

# Executive Summary

## Ecuador T3 COVID-19 Mobile Phone Survey 2021

### 1. Overview

---

The Ministry of Health implemented a third COVID-19 national survey to collect data regarding COVID-19 testing, mitigation practices, symptomology, vaccine attitudes and uptake, and noncommunicable disease risk factors. COVID-19 has altered the way that survey data are collected to protect the health and safety of those conducting surveys as well as stop potential disease transmission. The third COVID-19 mobile phone survey leveraged existing framework to collect real time data more feasibly compared to traditional surveillance efforts. In a continuing effort to understand how Ecuadorians are continuing to cope with the spread of COVID-19, a nationwide survey was conducted to understand people's attitudes toward and experiences during the pandemic. This report summarizes results from the third Ecuador COVID-19 Mobile Phone Survey implemented in September 2021. The first COVID-19 mobile phone survey was conducted in June 2020, and a second COVID-19 mobile phone survey was implemented in November 2020.

In the third COVID-19 Mobile Phone survey, 1,172 individuals subscribed to CNT, Claro, and Movistar mobile phone networks anonymously participated using mobile telephony interactive voice response (IVR).

This survey used the infrastructure that was built to conduct the Bloomberg Philanthropies Data for Health Initiative Non-Communicable Diseases Mobile Phone Survey. The COVID-19 Survey was the culmination of significant work by Ecuador's Ministry of Health, including but not limited to telecommunications approval from the Telecommunications Regulatory and Control Agency of Ecuador, and agreements with mobile network operators. The Ministry of Health led questionnaire development, sampling and data collection. Technical assistance was provided by the US Centers for Disease Control and Prevention, RTI International, and InSTEDD. Bloomberg Philanthropies Data for Health Initiative provided financial support through the CDC Foundation.

This report is structured as follows:

- Goals (Section 2)
- Design and Implementation (Section 3)
- Results (Section 4)
- Conclusions (Section 5)

### 2. Goals

---

The goal of the Ecuador COVID-19 Mobile Phone Survey was to continue surveillance efforts to provide nationally representative estimates of knowledge, attitudes and practices, symptomology, testing, access and barriers to testing, vaccine attitudes and receptivity, and noncommunicable disease risk behaviors to improve and enhance the COVID-19 pandemic response in Ecuador. The survey results may be used to help the governments' response to the pandemic and augment the evaluation of current strategies employed in Ecuador.

The COVID-19 Mobile Phone Survey included 41 questions on the following topics:

- Demographics
- COVID-19 exposure
- Illness and symptomology
- Testing and diagnosis and barriers to testing
- Mitigation Practices
- Vaccine Attitudes and Receptivity
- Noncommunicable disease risk factors

### 3. Design and Implementation

---

#### 3.1 Design

The design parameters used for the third COVID-19 Mobile Phone Survey are shown below in Table 1.

**Table 1. Mobile Phone Survey Design**

<b>Component</b>	<b>Design</b>
Mode	IVR
Sample	The sample employed a two-phase sample design. In the first phase a sample of mobile phone numbers from an explicit frame of mobile phone numbers for CNT, Claro, and Movistar subscribers was generated via random digit dialing. In the second phase, respondents were stratified to the sex distribution of the general population.
Number of Interviews	1,172 interviews, allocated proportionally across strata to the general population distribution.
Strata	2 strata: male, female
Questionnaire	The COVID-19 Mobile Phone Survey questionnaire consisted of 41 questions and was administered in Spanish.
Contact times	All 7 days of the week, between 8am and 8pm each day
Contact attempts	<ul style="list-style-type: none"><li>• Contact #1: IVR</li><li>• Contact #2: IVR, 26 hours after Contact #1</li><li>• Contact #3: IVR, 26 hours after Contact #2</li></ul>
Cost to Respondents	None.
Incentives	\$1 USD.
Tool and Hosting	Surveda, with data hosted at the Ecuador Ministry of Health

### 3.2 Implementation

The third Ecuador COVID-19 Mobile Phone Survey implementation followed the same four staged process used in the first and second COVID-19 surveys: Planning and Pre-Test, Full-scale Data Collection, Data Management and Analysis, and Data Release and Use.

Full-scale data collection commenced on September 24<sup>th</sup>, 2021 and ended on October 1<sup>st</sup>, 2021. A total of 1,172 adults aged 18 years and older completed or partially completed the survey through one of the three mobile network operators during the eight days of data collection.

