Supplemental materials for

Kaufmann J, Marino M, Lucas J, et al. Racial and ethnic disparities in acute care use for pediatric asthma. *Ann Fam Med*. 2022;20(2):116-122.

Supplemental Table 1. Characteristics of Oregon-Medicaid-recipient children age 3-17 years with asthma having had a minimum of one year observation time in the ADVANCE Clinical Research Network, 2012-2018.

Characteristic	All, No. (%)	Group, No. (%)			
		Non-Hispanic White	Non-Hispanic Black	Latinx prefer English	Latinx prefer Spanish
Patients	N=6555	N=2716	N=574	N=925	N=2340
Female	2822 (43.1%)	1214 (44.7%)	252 (43.9%)	410 (44.3%)	946 (40.4%)
Age at 1st Visit, mean(SD), y	8.2 (3.7)	8.9 (3.8)	8.1 (3.8)	8.2 (3.8)	7.4 (3.3)
Body Mass Index[a]					
Never Overweight	2451 (37.4%)	1158 (42.6%)	253 (44.1%)	344 (37.2%)	696 (29.7%)
Sometimes Overweight	1478 (22.5%)	581 (21.4%)	103 (17.9%)	190 (20.5%)	604 (25.8%)
Always Overweight	2626 (40.1%)	977 (36.0%)	218 (38.0%)	391 (42.3%)	1040 (44.4%)
Payor Type					
Some Private & Public	520 (7.9%)	320 (11.8%)	33 (5.7%)	60 (6.5%)	107 (4.6%)
Some Public	6035 (92.1%)	2396 (88.2%)	541 (94.3%)	865 (93.5%)	2233 (95.4%)
Federal Poverty Level					
Always >138%	346 (5.3%)	218 (8.0%)	13 (2.3%)	46 (5.0%)	69 (2.9%)
Above & Below 138%	2046 (31.2%)	647 (23.8%)	125 (21.8%)	279 (30.2%)	995 (42.5%)
Always <=138%	3786 (57.8%)	1560 (57.4%)	421 (73.3%)	545 (58.9%)	1260 (53.8%)
Not Documented	377 (5.8%)	291 (10.7%)	15 (2.6%)	55 (5.9%)	16 (0.7%)
Urbanicity[b]					
Metropolitan	5381 (82.1%)	1999 (73.6%)	558 (97.2%)	752 (81.3%)	2072 (88.5%)
Micropolitan	828 (12.6%)	485 (17.9%)	12 (2.1%)	125 (13.5%)	206 (8.8%)
Rural	346 (5.3%)	232 (8.5%)	4 (0.7%)	48 (5.2%)	62 (2.6%)
Visits Per Year					
<2	2804 (42.8%)	1247 (45.9%)	307 (53.5%)	440 (47.6%)	810 (34.6%)
[2, 3)	1399 (21.3%)	540 (19.9%)	103 (17.9%)	187 (20.2%)	569 (24.3%)
3+	2352 (35.9%)	929 (34.2%)	164 (28.6%)	298 (32.2%)	961 (41.1%)
Max Asthma Severity[c]					
Intermittent	1806 (27.6%)	714 (26.3%)	172 (30.0%)	252 (27.2%)	668 (28.5%)
Mild Persistent	698 (10.6%)	245 (9.0%)	63 (11.0%)	86 (9.3%)	304 (13.0%)
Mod-Severe Persistent	523 (8.0%)	199 (7.3%)	60 (10.5%)	66 (7.1%)	198 (8.5%)
Not Documented	3528 (53.8%)	1558 (57.4%)	279 (48.6%)	521 (56.3%)	1170 (50.0%)
Flu Vaccination Rate					
less than 50% annually	4642 (70.8%)	2154 (79.3%)	434 (75.6%)	695 (75.1%)	1359 (58.1%)
50-80% annually	1373 (20.9%)	402 (14.8%)	106 (18.5%)	168 (18.2%)	697 (29.8%)

at least 80% annually	540 (8.2%)	160 (5.9%)	34 (5.9%)	62 (6.7%)	284 (12.1%)
Pneumococcal Vaccination Ever	3896 (59.4%)	1353 (49.8%)	326 (56.8%)	553 (59.8%)	1664 (71.1%)
Smoker					
Never	4776 (72.9%)	1568 (57.7%)	379 (66.0%)	688 (74.4%)	2141 (91.5%)
Ever	295 (4.5%)	195 (7.2%)	40 (7.0%)	30 (3.2%)	30 (1.3%)
Passive Only	1339 (20.4%)	857 (31.6%)	144 (25.1%)	184 (19.9%)	154 (6.6%)
Not Documented	145 (2.2%)	96 (3.5%)	11 (1.9%)	23 (2.5%)	15 (0.6%)
Albuterol Rx Yearly Rate, mean(SD)	0.6 (0.6)	0.6 (0.6)	0.7 (0.6)	0.6 (0.6)	0.7 (0.5)
Inhaled Corticosteroid Rx Ever	2569 (39.2%)	952 (35.1%)	219 (38.2%)	339 (36.6%)	1059 (45.3%)

[a] BMI calculated using the `childsds` package in R based on age, sex, weight, and height. Overweight if BMI over the 85th percentile, obese if over the 95th percentile. Biologically implausible values were flagged as over 8 standard deviations over or 4 under the mean BMI. Patient category reflects all available measures during study period.

