevitably led them to overemphasize risk at a more implicit level.

When thinking about vaccines as a consumer good, people are also more likely to focus on potential risks and side effects because of their view of pharmaceutical companies and corporations more broadly. They typically reason that profit is the main, if not the only, factor driving the decisions made by “big pharma,” which leads them to wonder whether, in the case of vaccines, profit could trump any concerns about customers’ ultimate health outcomes. These concerns were less salient in the interviews than might have been expected. They mainly surfaced in discussions of the COVID-19 vaccines, as participants wondered whether the speed at which they were issued could have been motivated by the needs of big businesses to generate profit fast rather than by the health needs of the US population.

When people think about vaccines as a human-made product, it highlights their fallibility.

The idea that vaccines are “artificial” products made by humans also leads people to overemphasize their potential risks, for two main reasons: the belief that natural products are always better and safer for health than manufactured products, and the assumption that humans are, by essence, fallible beings.

Members of the public overwhelmingly agree that elements that already exist in nature are, by definition, healthier than human-made products. This is based on the assumption that the human body is itself part of nature, which means that it is usually better off and healthier when left in its natural state. When thinking in this way, interview participants reasoned the immune system is naturally effective and efficient and does not need human intervention. It thus follows that vaccines, being a human-made creation composed of artificially produced chemicals, have the potential to do more damage than good by corrupting a person’s natural immune system when introduced into the body.

People also assume humans are inherently flawed and fallible. This leads them to reason that anything produced by humans has the potential to malfunction or fail as well. When participants applied this logic to vaccines, they explained that there was a chance that something could unexpectedly go wrong from being vaccinated because there was always a chance that the people who made the vaccine “messed it up” in some way. Even when participants explicitly stated that they thought the benefits of vaccines outweighed the risks, the belief that “man ain’t perfect” implicitly foregrounded the probability of error in the development and production, and the risk of danger and harm associated with vaccines.

What this means for the field

The more tangible nature of potential risks, as well as beliefs about vaccines as a human-made, consumer good make it hard for people to see the importance of systemic barriers to vaccine uptake in the United States. These ways of thinking conspire to give risks, rather than benefits, center stage in people's minds, and reinforce psychological biases that naturally lead the human brain to focus on what they stand to lose more than what they stand to gain in any situation.

When people look at vaccines through a consumerist lens more specifically, it makes it hard for them to adopt a public health lens on the issue. Instead, they are more likely to focus on individuals' responsibility to get what they "pay" for. Focusing on individual "consumers" is also likely to block out thinking about vaccines as a common good that has not only individual benefits but, importantly, collective benefits.

Focus on individual attitudes

Given where the public is currently, communications strategies that, first and foremost, frame the issue of vaccines as an issue of safety and confidence are likely to further reinforce people's strong tendency to overemphasize risk rather than alleviate concerns among the public. For similar reasons, making the issue of vaccines about risk and safety might reinforce the impression that the anti-vaxxer movement is more widespread than it actually is and makes it hard for people to see that disinformation is primarily driven by vested interests, rather than a laudable desire to fight a broken system.

Preliminary recommendations

— **Avoid** reducing the issue of vaccination to an issue of risk and safety, hesitancy, and confidence. This does not mean that stakeholders in the field, especially medical practitioners, should not be *responsive* to individuals' and parents' questions and concerns about vaccines. But, it does mean that communications that are intended for the broader public should not proactively put the spotlight on risk and safety at the expense of other, more helpful aspects of the issue.

Instead:

Lead with structural barriers to vaccine uptake in the United States. Explain how they work, and how they can actively contribute to eroding the public's confidence in vaccination.

Explain where disinformation about vaccines comes from, identify who benefits from it, and clarify that its online prominence is due to media strategies rather than to the size of the population who subscribe to these ideas. This will help address concerns about safety and

risk by re-centering the conversation on *how* vaccine confidence has eroded over the past decade, rather than fueling doubts about *whether* vaccines can be trusted in the first place.

