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# COVID-19 Vaccine Acceptance: We Need to Start Now

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In this perspective, we discuss the importance of developing a vaccine to help curb transmission of severe acute respiratory syndrome coronavirus 2. The question remains: Once a safe and effective vaccine is developed, will the public be willing to get it? We present information from one of the first tracking polls to assess public attitudes and perceptions toward a possible coronavirus disease 2019 vaccine that suggests public hesitancy over a potential vaccine, concern regarding accelerating clinical trials, and unease over the vaccine approval process. Public health experts, government officials, advocates, and others in the scientific community should respect the signals of hesitancy and communicate sensitivity, applying lessons not only to how we message, but also in how we build this urgently needed vaccine if we are to have successful uptake once available.

**Keywords.** COVID-19; public health; SARS-CoV-2; vaccine.

Vaccines as a way to prevent infectious diseases such as polio, measles, tetanus, and pertussis have been one of the greatest scientific breakthroughs of the 20th century, leading to decreased morbidity, mortality, and outbreaks [1]. In a twist of irony, vaccines have become a victim of their own success in the United States because most individuals born in the 1970s and later have not experienced the devastation caused by vaccine-preventable diseases. Additionally, the antivaccine movement has gained momentum over the past 50 years despite debunked narratives such as the documentary *DTP: Vaccination Roulette* and Andrew Wakefield's publication in 1998 suggesting the measles, mumps, and rubella vaccine causes autism [1].

Additionally, antivaccine celebrity commentary and social media have contributed to the spreading of misinformation and vaccine hesitancy [1]. Re-emergence of vaccine-preventable diseases, in particular measles, has become a critical issue and led the World Health Organization (WHO) to list vaccine hesitancy as 1 of the top 10 global health threats in 2019 [2].

In the background of a global community struggling with how to improve vaccine acceptance, we are now faced with the eruption and widespread devastation of a pandemic where the global scientific community is racing to develop an effective and safe medical countermeasure. The question remains: Once an effective vaccine is developed, will the public be willing to get it?

While the pandemic may sway some previously undecided about vaccines, the development of the coronavirus vaccine along with its approval and distribution over the coming months and years will affect vaccine acceptance and uptake when eventually released. Additionally, this may have downstream consequences for future health emergencies. In short, we have a single shot to get this right.

While speed is clearly of the essence, we must work to ensure that risk communication and social mobilization around use of a novel vaccine match scientific

evidence and that a skeptical public is appropriately briefed regarding this important countermeasure. Few in the public at large—or frankly among health professionals—understand systematic medical product development, let alone what terms such as “fast-tracked” mean in practical terms related to the safety and efficacy of the vaccine product. The human papillomavirus vaccine was fast-tracked, and that fact remains a talking point for antivaccine groups who have exploited this same language for arguments against a coronavirus disease 2019 (COVID-19) vaccine [3].

Antivaccine narratives are not the only danger to a future COVID-19 vaccine. Social media has increasingly become a tool for spreading misinformation, with groups exploiting antivaccine and antiscience sentiments and promoting conspiracy theories [4]. Additionally, concerns over government interference in the vaccine approval process have raised public concerns and serve to undermine the rollout of a future COVID-19 vaccine [4]. We all should be anchored in science and prepared to address these factors along with vaccine hesitancy directly. When we are spending so much energy and so many resources to develop a vaccine, it is equally essential that we remain cognizant of the public concerns regarding safety that need to be addressed.

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NBC LX/Morning Consult performed a tracking poll on March 24 and 25 that assessed attitudes and perceptions regarding a COVID-19 vaccine among a random sample of 2200 adults over 18 years of age (Table 1) [5]. The respondents were 48% male and 52% female. Only 30% stated that they would be among the first to get vaccinated for COVID-19 once a vaccine is available, and 9% said they would not. Just under half of respondents did not think that the federal government should accelerate development of a coronavirus vaccine or skip aspects of clinical trials. Interestingly, over half of respondents aged >65 years believed that the government should consider skipping clinical trials to accelerate development of a coronavirus vaccine. Explanations for this could be that individuals in this age group have first-hand experiences with diseases like measles and polio and remember the effect of successful vaccine

rollout programs. Alternatively, it could be because this is the group at greatest risk of developing adverse events from COVID-19.

Groups traditionally disenfranchised, such as those who identified as not being white or who have lower socioeconomic status were more likely to be against speeding up clinical trials for vaccine development. Finally, when asked if potential benefits of a coronavirus vaccine would outweigh possible side effects, 54% of respondents thought that this would be the case, while 25% remained unsure. Overall, agreement with vaccine use was strongest among college-educated adults (66%), while those without college education agreed only 50% of the time. It should be noted that this poll was one of the first performed in the United States during the pandemic, and none of the authors participated in its design or conduct.