[b] RUCA classification code based on 2010 census tract information and patients' primary clinic zip code.

[c] Maximum asthma severity diagnosed in an ambulatory visits encounter or documented in the patient problem list.

Supplemental Table 2. Asthma exacerbation outcomes among Oregon-Medicaid recipient children (age 3-17) with asthma, at community health center ambulatory visits (AV), for children having had at least 1 AV in the ADVANCE Clinical Research Network, 2012-2018.

	Oregon Community Health Center Ambulatory Visits for Asthma Exacerbation					
	Unadjusted			Adjusted		
Probability (P) of Exacerbation Visit Ever	**Predicted(P)[a]**	**OR**	**95% CI**	**Predicted(P)[a]**	**OR**	**95% CI**
Group						
Non-Hispanic White	23.3%	Ref		26.9%	Ref	
Non-Hispanic Black	26.5%	1.18	(0.93,1.50)	27.6%	1.04	(0.82,1.33)
Latinx, Prefer English	23.8%	1.03	(0.88,1.20)	26.8%	1.00	(0.85,1.18)
Latinx, Prefer Spanish	**32.9%**	**1.61**	**(1.40,1.85)**	**31.9%**	**1.36**	**(1.17,1.58)**
	Unadjusted			Adjusted		
Yearly Rate (R) of Exacerbation Visits	**Predicted(R)[b]**	**RR**	**95% CI**	**Predicted(R)[b]**	**RR**	**95% CI**
Group						
Non-Hispanic White	12.1	Ref		17.1	Ref	
Non-Hispanic Black	16.6	1.37	(0.98,1.92)	17.2	1.00	(0.78,1.28)
Latinx, Prefer English	13.8	1.14	(0.96,1.36)	17.7	1.03	(0.89,1.20)
Latinx, Prefer Spanish	**20.2**	**1.66**	**(1.36,2.04)**	19.8	1.15	(0.98,1.36)

NOTE: OR, odds ratio; RR rate ratio, CI, confidence interval; Ref, reference. Statistically significant results (i.e. p-value < 0.05) are bolded. Estimates were derived using general estimating equations logistic (binary outcomes) or negative binomial (rate outcomes) regression and robust sandwich variance estimation for clustering of patients within clinics. Adjusted regression included covariates for age, sex, body-mass index, insurance type, federal poverty level, urbanicity, documented asthma severity, number of yearly visits, albuterol and inhaled corticosteroid prescriptions, influenza and pneumococcal vaccinations, and tobacco-smoke exposure.

[a] Predicted probability of ever having a visit with clinic-coded asthma exacerbation; adjusted results are averaged over covariates.

[b] Predicted yearly rate of visits per 100-person years with clinic-coded asthma exacerbation; adjusted results are averaged over covariates.

Supplemental Table 3. Asthma-related hospital inpatient admission outcomes for Oregon-Medicaid recipient children with asthma age 3-17, having had at least 1 community health center visit in the ADVANCE Clinical Research Network, 2012-2018 (N = 6,555).

	Asthma-Related Hospital In-Patient (IP) Admissions					
	Unadjusted			Adjusted		
Probability (P) of Asthma IP Admission Ever	**Predicted(P)[a]**	**OR**	**95% CI**	**Predicted(P)[a]**	**OR**	**95% CI**
Group						
Non-Hispanic White	3.4%	Ref		3.7%	Ref	
Non-Hispanic Black	4.1%	1.21	(0.78,1.88)	3.7%	0.98	(0.63,1.50)
Latinx, Prefer English	4.3%	1.27	(0.86,1.89)	4.5%	1.23	(0.81,1.86)
Latinx, Prefer Spanish	4.2%	1.22	(0.87,1.70)	3.8%	1.03	(0.75,1.42)
	Unadjusted			Adjusted		
Yearly Rate (R) of Asthma IP Admissions	**Predicted(R)[b]**	**RR**	**95% CI**	**Predicted(R)[b]**	**RR**	**95% CI**
Group						
Non-Hispanic White	1.2	Ref		1.3	Ref	
Non-Hispanic Black	1.1	0.90	(0.55,1.48)	1.1	0.85	(0.56,1.29)
Latinx, Prefer English	1.5	1.21	(0.83,1.78)	1.5	1.17	(0.78,1.75)
Latinx, Prefer Spanish	1.1	0.89	(0.56,1.41)	1.1	0.89	(0.60,1.31)

NOTE: OR, odds ratio; RR rate ratio, CI, confidence interval; Ref, reference. Statistically significant results (i.e. p-value < 0.05) are bolded. Estimates were derived using general estimating equations logistic (binary outcomes) or negative binomial (rate outcomes) regression and robust sandwich variance estimation for clustering of patients within clinics. Adjusted regression included covariates for age, sex, body-mass index, federal poverty level, urbanicity, documented asthma severity, number of yearly visits, albuterol and inhaled corticosteroid prescriptions, influenza and pneumococcal vaccinations, and tobacco-smoke exposure.

[a] Predicted probability of ever having an asthma-related IP admissions; adjusted results are averaged over covariates.

[b] Predicted yearly rate of visits per 100-person years for asthma-related IP admissions; adjusted results are averaged over covariates.