The Burden of Community-Acquired Pneumonia Requiring Admission to ICU in the United States

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**e-Table 1.** Characteristics of Alive and Deceased Patients at 30 days

| Total Study Population	Alive at 30 days	Deceased at 30 days	*P*
No.	1220	459	
Demographics and Hospitalization			
Age at hospitalization, Median[IQR]	65 [55, 75]	73 [63, 83]	<0.001
Male sex, Frequency(%)	613 (50)	253 (55)	0.641
Black race, Frequency(%)	254 (21)	74 (16)	0.349
Late ICU admission, Frequency(%)	287 (24)	140 (31)	0.044
Social and Medical History, Frequency(%)			
Chronic obstructive pulmonary disease	637 (52)	205 (45)	0.073
Renal disease	453 (37)	222 (48)	<0.001
Diabetes mellitus	465 (38)	160 (35)	>0.999
Congestive heart failure	441 (36)	184 (40)	>0.999
Obese	469 (38)	126 (28)	<0.001
Current smoker	484 (40)	107 (23)	<0.001
Stroke	176 (14)	64 (14)	>0.999
Neoplastic disease	119 (10)	107 (23)	<0.001
Chronic renal failure	118 (10)	49 (11)	>0.999
HIV disease	14 (1)	6 (1)	>0.999
Physical Exam Findings, Median[IQR]			
Altered mental status, Frequency (%)	405 (33)	203 (44)	0.002
Heart rate (Beats/Minute)	113 [98, 128]	112 [97, 131]	>0.999
Respiratory rate (Breaths/Minute)	28 [23, 33]	27 [23, 34]	>0.999
Systolic blood pressure (mmHg)	102 [87, 126]	97 [84, 116]	0.001
Diastolic blood pressure (mmHg)	51 [42, 61]	48 [39, 58]	<0.001
Temperature (Degrees Celsius)	37 [37, 38]	37 [37, 38]	0.008
Laboratory & Radiographic Findings, Median[IQR]			
Hematocrit (percent)	35 [30, 40]	34 [29, 38]	0.015
Serum bicarbonate (mEq/L)	26 [22, 30]	25 [20, 29]	0.117
Blood urea nitrogen (mg/dL)	23 [15, 35]	32 [21, 48]	<0.001
Serum glucose (mg/dl)	162 [126, 227]	159 [128, 218]	>0.999
Serum sodium (mEq/L)	137 [134, 140]	137 [133, 140]	>0.999
Pleural Effusion, Frequency (%)	454 (37)	203 (44)	0.316
Ventilatory Support and Vasopressors, Frequency(%)			
Invasive mechanical ventilatory support	292 (24)	111 (24)	>0.999
Non-invasive mechanical ventilatory support	247 (20)	98 (21)	>0.999
Vasopressors	105 (9)	82 (18)	<0.001
Severity of Disease, Frequency(%)			
PSI Risk Class IV/V	1007 (83)	425 (93)	<0.001
CURB-65 Score	282 (23)	189 (41)	<0.001

e-Table 2. Characteristics of Alive and Deceased Patients at 1 year

Total Study Population	Alive at 1 year	Deceased at 1 year	*P*
No.	890	779	
Demographics and Hospitalization			
Age at hospitalization, Median[IQR]*	62 [52, 73]	72 [62, 82]	<0.001
Male sex, Frequency(%)	432 (49)	429 (55)	0.001
Black race, Frequency(%)	186 (21)	140 (18)	>0.999
Late ICU admission, Frequency(%)	210 (24)	216 (28)	0.371
Social and Medical History, Frequency(%)			
Chronic obstructive pulmonary disease	441 (50)	394 (51)	>0.999
Renal disease	315 (35)	358 (46)	<0.001
Diabetes mellitus	318 (36)	301 (39)	>0.999
Congestive heart failure	289 (32)	329 (42)	<0.001
Obese	359 (40)	230 (30)	<0.001
Current smoker	387 (43)	203 (26)	<0.001
Stroke	123 (14)	115 (15)	>0.999
Neoplastic disease	53 (6)	169 (22)	<0.001
Chronic renal failure	68 (8)	98 (13)	<0.001
HIV disease	11 (1)	9 (1)	>0.999
Physical Exam Findings, Median[IQR]			
Altered mental status, Frequency (%)	290 (33)	313 (40)	0.002
Heart rate (Beats/Minute)	114 [98, 128]	112 [96, 130]	>0.999
Respiratory rate (Breaths/Minute)	28 [23, 33]	28 [23, 34]	>0.999
Systolic blood pressure (mmHg)	103 [87, 126]	99 [85, 120]	0.324
Diastolic blood pressure (mmHg)	51 [42, 62]	49 [40, 58]	0.035
Temperature (Degrees Celsius)	37 [37, 38]	37 [37, 38]	0.056
Laboratory & Radiographic Findings, Median[IQR]			
Hematocrit (percent)	36 [31, 41]	34 [29, 38]	<0.001
Serum bicarbonate (mEq/L)	25 [22, 29]	26 [21, 30]	>0.999
Blood urea nitrogen (mg/dL)	22 [14, 34]	29 [18, 45]	>0.999
Serum glucose (mg/dl)	162 [127, 229]	159 [126, 222]	>0.999
Serum sodium (mEq/L)	137 [134, 140]	137 [133, 140]	>0.999
Pleural Effusion, Frequency (%)	313 (35)	343 (44)	0.070
Ventilatory Support and Vasopressors, Frequency(%)			
Invasive mechanical ventilatory support	209 (23)	192 (25)	>0.999
Non-invasive mechanical ventilatory support	171 (19)	173 (22)	0.256
Vasopressors	78 (9)	107 (14)	0.015
Severity of Disease, Frequency(%)			
PSI Risk Class IV/V	699 (79)	723 (93)	<0.001
CURB-65 Score	176 (20)	290 (37)	<0.001

