Original Article

DOI: 10.4274/haseki.galenos.2026.91885
Med Bull Haseki 2026;64(2):101-107

Prognostic Performance of the PATHOS Score Compared with CURB-65 and A-DROP in Emergency Department Patients with Community-acquired Pneumonia

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Abstract

Aim: Accurate early risk stratification is essential for guiding disposition and monitoring decisions in community-acquired pneumonia (CAP) in the emergency department. We aimed to evaluate the prognostic performance of the PATHOS score and compare it with CURB-65 and A-DROP in predicting 30-day mortality in adult patients with CAP.

Methods: This retrospective, single-center observational cohort study included consecutive adult patients (≥18 years) presenting to the emergency department with CAP between January 1, 2019, and January 1, 2024. Patient data were obtained from the hospital's electronic medical record system using the International Classification of Diseases, Tenth Revision. CURB-65, A-DROP, and PATHOS scores were calculated based on the collected data. The ability of the PATHOS score to predict 30-day mortality was evaluated and compared with CURB-65 and A-DROP scores.

Results: A total of 605 cases were included in the study. The overall 30-day mortality rate was 8.6%. In predicting 30-day mortality, the PATHOS score [area under the curve (AUC)=0.849] demonstrated better performance than CURB-65 (AUC=0.733) and A-DROP (AUC=0.780). A PATHOS score of >3 was identified as the optimal threshold for predicting 30-day mortality, with a sensitivity of 75.0%, a specificity of 86.8%, and a negative predictive value of 97.4%.

Conclusion: Our findings indicate that the PATHOS score can serve as an effective tool in the clinical management of patients with CAP and contribute significantly to clinical decision-making.

Keywords: Pneumonia, prognosis, risk assessment, clinical decision-making, critical care, community-acquired infections

Introduction

Community-acquired pneumonia (CAP) remains a major cause of morbidity and mortality worldwide despite advances in antimicrobial therapy and supportive care (1). Mortality among hospitalized CAP patients is reported to range from approximately 5% to 15%, rising substantially in older patients and in those with comorbidities or severe disease (2). Contemporary guideline updates continue to emphasize early diagnosis and severity assessment to guide site-of-care decisions and monitoring intensity in adults with CAP (1,3,4).

Several scoring systems are used to estimate disease severity and short-term mortality risk in CAP, including the pneumonia severity index (PSI), CURB-65, and A-DROP (5,6). Although PSI is widely recommended and validated, its multi-variable structure may limit practicality in time-pressured emergency department (ED) settings (5,7). CURB-65 and A-DROP are simpler bedside tools; however, because they rely on a limited set of physiologic and laboratory variables, they may not fully capture risk heterogeneity, particularly among older patients and those with cardiovascular vulnerability (6,7). Accordingly, recent studies continue to develop and evaluate pragmatic

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Received: 30.12.2024 **Accepted:** 26.02.2026 **Publication Date:** 27.03.2026

Cite this article as: Kokulu K, Sert ET. Prognostic performance of the PATHOS score compared with CURB-65 and A-DROP in emergency department patients with community-acquired pneumonia. Med Bull Haseki. 2026;64(2):101-107

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prediction models and scores for 30-day mortality in CAP (7-9). This ongoing effort reflects the need for risk stratification tools that are both accurate and feasible for application in the ED. In parallel, routinely measured biomarkers such as troponin (reflecting myocardial injury) and platelet count abnormalities have repeatedly been associated with worse outcomes in CAP, suggesting that composite models incorporating these parameters may enhance prognostic discrimination (10,11).

We hypothesized that the PATHOS score comprising age, platelet count, troponin level, heart rate (HR), oxygenation, and systolic blood pressure (SBP) would demonstrate superior prognostic performance for 30-day mortality compared with that of CURB-65 and A-DROP in adult patients presenting to the ED with CAP. Therefore, the aim of this study was to evaluate the ability of PATHOS to predict 30-day mortality and to directly compare its discrimination with that of CURB-65 and A-DROP. We expect that improved early risk stratification at ED presentation will contribute to more consistent disposition decisions (outpatient vs. inpatient care) and to identifying patients who may benefit from closer monitoring and timely escalation of care.

Materials and Methods

Compliance with Ethical Standards

The study protocol was approved by the Aksaray University Health Sciences Scientific Research Ethics Committee (approval number: 2024/021, date: 04.04.2024). The study was conducted in accordance with the principles of the Declaration of Helsinki. Given the retrospective nature of the study, the requirement for informed consent was waived by the committee.

