Validation of the Revised Baux Score for Predicting In-Hospital Mortality Among Burn Patients in a Resource-Limited Tertiary Burn Center: A Retrospective Cohort Study

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Abstract

Background: Early prediction of mortality remains fundamental in the management of severe burn injuries because it facilitates risk stratification, clinical decision-making, family counseling, and allocation of limited healthcare resources. Although the Revised Baux Score (rBaux), which incorporates age, total body surface area (TBSA), and inhalation injury, has demonstrated favorable prognostic performance in several countries, evidence from low- and middle-income settings remains limited. This study aimed to evaluate the predictive value of the Revised Baux Score for in-hospital mortality among burn patients treated at a tertiary referral burn center in Indonesia.
Methods: A retrospective cohort study was conducted using medical records of burn patients admitted to the Burn Unit of H. Adam Malik General Hospital, Medan, Indonesia, between 2021 and 2026. Demographic characteristics, burn etiology, TBSA, burn depth, inhalation injury, comorbidities, and Revised Baux Scores were collected. Clinical characteristics were compared between survivors and non-survivors. Multivariable logistic regression was performed to identify independent predictors of mortality, while the discriminatory performance of the Revised Baux Score was evaluated using receiver operating characteristic (ROC) curve analysis with calculation of the area under the curve (AUC).
Results: A total of 113 patients were included, of whom 59 (52.2%) died during hospitalization. Non-survivors were significantly older, had larger total body surface area (TBSA) burns, and higher Revised Baux Scores than survivors (all $p < 0.001$). Inhalation injury was observed exclusively among non-survivors (30.1%, $p < 0.001$). In multivariable logistic regression, the Revised Baux Score was the only independent predictor of in-hospital mortality (OR 1.265, 95% CI 1.127–1.421; $p < 0.001$). Receiver operating characteristic analysis demonstrated excellent predictive performance, with an area under the curve of 0.972 (95% CI 0.948–0.997). An optimal cutoff value of ≥86 yielded 89.8% sensitivity and 94.4% specificity for predicting mortality.
Conclusions: The Revised Baux Score is a robust and clinically practical predictor of in-hospital mortality among burn patients in a tertiary referral burn center in Indonesia. Given its simplicity and strong discriminatory performance, the score may serve as an effective early risk stratification tool, particularly in resource-limited healthcare settings. Prospective multicenter validation is warranted to confirm its generalizability across diverse burn populations.

Keywords: Burn injury; Revised Baux Score; Mortality prediction; Prognostic model; Risk stratification; Burn center; Indonesia.

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Introduction

Burn injury remains a major global public health problem, contributing substantially to morbidity, mortality, prolonged hospitalization, permanent disability, and healthcare expenditures. According to the World Health Organization (WHO), approximately 180,000 burn-related deaths occur annually, with the vast majority occurring in low- and middle-income countries (LMICs), where access to specialized burn care is often limited. Despite advances in critical care, fluid resuscitation, infection control, early excision, and skin grafting, mortality from severe burn injuries remains unacceptably high, particularly among patients with extensive burns or inhalation injury (1,2).

Accurate early prediction of mortality is fundamental in the management of burn patients. Reliable prognostic models facilitate timely risk stratification, guide decisions regarding intensive care admission, optimize allocation of limited healthcare resources, and provide objective information for communication with patients and their families. Furthermore, standardized prognostic tools are valuable for benchmarking institutional performance and comparing outcomes across burn centers (3,4).

Several prognostic scoring systems have been developed to estimate mortality after burn injury, including the Baux Score, Abbreviated Burn Severity Index (ABSI), Belgian Outcome in Burn Injury (BOBI), Ryan Score, and FLAMES Score. Among these, the original Baux Score, calculated as the sum of patient age and total body surface area (TBSA) burned, has been widely adopted because of its simplicity and ease of application. However, improvements in burn care over recent decades have reduced mortality rates, limiting the predictive accuracy of the original Baux Score in contemporary clinical practice. Moreover, the original model does not account for inhalation injury, one of the strongest independent determinants of mortality following severe burns (5–7).