- **Avoid** cueing the idea that vaccines are a human-made, consumer good.

Instead:

Position vaccines as a scientific achievement and a triumph of modern medicine and vaccination as one of the most impactful health practices in human history. This leverages helpful beliefs that the public already holds and will likely help de-emphasize the issue of risk in people’s thinking.

Talk about the benefits of vaccines more often than their potential risks. This will cue people’s accurate understanding that vaccines are an effective way to prevent illness and help background concerns about risk.

Mention collective benefits at least as often as individual benefits. This will help the public start to think about vaccines through a public health lens rather than an individual one.

Finding #3: People’s relationship to science and medicine is more complex than we might think.

Core ideas from the field

- When it comes to vaccination, the main issue that needs solving in the United States is how to increase rates of vaccine uptake. This requires structural investment and solutions to make the highest quality of health care accessible to everyone, make vaccination more convenient, and better support medical practitioners in fulfilling their role.
- Investing in a fast and efficient rollout of the COVID-19 vaccines is crucial to addressing the pandemic.
- While the development and manufacturing of vaccines still need to be held to the highest standards, the validity of scientific expertise is not a problem that needs solving.

What the public brings to the conversation

The literature on public attitudes and beliefs about vaccines and vaccination⁹ suggests that the American public has conflicting attitudes and beliefs about science. On the one hand, researchers argue that lack of trust in science might be a serious obstacle to vaccination uptake in the United States. According to existing studies, a general lack of understanding of the science of vaccines and immunity has been compounded over the past few decades by a growing public rejection of scientific and expert authority. Blamed in the literature are the combination of religious beliefs, the post-modern belief that “there is no truth,” and the political instrumentalization of science.

On the other hand, recent studies also suggest that far from everyone in the United States lacks trust in science, especially when it comes to well-known childhood vaccines. A US-based 2017 poll, for instance, found that about 55% of Americans fully trust medical scientists to give full and accurate information about the risks and benefits of childhood vaccines.¹⁰ The findings below offer a new way to make sense of these seemingly contradictory accounts, by digging deeper into the beliefs and assumptions that underlie what they have to say about science, doctors, and scientific evidence about vaccines.

The public overwhelmingly believes that vaccines are a triumph of science and modern medicine.

Members of the public sometimes often model the relationship between humans and nature as a struggle for survival: they assume that the natural world is inherently dangerous for humans and that people must therefore ensure survival by protecting themselves from all things non-human that could cause them harm. They firmly believe that the most effective way for humans to control and triumph over nature is through their own ingenuity and their mastery of science and technology.

When people look at vaccines through this lens, they overwhelmingly consider them one of the great achievements of science and medicine because they have effectively protected humans from disease and death since their creation. In the interviews, participants often talked about vaccines as a tool developed by brilliant people through many decades of scientific research. When thinking in this way, participants also identified scientific institutions and studies as trusted sources of information about vaccines.

Focus on childhood vaccination: The polio vaccine

For many people, the polio vaccine is the perfect example of humans overcoming the threats of nature and saving thousands of lives. It did its job: eradicating a terrible disease that affected thousands of children throughout the country. In our interviews, some participants also brought up the MMR vaccine as a good illustration of humans' ingenuity—another vaccine administered in childhood. This suggests that the belief that vaccines are a key scientific achievement in the history of humanity might be more closely associated with childhood vaccines than other types of vaccines in people's minds.

This indicates that when this way of thinking is cued, it could help people see the benefits of childhood vaccination more so than other vaccines. Conversely, making the polio vaccine the epitome of successful vaccines may reinforce the assumption that vaccines are only ever effective if they are able to eradicate a given disease for good.

People have more trust in doctors' motivations than in their expertise.