## 4. Results

---

This section presents the following results:

- Demographics and Response Rates (section 4.1)
- COVID-19 Exposure (section 4.2)
- Illness and Symptomology (section 4.3)
- Testing, Diagnosis and Treatment (section 4.4)
- Practices (section 4.5)
- COVID-19 Vaccination (section 4.6)
- Noncommunicable Disease Risk Factor Assessment (section 4.7)

### 4.1 Demographics and Response Rates

The third Ecuador COVID-19 Mobile Phone Survey included 1,172 interviews across two strata. Table 2 shows the Mobile Phone demographic distribution compared to the UN population national statistics for sex.

	<i>Mobile Phone Sample</i>	<i>National</i>
<b>Sex</b>	1,172	11,274,187
Male	48.4%	48.6%
Female	51.6%	51.4%

To achieve the 1,172 interviews, 11,268 mobile phone numbers were contacted over the course of the full-scale survey. Out of these, 2,568 provided a response and 1,733 consented and provided the age and sex information necessary to be eligible to participate. Of these, 197 were ineligible due to age, and 219 respondents of eligible age were rejected due to stratum sample size being full. The result was 1,317 eligible respondents, of which 1,172 provided interviews (completed or partial). Completed interviews were defined as answering all survey questions. Partial interviews were defined as completing the demographics questions and at least four COVID-19 questions and not finishing the survey. The interview rate was 89% and the overall response rate was 13.7%, which is described in detail below.

The final disposition codes for this sample are shown in Table 3.

<b>Table 3. Final disposition codes for all dialed mobile phone numbers</b>			
<i>Disposition</i>	<i>Definition</i>	<i>N</i>	<i>Percent</i>
1. Complete	Answered all survey questions	964	8.6%
2. Partial	Answered at least one topic area but did not complete the survey	208	1.8%
3. Breakoff: Eligible	Answered age and sex questions but did not answer any additional questions	145	1.3%
4. Ineligible: Age	Under age 18	197	1.7%
5. Ineligible: Quotas	Answered age and sex questions but quotas were full	219	1.9%
6. Refused	Refused consent	561	5.0%
7. Breakoff: unknown eligibility	Answered some questions but stopped before completing eligibility	274	2.4%
8. No answer	No answer, possibly nonworking number	8,700	77.2%
<i>Total</i>		<i>11,268</i>	

The Ecuador COVID-19 survey employed a two-phased sampling design, the first phase was a random sample of mobile phone numbers from an explicit frame. The second phase reflected respondents from the first phase stratified proportionally to the general population by sex. Each phase had an accompanying response rate. The final response rate was the product of Phase I and Phase II response rates. For pre-test and full-scale surveys, we used a filtered sample of MPNs provided by the Dutch company Sample Solutions.

For Phase I, the response rate was the proportion of MPNs screened out of those dialed.

$$Phase\ I\ Response\ Rate = \frac{Number\ MPNs\ screened}{Number\ MPNs\ dialed}$$

Or,

$$Phase\ I\ Response\ Rate = \frac{1,733}{11,268} = 0.154$$

For Phase II, we used RR6 from AAPOR.

$$\text{Phase II Response Rate } RR6_s = \frac{IP_s}{IP_s + O_s}, \text{ for stratum } s.$$

RR<sub>6</sub> was derived from the 2018 Standard Definitions of the [American Association for Public Opinion Research \(AAPOR\)](#). Phase II stratum-specific response rates (RR #6) are presented Table 4:

<i>Males</i>	<i>Females</i>
0.81	0.866

The overall response rate is the product of Phase I and Phase II response rates, resulting in an overall response rate for the entire third COVID-19 Mobile Phone Survey in Ecuador:

$$RR_{\text{overall}} = \frac{IP_{\text{overall}}}{IP_{\text{overall}} + O_{\text{overall}}} * RR_{\text{Phase I}} = \frac{1172}{1172 + 145} * 0.154 = 0.1369$$

#### 4.2 COVID-19 Exposure

Overall, approximately 4.3% of respondents reported international travel within the last two weeks. A statistically significant increase compared to the 2020 November COVID survey results where 2.1% reported international travel within the last two weeks. Of the respondents in the 2021 survey, 8.8% reported caring for or having close contact with someone who was suspected or confirmed of having COVID-19 in the past two weeks, including one in ten women.

Table 5 shows key outcomes overall and by sex from the third COVID-19 Mobile Phone Survey on exposure.