Study Design and Participants

This retrospective, single-center, observational cohort study included patients aged 18 years and older who presented consecutively to the ED and were diagnosed with CAP between January 1, 2019, and January 1, 2024. Patients excluded from the study were those who lacked sufficient clinical data and follow-up information; those under 18 years of age; those exhibiting atypical findings on chest radiography or thoracic computed tomography; those who were not diagnosed with pneumonia; those with a history of hospitalization within the previous two weeks; those with concurrent diagnoses of other severe infections; those diagnosed with acute coronary syndrome; those receiving antibiotic or immunosuppressive therapy; those with aspiration-related pneumonia; and pregnant women. The study flowchart is presented in Figure 1.

Data Collection and Definitions

Patient data were obtained from the hospital's electronic medical records system using the International Classification of Diseases-Tenth Revision. The collected variables included age, gender, vital parameters at presentation (SBP, diastolic blood pressure, respiratory

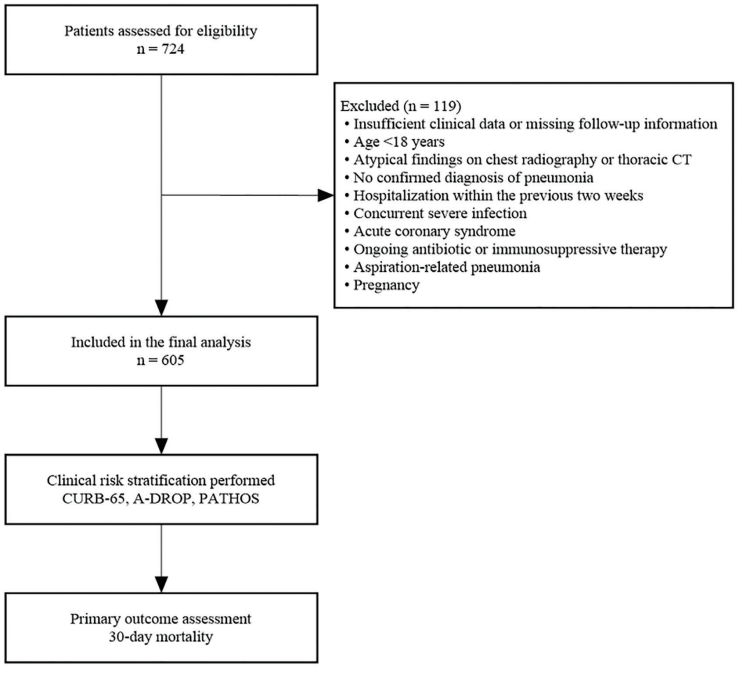

Figure 1. Flow chart of the study
CT: Computed tomography

rate, and HR), complete blood count and biochemical parameters (urea, platelet count, and troponin levels), arterial blood gas parameters [partial arterial oxygen pressure and oxygen saturation (SpO_2)], radiological imaging reports, and patient outcomes (discharge or death). CURB-65, A-DROP, and PATHOS scores were calculated from the obtained data. The PATHOS score assessed the following parameters: age >80 years, platelet count <100 or >400×10³/μL, troponin level >17 pg/mL, SBP<100 mmHg, HR>100 bpm, and SpO_2<90% (12). Each criterion was assigned a score of 1 point if present. Community-acquired pneumonia was defined as the presence of a new infiltrate consistent with pneumonia on chest imaging and at least one of the following clinical findings: fever (≥38 °C) or hypothermia (<35 °C), cough, new or purulent sputum production, dyspnea, pleuritic chest pain, or abnormal breath sounds on auscultation (13). The predictive power of the PATHOS score for 30-day mortality was calculated and compared with CURB-65 and A-DROP scores.