e-Figure 1.Incidence of community-acquired pneumonia requiring hospitalization (All) compared to the incidence of community-acquired pneumonia requiring admission to intensive care (ICU) according to age brackets.
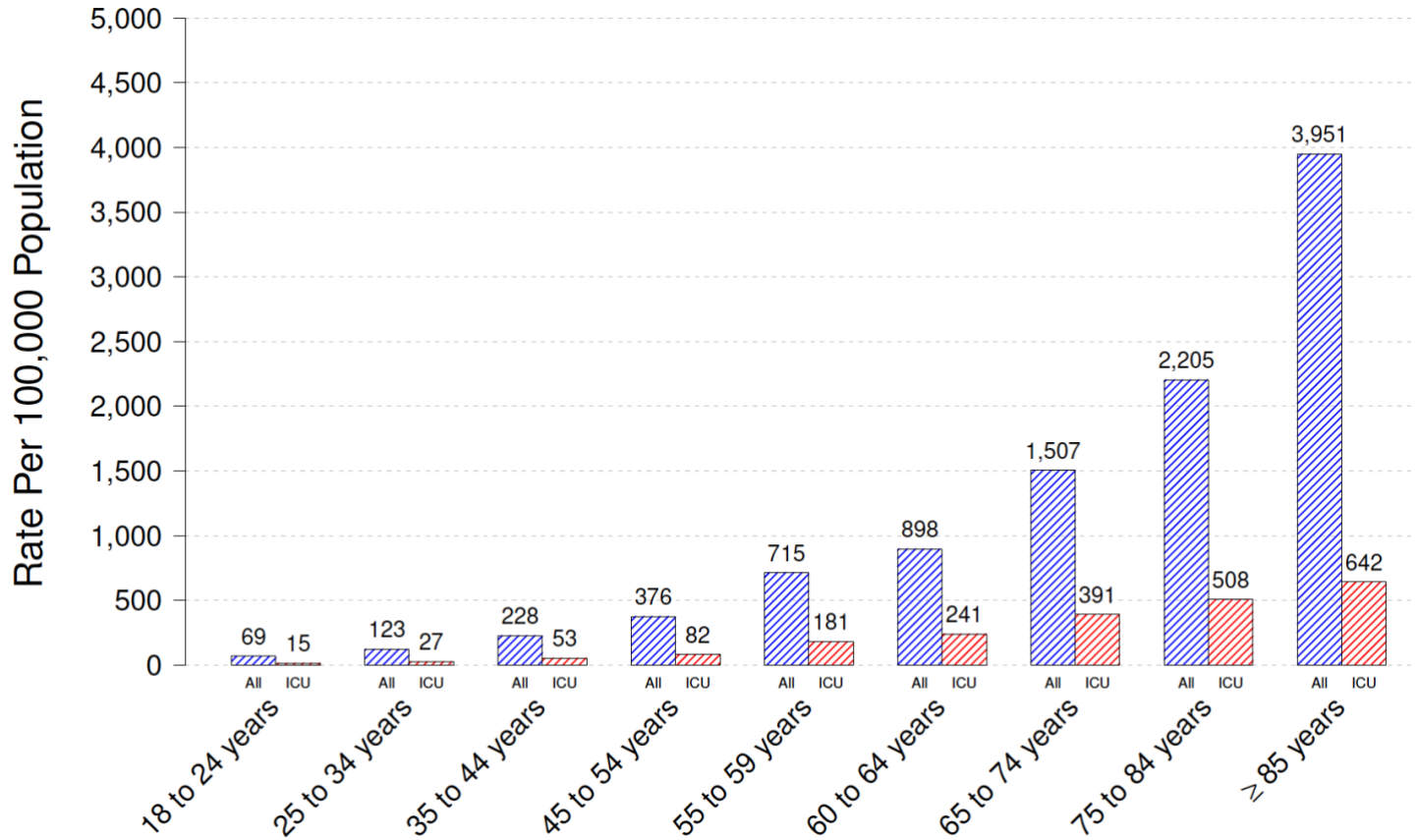
e-Figure 2. Incidence of community-acquired pneumonia requiring admission to intensive care unit according to presence of co-morbidities.
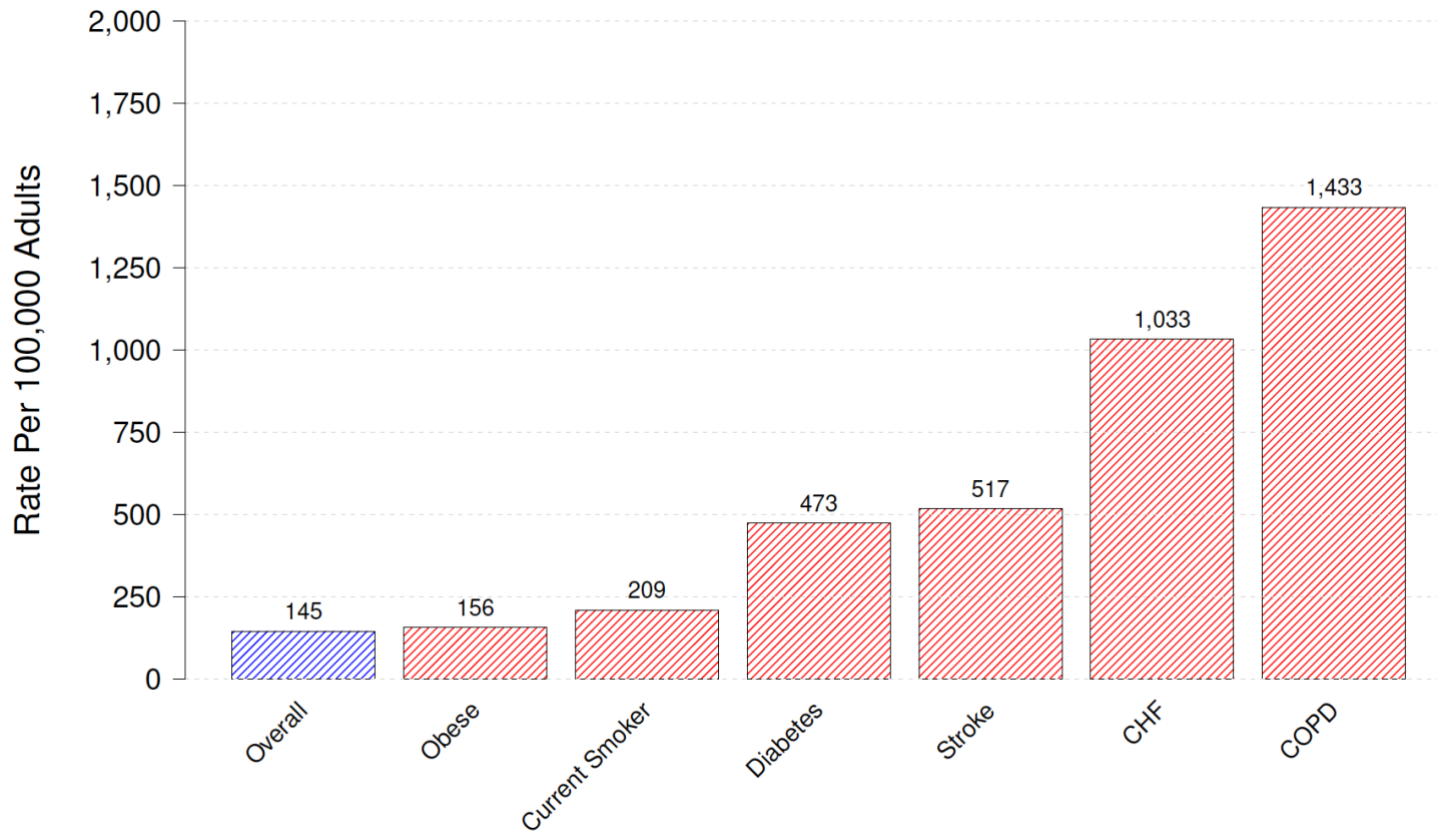
e-Figure 3. Kaplan-Meier curves comparing early and late ICU admission for survival estimates up to one year.