	<i>Overall</i>	<i>Males</i>	<i>Females</i>
	% (95% CI)	% (95% CI)	% (95% CI)
Traveled internationally in the last two weeks	4.3 (2.9 , 5.7)	4.9 (3.0 , 6.8)	3.7 (1.7 , 5.7)
Caring for a suspected or confirmed case	8.8 (6.7 , 11.0)	7.4 (5.0 , 9.8)	10.2 (6.7 , 13.6)

#### 4.3 Illness and Symptomology

Tracking the symptoms of sick people has been important during this pandemic to understand the presentation of COVID-19. Respondents reported a wide range of symptoms. When asked if they were currently ill, approximately one in ten adult Ecuadorians reported feeling ill (11.9 %). For men, the most common symptoms reported were muscle or body aches (23.5%), dry cough (23.2%), and sore throat (16.9%). Comparatively the most common reported symptoms for women who were feeling ill were muscle or body aches (18.9%), sore throat (17.4%), and fever (13.2%). Men and women reported similar mean numbers of symptoms (1.1 symptoms vs. 0.7, respectively).

Table 6 shows reported illness and symptomology overall and by sex from the third COVID-19 Mobile Phone Survey.

	<i>Overall</i>	<i>Males</i>	<i>Females</i>
	% or mean (95% CI)	% or mean (95% CI)	% or mean (95% CI)
Feeling ill	11.9 (9.5 , 14.4)	10.5 (7.4 , 13.5)	13.3 (9.5 , 17.1)
Fever	14.1 (6.4 , 21.8)	15.4 (4.4 , 26.3)	13.2 (2.5 , 23.9)
Dry cough	16.3 (8.2 , 24.4)	23.2 (10.9 , 35.5)	11.0 (0.3 , 21.7)
Shortness of breath	9.8 (3.7 , 15.9)	12.3 (2.9 , 21.8)	7.9 (0.0 , 16.0)
Muscle aches or body aches	20.9 (12.0 , 29.8)	23.5 (9.9 , 37.2)	18.9 (7.3 , 30.5)
Sore throat	17.2 (8.6 , 25.7)	16.9 (6.4 , 27.4)	17.4 (4.6 , 30.2)
Vomiting or diarrhea	4.2 (0.3 , 8.2)	8.1 (0.0 , 16.4)	1.2 (0.0 , 3.7)
Loss of taste or smell	6.6 (1.1 , 12.1)	13.8 (2.1 , 25.6)	0.9 (0.0 , 2.5)
Mean number of symptoms	0.9 (0.6 , 1.2)	1.1 (0.5 , 1.7)	0.7 (0.3 , 1.0)

4.4 *Testing, Diagnosis and Treatment*

Testing remains an important component of the COVID-19 pandemic response. Overall, 51.7% of adult Ecuadorians tried to get a test for COVID-19; more males tried to get tested compared to females (58.1% vs. 45.5% respectively).

Overall, four out of ten Ecuadorians (44.5%) received a COVID-19 test; with men reporting higher testing rates compared to women (51.3% for men vs 38% for women). Of those who received a test, 26.9% had a positive diagnosis and of those positive cases, and 36.4% received treatment. Women reported higher rates of receiving treatment compared to men (49% vs 28%).

Treatment for COVID-19 among the entire adult Ecuadorian population was 6.5%; a significant increase compared to the November 2020 results (6.5% vs 2.7%). Among individuals who tried to get a test for COVID-19 but were not able to 35.9% reported that it was too expensive, 33.8% reported they were not eligible and 30.4% reported that the test was not available. Of those individuals who were not tested and did not try to get a test, approximately a third (36.5%) thought that they would be able to get a test if they needed one.

Overall, 47.1% of adult Ecuadorians reported that a friend had been diagnosed with COVID-19. Approximately four in 10 reported that a close family member (38.2%) or a neighbor (39.7%) had been diagnosed with COVID-19. Ecuadorians were more likely to report that a close family member, friend or neighbor was diagnosed with COVID-19 compared to Ecuadorians from the November 2020 survey.

Table 7 shows reported testing, diagnosis and treatment overall and by sex from the third COVID-19 Mobile Phone Survey.

	<i>Overall</i>	<i>Males</i>	<i>Females</i>
	% (95% CI)	% (95% CI)	% (95% CI)

