

Supplemental Materials

Hierarchy of Controller Step Levels

- Step 2
 - Low dose ICS
- Step 3
 - Low dose ICS plus Leukotriene inhibitor
 - Medium dose ICS
 - Low dose ICS plus LABA OR LAMA
 - High dose ICS
- Step 4
 - Medium dose ICS plus Leukotriene inhibitor
 - Low dose ICS plus LABA OR LAMA plus Leukotriene inhibitor
 - Low dose ICS plus LABA AND LAMA
 - Low dose ICS plus LABA AND LAMA plus Leukotriene inhibitor
 - High dose ICS plus Leukotriene inhibitor
 - Medium dose ICS plus LABA OR LAMA
 - Medium dose ICS plus LABA OR LAMA plus Leukotriene inhibitor
- Step 5
 - Medium dose ICS plus LABA AND LAMA
 - Medium dose ICS plus LABA AND LAMA plus Leukotriene inhibitor
 - High dose ICS plus LABA OR LAMA
 - High dose ICS plus LABA AND LAMA
 - High dose ICS plus LABA OR LAMA plus Leukotriene inhibitor
 - High dose ICS plus LABA AND LABA plus Leukotriene inhibitor
- Step 6
 - Biologics
 - Daily Corticosteroids

Overall Model for All 28 Months (Supplemental Table 1; no corrections applied; no spline)

The month before or after enrollment did show a significant increase over time (estimate: 0.039; $t = 9.315$). The UCare patients were at a significantly higher asthma controller medication level overall (difference: 0.191; $t = 2.327$). The assigned reclassified levels differed significantly between the sites ($F(15, 692.810) = 19.968$; $p = 0.000$). Five sites (Sites 2, 3, 4, 5, 7) had significantly higher steps of asthma controller medications than patients from Site 16. Two sites (Sites 6, 15) had significantly lower steps of asthma controller medications than patients from Site 16. The assigned reclassified levels differed significantly with the patients' decade of birth ($F(4, 692.014) = 5.135$; $p = 0.000$). Patients born in the 1940s/1950s had significantly higher levels of asthma controller medications than patients born in the 1990s/2000s (difference: 0.611; $t = 3.803$). Lastly, in the months were COVID-19 was not present (before April 2020), the patients had a significantly higher asthma controller medication level than after the COVID-19 pandemic began (difference: 0.902; $t = 14.118$; Supplemental Table 1).

47 Supplemental Table 1. Final LME Results with Significant Variables.

Parameter	Estimate	Standard Error	95% CI	t
-2 Restricted Log Likelihood: 73628.74 Month: $F(1, 740.37) = 86.77$; $p < 0.001$ Group: $F(1, 691.99) = 5.41$; $p = 0.02$ Site: $F(15, 692.81) = 19.97$; $p < 0.001$ Decade of Birth: $F(4, 692.01) = 5.14$; $p < 0.001$ COVID Correction: $F(1, 18759.68) = 199.32$; $p < 0.001$				
Intercept (Baseline)	0.78	0.24	[0.31, 1.25]	3.24*
Month	0.04	0.00	[0.03, 0.05]	9.32*
UCare	0.19	0.08	[0.03, 0.35]	2.33*
PARTICS	Reference			
Site 1	-0.44	0.34	[-1.11, 0.24]	-1.27
Site 2	1.14	0.30	[0.55, 1.73]	3.80*
Site 3	1.51	0.23	[1.05, 1.96]	6.49*
Site 4	0.91	0.26	[0.40, 1.42]	3.49*
Site 5	1.22	0.23	[0.76, 1.68]	5.24*
Site 6	-0.93	0.22	[-1.36, -0.50]	-4.25*
Site 7	0.66	0.22	[0.23, 1.08]	3.02*
Site 8	0.04	0.33	[-0.61, 0.69]	0.13
Site 9	0.27	0.24	[-0.21, 0.74]	1.11
Site 10	0.05	0.23	[-0.41, 0.50]	0.19
Site 11	0.11	0.25	[-0.38, 0.60]	0.43
Site 12	-0.24	0.41	[-1.04, 0.57]	-0.58
Site 13	-0.07	0.23	[-0.51, 0.37]	-0.33
Site 14	0.17	0.23	[-0.27, 0.62]	0.78
Site 15	-1.43	0.35	[-2.13, -0.74]	-4.05*
Site 16	Reference			
Born: 1940s & 1950s	0.61	0.16	[0.30, 0.93]	3.80*
Born: 1960s	0.21	0.16	[-0.11, 0.52]	1.29
Born: 1970s	0.26	0.17	[-0.07, 0.58]	1.54
Born: 1980s	0.31	0.17	[-0.03, 0.65]	1.80+
Born: 1990s & 2000s	Reference			
No COVID-19	0.90	0.06	[0.78, 1.03]	14.19*
COVID-19 Present	Reference			