To overcome these limitations, Osler et al. developed the Revised Baux Score (rBaux), which incorporates inhalation injury into the traditional Baux calculation by adding 17 points when inhalation injury is present (8). Since its introduction, the Revised Baux Score has consistently demonstrated excellent discrimination for mortality prediction across diverse patient populations and has undergone external validation in multiple burn centers worldwide. Comparative studies have further shown that the rBaux score performs similarly to, or better than, more complex prognostic models while maintaining simplicity and ease of bedside application, making it an attractive tool for routine clinical use (8–11).

Although the Revised Baux Score has been extensively evaluated in high-income countries, evidence from LMICs remains relatively limited. Differences in patient demographics, burn mechanisms, referral pathways, intensive care capacity, surgical resources, and infection control practices may influence the predictive performance of prognostic models across healthcare settings. Consequently, external validation within specific populations is essential before routine implementation can be recommended (12–14).

Indonesia continues to experience a substantial burden of burn injuries, yet studies evaluating validated mortality prediction models remain scarce. H. Adam Malik General Hospital is one of the largest tertiary referral hospitals in western Indonesia and manages a considerable number of patients with moderate-to-severe burn injuries annually. Establishing the validity of a simple and reliable prognostic model in this setting may improve early clinical decision-making, optimize resource allocation, and support standardized risk stratification, particularly in resource-constrained healthcare systems (15).

Therefore, this study aimed to evaluate the performance of the Revised Baux Score in predicting in-hospital mortality among patients admitted to the Burn Unit of H. Adam Malik General Hospital, Medan, Indonesia. Specifically, this study investigated the association between the Revised Baux Score and mortality, identified independent predictors of mortality, and assessed the discriminatory performance of the Revised Baux Score using receiver operating characteristic (ROC) curve analysis.

Methods

Study Design and Setting

This retrospective cohort study was conducted at the Burn Unit of H. Adam Malik General Hospital, Medan, Indonesia, a tertiary referral center for burn care. Medical records of consecutive patients admitted between January 2021 and December 2026 were reviewed to evaluate the prognostic performance of the Revised Baux Score (rBaux) in predicting in-hospital mortality.

Study Population

All patients admitted with acute burn injuries during the study period were screened for eligibility. Patients with complete demographic, clinical, and outcome data required for calculation of the Revised Baux Score were included. Patients with incomplete medical records, missing data regarding age, total body surface area (TBSA), inhalation injury, or hospital outcome were excluded from the analysis.

Data Collection

Clinical data were extracted from electronic and paper-based medical records using a standardized data collection form. Variables collected included age, sex, burn etiology, burn depth, percentage of TBSA burned, inhalation injury, comorbidities, Revised Baux Score, and in-hospital outcome (survival or death).

Burn size was determined as the percentage of TBSA using the Lund–Browder chart or the Rule of Nines, as documented in the medical record. Burn depth was categorized as superficial-to-mid dermal, deep dermal, or full-thickness burns according to the attending burn surgeon's clinical assessment. Inhalation injury was diagnosed based on documented clinical findings, including a history of smoke exposure in an enclosed space, facial burns, carbonaceous sputum, hoarseness, stridor, bronchoscopic findings when available, or other clinical documentation recorded by the treating physician.

Revised Baux Score

The Revised Baux Score was calculated using the established formula:

Revised Baux Score = Age (years) + TBSA (%) + 17 (if inhalation injury was present).

The primary outcome was all-cause in-hospital mortality.

Statistical Analysis

Continuous variables were tested for normality using the Shapiro–Wilk test and are presented as mean ± standard deviation (SD). Comparisons between survivors and non-survivors were performed using the independent-samples *t*-test for normally distributed variables. Categorical variables are presented as frequencies and percentages and were compared using the chi-square test or Fisher's exact test, as appropriate.

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Variables with a p-value <0.25 in univariable analysis were entered into a multivariable logistic regression model to identify independent predictors of in-hospital mortality. Odds ratios (ORs) with 95% confidence intervals (CIs) were reported. Because inhalation injury demonstrated complete separation, with all affected patients experiencing mortality, this variable was excluded from the multivariable model. Its prognostic contribution remained incorporated within the Revised Baux Score calculation.