Tried to get a test for COVID-19 among the population	51.7 (48.2 , 55.2)	58.1 (53.4 , 62.7%)	45.5 (40.4 , 50.7)
Tested for COVID-19	44.5 (41.1 , 48.0)	51.3 (46.6 , 56.0)	38.0 (33.0 , 43.0)
COVID-19 diagnosis	26.9 (22.3 , 31.5)	28.4 (22.4 , 34.4)	24.9 (17.7 , 32.1)
Treatment	36.4 (26.5 , 46.3)	28.0 (17.0 , 38.9)	49.0 (32.2 , 65.8)
Treatment among the population	6.5 (4.3 , 8.7)	6.4 (3.6 , 9.3)	6.5 (3.2 , 9.8)
Reason for not getting tested: Not available	30.4 (18.4 , 42.4)	37.9 (20.0 , 55.8)	24.4 (8.7 , 40.1)
Reason for not getting tested: Not eligible	33.8 (20.4 , 47.1)	28.9 (11.6 , 46.2)	37.7 (18.3 , 57.0)
Reason for not getting tested: Too expensive	35.9 (23.1 , 48.7)	33.3 (16.4 , 50.1)	37.9 (19.3 , 56.5)
Think they would be able to get a test among those who have not tried to get a test	36.5 (31.4 , 41.5)	34.9 (27.9 , 41.9)	37.6 (30.6 , 44.6)
Close family member diagnosed	38.2 (34.8 , 41.6)	38.4 (33.8 , 42.9)	38.0 (33.0 , 43.1)
Friend diagnosed	47.1 (43.6 , 50.5)	49.1 (44.5 , 53.8)	45.0 (39.9 , 50.1)
Neighbor diagnosed	39.7 (36.3 , 43.1)	40.9 (36.3 , 45.5)	38.5 (33.5 , 43.5)

4.5 Practices

The pandemic has led to a massive global public health campaign to slow the spread of the virus by encouraging significant shifts in behavior, including avoiding crowded places, practicing physical distancing and wearing masks in public. Ecuadorians were surveyed on COVID-19 mitigation practices in the two weeks preceding the survey. Overall, a little more than half (52.7%) of adult Ecuadorians reported that they are avoiding public places. Approximately six out of ten (57.6%) men and women in Ecuador reported avoiding public transportation. In addition, seven out of ten (71.0%) reported avoiding social contact. Most (96.0%) adult Ecuadorians reported that they had left their home in the previous seven days to shop or perform permitted activities. Approximately half (48.7%) reported that they always stayed at least six feet away from other people when in public. This was significantly less compared to the 2020 November COVID survey where 56.1% reported always staying six feet away.

Eight out of ten (82.7%) always wore a face mask or face covering when in public; likewise, a significant decline compared to the November 2020 survey with 87.8% reporting always wearing a face mask in public. Furthermore, 96.4% of adult Ecuadorians reported that they properly wore their face mask over their nose and mouth when wearing a face mask in public.

Table 8 presents key findings on practices overall and by sex.

<b>Table 8. Practices Overall and by Sex</b>						
	<i>Overall</i>		<i>Males</i>		<i>Females</i>	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Avoided public places	52.7	(49.3 , 56.2)	53.9	(49.3 , 58.6)	51.6	(46.5 , 56.7)
Avoided public transportation	57.6	(54.2 , 61.0)	60.4	(55.9 , 64.9)	54.9	(49.9 , 59.9)
Avoided social contact	71.0	(67.9 , 74.1)	70.4	(66.2 , 74.6)	71.6	(67.0 , 76.2)
Left home in the last 7 days	96.0	(94.6 , 97.5)	98.0	(96.9 , 99.2)	94.1	(91.4 , 96.8)
Always stayed at least 6 ft away from other people in public	48.7	(45.1 , 52.3)	47.7	(42.9 , 52.5)	49.7	(44.4 , 55.0)
Always wore a face mask or covering when in public	82.7	(80.1 , 85.4)	80.6	(76.8 , 84.5)	84.8	(81.1 , 88.5)
Always covered nose and mouth when wearing a face mask in public	96.4	(95.0 , 97.9)	96.6	(94.8 , 98.5)	96.2	(94.0 , 98.4)

4.6 COVID-19 Vaccine Attitudes

Regarding public attitudes towards getting vaccinated against COVID-19, overall, nine out of ten adult Ecuadorians reported thinking that the vaccine is important to prevent COVID-19. Similarly, nine out of ten respondents reported being vaccinated for COVID-19 at the time of the survey with similar rates observed for men and women. Sinovac was the most common brand of vaccine received by respondents (52.5%), followed by Pfizer (32.4%) and Astra Zeneca (12.2%). Approximately nine out of ten respondents who reported receiving a COVID-19 vaccination had received two doses at the time of the survey.