* p-value < 0.05

50 Supplemental Table 2. LME Results with All Variables

All Variables (-2 Restricted Log Likelihood: 67558.41)				
Month: F(1, 694.89) = 5.31; p = 0.02				
Group: F(1, 715.15) = 1.81; p = 0.18				
Site: F(15, 721.21) = 18.76; p = 0.00				
Gender: F(1, 701.07) = 0.16; p = 0.69				
Decade of Birth: F(4, 717.97) = 4.24; p = 0.002				
Race/Ethnicity: F(1, 739.73) = 0.62; p = 0.43				
Language: F(1, 695.91) = 2.22; p = 0.14				
COVID Correction: F(1, 12122.12) = 12.28; p = 0.00				
Intercept (Baseline)	4.57	1.07	[2.46, 6.67]	4.26*
Month	0.03	0.01	[0.00, 0.05]	2.30*
UCare	0.41	0.30	[-0.19, 1.00]	1.35
PARTICS	Reference			
Site 1	1.43	1.29	[-1.10, 3.96]	1.11
Site 2	5.35	1.12	[3.16, 7.53]	4.79*
Site 3	4.43	0.87	[2.72, 6.15]	5.08*
Site 4	2.42	1.07	[0.32, 4.53]	2.26*
Site 5	3.71	0.97	[1.80, 5.61]	3.82*
Site 6	-0.74	0.85	[-2.41, 0.93]	-0.87
Site 7	-0.07	0.83	[-1.69, 1.55]	-0.08
Site 8	-1.88	1.21	[-4.24, 0.49]	-1.56
Site 9	4.93	1.02	[2.93, 6.94]	4.82*
Site 10	0.75	0.96	[-1.14, 2.65]	0.78
Site 11	3.53	1.01	[1.55, 5.52]	3.50*
Site 12	0.30	1.55	[-2.74, 3.33]	0.19
Site 13	-1.29	0.94	[-3.14, 0.55]	-1.38
Site 14	6.08	0.96	[4.20, 7.96]	6.34*
Site 15	-0.75	1.43	[-3.56, 2.06]	-0.53
Site 16	Reference			
Male	0.16	0.40	[-0.63, 0.95]	0.40
Female	Reference			
Born: 1940s & 1950s	1.77	0.60	[0.60, 2.95]	2.97*
Born: 1960s	0.40	0.59	[-0.75, 1.56]	0.69
Born: 1970s	0.60	0.61	[-0.61, 1.80]	0.97
Born: 1980s	0.20	0.63	[-1.04, 1.45]	0.32
Born: 1990s & 2000s	Reference			
Hispanic	-0.37	0.47	[-1.29, 0.55]	-0.79
Non-Hispanic	Reference			
English	0.82	0.55	[-0.26, 1.89]	1.49
Spanish	Reference			
No COVID-19	0.59	0.17	[0.26, 0.92]	3.51*
COVID-19 Present	Reference			

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