

Supplementary Materials

Original Research

Impact of COVID-19 Vaccine Rollout on Mental Health, Social Determinants of Health, and Attitudes Among Individuals With COPD

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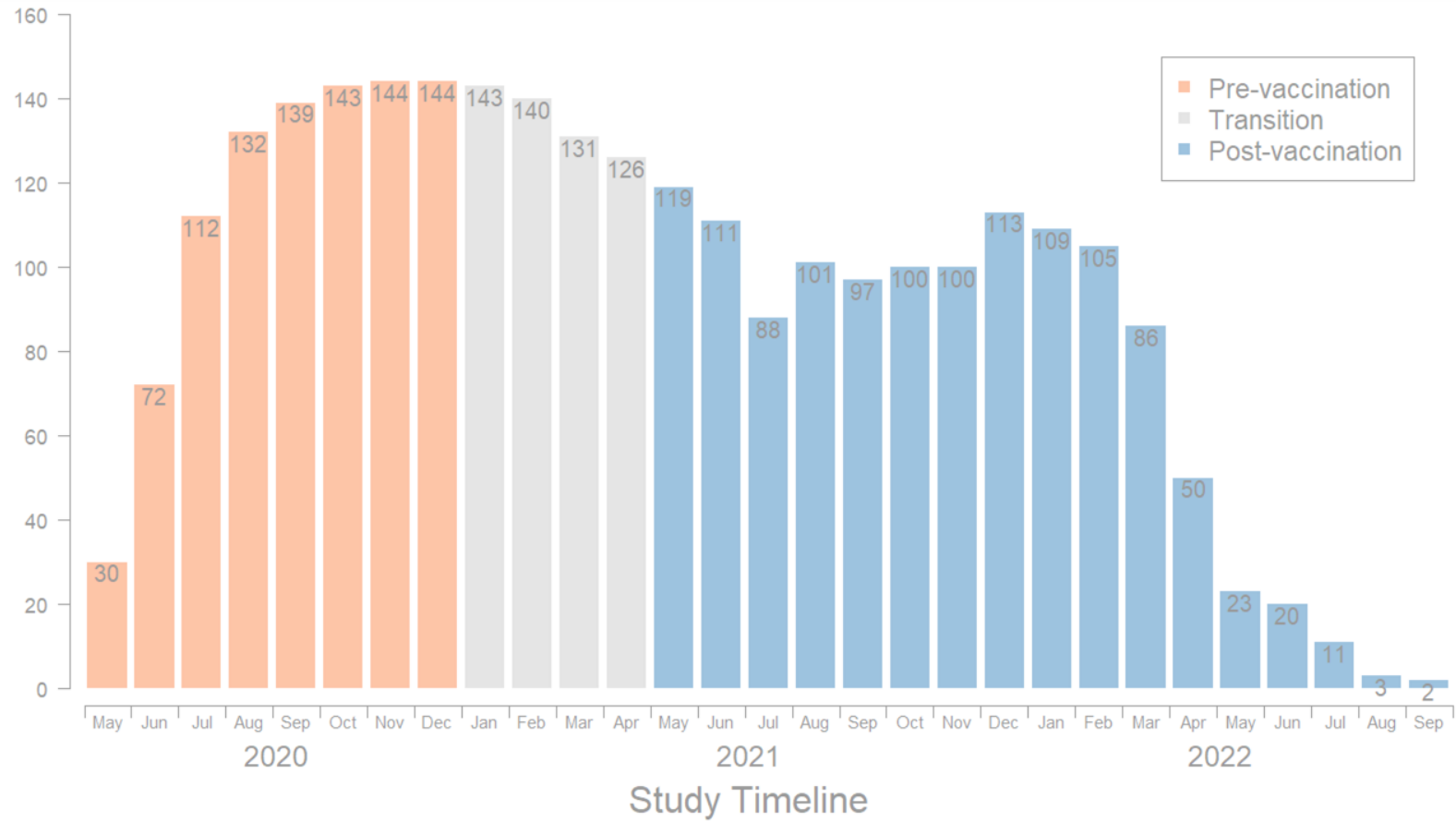
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Supplemental Table 1: Comparison of baseline characteristics between Losartan Effects on Emphysema Progression (LEEP) clinical trial participants who did and did not participate in the ancillary study.