Despite this poll being conducted during the early months of the outbreak, public concerns regarding a COVID-19 vaccine have persisted and gotten worse as the pandemic has progressed. A September survey performed by the Pew Trust of over 10 000 Americans showed that intent to get a COVID-19 vaccine has declined 72% from May 2020 across all major political and demographic groups [6]. This decline in confidence is attributed to concerns that one will be approved before its safety and efficacy are fully understood (77%) and that the approval process will move too quickly without establishing appropriate safety and efficacy (78%) [6]. A December survey, released as vaccination began in health care workers, showed slight improvement, with 80% of individuals expecting to get the vaccine “eventually.” This moderate increase may be due to the fall surge in cases, as the percentage of individuals concerned about infection was at the highest level since May

**Table 1. Demographics and Characteristics**

	Total (n = 2200), No. (%)	The Government Should Accelerate Coronavirus Vaccine Development, No. (%)			Benefits of Coronavirus Vaccine Outweigh Risk, No. (%)		
		Agree	Disagree	Unknown	Agree	Disagree	Unknown
<b>Gender</b>							
Male	1062 (48)	531 (50)	418 (39)	113 (11)	644 (60)	186 (18)	232 (22)
Female	1138 (52)	390 (35)	610 (53)	139 (12)	556 (49)	260 (23)	322 (28)
<b>Age</b>							
18–29 y	457 (21)	160 (35)	247 (54)	50 (11)	257 (57)	109 (23)	92 (20)
30–44 y	555 (25)	221 (39)	266 (48)	70 (13)	291 (52)	115 (21)	149 (27)
45–54 y	330 (15)	127 (39)	167 (50)	36 (11)	161 (49)	74 (22)	96 (29)
55–64 y	421 (19)	173 (41)	188 (45)	59 (14)	212 (50)	82 (20)	127 (30)
65+ y	436 (20)	239 (55)	160 (37)	37 (8)	279 (64)	67 (15)	90 (21)
<b>Ethnicity</b>							
White	1722 (78)	761 (45)	779 (44)	182 (11)	974 (57)	327 (19)	420 (24)
Hispanic	349 (16)	115 (33)	192 (55)	42 (12)	190 (54)	81 (24)	78 (22)
African American	274 (12)	91 (33)	144 (53)	39 (14)	120 (44)	73 (26)	81 (30)
Other	204 (9)	68 (34)	106 (51)	31 (15)	106 (52)	45 (22)	52 (26)
<b>Political affiliation</b>							
Democrat	861 (39)	368 (43)	427 (49)	66 (8)	491 (58)	184 (20)	186 (22)
Republican	681 (31)	321 (47)	287 (42)	74 (11)	385 (57)	131 (19)	165 (24)
Independent	658 (30)	231 (35)	315 (48)	112 (17)	323 (49)	131 (20)	203 (31)
<b>Education</b>							
Less than college	1512 (69)	610 (40)	699 (47)	203 (13)	758 (50)	343 (23)	410 (27)
Bachelor's degree	444 (20)	196 (44)	220 (49)	29 (7)	282 (64)	71 (16)	90 (20)
Postgraduate education	244 (11)	115 (48)	109 (44)	20 (8)	161 (66)	31 (12)	53 (22)
<b>Income/year</b>							
<\$50 000	1197 (54)	470 (39)	560 (47)	167 (14)	585 (49)	277 (23)	334 (28)
\$50 000–\$100 000	653 (30)	283 (43)	315 (49)	55 (8)	388 (60)	123 (18)	143 (22)
>\$100 000	350 (16)	168 (48)	153 (44)	29 (8)	227 (65)	47 (13)	77 (22)

Results courtesy the NBC/LX Tracking Poll.

[7]. That there has been such a significant falloff in public confidence in a COVID-19 vaccine amidst an ongoing pandemic is a signal that greater attention must be paid toward communication and messaging with the public at large.

Factors that are critical when determining vaccine uptake include perceived safety, efficacy, and disease susceptibility [1]. Even if the specter of COVID-19 lingers, will that be enough for vaccine-hesitant individuals to accept the new vaccine for their children or themselves? Antivaccine physician Bob Sears has already suggested that COVID-19 is “harmless” to anyone but the elderly and vulnerable groups [8], and the antivaccine group National Vaccine Information Center (NVIC) suggests that COVID-19 vaccines may be the first “federal mandatory mass vaccinations” [9]. These groups are sowing fear and suspicion before the vaccines are assessed; as such, the research behind them needs to be meticulous and communicated transparently to the public while trials are ongoing. Additionally, data thus far indicate that most children with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are asymptomatic or have mild disease, although some may develop multisystem inflammatory syndrome (MIS-C) after infection, which can lead to significant cardiac complications.

There are also growing data that indicate that children may be a source of contagion, and long-term morbidity from SARS-CoV-2 is still being understood. Given the evolving understanding of coronavirus disease in children, an honest conversation that includes discussion regarding a broad vaccination campaign for children will be important.

It is vital that governmental officials and public health experts understand that equally important to developing a safe and efficacious coronavirus vaccine will be the education, communication, and community engagement to help foster uptake of this important medical intervention if we are to stop the COVID-19 pandemic. It is vital that the scientific community communicate its understanding that the risk of a poor outcome from anything other than rigorous product development likely will reverberate throughout the community and potentially spill over into fear of other vaccines, with downstream repercussions for the management of pervasive threats and the next emerging disease. Speed is critical for this urgently needed vaccine, but ensuring it is safe is our ethical and humanistic responsibility, even if no one in the public is watching.

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**Patient consent.** This perspective does not include factors necessitating patient consent.

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