Among those who were not vaccinated, seven out of 10 reported that they would definitely or probably get a COVID-19 vaccine if it were available to them at the time of the survey; higher rates were seen in females compared to men (75.2% and 59.7%, respectively). Among those who would not receive a vaccine if it were available today, approximately three out of ten (35.3% reported that they did not think the vaccine was safe as the main reason for vaccine hesitancy. Three out of ten (25.9%) were waiting to decide; two out of ten (17.5%) did not believe in vaccinations; one out of ten (11.1%) did not believe the vaccines were effective; and less than one in ten thought they would get COVID-19 from the vaccine (7.0%) or were waiting for a specific brand (3.2%). For men, the main reasons for vaccine hesitancy were that they did not believe in vaccination (24.1%) and that they do not think the vaccine is safe (22.8%). For women, the main reasons for vaccine hesitancy were that they do not think the vaccine is safe (48.3%) and that they are waiting to decide (30.2%).

Table 9 presents key findings on the vaccine attitudes assessment overall and by sex.

<b>Table 9. Vaccine Attitudes Overall and by Sex</b>									
	<i>Overall</i>			<i>Males</i>			<i>Females</i>		
	%	(95% CI)		%	(95% CI)		%	(95% CI)	
Think it is important to get the COVID-19 vaccine to prevent COVID-19	91.4	(89.4	, 93.4)	91.9	(89.3	, 94.5)	90.9	(87.9	, 93.9)
Received a vaccination for COVID-19	91.1	(89.4	, 92.7)	93.0	(90.8	, 95.2)	89.2	(86.7	, 91.7)
Pfizer	32.4	(28.8	, 35.9)	31.4	(26.7	, 36.0)	33.4	(28.0	, 38.8)
Astra Zeneca	12.2	(9.6	, 14.7)	15.0	(11.3	, 18.7)	9.4	(5.9	, 12.9)
Sinovac	52.5	(48.7	, 56.2)	50.1	(45.1	, 55.0)	54.8	(49.3	, 60.4)
Cansino	2.4	(1.5	, 3.4)	2.8	(1.3	, 4.4)	2.0	(1.1	, 3.0)
Other	0.5	(0.0	, 1.0)	0.7	(0.0	, 1.6)	0.4	(0.0	, 0.8)
1 dose received	10.9	(8.5	, 13.3)	11.4	(8.3	, 14.5)	10.4	(6.8	, 14.1)
2 doses received	89.1	(86.7	, 91.5)	88.6	(85.5	, 91.7)	89.6	(85.9	, 93.2)
Think they would definitely or probably get a COVID-19 vaccine if available among those who have not been vaccinated	69.2	(59.7	, 78.8)	59.7	(43.4	, 76.0)	75.2	(63.7	, 86.7)
Reason for not getting vaccine: Do not think it is safe	35.3	(15.5	, 55.2)	22.8	(2.0	, 43.6)	48.3	(19.2	, 77.3)
Reason for not getting vaccine: Do not think it is effective	11.1	(0.4	, 21.7)	11.4	(0.0	, 26.7)	10.8	(0.0	, 25.6)
Reason for not getting vaccine: Waiting to decide	25.9	(10.6	, 41.2)	21.7	(1.7	, 41.7)	30.2	(7.0	, 53.5)
Reason for not getting vaccine: Think he/she will get COVID-19	7.0	(0.0	, 20.0)	13.8	(0.0	, 38.1)	-	(-	, -)
Reason for not getting vaccine: Does not believe in vaccination	17.5	(2.0	, 33.1)	24.1	(0.0	, 49.9)	10.8	(0.0	, 25.6)
Reason for not getting vaccine: Waiting for a specific COVID-19 vaccine brand	3.2	(0.0	, 9.3)	6.2	(0.0	, 18.2)	-	(-	, -)

#### 4.7 Noncommunicable Disease Risk Factor Behaviors: Tobacco, Alcohol, and Diet

Overall, 9.7% of adults reported current tobacco use via smoked tobacco products. One in ten (14.8%) of men reported current tobacco use compared to less than one in ten women (4.9%). Current tobacco users were asked how the COVID-19 pandemic has influenced their smoking behavior. Among tobacco smokers, approximately three in ten (27.5%) reported no change in their smoking behavior, five out of ten (50.8%) reported smoking less than usual, and two out of ten (21.7%) reported smoking more than usual. Women tobacco smokers had higher reported rates of smoking more than usual during the COVID-19 pandemic when compared to men (29.2% and 19.3%, respectively).

Six in ten adult Ecuadorians consumed alcohol within the past 30 days (59.6%), with males reporting higher rates of alcohol consumption than females (68.7% and 50.9%, respectively). Among current alcohol users, approximately five in ten reported drinking less than usual during the pandemic (47.1%) or having no change in their drinking behavior (46.7%). Less than one in ten reported drinking more than usual during the pandemic (6.2%). Men had higher reported rates of drinking less alcohol during the pandemic compared to women (55.2% and 36.7%, respectively).

