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572. Real-world Effectiveness of COVID-19 mRNA Vaccines against Hospitalizations and Deaths in a Retrospective Cohort

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Session: P-25. COVID-19 Vaccines

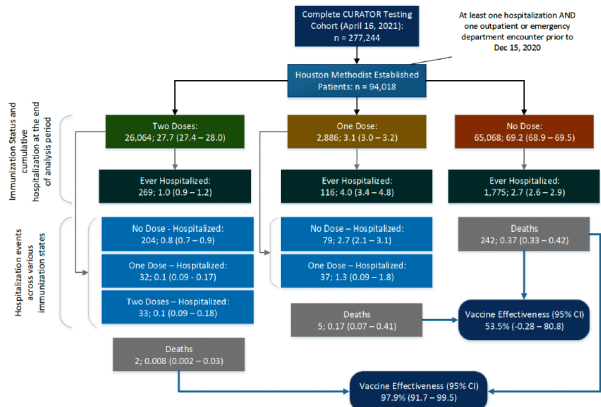
Background. The effectiveness of Severe Acute Respiratory Syndrome Coronavirus 2 vaccines after two doses needs to be demonstrated beyond clinical trials.

Methods. In a retrospective cohort assembled from a cross-institution comprehensive data repository, established patients of the health care system were categorized as having received no doses, one dose or two doses of SARS-CoV-2 mRNA vaccine through April 4, 2021. Outcomes were COVID-19 related hospitalization and death.

Results. Of 94,018 patients 27.7% had completed two doses and 3.1% had completed one dose of a COVID-19 mRNA vaccine. The two dose group was older with more comorbidities. 1.0% of the two dose group had a COVID-19 hospitalization, compared to 4.0% and 2.7% in the one dose and no dose groups respectively. The adjusted Cox proportional-hazards model based vaccine effectiveness after two doses (vs. no dose) was 96%(95% confidence interval(CI):95-97), compared to 78%(95%CI:76-82) after one dose. After two doses, vaccine effectiveness for COVID-19 mortality was 97.9%(95%CI:91.7-99.5), and 53.5%(95%CI:0.28-80.8) after one dose. Vaccine effectiveness at preventing hospitalization was conserved across age, race, ethnicity, Area Deprivation Index and Charlson Comorbidity Indices.

Cohort Enrollment and Distribution by Immunization Status and Vaccine effectiveness against mortality

Figure 1:



Cohort members are described by their immunization status and hospitalization at the end of the study period ending April 4th, 2021. Percentages compare this population to the total established patients. Each group is then divided into when hospitalized events occurred across immunization status. These percentages compare the number of events to the population in the immunization status at the end of the analysis period. Odds ratios for mortality were calculated and vaccine effectiveness calculated as 1 minus odds ratio times 100%.

Table : Hazard Ratios and Vaccine Effectiveness associated with COVID-19

Hospitalization Among the One and Two Dose Vaccine Cohorts with COVID-19 mRNA vaccines.

	Hospitalization HR (95% CI)	Hospitalization VE (95% CI)		
Unadjusted				
Two doses	0.05 (0.04 – 0.07)	95% (93 – 96)		
One dose	0.22 (0.18 – 0.25)	78% (75 – 82)		
Adjusted *				
Two Doses	0.04 (0.03 – 0.05)	96% (95 – 97)		
One Dose	0.22 (0.18 – 0.24)	78% (76 – 82)		
	Death	No Death	OR (95% CI)	VE (95% CI)
Two Doses	2	26,062	0.021 (0.005 – 0.083)	97.9 (91.7 – 99.5)
One Dose	5	2,881	0.465 (0.192 – 1.128)	53.5 (-0.28 – 80.8)
Two or One Dose	7	28,943	0.065 (0.031 – 0.137)	93.5 (86.3 – 96.9)
No Dose	242	64,826	-	-

*Age, Sex, Race, Ethnicity, Area Deprivation Index (ADI), Charlson Comorbidity Index (CCI)

Burden

Conclusion. In a large, diverse US cohort, receipt of two doses of an mRNA vaccine was highly effective in the real-world at preventing COVID-19 related hospitalizations and deaths with a substantive difference in effectiveness between one and two doses.

Disclosures. All Authors: No reported disclosures

573. Digital Patient/Caregiver Education: A Tool to Improve COVID-19 Vaccination Rates and Confidence Among the Public

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Background. Due to patient hesitancy surrounding the COVID-19 vaccination initiative, the public needs accurate and timely education that encourages partnership with medical professionals.

Methods. This study assessed the impact of online patient/caregiver education on knowledge, confidence and intent to act. The educational intervention consisted of 4 activities published on a dedicated COVID-19 learning center on WebMD Education portal from April-May, 2021. The activities were comprised of text and integrated visuals, with 3 of the activities being further customized with a patient or healthcare professional (HCP) video commentary. Demographic questions were asked prior to each activity. Knowledge questions were asked both before and after to assess learning gains. Intent to change and confidence questions were asked at the end of each activity. Absolute improvements were calculated for pre/post questions. An initial data pull was conducted on 6/7/2021 for the purpose of this abstract, and data for the complete analysis will be collected until approximately 8/7/21.

Results. To date, 14,911 learners (3,579) of which responded to the pre/post questions) have participated in the activities, and have demonstrated improvements in knowledge and high levels of confidence and intent to act (Figure). Activity 1: COVID-19 Vaccines: Covering the Basics. Demographics (n=155): 50% male; 41% White, non-Hispanic, 30% Asian; 52% over the age of 54. Activity 2: Understanding the Why, Who, and When of COVID-19 Vaccines. Demographics (n=2,325): 66% female; 51% White, non-Hispanic, 18% Asian; 54% over the age of 54. Activity 3: What to Expect When You Get the COVID-19 Vaccine. Demographics (n=500): 66% female; 49% White, non-Hispanic, 22% Asian; 56% over the age of 54. Activity 4: What Have You Heard about Herd Immunity and COVID-19. Demographics (n=599): 63% female; 53% White, non-Hispanic, 25% Asian; 53% over the age of 54.

Results.