The discriminatory ability of the Revised Baux Score was evaluated using receiver operating characteristic (ROC) curve analysis. Model performance was quantified by the area under the ROC curve (AUC) with corresponding 95% confidence intervals. The optimal cutoff value was determined using the Youden Index, and sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and overall diagnostic accuracy were calculated.

Model calibration was assessed using the Hosmer–Lemeshow goodness-of-fit test, while explanatory performance was evaluated using the Nagelkerke R^2 statistic. Statistical significance was defined as a two-sided p-value <0.05. All analyses were performed using IBM SPSS Statistics version XX (IBM Corp., Armonk, NY, USA).

Ethical Considerations

This study was approved by the Health Research Ethics Committee of the Faculty of Medicine, Universitas Sumatera Utara/H. Adam Malik General Hospital. Owing to the retrospective nature of the study and the use of anonymized medical records, the requirement for informed consent was waived by the ethics committee. Patient confidentiality was maintained throughout the study in accordance with the Declaration of Helsinki.

Results

Study Population

A total of 113 patients with acute burn injuries admitted to the Burn Unit of H. Adam Malik General Hospital, Medan, between January 2021 and December 2026 were included in this retrospective cohort study after applying the eligibility criteria. The Revised Baux Score (rBaux) was calculated for all patients using age, total body surface area (TBSA), and the presence of inhalation injury. During hospitalization, 54 patients (47.8%) survived, whereas 59 patients (52.2%) died.

Patient Characteristics

The demographic and clinical characteristics of the study population according to in-hospital mortality are presented in Table 1. The mean age of the overall cohort was 35.13 ± 16.42 years. Patients who died were significantly older than survivors (41.15 ± 14.41 vs. 28.56 ± 16.07 years, $p < 0.001$). Likewise, non-survivors had a significantly larger mean TBSA compared with survivors (61.78 ± 18.52% vs. 34.72 ± 9.37%, $p < 0.001$).

Overall, males accounted for 64.6% of the study population, although sex distribution did not differ significantly between survivors and non-survivors ($p = 0.220$). Burn depth was significantly associated with mortality ($p = 0.015$). Deep dermal burns were the most common injury (48.7%) and occurred more frequently among patients who died than among survivors (61.0% vs. 35.2%).

Thermal injury was the predominant burn mechanism (86.7%) and was significantly associated with mortality ($p = 0.007$). In contrast, most patients with electrical burns survived (12 of 14 patients). Comorbidities were identified in only three patients (2.7%) and showed no significant association with mortality (p = 1.000). Inhalation injury was documented in 34 patients (30.1%), all of whom died during hospitalization. None of the survivors had inhalation injury, resulting in a highly significant association with mortality (p < 0.001).

Table 1. Baseline demographic and clinical characteristics according to in-hospital mortality

Variable	Total (n = 113)	Survivors (n = 54)	Non-survivors (n = 59)	p-value
Age (years), mean ± SD	35.13 ± 16.42	28.56 ± 16.07	41.15 ± 14.41	<0.001[a]
TBSA (%), mean ± SD	48.85 ± 20.09	34.72 ± 9.37	61.78 ± 18.52	<0.001[a]
Sex, n (%)				0.220[b]
Male	73 (64.6)	38 (70.4)	35 (59.3)	
Female	40 (35.4)	16 (29.6)	24 (40.7)	
Burn depth, n (%)				0.015[b]
Superficial–mid dermal	27 (23.9)	18 (33.3)	9 (15.3)	
Deep dermal	55 (48.7)	19 (35.2)	36 (61.0)	
Full-thickness	31 (27.4)	17 (31.5)	14 (23.7)	
Burn etiology, n (%)				0.007[b]
Thermal	98 (86.7)	42 (77.8)	56 (94.9)	
Electrical	14 (12.4)	12 (22.2)	2 (3.4)	
Chemical	1 (0.9)	0	1 (1.7)	
Comorbidity, n (%)				1.000[c]
No	110 (97.3)	53 (98.1)	57 (96.6)	
Yes	3 (2.7)	1 (1.9)	2 (3.4)	
Inhalation injury, n (%)				<0.001[b]
No	79 (69.9)	54 (100.0)	25 (42.4)	
Yes	34 (30.1)	0	34 (57.6)	

[a] Independent-samples *t*-test.
[b] Pearson's chi-square test.
[c] Fisher's exact test.