Members of the public also overwhelmingly trust doctors and the medical profession more generally, but they appear to do so primarily because of their perceived motivations rather than their expertise. People generally assume that the defining attribute of good doctors is the degree to which they care about their patients, and people more generally.¹¹ They think that most doctors went into the medical profession because of their vocation to do good and improve the human condition, which is sufficient to make them good and trustworthy. In the interviews, many participants cited the Hippocratic Oath as a symbol of doctors' commitment to the betterment of society through ethical behavior, which they saw as reason enough to trust them to do their work well. Participants also often took for granted that most doctors, because of their personal commitment to high standards of ethics and care, would be immune to pressures from the pharmaceutical industry (i.e., "big pharma") and other sources of personal gain. In other words, people took it for granted that most doctors do not have any ulterior motive when they recommend getting vaccines to adults or children alike.

Even as they made these points, however, participants also mentioned that frequently, the media or even experts themselves, challenge, contradict, change, or debunk scientific findings. This raised concerns for them about the reliability of scientific and medical expertise. In short, even when participants trusted *their* doctor's recommendations about vaccines, they could still express doubt about the safety or effectiveness of those same vaccines, because what they trust is the doctor's personal commitment more than their scientific expertise.

The public assumes that the most reliable way to ensure that a vaccine is safe and effective is to rely on real-life experience.

Because of people's ambivalent attitudes towards science and scientific evidence, they ultimately believe that the most reliable proof of a vaccine's safety and effectiveness is the population's lived experience of that vaccine. They think that only once a vaccine has been in circulation for a significant amount of time without occurrences of the disease it is designed to prevent or any significant side effects can it be truly deemed effective and safe. The more time goes by without harm occurring, the safer the vaccine is assumed to be. Sometimes participants measured this trust of vaccines over decades or even generations. Even participants who did not fully understand vaccines or how they were developed trusted vaccines in general because "they've been around for a long time."

Although both hinge on people's trust in science and expertise, this way of thinking differs from the well-known Dunning-Kruger effect¹², according to which the less people know about an issue, the more likely they are to think of themselves as experts in it. The issue here is not so much that people are inclined to perceive themselves as lay epidemiologists, but rather that they trust their lived experience more than scientific expertise. In the interviews, even when

participants had some sense of what clinical trials are and how they work, they remained more likely to trust their own experience of seeing how a vaccine works over long periods, in everyday life, in the world where they live.

This way of thinking significantly contributed to participants' doubts and concerns about the COVID-19 vaccines, on the grounds of their newness and the speed at which they were developed. Many participants either subscribed to or understood the decision to take “wait and see” before being vaccinated against COVID-19.

What this means for the field

People's recognition that **vaccines are one of the main scientific and medical achievements of the past century** can be leveraged in future communications. It makes it easier for people to focus on the benefits of vaccines rather than worrying about their potential risks, especially in the case of childhood vaccines.

When people assume health care quality is shaped in important ways by whether or **not individual doctors truly “care” for their patients**, it can be harder to see the need to invest in more effective systems that support practitioners. Such systems would ensure effective vaccine uptake, facilitate clinical decision-making, as well as track the distribution and administration of vaccines (e.g., a nationwide immunization information system, as recommended by the field).

Focus on individual attitudes

There is, of course, some value in people's **trust in their doctors to put the best interests of their patients first**. It notably confirms findings from the literature¹³ that suggest that people's conversations with their own physician, or parents' conversations with their children's pediatricians, are a promising setting to address concerns about vaccines at an interpersonal level. But, because people primarily trust doctors more for their intentions and devotion to their patients than for their scientific expertise, more research is needed to determine whether medical practitioners could serve as effective messengers for broader communication efforts on the issue of vaccines more generally.

Relying on **“real life” experience to assess a vaccine's safety and effectiveness** can make it hard for people to see the need for public and private investment in infrastructure and systems to make the rollout of vaccines faster and more convenient (e.g., enlisting public health infrastructure and pharmacies to administer seasonal vaccines, investing in vaccine manufacturing and supply). This is especially true for newer vaccines like the COVID-19 vaccines, for which some people are likely to favor a “wait and see” approach in the first place.