Statistical Analysis

Statistical analyzes were performed using the SPSS, version 22.0 (IBM Corp., Armonk, NY, USA). The normality of the continuous data distribution was evaluated using the Kolmogorov-Smirnov test. Continuous variables with normal distributions were expressed as mean ± standard deviation, while non-normally distributed continuous variables were expressed as median and interquartile range (IQR, 25th-75th percentile). Frequencies and percentages were used for categorical variables. Comparisons of categorical variables were undertaken using the chi-square test. The patients were categorized into two groups based on 30-day mortality outcomes: non-survivors and survivors. Potential risk factors were analyzed using logistic regression, with odds ratio (OR) and 95% confidence intervals (CIs) calculated. Variables with p<0.10 in univariate analysis were entered into the multivariate logistic regression model. Model calibration was assessed using the Hosmer-Lemeshow goodness-of-fit test. The prognostic power of CURB-65, A-DROP, and PATHOS scores in patients with CAP was evaluated using receiver operating characteristic (ROC) analysis. Values for area under the curve (AUC), cutoff, sensitivity, and specificity were determined. The optimal cut-off values were determined using the Youden index from ROC analysis. A p-value of <0.05 was considered statistically significant.

Results

A total of 605 cases were included in the study, comprising 58.8% (n=356) males and 41.2% (n=249) females. The median age of the cases was 68 years (IQR=59-73). The distribution of patients according to their PATHOS, A-DROP, and CURB-65 scores is presented in Table 1.

Subgroup analyses revealed that among patients with PATHOS scores of 0-1, the mortality rate was 2.6% (13/493), compared with 37.6% (32/85) among those with scores of 3-6 (p<0.001). Compared with CURB-65 and A-DROP scores, the PATHOS score provided superior classification of high-risk patients (Table 2).

In logistic regression analysis, significant risk factors for 30-day mortality included age ≥65 years (OR=2.83; 95% CI=1.35-6.17; p=0.011), blood urea nitrogen level >20 mg/dL (OR=2.04; 95% CI=1.37-5.92; p=0.004), platelet count <100×10³/μL or >400×10³/μL (OR=2.69; 95% CI=1.51-4.81; p=0.006), troponin level above the cut-off (OR=3.54; 95% CI=2.18-5.21; p<0.001), SpO_2<90% (OR=1.11; 95% CI=1.04-2.65; p=0.002), and SBP<100 mmHg (OR=1.19; 95% CI=1.07-3.71; p=0.001) (Table 3).

Table 1. Baseline characteristics of patients with community-acquired pneumonia

Variable	
Age, years	68 (59-73)
Gender	
Male	356 (58.8%)
Female	249 (41.2%)
CURB-65 score	
C: confusion	23 (3.8%)
U: blood urea nitrogen >20 mg/dL	129 (21.3%)
R: respiratory rate ≥30 breaths per minute	147 (24.3%)
B: systolic blood pressure <90 mmHg or diastolic ≤60 mmHg	104 (17.2%)
A: age ≥65 years	371 (61.3%)
A-DROP score	
A: age (years) (male ≥70 and female ≥75)	250 (41.3%)
D: dehydration (blood urea nitrogen ≥21 mg/dL)	121 (20.0%)
R: respiratory failure (SaO_2≤90% or PaO_2≤60 mmHg)	75 (12.4%)
O: orientation disruption (confusion)	23 (3.8%)
P: low blood pressure (systolic blood pressure ≤90 mmHg)	104 (17.2%)
PATHOS score	
P: platelet count <100 or >400×10³/μL	63 (10.4%)
A: age>80 years	39 (6.4%)
T: troponin level >cut-off	61 (10.1%)
H: heart rate >100 bpm	132 (21.8%)
O: oxygenation (SpO_2<90%)	75 (12.4%)
S: systolic blood pressure <100 mmHg	123 (20.3%)
30-day mortality	52 (8.6%)
Data are presented as median (25th-75th percentile or n (%)	

The logistic regression model demonstrated good calibration (Hosmer-Lemeshow p>0.05).

The ability of the PATHOS score to predict mortality in patients with CAP was evaluated using ROC analysis (Figure 2). The PATHOS score demonstrated greater accuracy in predicting 30-day mortality (AUC=0.849) than CURB-65 (AUC=0.733) and A-DROP (AUC=0.780).

A PATHOS score of >3 was found to predict 30-day mortality with a sensitivity of 75.0%, a specificity of 86.8%, and a negative predictive value of 97.4% (Table 4).

Discussion

The study results demonstrate that the PATHOS score (AUC=0.849) offers higher accuracy in predicting mortality among patients with CAP compared to CURB-65 (AUC=0.733) and A-DROP (AUC=0.780). In ROC analysis, the PATHOS score predicted mortality with a sensitivity of 75.0% and a specificity of 86.8%. These findings suggest that the PATHOS score may serve as a valuable tool in the clinical management of patients with CAP, addressing gaps in existing scoring systems and contributing to clinical decision-making. Importantly, our study reflects a real-world ED cohort, which may explain the slightly higher mortality rate compared with outpatient CAP populations.

