Table S1 ICD-9 medical comorbidity codes

Category	ICD9
Lung cancer	162.2, 162.3, 162.4, 162.5, 162.8, 162.9, 165.0, 165.9
Solid organ transplantation [+]	V42.0, V42.1, V42.6, V42.1, V42.7, V42.84, V42.83, 996.81, 996.83, 996.82, 996.84, 996.86
Hematologic Disease [ƒ]	201.40, 201.50, 201.60, 201.70, 201.90, 202.00, 200.80, 202.10, 202.80, 202.81, 273.3, 203.80, 203.00, 203.82, 204.00, 204.82, 205.00, 205.82, 206.00, 206.82, 207.00, 207.82, 208.00, 208.92, 202.5, 202.90, 238.4, 238.72, 238.73, 238.75, 238.74, 279.51, 279.52, 279.53, 279.50, 284.01, 284.09, 284.89, 284.11, 284.9, 996.85, 996.88, V42.81, V42.82, 284.11, 284.12, 288.01, 288.03, 288.04, 288.02, 288.09, 288.00
Immunodeficiency syndromes	288.1, 279.04, 279.19, 279.2, 279.12, 279.8, 279.06, 279.3, 270.2
Diabetes	249.20, 249.00, 249.20, 250.11, 250.00, 250.20
Hemochromatosis and iron overload	275.01, 275.02, 275.03
Chronic pulmonary diseases [‖]	277.02, 277.01, 277.03, 277.09, 277.00, 273.4, 135, 490, 491.0, 491.8, 491.9, 492.8, 491.22, 496, 493.00, 493.90, 494.1, 494.0, 500, 501, 502, 503, 505, 504, 495.0, 495.9, 506.0, 506.9, 507.0, 507.8, 508.0, 508.9, 516.0, 516.8, 515, 516.35, 516.4, 516.9, 518.83, 518.84
Liver disease	070.0, 070.1, 070.21, 070.30, 070.52, 070.9, 070.33, 070.59, 070.6, 070.9, 571.0, 571.1, 571.2, 571.3, 573.3, 570, 572.2, 571.41, 571.40, 571.5, 571.6, 571.8, 573.8, 572.3, 572.4, 573.5, 571.8, 573.9
Pulmonary nontuberculosis mycobacterial infection	031.0
HIV	042, V08
Corticosteroid or other immunosuppression	V87.44, V87.45, V87.46

[+] Status post heart, lung, kidney, intestinal or pancreas transplantation; [ƒ] Patients with neutropenia, bone marrow transplant, hematologic malignancies, and myeloproliferative disorders; [‖] Patients with α1AT deficiency, pulmonary sarcoidosis, COPD, asthma, bronchiectasis, occupational and other exposure based lung diseases, interstitial lung disease, and chronic respiratory failure.

Table S2 Multivariable logistic regression identifying predictors of mortality for patients with pulmonary aspergillosis