Association Between Revised Baux Score and In-Hospital Mortality

The distribution of Revised Baux Scores according to clinical outcome is summarized in Table 2. The overall mean Revised Baux Score was 89.10 ± 31.90. Patients who died had significantly higher rBaux scores than survivors (112.73 ± 22.56 vs. 63.28 ± 17.11, p < 0.001).

Table 2. Revised Baux Score according to in-hospital mortality

Variable	Total	Survivors	Non-survivors	p-value
Revised Baux Score, mean ± SD	89.10 ± 31.90	63.28 ± 17.11	112.73 ± 22.56	<0.001[a]

[a] Independent-samples *t*-test.

Independent Predictors of In-Hospital Mortality

Variables with a p-value <0.25 in the univariable analysis were entered into the multivariable logistic regression model. These included Revised Baux Score, sex, burn depth, and burn etiology. Inhalation injury was excluded because complete separation occurred, with all patients presenting inhalation injury dying during hospitalization. Since inhalation injury is incorporated into the Revised Baux Score calculation, its prognostic contribution remained represented within the model.

As shown in Table 3, the Revised Baux Score was the only independent predictor of in-hospital mortality (OR 1.265, 95% CI 1.127–1.421, $p < 0.001$). Sex, burn depth, and burn etiology were not independently associated with mortality after multivariable adjustment.

The logistic regression model demonstrated good overall performance, with a significant omnibus likelihood ratio test ($p < 0.001$), satisfactory calibration according to the Hosmer–Lemeshow goodness-of-fit test ($p = 0.856$), a Nagelkerke R^2 of 0.855, and an overall classification accuracy of 92.0%.

Table 3. Multivariable logistic regression analysis of factors associated with in-hospital mortality

Variable	Adjusted OR	95% CI	p-value
Revised Baux Score	1.265	1.127–1.421	<0.001
Sex (male)	3.436	0.576–20.488	0.175
Burn depth	—	—	0.506
Burn etiology	0.181	0.007–4.803	0.307

Predictive Performance of the Revised Baux Score

The receiver operating characteristic (ROC) curve analysis demonstrated excellent discrimination of the Revised Baux Score for predicting in-hospital mortality (Figure 1). The area under the ROC curve (AUC) was 0.972 (95% CI 0.948–0.997, $p < 0.001$).

The optimal cutoff value determined using the Youden Index was ≥86, yielding a sensitivity of 89.8% and specificity of 94.4%. At this threshold, the positive predictive value (PPV) was 94.6%, the negative predictive value (NPV) was 89.5%, and the overall diagnostic accuracy was 92.0%.

Table 4. Diagnostic performance of the Revised Baux Score for predicting in-hospital mortality

Parameter	Value
Area under the ROC curve (AUC)	0.972
Standard error	0.012
95% Confidence interval	0.948–0.997

Parameter	Value
p-value	<0.001
Optimal cutoff (Revised Baux Score)	≥86
Sensitivity	89.8%
Specificity	94.4%
Youden Index	0.842
Positive predictive value (PPV)	94.6%
Negative predictive value (NPV)	89.5%
Overall accuracy	92.0%

