

(A) Risk of any severe exacerbation

Variable	HR	P value	Adjusted HR	95% CI	P value
Quality-of-care indicators					
Asthma education	0.82	<0.001	0.88	0.793–0.983	0.023
ACT	0.77	<0.001	0.83	0.743–0.917	<0.001
Spirometry	1.33	<0.001	1.22	1.024–1.443	0.026
Confounders					
Number of previous exacerbations per year	1.14	<0.001	1.15	1.127–1.168	<0.001
Sex: female (reference male)	0.94	0.165	0.99	0.907–1.075	0.771
Current smoker	1.11	0.156	1.19	1.029–1.385	0.020
Age	1.00	<0.001	1.00	1.002–1.007	<0.001
Cumulative comorbidity index (reference <3)	1.43	<0.001	1.31	1.156–1.493	<0.001
BMI	1.01	<0.001	1.01	1.008–1.018	<0.001
Type of care (reference PC)					
PC&SC	1.12	0.011	0.93	0.848–1.025	0.148
SC	0.91	0.254	0.58	0.476–0.696	<0.001
GINA Step 4/5 (reference Step 3)	1.12	0.008	1.04	0.952–1.126	0.415
Race (reference Chinese)					
Indian	1.00	0.990	1.01	0.888–1.137	0.937
Malay	1.04	0.492	1.05	0.950–1.168	0.326
Others	0.90	0.186	0.87	0.741–1.016	0.079

ACT: Asthma Control Test; BMI: body mass index; CI: confidence interval; GINA: Global Initiative for Asthma; HR: hazard ratio; PC: primary care; SC: specialist care/acute care

(B) Risk of severe exacerbation associated with ED or inpatient visit

Variable	HR	P value	Adjusted HR	95% CI	P value
Quality-of-care indicators					
Asthma education	0.55	<0.001	0.77	0.520–1.152	0.206
ACT	0.66	0.009	0.91	0.636–1.303	0.607
Spirometry	1.85	<0.001	1.43	0.912–2.241	0.120
Confounders					
Number of previous exacerbations per year	1.16	<0.001	1.12	1.060–1.185	<0.001
Sex: female (reference male)	1.10	0.530	1.02	0.743–1.407	0.891
Current smoker	2.09	<0.001	2.25	1.427–3.539	<0.001
Age	1.01	0.274	1.01	0.997–1.018	0.157
Cumulative comorbidity index (reference <3)	2.63	<0.001	2.42	1.747–3.356	<0.001
BMI	1.02	0.106	1.01	0.986–1.030	0.476
Type of care: SC (reference PC&SC)	1.34	0.098	0.93	0.631–1.366	0.706
GINA Step 4/5 (reference Step 3)	2.48	<0.001	1.85	1.289–2.661	<0.001
Race (reference Chinese)					
Indian	2.08	<0.001	2.00	1.385–2.898	<0.001
Malay	1.05	0.819	1.09	0.701–1.706	0.693
Others	1.19	0.564	1.07	0.590–1.926	0.832

ACT: Asthma Control Test; BMI: body mass index; CI: confidence interval; GINA: Global Initiative for Asthma; HR: hazard ratio; PC: primary care; SC: specialist care/acute care