Patients with CAP are generally older individuals with multiple comorbidities (14). Making appropriate treatment decisions is critically important. Clinicians, therefore, require supportive parameters during the decision-making process, and various scoring systems have been developed for this purpose. CURB-65, A-DROP, and PSI are widely used to assess the severity of CAP (5,6). Pneumonia severity index is the recommended scoring system in international guidelines for determining the need for hospitalization, instead of CURB-65 (5).

Pneumonia severity index is based on 20 variables and requires radiographic assessment. These features can complicate its use in crowded EDs and may delay time-sensitive decision-making. Although PSI is widely recommended in guidelines, it was not included in the present analysis due to its complexity and limited availability of some variables in retrospective ED data. Therefore, there is a need for simpler and more rapidly applicable scoring systems in emergency care settings. CURB-65 offers simplicity due to its reliance on a limited number of parameters, enabling quick calculations. However, it may fall short of accurately determining the severity of pneumonia in patients with comorbidities.

Previous studies have reported CURB-65 AUC values of 0.829 for 28-day mortality (15), 0.755 for 30-day mortality (16), and 0.738 for in-hospital mortality (17).

Table 2. Thirty-day mortality rates across subgroups of the CURB-65, A-DROP and PATHOS scores

Subgroup	All	30-day mortality
CURB-65 score		
0-1	390 (64.5%)	14 (3.6%)
2	137 (22.6%)	18 (13.1%)
3-5	78 (12.9%)	20 (25.6%)
p-value		<0.001
A-DROP score		
0-1	458 (75.7%)	14 (3.1%)
2	88 (14.5%)	23 (26.1%)
3-5	59 (9.8%)	15 (25.4%)
p-value		<0.001
PATHOS score		
0-1	493 (81.5%)	13 (2.6%)
2	27 (4.5%)	7 (25.9%)
3-6	85 (14.0%)	32 (37.6%)
p-value		<0.001

Statistical tests: Fisher's exact test for categorical variables

Table 3. Univariate and multivariate analyses of risk factors associated with 30-day mortality in patients with community-acquired pneumonia

	Univariate logistic regression			Multivariate logistic regression		
Risk factors	**OR**	**95% CI**	**p-value**	**OR**	**95% CI**	**p-value**
Age ≥65 years	2.33	1.31-4.15	0.004	2.83	1.35-6.17	0.011
Confusion	1.89	0.23-4.43	0.989	1.71	0.29-8.09	0.549
Respiratory rate ≥30/min	1.74	0.95-3.18	0.072	1.53	0.52-4.68	0.452
Heart rate >100 bpm	1.51	1.06-2.34	0.048	1.22	0.46-1.89	0.114
Systolic blood pressure <100 mmHg	1.75	1.16-2.34	<0.001	1.19	1.07-3.71	0.001
SpO_2<90%	1.21	1.09-1.95	<0.001	1.11	1.04-2.65	0.002
Blood urea nitrogen >20 mg/dL	3.38	2.17-7.46	<0.001	2.04	1.37-5.92	0.004
Platelet count <100 or >400×10^3/μL	3.75	2.49-5.39	<0.001	2.69	1.51-4.81	0.006
Troponin level >cut-off	4.96	3.10-7.31	<0.001	3.54	2.18-5.21	<0.001

CI: Confidence interval, OR: Odds ratio

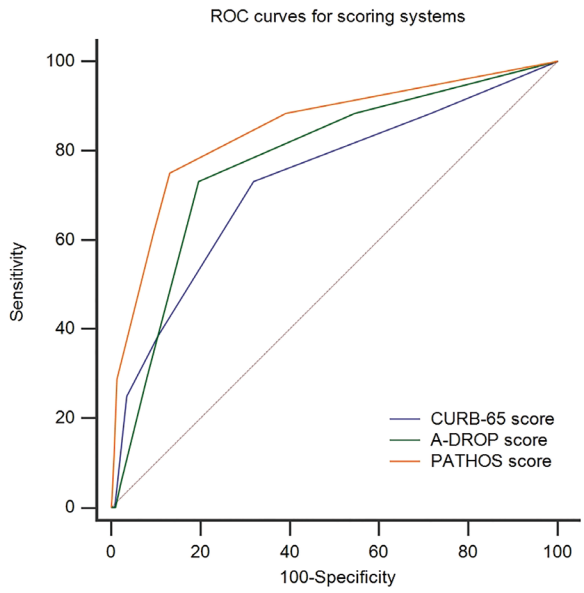

Figure 2. Receiver operating characteristic curves for the scoring systems
ROC: Receiver operating characteristic