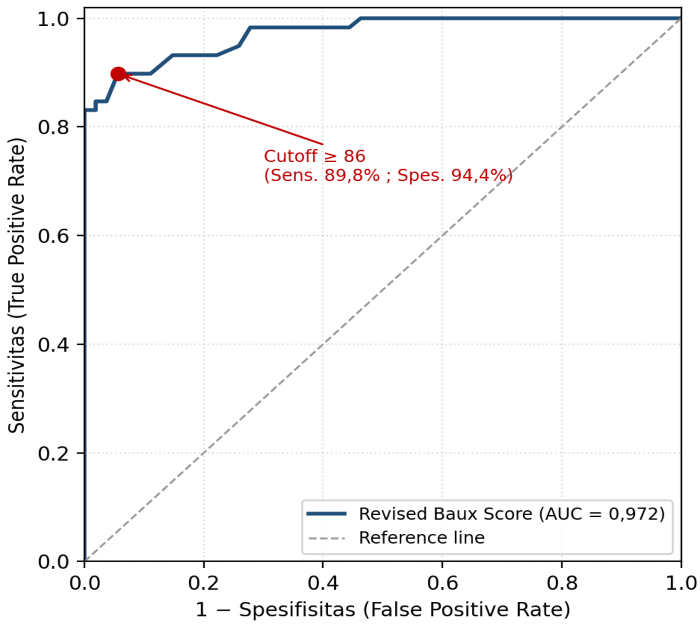

Figure 1. Receiver operating characteristic (ROC) curve showing the discriminatory performance of the Revised Baux Score for predicting in-hospital mortality among patients with burn injuries. The area under the curve (AUC) was **0.972** (95% CI 0.948–0.997; $p < 0.001$), indicating excellent predictive performance.

Discussion

This study evaluated the prognostic performance of the Revised Baux Score (rBaux) for predicting in-hospital mortality among burn patients admitted to a tertiary referral burn center in Indonesia. The principal findings were that patients who died were significantly older, had larger burn sizes, and had substantially higher rBaux scores than survivors. In multivariable analysis, the Revised Baux Score emerged as the only independent predictor of in-hospital mortality, while receiver operating characteristic analysis demonstrated excellent discriminatory performance with an AUC of 0.972. These findings support the utility of the rBaux score as a simple and reliable prognostic tool for early mortality risk stratification in burn patients.

Age has consistently been recognized as an important determinant of burn mortality because increasing age is associated with reduced physiological reserve, impaired immune function, delayed wound healing, and a higher prevalence of chronic comorbidities (1,2). In the present study, non-survivors were significantly older than survivors, consistent with previous reports demonstrating that mortality increases progressively with advancing age, even after adjustment for burn severity (3,4). Although age alone was not independently associated with mortality in the multivariable model, its contribution is incorporated into the Revised Baux Score, supporting the rationale for composite prognostic models that integrate multiple clinically relevant variables.

Burn size, expressed as the percentage of total body surface area (TBSA), also differed markedly between survivors and non-survivors. Patients who died had a mean TBSA approaching 62%, whereas survivors had a mean TBSA of approximately 35%. Extensive burn injuries induce profound systemic inflammatory responses, capillary leak syndrome, hypermetabolism, immune dysfunction, and multiple organ failure, all of which substantially increase mortality risk (5,6). Previous multicenter studies have consistently demonstrated TBSA as one of the strongest predictors of death following burn injury, explaining its inclusion in virtually all established prognostic scoring systems (7,8).

A notable finding of the present study was the perfect association between inhalation injury and mortality, with every patient diagnosed with inhalation injury dying during hospitalization. This resulted in complete separation during logistic regression analysis, precluding estimation of an independent odds ratio. Inhalation injury has long been recognized as one of the most powerful predictors of adverse outcomes because airway thermal injury and smoke inhalation increase the risk of acute respiratory distress syndrome, pneumonia, respiratory failure, and sepsis (9,10). The inclusion of inhalation injury in the Revised Baux Score therefore represents a major advantage over the original Baux Score, which did not account for this important clinical variable (11).

The Revised Baux Score was the only independent predictor of mortality in the adjusted regression model. Each one-point increase in the score was associated with a 26.5% increase in the odds of in-hospital mortality. This finding is consistent with the original study by Osler et al., who demonstrated that incorporation of inhalation injury significantly improved the predictive accuracy of the traditional Baux Score (11). Similar observations have subsequently been reported across North America, Europe, and Asia, where the Revised Baux Score has consistently outperformed or equaled more complex prognostic models despite requiring only three routinely available clinical variables (12–15). The simplicity of the scoring system makes it particularly attractive for routine clinical practice, especially in emergency settings where rapid decision-making is essential.

The excellent discriminatory ability observed in this study (AUC = 0.972) compares favorably with previous external validation studies. Osler et al. originally reported an AUC exceeding 0.90 for mortality prediction (11), while subsequent investigations have demonstrated AUC values generally ranging between 0.90 and 0.96 depending on patient population and burn severity (13–16). The slightly higher AUC observed in the present study may reflect the relatively homogeneous study population, the high proportion of severe burn injuries managed at a tertiary referral center, and the strong association between inhalation injury and mortality. Nevertheless, the findings indicate excellent discrimination according to conventional ROC interpretation, suggesting that the Revised Baux Score accurately distinguishes survivors from non-survivors within this population.