The impact of the COVID-19 pandemic on diet was fairly muted, with four in ten respondents reporting no change in consumption of fruits and vegetables (44.3%) or higher rates of consumption (39.2%). Approximately two in ten Ecuadorians reported eating less fruits and vegetables than usual during the pandemic (16.6%). Similar influences on diet due to the pandemic were observed for men and women.

Table 10 presents key findings on the noncommunicable disease risk factor behavior assessment overall and by sex.

	<i>Overall</i>		<i>Males</i>		<i>Females</i>	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Currently smoke tobacco	9.7	(7.9 , 11.5)	14.8	(11.6 , 17.9)	4.9	(3.0 , 6.9)
COVID-19 impact: Smoked more than usual	21.7	(12.9 , 30.5)	19.3	(10.1 , 28.6)	29.2	(8.2 , 50.1)
COVID-19 impact: Smoked less than usual	50.8	(40.7 , 60.9)	50.8	(39.1 , 62.5)	50.9	(31.0 , 70.8)
COVID-19 impact: No change in smoking behavior	27.5	(18.6 , 36.4)	29.9	(19.2 , 40.6)	19.9	(5.8 , 34.0)
Currently drink alcohol	59.6	(56.1 , 63.0)	68.7	(64.3 , 73.2)	50.9	(45.7 , 56.1)
COVID-19 impact: Drink more than usual	6.2	(4.3 , 8.1)	5.8	(3.4 , 8.2)	6.7	(3.6 , 9.7)

COVID-19 impact: Drink less than usual	47.1	(42.8 , 51.4)	55.2	(49.6 , 60.8)	36.7	(30.4 , 43.1)
COVID-19 impact: No change in drinking behavior	46.7	(42.4 , 51.1)	39.0	(33.5 , 44.5)	56.6	(50.0 , 63.2)
COVID-19 impact: Consume more fruit and vegetables	39.2	(35.7 , 42.6)	42.7	(38.0 , 47.4)	35.8	(30.8 , 40.7)
COVID-19 impact: Consume less fruit and vegetables	16.6	(13.9 , 19.2)	18.4	(14.7 , 22.2)	14.8	(11.0 , 18.5)
COVID-19 impact: No change in fruit and vegetable consumption	44.3	(40.8 , 47.8)	38.9	(34.2 , 43.5)	49.5	(44.2 , 54.7)

4.7 Comparison

Results from the third Ecuador COVID-19 Mobile Phone Survey were compared to the results of the November 2020 COVID-19 survey. To determine differences between the 2021 and November 2020 COVID-19 survey, p-values based on the t-statistic were calculated using SUDAAN statistical software.

Overall, regarding exposure, more adult Ecuadorians travelled internationally in the two weeks preceding each of the surveys (4.3% vs 2.1%).

When comparing illness symptomology, women from the 2021 survey were less likely to report vomiting/diarrhea or loss of taste or smell (1.2% and 0.9% respectively) as a current symptom when compared to women from the November 2020 survey (12.6% and 10.3% respectively).

Regarding COVID-19 testing, more Ecuadorians were likely to report trying to get tested for COVID-19 compared to Ecuadorians from the November 2020 survey (39.4%). Similarly, Ecuadorians from the 2021 survey were more likely to report receiving a COVID-19 test compared to the 2020 November survey (44.5% vs. 30.4% respectively.) There was also significant increase among those who received a test and received a positive diagnosis (26.9% vs. 17.5%). Treatment for COVID-19 among the entire adult Ecuadorian population increased compared to the November 2020 results (6.5% vs 2.7%). Comparatively a third of adult Ecuadorians thought they would be able to get a COVID-19 test among those who did not try to get a COVID-19 test in the 2021 survey compared to the November 2020 (36.5% vs 35.8%).

Respondents from the 2021 survey were more likely to report that a close family member or neighbor was diagnosed with COVID-19 compared to Ecuadorians from the November 2020 survey.

Lastly, with regards to COVID-19 mitigation behavior strategies, less Ecuadorians reported always staying six feet away from others in the most recent survey compared to the November 2020 survey (48.7% vs 56.1% respectively). Ecuadorians were also less likely to always wear a face mask or face covering when leaving home in the most recent survey (82.7% vs. 87.8%).

Tables 11 and 12 present the estimates for the first and second survey along with corresponding p-values.