Focus on individual attitudes

When people **base their trust in vaccines on lived experience** rather than scientific expertise, it can lead them to overemphasize risk and potential issues, and neglect benefits. Gauging effectiveness by the amount of time a vaccine has been in circulation without *incidents* means, in essence, constantly being on the lookout for problems that might occur as a result of vaccination. This can make it harder for people to recognize that the risks of not getting a vaccine are much higher than the risks of getting it.

Preliminary recommendations

- **Avoid** relying only on assertions of scientific authority when communicating to the public about vaccines. This will likely cue more questions than answers and lead people to lean into their tendency to make the issue of vaccines primarily about risks and side effects.

Instead:

Explain what clinical trials are, how they work, and why they are the main reason why well-known vaccines have been and continue to be so successful. This will likely provide people with a starting point to better understand what the scientific method entails and why it is the most reliable way to develop vaccines.

Cue the idea that vaccines are one of the most significant scientific achievements of the past century. This will likely help people focus more on the benefits of vaccines than on their potential risks.

Talk about the training and structural supports needed to ensure that doctors can provide the highest quality of health care to all their patients. This will likely help people see beyond the belief that individual “vocation” is what makes doctors good and trustworthy.

Finding #4: People assume that not everyone needs vaccines.

Core ideas from the field

- Vaccines are the most **effective** public health measure to prevent communicable diseases, especially in childhood. Immunizing infants in the United States according to the recommended childhood schedule, for instance, saves an estimated 42,000 lives per year. Because of vaccination, smallpox has been eradicated, and diseases like polio, measles, mumps, and rubella are almost eliminated in countries with high rates of vaccination against the diseases.¹⁴

What the public brings to the conversation

When people think about effective ways of preventing illness, vaccination is not top-of-mind for most. The issue here is not so much that the public does not think that vaccines can protect against diseases and illness, as that they do not see health prevention through a public health lens. Instead, people tend to think about health prevention as an individual issue and an individual responsibility. This way of thinking is grounded into foundational beliefs about what health is and what shapes health outcomes, which the findings below provide a deep dive into.

The public primarily thinks of illness prevention in terms of the lifestyle choices that shape health outcomes, with vaccines as a plan B.

Members of the public think that illness is prevented primarily through individual habits such as eating right, exercising, and getting enough sleep. In this way of thinking, individuals are responsible for making the right choices for their health. The public notably believes that people can strengthen their immune system by consuming certain foods and vitamins, exercising, getting sufficient rest, and avoiding harmful choices like smoking or alcohol consumption. Consequently, people assume that if a person makes the right lifestyle choices for themselves, they might not need to take any additional measures to prevent illness. When thinking in this way, people tend to see vaccination not as a preventive must-have, but as a plan B, which some individuals might need to resort to more than others if they have not made the right choices to take care of their bodies in the first place.

When people also assume an individual's willpower, moral strength, or in some cases their intelligence level, shapes the choices they make for their health, the need to resort to vaccination ends up being perceived not only as the sign of physical failings that need fixing (as in the "medication" scenario discussed above) but as a sign of moral weakness.

The public understands the human body's natural immunity along a spectrum of strength and weakness, and thus, not everyone needs vaccines.

Members of the public believe that the strength of an individual's immune system is shaped by their genetic makeup, and that depending on how strong a person's immune system naturally is, there might be more or less of a need to strengthen it through additional means like vaccination. This way of thinking also rests on the inaccurate assumption that vaccines work a little bit like vitamins and give the whole immune system a boost rather than train the immune system to fight off a specific virus it has not yet encountered.

Thinking about vaccines through the lens of genetic determinism also sometimes led participants to reason that the effects of vaccines might also differ from person to person depending on their genetic makeup. They reasoned that certain people might be naturally more prone to experiencing serious side effects after getting a vaccine or to still get sick despite getting the right shots.

Focus on childhood vaccination: Individualism and genetic determinism play out differently for children

When focusing specifically on childhood vaccination, people's beliefs about individual behaviors and natural immunity turn out to be more helpful, because they interact with deeply held assumptions about children and parenting.