The optimal cutoff value identified in this study (rBaux ≥86) demonstrated high sensitivity and specificity for predicting mortality. Although the optimal threshold varies among studies because of differences in case mix, healthcare systems, and mortality prevalence, previous investigations have similarly reported cutoff values ranging from approximately 80 to 100 (13,15,16). Rather than applying a universal threshold, clinicians should consider locally validated cutoff values that reflect institutional patient characteristics and available treatment resources. In this context, the present findings provide clinically relevant evidence supporting the use of an rBaux threshold of 86 for early identification of high-risk patients in Indonesian tertiary burn centers.

Interestingly, burn depth and burn etiology were significantly associated with mortality in univariable analysis but lost statistical significance after multivariable adjustment. This observation suggests that much of their prognostic effect is mediated through variables already included in the Revised Baux Score, particularly TBSA and inhalation injury. Previous studies have similarly shown that once overall burn severity is adequately quantified, additional clinical variables frequently contribute limited incremental prognostic information (8,12). Likewise, sex and comorbidities were not independently associated with mortality in this cohort, although the low prevalence of documented comorbidities may have reduced statistical power to detect their effects.

The clinical implications of these findings are particularly relevant for low- and middle-income countries. Sophisticated prognostic models often require laboratory biomarkers, physiological parameters, or complex calculations that may not be immediately available in resource-limited settings. In contrast, the Revised Baux Score requires only age, TBSA, and inhalation injury, variables routinely assessed during the initial evaluation of burn patients. Consequently, the score can facilitate early triage, intensive care prioritization, referral decisions, family counseling, and resource allocation without additional cost or specialized equipment. Adoption of standardized prognostic tools may also improve benchmarking of burn outcomes across institutions and contribute to quality improvement initiatives.

This study has several strengths. It represents one of the few external validations of the Revised Baux Score conducted in Indonesia and provides evidence from a tertiary referral burn center serving a large population in western Indonesia. In addition, the study comprehensively evaluated both calibration and discrimination using multivariable regression and ROC analysis, demonstrating excellent predictive performance.

Several limitations should be acknowledged. First, the retrospective single-center design may limit the generalizability of the findings and introduces the possibility of selection and information bias. Second, the relatively modest sample size reduced statistical power for subgroup analyses, particularly for less common burn etiologies and patients with documented comorbidities. Third, inhalation injury demonstrated complete separation because all affected patients died, preventing direct estimation of its independent effect within the regression model. Finally, other potential prognostic variables, including time to definitive treatment, sepsis, mechanical ventilation, Acute Physiology and Chronic Health Evaluation (APACHE II) score, Sequential Organ Failure Assessment (SOFA) score, serum lactate, and nutritional status, were not evaluated and may provide incremental prognostic value beyond the Revised Baux Score.

Future multicenter prospective studies involving larger and more diverse patient populations are warranted to externally validate these findings and determine whether integration of physiological or laboratory biomarkers can further improve mortality prediction beyond the Revised Baux Score. Machine learning-based prediction models may also be explored, although their added complexity should be balanced against the practicality and simplicity of bedside clinical tools.

Overall, the present study demonstrates that the Revised Baux Score provides excellent prediction of in-hospital mortality among burn patients in an Indonesian tertiary referral hospital. Its simplicity, strong discriminatory performance, and reliance on routinely available clinical variables support its implementation as a practical risk stratification tool, particularly in resource-constrained burn care settings.

Conclusion

The Revised Baux Score demonstrated excellent performance in predicting in-hospital mortality among burn patients treated at a tertiary referral burn center in Indonesia. Higher Revised Baux Scores were independently associated with an increased risk of death, and the model showed outstanding discriminatory ability with high sensitivity and specificity for mortality prediction. Given its simplicity, reliance on routinely available clinical variables, and strong predictive performance, the Revised Baux Score may serve as a practical tool for early risk stratification and clinical decision-making, particularly in resource-limited settings. Further prospective multicenter studies are warranted to validate these findings and determine the generalizability of the proposed cutoff value across diverse burn populations.