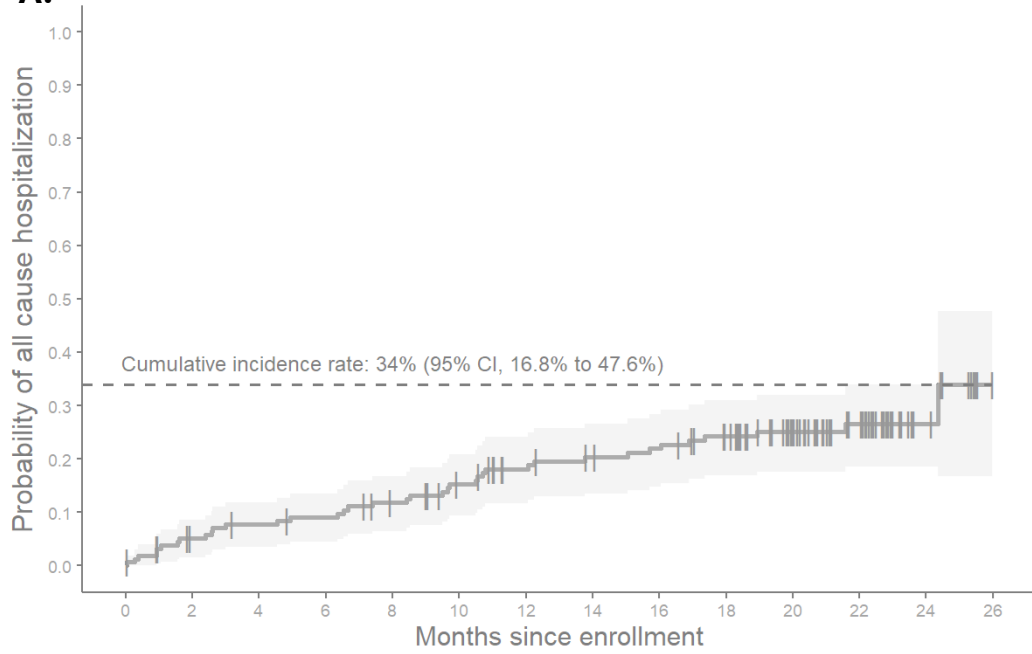
Characteristic	LEEP Participants Enrolled in Ancillary Study (N = 157)	LEEP Participants not Enrolled in Ancillary Study (N = 63)
Age, median (IQR)	66 (62, 73)	64 (61, 70)
Male, N (%)	86 (55)	41 (65)
Ethnicity: Not Hispanic/Latino, N (%)	155 (99)	57 (90)
Race, N (%)		
Black/African American	27 (17)	15 (24)
White	129 (82)	46 (73)
Other	1 (1)	2 (3)
Geographic Region, N (%)		
Central	57 (36)	21 (33)
Northeastern	51 (32)	17 (27)
Southeastern	30 (19)	15 (24)
Western	19 (12)	10 (16)
Education, N (%)		
Some High School or Less	8 (5)	10 (16)
High School Graduate / GED	37 (24)	12 (19)
Vocational / Some College	57 (36)	25 (39)
College Degree	29 (18)	11 (17)
Professional or Graduate Degree	26 (17)	5 (8)
Marital Status, N (%)		
Single	35 (22)	19 (30)
Divorced	23 (15)	13 (21)
Married/Domestic Partner	73 (46)	22 (35)
Widowed	25 (16)	7 (11)
Declined to answer	1 (1)	2 (3)
Employment Status, N (%)		
Full or Part-Time	37 (24)	14 (22)
Retired/Disabled	106 (68)	45 (71)
Other	14 (9)	4 (6)
Income, N (%)		
<\$30K	60 (38)	34 (54)
\$30K to \$49K	24 (15)	8 (13)
\$50K to \$75K	23 (15)	7 (11)
>\$75K	32 (20)	10 (16)
Unknown	18 (11)	4 (6)
Current Smoker, N (%)	28 (18)	21 (33)
Post-bronchodilator FEV1 % predicted, median (IQR)	48 (36, 61)	44 (34, 55)

Supplemental Figure 1: Number of participants interviewed in the pre-vaccination, transition, and post-vaccination periods



Supplemental Figure 2: Probability of all cause hospitalization (A) and death (B) since enrollment in the ancillary study between May 2020 to November 2020 with follow-up through September 2022