Predictors	Descriptive statistics			Multivariable predictors of mortality	
	Alive (n=96,143)	Death (n=16,855)	P value	AOR (95% CI)	P value
Age[†]	62 (51, 72)	65 (55, 74)	<0.001*	1.19 (1.18–1.21)	<0.001*
Gender			<0.001*		
Male	52,477 (54.6)	9,679 (57.4)		1	
Female	43,666 (45.4)	7,176 (42.6)		0.91 (0.88–0.94)	<0.001*
Race			<0.001*		
White	60,677 (70.6)	10,700 (71.3)		1	
Black	12,387 (14.4)	1,624 (10.8)		0.86 (0.81–0.92)	<0.001*
Hispanic	7,118 (8.3)	1,351 (9.0)		1.15 (1.09–1.23)	<0.001*
Asian/Pacific Islander	3,021 (3.5)	753 (5.0)		1.36 (1.25–1.48)	<0.001*
Others	2,791 (3.2)	576 (3.8)		1.21 (1.10–1.33)	<0.001*
Primary expected payer			<0.001*		
Private Insurance	27,860 (29.0)	4,778 (28.4)		1	
Medicaid	12,632 (13.2)	1,937 (11.5)		0.94 (0.88–0.99)	0.047*
Medicare	50,035 (52.2)	9,233 (54.9)		0.90 (0.86–0.95)	<0.001*
Other	5,407 (5.6)	881 (5.2)		1.04 (0.95–1.13)	0.406
Admission			<0.001*		
Elective	78,268 (81.6)	14,510 (86.2)		1	
Non-elective	17,617 (18.4)	2,320 (13.8)		1.35 (1.28–1.42)	<0.001*
Surgery			<0.001*		
No	91,368 (95.0)	16,237 (96.3)		1	
Yes	4,774 (5.0)	618 (3.7)		0.97 (0.89–1.07)	0.509
Hemoptysis	2,947 (3.1)	487 (2.9)	0.220	1.06 (0.96–1.19)	0.248
Comorbidities					
Lung cancer	4,568 (4.8)	1,146 (6.8)	<0.001*	1.57 (1.46–1.68)	<0.001*
Solid organ transplantation	8,692 (9.0)	1,255 (7.4)	<0.001*	0.94 (0.87–1.03)	0.504
Hematologic disease	18,653 (19.4)	4,497 (26.7)	<0.001*	1.67 (1.60–1.74)	<0.001*
Diabetes	16,126 (16.8)	2,126 (12.6)	<0.001*	0.72 (0.68–0.75)	<0.001*
Chronic pulmonary diseases	46,106 (48.0)	7,834 (46.5)	<0.001*	1.05 (1.01–1.09)	0.018*
Liver disease	4,703 (4.9)	2,437 (14.5)	<0.001*	3.47 (3.28–3.67)	<0.001*
Pulmonary NTM infection	2,264 (2.4)	296 (1.8)	<0.001*	0.76 (0.65–0.85)	<0.001*
Prior pulmonary tuberculosis	559 (0.6)	51 (0.3)	<0.001*	0.55 (0.41–0.75)	<0.001*

† Age data presented as median years (interquartile range) in descriptive statistics, and per 10 years change in multivariable analysis. *, P-value is significant at alpha 0.05 level. NTM, nontuberculosis mycobacterial.

Table S3 Multivariable logistic regression identifying predictors of non-elective admission for patients with pulmonary aspergillosis who underwent surgical resection

Predictors	Non-elective surgical admission	
	AOR (95% CI)	P value
Age (per 10 years)	1.02 (0.96–1.08)	0.511
Gender		
Male	1	
Female	0.90 (0.79–1.03)	0.112
Race		
White	1	
Black	3.59 (2.97–4.34)	<0.001*
Hispanic	1.33 (1.06–1.67)	0.001*
Asian/Pacific Islander	2.89 (2.12–3.94)	<0.001*
Others	2.31 (1.64–3.25)	<0.001*
Primary expected payer		
Private Insurance	1	
Medicaid	2.11 (1.72–2.59)	<0.001*
Medicare	1.57 (1.33–1.86)	<0.001*
Other	3.54 (2.81–4.46)	<0.001*
Extent of Surgery		
Wedge Resection	1	
Segmentectomy	0.42 (0.34–0.53)	<0.001*
Lobectomy	0.67 (0.58–0.77)	<0.001*
Pneumonectomy	1.61 (1.24–2.09)	<0.001*
Hemoptysis	2.24 (1.73–2.91)	<0.001*
Other major comorbidities		
Lung cancer	0.92 (0.73–1.16)	0.468
Solid organ transplantation	2.88 (2.16–3.83)	<0.001*
Liver disease	2.75 (1.92–3.93)	<0.001*
HIV	4.62 (2.75–7.77)	<0.001*
Hematologic disease	2.33 (1.84–2.96)	<0.001*
Chronic pulmonary diseases	0.76 (0.66–0.86)	<0.001*

* P-value is significant at alpha 0.05 level. HIV, human immunodeficiency virus.