References

1. World Health Organization. Burns [Internet]. Geneva: World Health Organization; 2024 [cited 2026 Aug 7]. Available from: https://www.who.int/news-room/fact-sheets/detail/burns
2. Jeschke MG, van Baar ME, Choudhry MA, Chung KK, Gibran NS, Logsetty S. Burn injury. Nat Rev Dis Primers. 2020;6(1):11.
3. Greenhalgh DG. Management of burns. N Engl J Med. 2019;380(24):2349–59.
4. Greenhalgh DG. Burn resuscitation. J Burn Care Res. 2023;44(1):1–13.
5. Brusselaers N, Monstrey S, Colpaert K, De Waele JJ, Vandewoude K, Blot SI. Outcome prediction in burn patients: a systematic review of mortality predictive models. Crit Care. 2010;14(1):R5.
6. Tobiasen J, Hiebert JM, Edlich RF. The abbreviated burn severity index. Ann Emerg Med. 1982;11(5):260–2.
7. Ryan CM, Schoenfeld DA, Thorpe WP, Sheridan RL, Cassem EH, Tompkins RG. Objective estimates of the probability of death from burn injuries. N Engl J Med. 1998;338(6):362–6.
8. Osler T, Glance LG, Hosmer DW. Simplified estimates of the probability of death after burn injuries: extending and updating the Baux score. J Trauma. 2010;68(3):690–7.
9. Steinvall I, Bak Z, Sjöberg F. Validation of burn mortality prediction models in contemporary burn care. Burns. 2021;47(5):1150–8.
10. Pham TN, Gibran NS. Prediction models after burn injury. Surg Clin North Am. 2021;101(6):1025–37.
11. Jeschke MG, Herndon DN. Burns in children: standard and new treatments. Lancet Child Adolesc Health. 2022;6(3):209–21.
12. Walker PF, Buehner MF, Wood LA, Boyer NL, Driscoll IR, Lundy JB, et al. Diagnosis and management of inhalation injury: an updated review. Crit Care. 2023;27:188.
13. Endorf FW, Ahrenholz DH. Inhalation injury and respiratory management in burn patients. J Burn Care Res. 2021;42(4):691–9.
14. Smolle C, Cambiaso-Daniel J, Forbes AA, Wurzer P, Hundeshagen G, Branski LK, et al. Recent trends in burn epidemiology worldwide: a systematic review. Burns. 2017;43(2):249–57.

15. Jeschke MG. Post-burn hypermetabolism: past, present and future. Burns Trauma. 2023;11:tkad006.
16. Greenhalgh DG, Holmes JH, Palmieri TL, et al. American Burn Association consensus guidelines for burn care. J Burn Care Res. 2024;45(2):189–214.
17. American Burn Association. Practice Guidelines for Burn Care [Internet]. Chicago: American Burn Association; 2024 [cited 2026 Aug 7]. Available from: https://ameriburn.org
18. ISBI Practice Guidelines Committee. ISBI practice guidelines for burn care. Burns. 2024;50(2):245–78.
19. Galeiras R, Lorente JA, Pértega S, Patiño MJ, Tomás M, López P. A model for predicting mortality among critically ill burn victims. Burns. 2009;35(2):201–9.
20. Salehi SH, As'adi K, Mousavi SJ, Shoar S. Evaluation of the Revised Baux Score as a predictor of mortality in burn patients: an external validation study. Burns. 2021;47(7):1625–32.
21. Kim YJ, Lee JW, Kim DY, et al. External validation of the Revised Baux Score in Asian patients with severe burns. Burns. 2022;48(5):1143–50.
22. Pantet O, Pasquier M, Kronenberg A, et al. External validation of burn mortality prediction scores in critically ill adult burn patients. Burns. 2022;48(3):634–42.
23. Atiyeh BS, Costagliola M, Hayek SN. Burn prevention mechanisms and outcomes: pitfalls, failures and successes. Burns. 2009;35(2):181–93.
24. World Health Organization. Global Burn Registry Report 2023. Geneva: World Health Organization; 2023.
25. STROBE Initiative. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: Guidelines for Reporting Observational Studies. Int J Surg. 2014;12(12):1495–9.