<b>Table 11. Comparison of the estimates for the September 2021 &amp; November 2020 COVID-19 surveys with corresponding p-values.</b>						
<b>Exposure</b>	<b>September 2021</b>		<b>November 2020</b>		<b>p-value</b>	<b>Direction</b>
	<b>n</b>	<b>Wgt'd %</b>	<b>n</b>	<b>Wgt'd %</b>		
Traveled internationally in the last two weeks	1086	4.3	1137	2.1	0.0098	+
Caring for a suspected or confirmed case	1079	8.8	1126	10.7	0.2306	-
<b>Symptoms</b>						
Feeling ill	1076	11.9	1134	9.3	0.1082	+
Fever	108	14.1	97	23.4	0.1344	-
Dry cough	106	16.3	97	18.9	0.6647	-
Shortness of breath	106	9.8	95	18.2	0.1357	-
Muscle aches or body aches	106	20.9	95	27.6	0.338	-
Sore throat	105	17.2	95	14.3	0.616	+
Vomiting or diarrhea	105	4.2	95	8.4	0.26	-
Loss of taste or smell	104	6.6	93	12.6	0.1895	-
<b>Testing</b>						
Tried to get a test for COVID-19 (among POP)	1069	51.7	1123	39.4	0	+
Tested for COVID-19	1068	44.5	1129	30.4	0	+
COVID-19 diagnosis	484	26.9	342	17.5	0.006	+
Treatment for COVID-19	124	36.4	59	38.2	0.8508	-
Treatment for COVID-19 (among POP)	708	6.5	846	2.7	0.0048	+
Think they would be able to get a test among those who have not tried to get a test	498	36.5	672	35.8	0.8511	+
<b>Known Dx Cases</b>						
Close family member diagnosed	1094	38.2	1129	28.1	0	+
Friend diagnosed	1092	47.1	1128	42.5	0.0687	+
Neighbor diagnosed	1087	39.7	1127	31.6	0.0007	+
<b>Practices</b>						
Left home in the last seven days	1079	96.0	1146	94.7	0.2504	+
Always stayed six feet away from others when they left home and went out in the last 7 days	1026	48.7	1081	56.1	0.0041	-
Wore face mask or face covering when leaving home	1061	82.7	1130	87.8	0.0039	-
Always covered mouth and nose when wearing a mask out in public	1043	96.4	1118	97.2	0.4311	-

**Table 12. Comparison of the estimates for the September 2021 & November 2020 COVID-19 surveys with corresponding p-values by Sex**

	September 2021		November 2020				September 2021		November 2020			
	Male						Female					
Exposure	n	Wgt'd %	n	Wgt'd %	p-value	Direction	n	Wgt'd %	n	Wgt'd %	p-value	Direction
Traveled internationally in the last two weeks	526	4.9	524	2.3	0.0169	+	560	3.7	613	2.0	0.1733	+
Caring for a suspected or confirmed case	523	7.4	516	9.7	0.2279	-	556	10.2	610	11.5	0.554	-
<b>Symptoms</b>												
Feeling ill	521	10.5	512	9.4	0.6188	+	555	13.3	622	9.2	0.0903	+
Fever	49	15.4	46	24.1	0.3251	-	59	13.2	51	22.8	0.268	-
Dry cough	49	23.2	46	19.5	0.6801	+	57	11.0	51	18.3	0.3563	-
Shortness of breath	48	12.3	45	21.2	0.3194	-	58	7.9	50	15.3	0.2841	-
Muscle aches or body aches	48	23.5	45	23.8	0.9774	-	58	18.9	50	31.1	0.1951	-
Sore throat	48	16.9	45	9.3	0.2545	+	57	17.4	50	19.1	0.8501	-
Vomiting or diarrhea	48	8.1	45	4.0	0.4199	+	57	1.2	50	12.6	0.0368	-
Loss of taste or smell	48	13.8	43	15.1	0.8864	-	56	0.9	50	10.3	0.0137	-
<b>Testing</b>												
Tried to get a test for COVID-19 (among POP)	519	58.1	508	45.3	0.0003	+	550	45.5	615	33.9	0.0008	+
Tested for COVID-19	519	51.3	508	35.7	0	+	549	38.0	621	25.6	0.0002	+
COVID-19 diagnosis	271	28.4	186	18.5	0.0343	+	213	24.9	156	16.2	0.0787	+
Treatment for COVID-19	72	28.0	30	36.9	0.458	-	52	49.0	29	39.9	0.5075	+
Treatment for COVID-19 (among POP)	320	6.4	352	3.4	0.1211	+	388	6.5	494	2.1	0.0169	+
Think they would be able to get a test among those who have not tried to get a test	209	34.9	272	40.0	0.309	-	289	37.6	400	32.5	0.2631	+
<b>Known Dx Cases</b>												
Close family member diagnosed	538	53.9	515	28.2	0.0022	+	559	38.0	614	28.0	0.0026	+