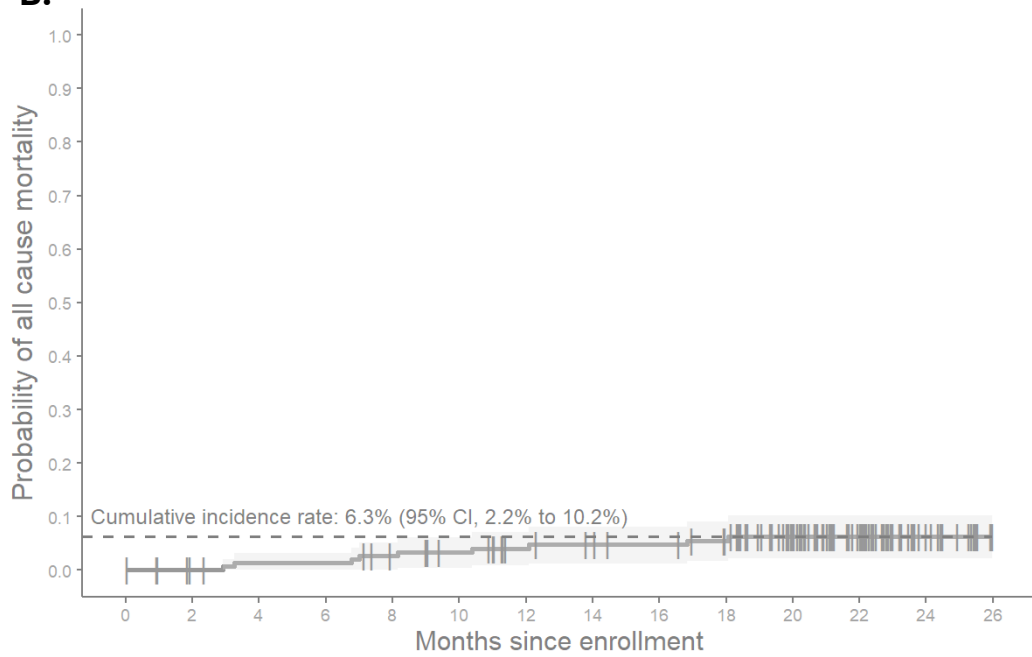
A.



No. at risk

157 144 139 136 129 120 109 104 101 92 71 43 11 0

B.



No. at risk

157 152 149 149 144 140 132 129 127 121 97 58 16 0

Supplemental Table 2: Comparison between the pre-vaccine and post-vaccine periods of prevalence of \geq moderate anxiety, \geq moderate depression, and severe respiratory symptoms as well as social isolation and instrumental support scores among participants interviewed during both periods (N=138).

Outcomes	Odds Ratio (95% Confidence Interval)	P-value
Moderate/Severe Anxiety \downarrow (GAD-7 \geq 10)	1.67 (1.12, 2.48)	0.011
Moderate/Severe Depression \downarrow (PHQ-8 \geq 10)	1.56 (1.08, 2.26)	0.017
Severe respiratory symptoms \downarrow (CAT > 20)	1.42 (1.04, 1.92)	0.025
Outcomes	Mean Difference (95% Confidence Interval)	P-value
PROMIS 4a t-score \downarrow (social isolation)	-1.14 (-2.41, 0.13)	0.08
NIH instrumental support t-score \uparrow	0.16 (-1.84, 2.16)	0.87
$\uparrow\downarrow$ indicates that a higher or lower score, respectively, is better		

Supplemental Table 3: Comparison of questionnaire scores in the post-vaccine period based on personal vaccination status (N=137)

Outcomes	Unvaccinated vs Vaccinated	P-value
	Odds Ratio (95% Confidence Interval)	
Moderate/Severe Anxiety \downarrow (GAD-7 \geq 10)	1.16 (0.35, 3.90)	0.80
Moderate/Severe Depression \downarrow (PHQ-8 \geq 10)	0.64 (0.20, 2.09)	0.46
Severe respiratory symptoms \downarrow (CAT > 20)	0.58 (0.20, 1.68)	0.32
Outcomes	Unvaccinated vs Vaccinated	P-value
	Mean Difference (95% Confidence Interval)	
PROMIS 4a t-score \downarrow (social isolation)	-1.16 (-5.96, 3.64)	0.64
NIH instrumental support t-score \uparrow	1.36 (-5.55, 8.26)	0.70
$\uparrow\downarrow$ indicates that a higher or lower score, respectively, is better		

Supplemental Table 4: Comparison of change in questionnaire scores between the pre- and post-vaccine periods based on personal vaccination status

Outcomes	Unvaccinated		Vaccinated		P-value
	N*	Least Squares Means (95% CI)	N*	Least Squares Means (95% CI)	
Change from pre-vaccination period in Anxiety: GAD-7 ↓	17	0.06 (-2.39, 2.51)	120	-0.86 (-1.44, -0.27)	0.48
Change from pre-vaccination period in Depression: PHQ-8 ↓	17	0.18 (-2.13, 2.48)	120	-1.28 (-1.95, -0.60)	0.24
Change from pre-vaccination period in Respiratory symptoms: CAT ↓	17	-0.82 (-3.34, 1.69)	119	-0.87 (-1.82, 0.07)	0.97
Change from pre-vaccination period in PROMIS 4a t-score ↓	16	1.43 (-3.59, 6.45)	111	1.20 (-0.05, 2.45)	0.93
Change from pre-vaccination period in NIH instrumental support t-score ↑	17	-1.31 (-6.86, 4.24)	107	0.35 (-1.78, 2.47)	0.59
* N = Number of participants with data ↑↓ indicates that a higher or lower score, respectively, is better					