People generally assume that children cannot be held responsible for making the right choices for themselves in the same way that adults are, which makes plan B of vaccination more credible and more salient as a preventive solution for children than adults. People also think that children are physically (and mentally) more vulnerable than adults because they are still in the process of developing. This often leads people to recognize that children's immune system is weaker than adults', which means they are more vulnerable to different types of illness and disease, and therefore in greater need of protection through vaccination.

As people also believe that one of the most central responsibilities of parents is to do everything they can to protect their children from harm, thinking about children's vulnerability and lack of responsibility often leads them to conclude that being a "good" parent means getting children the vaccinations they need to be adequately protected from harm. In the interviews, this logic was far more prominent among participants than another interpretation referred to in the literature, i.e., the idea that because vaccines are themselves a threat to children, the best way for a parent to protect their children from harm is to refuse vaccination.

What this means for the field

When **people reason that individual lifestyle choices are the most effective method of prevention**, it makes it difficult to think about prevention at the public health level, to see vaccination as anything but a plan B, or see the need to expand and strengthen existing laws at the state level (e.g., by revoking religious and philosophical exemptions for school vaccination requirements).

When people assume **that some people just make better choices for themselves than others, or that their immune system is naturally stronger**, they are likely to see vaccination as a sign of physical or moral weakness, which can make it seem not only unnecessary but also undesirable for some people. This can increase people's reluctance to agree to certain vaccines. It can also make it harder for members of the public to support collective efforts to make health care available to everyone, to address systemic barriers to improve vaccine access, or to expand and strengthen vaccine legislation.

Preliminary recommendations

- **Focus** on how vaccines work with the body’s natural immune system, rather than on what separates the natural immune system from vaccines. The more people distinguish between the two, the more likely they are to reinforce and hold beliefs that some people need vaccines and others do not.
- **Emphasize** that vaccination has collective benefits and explain what they are. This is likely to prevent people from zooming in on individual specificities.

Focus on childhood vaccination: How to best talk about its importance

Make sure to mention that not only should children be protected from harm but that they also need to have the support they need to thrive. This will prevent people from focusing too strongly on what children might be threatened by, which could lead them to the conclusion that they need to be protected from the potential harm of vaccines as well.

Always mention that vaccination is the most effective way for parents to protect children from harm and help them thrive. This should also prevent people from assuming that vaccine refusal is the best way to protect kids from harm.

Expand people’s sense of responsibility towards children from parents only to parents and society at large. This will likely build public support for systemic measures to increase rates of vaccine uptake, instead of assuming that parents are solely responsible for their children’s outcomes.

Finding #5: The public primarily thinks of vaccination as an individual issue.

Core ideas from the field

- Vaccines are a common good with collective as well as individual benefits. They protect the health not just of individuals, but of communities and populations, and they produce economic benefits for society, especially when administered in childhood.
- High vaccination rates are needed to eliminate or eradicate infectious diseases.
- To be more consistent with a public health perspective on vaccination, existing laws at the state level need to be expanded and strengthened (e.g., revoking religious and philosophical exemptions for school vaccination requirements).

What the public brings to the conversation

The public primarily views the benefits of vaccines through an individual lens.

Members of the public already see the individual benefits of vaccines: they protect individuals from illness, disease, and sometimes even early death. However, they tend to overlook or misunderstand the collective benefits of vaccination.

First and foremost, people struggle to understand collective benefits and, more specifically, herd immunity. Most participants were not familiar with the term. Those who were often struggled with the concept as well, in which case they relied on their existing beliefs about what shapes health to make sense of it. This led them to a wide array of often inaccurate interpretations. For instance, participants sometimes assumed that herd immunity was determined by genetics (e.g., everyone of a given blood type is immune). They also sometimes assumed that herd immunity was achieved by letting nature take its course and letting those who are not strong enough to either resist the virus altogether or survive it once they get sick, die.