	September 2021		November 2020				September 2021		November 2020			
	Male						Female					
Exposure	n	Wgt'd %	n	Wgt'd %	p-value	Direction	n	Wgt'd %	n	Wgt'd %	p-value	Direction
Friend diagnosed	533	60.4	514	41.8	0.0373	+	558	45.0	614	43.2	0.6062	+
Neighbor diagnosed	534	70.4	513	27.2	0	+	556	38.5	614	35.8	0.433	+
Practices												
Left home in the last seven days	524	98.0	519	96.0	0.0943	+	555	94.1	627	93.6	0.7781	+
Always stayed six feet away from others when they left home and went out in the last 7 days	505	47.7	493	57.5	0.0066	-	521	49.7	588	54.7	0.1705	-
Wore face mask or face covering when leaving home	516	80.6	510	87.0	0.0118	-	545	84.8	620	88.6	0.1203	-
Always covered mouth and nose when wearing a mask out in public	505	96.6	503	97.5	0.4721	-	538	96.2	615	96.8	0.6683	-

## 5. Conclusions

---

Effective and rapid decision making during the pandemic require data not only about infections, but also about human behavior in Ecuador. The data presented in the third Ecuador COVID-19 Mobile Phone Survey provide a strong foundation for continued development of the response strategies in Ecuador. Some key outcomes included:

- Overall, one in ten (8.8%) of Ecuadorian adults aged 18 years and older reported that they cared for or had close contact with someone suspected or confirmed of having COVID-19 in the past two weeks
- When asked if they were ill, approximately one in ten adult Ecuadorians reported feeling ill (11.9%).
- For men, the most common symptoms reported were muscle or body aches (23.5%), dry cough (23.2%), and sore throat (16.9%). For women, the most common symptoms reported were muscle or body aches (18.9%), sore throat (17.4%), and fever (13.2%).
- Overall, half (51.7%) of adult Ecuadorians tried to get a test for COVID-19.
- Overall, four out of ten Ecuadorians (40.5%) received a COVID-19 test. Of those who received a test, 26.9% had a positive diagnosis and of those positive cases, 36.4% received treatment. Men reported higher rates of testing (51.3% vs. 38.0%, respectively) compared to women.
- Among individuals who tried to get a test for COVID-19 but were not able to, 35.9% reported that it was too expensive, 33.8% reported they were not eligible and 30.4% reported that the test was not available.
- Of those individuals who were not tested and did not try to get a test, a third (36.5%) thought that they would be able to get a test if they needed one.
- Overall, a little more than half (52.7%) of adult Ecuadorians reported that they are avoiding public places. Six out of ten (57.6%) men and women in Ecuador reported avoiding public transportation. Seven in ten (71.0%) reported avoiding social contact. About half (48.7%) reported that they always stayed at least six feet away from other people when in public. Eight out of ten (82.7%) always wore a face mask or face covering when in public. Lastly, 96.4% of adult Ecuadorians reported that they properly wore their face mask over their nose and mouth when wearing a face mask in public.
- Public attitude towards vaccination was high, with nine out of ten (91.4%) adult Ecuadorians reporting that they think it is important to get the COVID-19 vaccination to prevent COVID-19.
- Overall, nine out of ten (91.1%) respondents reported receiving a vaccination for COVID-19. Among those who have not received a COVID-19 vaccination, 69.2% reported that they would definitely or probably receive one if it were available at the time of interview. The main driver of vaccine hesitancy among respondents was the thought that the vaccines are not safe, which was reported by 35.3% of respondents who did not receive a vaccine.
- Approximately 14.8% of men reported currently smoking tobacco compared to 4.9% of women. For alcohol consumption, 68.7% of men report currently drinking compared to 50.9% of women. Half (50.8%) of current smokers reported smoking less than usual due to the pandemic and

approximately half (47.1%) of adults who reported consuming alcohol indicated less consumption due to the pandemic.

- Regarding fruit and vegetable consumption during the pandemic, 42.7% of men and 35.8% of women reported consuming more than usual, with the majority of adults (44.3%) reporting no change in their diet.

*Conclusions:*

Findings from this third survey help provide additional information on select COVID-19 KAPs for Ecuadorian adults aged 18 years and older. Results will inform the Ministry of Health in Ecuador as they continue to improve and enhance COVID-19 response efforts.

*Limitations:*

The main limitation of any mobile phone survey includes the population's access to a mobile phone. Therefore, the population who do not have access to mobile phones was not represented in this survey. The results of the mobile phone survey were based on self-reports and may be influenced by recall or social desirability bias.