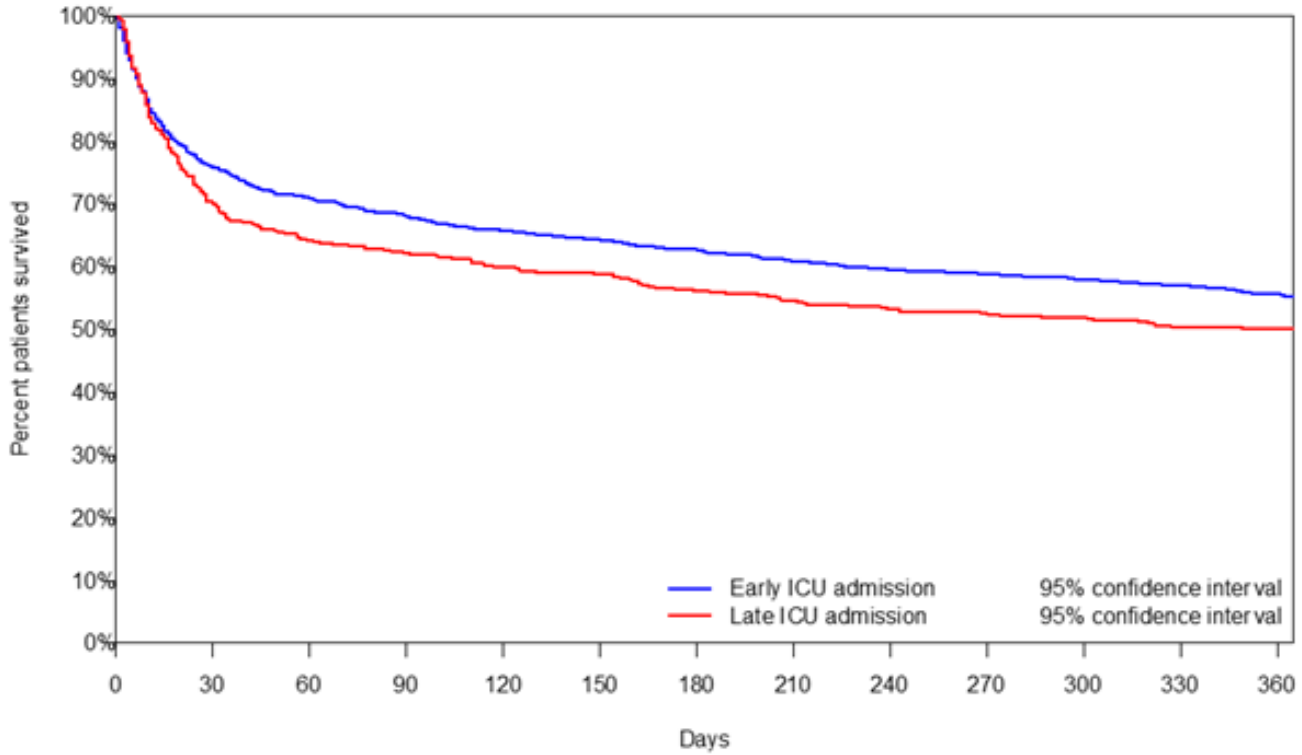
e-Figure 4. Stratified, multivariable Cox proportional hazards regression analysis assessing the impact of demographics, risk factors and comorbidities on mortality.

	<- Less likely : More likely ->	HR	95% CI	P-value
Late ICU admission		1.12	(0.95, 1.31)	0.172
Age per 10 years		1.28	(1.21, 1.36)	<0.001
Male sex		1.21	(1.05, 1.40)	0.011
Black or African American race		0.94	(0.77, 1.15)	0.542
Chronic obstructive pulmonary disease		0.90	(0.77, 1.05)	0.170
Renal disease		1.24	(1.07, 1.44)	0.004
Diabetes		1.03	(0.88, 1.20)	0.733
Congestive Heart Failure		1.09	(0.93, 1.27)	0.302
*BMI > 30		0.79	(0.67, 0.93)	0.004
*BMI < 18.5		1.26	(0.98, 1.61)	0.073
**Current Smoker		0.77	(0.62, 0.95)	0.016
**Former Smoker		1.01	(0.85, 1.21)	0.871
Stroke		0.97	(0.79, 1.19)	0.774
Neoplastic disease in past year		2.22	(1.86, 2.65)	<0.001

*Reference group: BMI: 18.5 – 30
**Reference group: No smoking history

Hazard Ratio

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