

# ASSESSING PATIENTS' ACCESS TO MASKS AND THE ACCEPTABILITY OF COVID-19 VACCINES IN THE EMERGENCY DEPARTMENT

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## Background

Emergency Departments (EDs) serve as the primary (and often only) health care access point to many vulnerable patient populations. As such, any efforts to protect this population that is at risk for poor outcomes from COVID-19 infection must consider ED based interventions; this is especially critical in the era of the COVID-19 pandemic. The three staples of COVID-19 prevention are social distancing, masks and vaccines. Due to housing and other socioeconomic constraints, the aforementioned vulnerable groups whose primary care occurs in EDs often have difficulties with social distancing, thus emphasizing the need to make vaccines widely available. Prior studies in this field have shown that a number of public health interventions, especially immunization programs for influenza and pneumococcal pneumonia, are feasible and can be implemented quickly in the ED.

### Specific Aims

To inform and prepare for a national, ED-based program that would provide vulnerable groups the other two COVID-19 prevention measures – masks and COVID-19 immunizations.

## Methods

- This study was conducted at Olive View-UCLA Medical Center, Department of Emergency Medicine, a participating site of approximately a 14-ED network.
- We obtained verbal consent for participation in the survey (and conducted the survey itself if they consented), via a secure phone placed in the patients' private ED room by research staff.

## Results

	All	Have Primary Care/Clinic n = 1805	No Primary Care/Clinic n = 416	Utilize ED as Usual Source of Care n = 266
Age yr. median (IQR)	48 (34 - 62)	52 (36 - 63)	36 (28 - 49)	38 (28 - 50)
		x(%)	x(%)	x(%)
Gender n(%)				
Male	1124 (50)	841 (47)	277 (67)	189 (71)
Female	1092 (49)	955 (53)	135 (33)	76 (29)
Race/Ethnicity				
African American	658 (29)	528 (29)	126 (30)	84 (32)
Asian	105 (5)	83 (5)	22 (5)	13 (5)
Latinx	533 (24)	377 (21)	155 (37)	112 (42)
Middle Eastern	23 (1)	17 (1)	6 (4)	4 (1.5)
Native American	27 (1)	20 (1)	7 (1.7)	6 (2)
Native Hawaiian/Pacific Islander	8 (0.4)	7 (0.4)	1 (0.2)	1 (0.4)
White	891 (40)	780 (43)	111 (27)	51 (19)
Other	86 (4)	62 (3)	24 (6)	18 (7)
Health Insurance Types				
Private	844 (39)	771 (43)	73 (18)	32 (12)
Medicaid	646 (30)	512 (28)	134 (32)	94 (35)
Medicare	514 (24)	483 (27)	31 (8)	20 (8)
Uninsured	284 (13)	126 (7)	158 (38)	110 (41)
ACA/ObamaCare	108 (5)	88 (5)	20 (5)	14 (5)
Kaiser Permanente	22 (1)	20 (1)	2 (0.5)	1 (0.4)
Veterans Administration	17 (0.8)	17 (1)	0	0
Other	41 (2)	33 (2)	8 (2)	3 (1)
Primary Language				
English	1794 (81)	1490 (83)	296 (71)	177 (67)
Spanish	342 (15)	240 (13)	102 (25)	75 (28)
Cantonese/Mandarin	16 (0.7)	13 (0.7)	3 (0.7)	3 (1)
Other	78 (3.4)	62 (3)	14 (3)	11 (4)
Homeless	84 (4)	41 (2)	43 (10)	35 (13)

Table 1. Patient demographics stratified by reported access to health care.