Studies have also shown that A-DROP performs similarly to CURB-65 in evaluating disease severity (6,18). A recent study comparing 30-day mortality rates found comparable discriminative performance between A-DROP and CURB-65 (AUC=0.756 for A-DROP and 0.808 for CURB-65). However, both scores demonstrated a lower ability to predict 72-hour ED revisit rates (AUC=0.617 for A-DROP and 0.639 for CURB-65) (6). Variability in reported AUC values complicates achieving consensus regarding these systems' effectiveness. Our findings are consistent with previous studies regarding the performance of CURB-65 and A-DROP scores in predicting mortality.

In the literature, differences in patient selection and event rates appear to influence the performance of bedside scores. In a prospective Japanese cohort of hospitalized CAP patients, Kasamatsu et al. (18) reported high discrimination for A-DROP and CURB-65 (AUC=0.88 for each) and for PSI (AUC=0.89). In the same cohort, CRP performed poorly (AUC=0.54), whereas semi-quantitative procalcitonin showed intermediate discrimination (AUC=0.80) (18). By contrast, Limapichat and Supavajana (6) evaluated an ED cohort largely considered for discharge with a very low 30-day mortality rate (1.47%) and reported AUCs of 0.756 for A-DROP and 0.808 for CURB-65, alongside only modest discrimination for 72-hour ED revisit (AUC=0.617 vs. 0.639, respectively) (6). In our ED cohort, which had a higher 30-day mortality rate (8.6%) and a broader spectrum of severity, A-DROP (AUC=0.780) and CURB-65 (AUC=0.733) demonstrated performance within the ranges reported in prior studies. In contrast, the PATHOS score demonstrated greater discriminatory ability, with an AUC of 0.849. These comparisons suggest that cohort characteristics may partly explain heterogeneous A-DROP and CURB-65 performance and also support the potential added value of incorporating troponin and platelet abnormalities in ED-based mortality risk stratification.

Previous research has highlighted the prognostic significance of troponin and platelet levels in patients with CAP. Platelets play a vital role in antimicrobial defense and modulation of inflammatory responses. Studies on platelet count abnormalities (thrombocytopenia and thrombocytosis) in patients with CAP have demonstrated an association between these abnormalities and clinical outcomes. Mirsaeidi et al. (10) reported that both thrombocytopenia and thrombocytosis were associated with 30-day mortality, with thrombocytosis carrying a higher mortality risk. In another study, Ghoneim et al. (19) identified associations between thrombocytosis and respiratory complications such as empyema, lung abscess, and pleural effusion. Thrombocytopenia was linked to sepsis and septic shock. Both abnormalities independently predicted 30-day mortality. In contrast, Mısıroğlu et al. (20) found that platelet changes were not directly predictive of mortality but were associated with increased intensive care and mechanical ventilation needs during follow-up. These findings suggest that platelet count should be considered a significant biomarker for predicting mortality and complications in patients with CAP.

Troponin is a biomarker frequently used to assess myocardial injury. Studies have shown that troponin levels measured at the time of presentation are associated with increased mortality in patients with CAP. A study involving 295 patients with CAP found that elevated troponin levels at presentation were a strong predictor of both short- and long-term mortality risks (11). The same study demonstrated that combining troponin levels with the

Table 4. The accuracy of different scoring systems in predicting 30-day mortality

Scoring system	AUC (95% CI)	Cut-off	Sensitivity	Specificity	PPV	NPV
CURB-65 score	0.733 (0.695-0.767)	>3	73.06	67.99	17.7	96.4
A-DROP score	0.780 (0.744-0.812)	>3	73.08	80.29	25.9	96.9
PATHOS score	0.849 (0.818-0.877)	>3	75.00	86.80	34.8	97.4

AUC: Area under the curve, CI: Confidence interval, PPV: Positive predictive value, NPV: Negative predictive value