Only when focusing on past diseases that have either been eliminated or fully eradicated were participants sometimes able to take a more collective view of the benefits of vaccination. In discussions of childhood vaccination specifically, participants recognized that by immunizing children early in life against an array of severe diseases, society has ensured that more children can not only survive but thrive and go on to live fulfilling lives.

Members of the public believe that individuals should be free to choose what goes into their bodies, including vaccines.

Even when participants were able to think about the benefits of vaccines in somewhat collective ways, they hardly ever concluded from it that people should get vaccinated for the good of the collective. When talking about childhood vaccination, for instance, participants often argued that other parents had the responsibility to get *their* children vaccinated, so that their *own* child would be protected and safe. In other words, they reasoned that others had a responsibility to get vaccinated for their own benefit, but often in the next breath, fiercely defended their own freedom to choose whether to get themselves or their children vaccinated.

This is grounded in the deeply held belief that individuals have complete dominion over their own bodies, and therefore should have the freedom to decide what can or cannot go into it, including vaccines. Participants often associated this belief with the concept of having free will, but a few also explicitly drew a parallel with the pro-choice argument of “a woman’s right to choose.” This illustrates a well-known conservative strategy of appropriating progressive language for their own political ends; it also highlights how deeply attached people are to individual freedom in its many forms.¹⁵ Unsurprisingly, individual freedom was particularly salient in conversations about COVID-19 vaccines, which were already heavily politicized by the

time of the interviews. Despite differences in political leanings and ideologies, all participants concluded that in the case of the COVID-19 vaccines, individuals should be able to choose what to do with their own bodies.

Focus on childhood vaccination: My child, my choice

When people use their beliefs about individual freedom to reason about childhood vaccination more specifically, freedom is not assigned to children, but to their parents, who people believe should have ultimate control over what happens to their children. Once the ideal of individual freedom is cued, it becomes almost impossible for people to see that children should get the support they need to thrive and be protected from harm.

The public does not know whether to trust the government on the issue of vaccination.

Members of the public are ambivalent about the role that government should play on the issue of vaccination. On the one hand, they are increasingly able to see that government as an institution can and should act in the best interests of the population¹⁶; on the other, they struggle to identify when—or whether—individual freedom should be sacrificed in favor of the collective. When the belief in a responsive government is cued for people, they are able to see the need for stronger laws to increase vaccine uptake in the country. When the idea of individual freedom is more salient, on the other hand, they see laws about vaccination as encroaching on individuals' sacred right to make their own decisions.

The public's ambivalence about government also comes through in discussions of trust. People's level of trust in government to act in people's best interests varies significantly depending on who they assume has more influence over it. When participants focused on the medical professionals and scientists working in government—such as Dr. Fauci, for instance, they assumed that government could be trusted to make the right decisions for the country. On the other hand, when they thought about how powerful the pharmaceutical and business lobbies were in the current moment, they were more likely to conclude that government officials were also primarily motivated by profit, not the good of the people.

What this means for the field

It is encouraging that people recognize the **individual benefits of vaccination** and are at times able to think about **collective benefits as well**. This existing knowledge should be leveraged as much as possible in future communications to build support for systemic solutions and a sense of collective responsibility to increase rates of vaccine uptake in the country.

To be truly able to see the issue of vaccination through a public health lens, however, people will need to gain a more solid understanding of what **herd immunity** is and how it works—in addition to what the term itself means.

People’s deep attachment to the ideal of **individual freedom**, on the other hand, is a significant obstacle for the field. Once cued, it makes it particularly hard to build a sense of collective responsibility for vaccination, which in turn is likely to sap support for the structural solutions advocated for by the field.

The public’s **ambivalence about government** having a role in vaccination in the United States makes it hard for people to trust and support policy solutions to increase vaccination uptake. On the other hand, people’s ability to see that government can and should take action to meet the needs of the population is a promising opening that should be leveraged in future communications.