	All	Have Primary Care/Clinic n = 1805	No Primary Care/Clinic n = 416	Utilize ED as Usual Source of Care n = 266
	N(x; 95%CI)	N(x; 95%CI)	N(x; 95%CI)	N(x; 95%CI)
Have you had the flu vaccine in the last 5 years?				
Yes	1525 (69; 67 - 71)	1330 (74; 72 - 76)	190 (46; 41 - 51)	117 (44; 38 - 50)
No	619 (28; 26 - 30)	417 (23; 21 - 25)	202 (49; 44 - 53)	130 (49; 43 - 55)
Unsure	79 (4; 3 - 4.4)	56 (3.1; 2.4 - 4.0)	23 (5.5; 3.5 - 8.2)	18 (6.8; 4.1 - 10)
Would you accept a COVID-19 vaccine?				
Yes	1360 (61; 60 - 63)	1133 (63; 60 - 65)	222 (53; 48 - 58)	147 (55; 49 - 61)
No	389 (18; 16 - 19)	288 (16; 14 - 18)	96 (24; 20 - 28)	63 (24; 19 - 29)
Unsure	481 (22; 20 - 23)	383 (21; 19 - 23)	96 (23; 19 - 27)	56 (21; 16 - 26)
Would you accept a COVID-19 vaccine in the ED?				
Yes	1270 (64; 92 - 95)	1062 (64; 92 - 95)	206 (93; 89 - 96)	139 (95; 90 - 98)
No	32 (2; 2 - 3)	27 (2; 2 - 4)	5 (2; 0.7 - 5)	2 (1; 0.1 - 5)
Unsure	52 (4; 3 - 5)	42 (4; 3 - 5)	10 (5; 2 - 8)	6 (4; 2 - 9)
Would your family accept a COVID-19 vaccine?				
Yes	977 (45; 43 - 47)	838 (46; 44 - 49)	139 (33; 29 - 38)	85 (32; 26 - 38)
No	233 (11; 10 - 12)	174 (9; 8; 3 - 11)	57 (14; 11 - 17)	36 (14; 10 - 18)
Some	521 (24; 22 - 26)	425 (24; 22 - 26)	95 (23; 19 - 27)	61 (23; 18 - 28)
Unsure	429 (20; 18 - 22)	326 (18; 16 - 20)	102 (25; 20 - 29)	64 (24; 19 - 30)
Do you wear masks?				
Always	1747 (78; 77 - 80)	1435 (80; 78 - 81)	303 (73; 68 - 77)	189 (71; 65 - 76)
Most of the time (more than 50% of the time)	390 (17; 16 - 19)	308 (17; 15 - 19)	81 (19; 16 - 24)	52 (20; 15 - 25)
Sometimes (less than 50% of the time)	79 (4; 3 - 4)	52 (2.9; 2.2 - 3.8)	27 (6.5; 4.3 - 9.3)	21 (7.9; 5.0 - 12)
Never	14 (0.6; 0.3 - 1)	10 (0.6; 0.3 - 1.0)	4 (1.0; 0.3 - 2.4)	3 (1.1; 0.2 - 3.3)
Where did you get masks from?				
Store or Pharmacy	1256 (41; 40 - 43)	1016 (56; 54 - 59)	235 (56; 52 - 61)	156 (59; 52 - 65)
Friend/Family	494 (17; 15 - 17)	404 (22; 20 - 24)	88 (21; 17 - 25)	51 (19; 15 - 24)
Online	474 (15; 14 - 17)	404 (22; 20 - 24)	74 (18; 14 - 22)	44 (17; 12 - 22)
Clinic/Primary Care Provider	222 (7; 7 - 8)	198 (11; 9.6 - 13)	24 (5.8; 3.7 - 8.5)	16 (6.0; 3.5 - 9.6)
Emergency Department	125 (4; 3 - 5)	102 (5.7; 4.6 - 6.8)	23 (5.5; 3.5 - 8.2)	16 (6.0; 3.5 - 9.6)
Shelter/Food bank	85 (2; 2 - 3)	37 (2.1; 1.5 - 2.8)	27 (6.5; 4.3 - 9.3)	20 (7.5; 4.7 - 11)
Other	427 (14; 13 - 15)	331 (18; 17 - 20)	85 (23; 19 - 27)	61 (23; 18 - 28)

Table 2. Select questions from ED survey stratified by reported access to health care.

	All n = 865	Have Primary Care/Clinic n = 671	No Primary Care/Clinic n = 194	Utilize ED as Usual Source of Care n = 119
	N(%)	N(%)	N(%)	N(%)
What are reasons for not accepting a COVID-19 vaccine?				
Have concerns about side effects and safety	568 (66%)	456 (68%)	110 (57%)	67 (56%)
Need more information about the vaccine	410 (47%)	315 (47%)	94 (48.5%)	62 (52%)
Heard media stories that gave me doubt about vaccines	216 (25%)	165 (25%)	50 (26%)	35 (29%)
Don't believe the vaccine will work	103 (12%)	73 (11%)	29 (15%)	18 (15%)
Not worried about getting COVID-19 infection	85 (10%)	55 (8%)	30 (15.5%)	19 (16%)
Already had COVID-19 infection	34 (4%)	25 (4%)	9 (5%)	8 (7%)
Other	175 (20%)	133 (20%)	42 (22%)	26 (22%)

Table 3. Reported reasons for not accepting the COVID-19 Vaccine

	Odds Ratio	Z	P-value	95% CI
Age (25th percentile vs 50th Percentile)	0.9884	-4.68	0.000	0.9836 - 0.9932
Age (25th percentile vs 75th Percentile)	0.9915	-2.02	0.044	0.9834 - 0.9998
Gender	1.8569	3.02	0.003	1.2420 - 2.7763
African American	1.6259	1.03	0.302	0.6456 - 4.0950
Hispanic American	1.7229	1.27	0.205	0.7422 - 3.9993
Asian American	1.2413	0.29	0.769	0.2930 - 5.2589
No Flu Vaccine	3.5303	4.69	0.000	2.0830 - 5.9830
Mask	3.8132	2.82	0.005	1.5057 - 9.6570
Family Not Accepting Vaccine	4.5106	6.95	0.000	2.9498 - 6.8973

Table 4. Regression analysis demonstrating vaccine hesitancy among different independent variables

- 61% (95% CI 60-63) of all participants reported they would accept the COVID-19 vaccine.
- 94% (95% CI 92-95) of all participants who reported they would accept the vaccine, stated they would receive the vaccine in the ED.
- 94% (95% CI 92-95) of patients with established primary care reported they would accept the vaccine compared to 93% (95% CI 89-96) with no primary care.
- 95% (95% CI 90-98) of patients who utilize the ED as their usual source of care reported they would accept the vaccine as part of their ED care

- Relative to the 25<sup>th</sup> percentile group, the 75<sup>th</sup> percentile showed a decrease in vaccine hesitancy (OR 0.9915, P 0.044).
- Relative to participants who identified as Male, those who identified as Female showed an increase in vaccine hesitancy (OR 1.86, P 0.003).
- Vaccine hesitancy was also increased in participants who had not received the Flu vaccine in the last 5 years (OR 3.53, P 0.000), reported never wearing masks (OR 3.81, P 0.005), and those who stated their family members would not receive the COVID-19 vaccine (OR 4.51, P 0.000).

## Conclusion

- The majority of participants in this study were amenable to receiving the COVID-19 vaccine as part of their care in the ED, thus the ED may serve as important avenue for vaccine distribution, especially for underserved patients.
- A National ED-based immunization program would augment other efforts to broadly immunize the US population at large, including vulnerable groups.

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