PSI classification provided superior predictive capacity for short-term mortality compared with the PSI classification alone (AUC for troponin and PSI combination=0.903; AUC for PSI alone=0.818). Similarly, a study focusing on patients with CAP without acute coronary syndrome identified an association between elevated troponin levels and mortality in the intensive care unit (21). The increase in troponin levels is considered related to oxygen supply-demand imbalance, systemic inflammation, and coagulation mechanisms. Our study highlights the effectiveness of the PATHOS score as a tool for predicting prognosis in patients with CAP. This score incorporates platelet count and troponin levels, thereby improving its accuracy and reliability. The inclusion of additional parameters, such as troponin and platelet count, in scoring systems can enhance the precision of risk stratification, particularly for patients with high cardiovascular risk. Therefore, the PATHOS score is a robust alternative with a broader set of parameters for determining prognosis in this patient population. In addition, PATHOS has shown prognostic utility in other ED-based acute care cohorts, supporting further evaluation across ED populations (22,23).

Study Limitations

This study has certain limitations. First, it had a retrospective design. Second, it was conducted at a single center, which may have limited sample size and patient diversity, thereby reducing the generalizability of the findings to other patient groups. Third, scores were calculated from baseline presentation variables and therefore do not account for dynamic changes during treatment; consequently, our findings primarily inform early risk stratification rather than assessment of response to therapy. In addition, the predictive efficacy of the PATHOS score lacked external validation in an independent cohort, necessitating cautious interpretation of the findings' generalizability.

Despite these limitations, our study provides a consecutive, ED-based adult CAP cohort with short-term outcome assessment and a direct, clinically interpretable head-to-head comparison of three bedside tools using both discrimination metrics and risk-stratum separation.

Conclusion

In this ED-based cohort of adults with CAP, PATHOS demonstrated greater discriminative ability for predicting 30-day mortality than CURB-65 and A-DROP. With a cut-off of >3, PATHOS provided high specificity and an excellent negative predictive value, supporting its use as a practical bedside option for early risk stratification in the ED.

Ethics

Ethics Committee Approval: The study protocol was approved by the Aksaray University Health Sciences Scientific Research Ethics Committee (approval number: 2024/021, date: 04.04.2024).

Informed Consent: Given the retrospective nature of the study, the requirement for informed consent was waived by the committee. All patient data were anonymized prior to analysis.

Footnotes

Authorship Contributions

Concept: K.K., E.T.S., Design: K.K., E.T.S., Data Collection or Processing: K.K., E.T.S., Analysis or Interpretation: K.K., E.T.S., Literature Search: K.K., E.T.S., Writing: K.K., E.T.S.

Conflict of Interest: No conflicts of interest or competing interests have been reported by the authors or any individuals with control over the content of this article.

Financial Disclosure: No financial support was received for this paper or for the research that resulted in it.

References

1. Jones BE, Ramirez JA, Oren E, et al. Diagnosis and management of community-acquired pneumonia: an Official American Thoracic Society Clinical Practice Guideline. Am J Respir Crit Care Med. 2026;212:24-44.
2. Ferreira-Coimbra J, Sarda C, Rello J. Burden of community-acquired pneumonia and unmet clinical needs. Adv Ther. 2020;37:1302-18.
3. Dinh A, Barbier F, Bedos JP, et al. Update of guidelines for management of Community Acquired pneumonia in adults by the French Infectious Disease Society (SPILF) and the French-Speaking Society of Respiratory Diseases (SPLF): Endorsed by the French intensive care society (SRLF), the French microbiology society (SFM), the French radiology society (SFR) and the French emergency society (SFMU). Respir Med Res. 2025;87:101161.
4. National Institute for Health and Care Excellence (NICE). Pneumonia: diagnosis and management [Internet]. London: NICE; 2025 Sep 2 [cited 2026 Jan 28]. Available from: https://www.nice.org.uk/guidance/ng250
5. Metlay JP, Waterer GW, Long AC, et al. Diagnosis and treatment of adults with community-acquired pneumonia. An official clinical practice guideline of the American Thoracic Society and Infectious Diseases Society of America. Am J Respir Crit Care Med. 2019;200:e45-67.
6. Limapichat T, Supavajana S. Comparison between the severity scoring systems A-DROP and CURB-65 for predicting safe discharge from the emergency department in patients with community-acquired pneumonia. Emerg Med Int. 2022;2022:6391141.
7. Pomerantz A, Yaacov A, Goldman A, et al. Evaluation of PSI, CURB-65, and CRB-65 as prognostic tools in hospitalized

immunocompetent patients with pneumonia: real-world outcomes from internal medicine wards. Pneumonia (Nathan). 2026;18:3.