Preliminary recommendations

- **Emphasize** the collective benefits of vaccination at least as often as its individual benefits. While existing literature¹⁷ shows that an emphasis on individual benefits can lead to behavior change and vaccine acceptance at the individual level, people need more opportunities to flex their citizen muscle to recognize the need for systemic, policy solutions to increase vaccine uptake in the United States.
- **Explain** what herd immunity is and how it works, whenever possible when using the term in your communications, to clarify what the concept entails and familiarize the public with the term.
- **Give examples** of existing policies that have effectively increased vaccine uptake in the country and explain how they work. This can help cue the idea of a responsive government and make it less likely for people to assume that government policies and regulations are necessarily at odds with the ideal of individual freedom.

Finding #6: The public is aware that access to vaccines is an issue in the United States, but they are unclear as to why that is and how that works.

Core ideas from the field

- Practical barriers to vaccine access are due to socioeconomic factors, discrimination in health care settings, and lack of convenience.

- These barriers need to be addressed at a systemic level, by:
 - Making high-quality health care services accessible to everyone
 - Making vaccination and health care more convenient
 - Implementing nationwide immunization information system to facilitate tracking and administering of vaccinations
 - Creating partnerships with community-based organizations to rebuild trust among communities harmed by the medical establishment.

What the public brings to the conversation

The public realizes that access to vaccination is a problem that often affects underserved communities in the United States, but they assume that is “just the way American society works.”

As per the consumerist mindset discussed above, members of the public see a strong connection between a person’s wealth and their ability to access goods and services, including health care. Because they see vaccines as part of health care, they logically conclude that the less income people have, the harder it will be for them to access vaccination services. Participants also often recognized that lower-income neighborhoods lack hospitals and health care workers, which in turn makes it harder for residents to access vaccination services. Participants also sometimes cited lack of access to transportation as a barrier for low-income communities, particularly rural communities. While participants generally agreed that this was not a desirable situation, they tended to assume that these inequities are par for the course in American society. They did not venture into why these inequities in wealth existed in the first place, or how to address them. They mainly deplored, but still took for granted, that this was just “the way things are.”

People assign disparities in vaccine *uptake* to “cultural” differences, which are often grounded in racist and/or classist assumptions.

When people want to explain the existence of disparities in vaccine *uptake*, rather than disparities in vaccine *access*, they tend to focus on cultural differences between families and communities. When thinking in this way, people reason that because of their customs, beliefs, and values, some families and communities are naturally less likely to value, trust, and agree to vaccination. Relatedly, participants sometimes argued that some people simply are not able to understand the importance of vaccination, which explains why they do not make the right choices for themselves and their families. Some of our white participants mainly used this rationale to talk about racial disparities in vaccine uptake, sometimes explicitly mentioning Black and Native American communities. Others focused on differences based on nationality, religion, first language, or geographical location.

What this means for the field

The fact that people recognize that **access to vaccination is an issue** in the United States is an encouraging starting point. However, as long as people take for granted the idea that money is what buys health, and that inequities in wealth are just par for the course in the United States, it will be hard for the field to build support for some of the most impactful systemic policies they are advocating for, like Medicare for All.

People's assumptions about the role of cultural differences in shaping disparities in vaccine uptake are problematic at best, and racist and classist at worst. They perpetuate toxic stereotypes, notably about communities of color, and make it almost impossible for people to see the role that racism and other types of discrimination in health care and broader society play in shaping disparities in vaccine uptake across the country.

Preliminary recommendations

- **Lead** with disparities in vaccine *access* rather than disparities in vaccine *uptake*; explain how problems of vaccine access shape inequities in vaccine uptake after. This will likely avoid cueing classist and racist rationales among members of the public.
- **Give** examples of structural solutions to improve vaccine access in the United States. Explain how they would work, especially among underserved communities and communities of color. This will likely build a sense that inequities in vaccine access and vaccine uptake are solvable problems, rather than just the way things are.
- **Explain** how implicit bias and other forms of racism and discrimination shape people's experiences of health care, which, in turn, shapes their likelihood to agree to vaccination.

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Communicating About Vaccination in the United States: A FrameWorks Strategic Brief

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