8. Algin A, Özdemir S, Afacan MA, Yusufoglu K, Özkan A. Comparative analysis of APUA, APUA-RO2, and CURB-65 scores for mortality risk in hospitalized pneumonia patients. Am J Emerg Med. 2025;97:136-139.
9. Calis AG, Karaboga B, Uzer F, et al. Correlation of pneumonia severity ındex and CURB-65 score with neutrophil/lymphocyte ratio, platelet/lymphocyte ratio, and monocyte/lymphocyte ratio in predicting ın-hospital mortality for community-acquired pneumonia: observational study. J Clin Med. 2025;14:728.
10. Mirsaeidi M, Peyrani P, Aliberti S, et al. Thrombocytopenia and thrombocytosis at time of hospitalization predict mortality in patients with community-acquired pneumonia. Chest. 2010;137:416-420.
11. Vestjens SMT, Spoorenberg SMC, Rijkers GT, et al. High-sensitivity cardiac troponin T predicts mortality after hospitalization for community-acquired pneumonia. Respirology. 2017;22:1000-1006.
12. Spampinato MD, Covino M, Passaro A, et al. Predicting in-hospital mortality in pulmonary embolism patients: development and external validation of the PATHOS score. Clin Exp Emerg Med. 2023;10:26-36.
13. Carratalà J, Fernández-Sabé N, Ortega L, et al. Outpatient care compared with hospitalization for community-acquired pneumonia: a randomized trial in low-risk patients. Ann Intern Med. 2005;142:165-172.
14. Putot A, Tetu J, Perrin S, et al. A new prognosis score to predict mortality after acute pneumonia in very elderly patients. J Am Med Dir Assoc. 2016;17:1123-1128.
15. Zhou H, Guo S, Lan T, Ma S, Zhang F, Zhao Z. Risk stratification and prediction value of procalcitonin and clinical severity scores for community-acquired pneumonia in ED. Am J Emerg Med. 2018;36:2155-2160.
16. Ito A, Ishida T, Tokumasu H, Yamazaki A, Washio Y. Evaluation of pneumonia severity scoring systems in nursing and healthcare-associated pneumonia for predicting prognosis: a prospective, cohort study. J Infect Chemother. 2020;26:372-378.
17. Ma C-M, Wang N, Su Q-W, Yan Y, Yin F-Z. The performance of CURB-65 and PSI for predicting in-hospital mortality of community-acquired pneumonia in patients with type 2 diabetes compared with the non-diabetic population. Diabetes Metab Syndr Obes. 2021;14:1359-1366.
18. Kasamatsu Y, Yamaguchi T, Kawaguchi T, et al. Usefulness of a semi-quantitative procalcitonin test and the A-DROP Japanese prognostic scale for predicting mortality among adults hospitalized with community-acquired pneumonia. Respirology. 2012;17:330-336.
19. Ghoneim AHA, Mohammad MA, Elghamrawy MA, Embarak S. Platelet count as a predictor of outcome of hospitalized patients with community-acquired pneumonia at Zagazig University Hospitals, Egypt. Egypt J Bronchol. 2020;14:11.
20. Mısıroğlu RS, Aksay E, Şancı E, Tertemiz KC. Can thrombocytosis or thrombocytopenia predict complicated clinical course and 30-days mortality in patients with pneumonia? Turk J Med Sci. 2021;51:2903-2907.
21. Lee YJ, Lee H, Park JS, et al. Cardiac troponin I as a prognostic factor in critically ill pneumonia patients in the absence of acute coronary syndrome. J Crit Care. 2015;30:390-394.
22. Menekse TS, Gunsay RH, Sert ET, Utlu SG, Kokulu K. PATHOS score as a predictor of in-hospital mortality in patients with acute cardiogenic pulmonary edema presenting to the emergency department. Gazi Med J. 2025;36:422-429.
23. Sert ET, Kokulu K. Performance of the PATHOS score in predicting in-hospital mortality in patients aged 65 years and older admitted to the intensive care unit from the emergency department. Cukurova Med J. 2025;50:99-105.