

## DAFTAR PUSTAKA

1. Menteri Kesehatan Republik Indonesia. Peraturan Menteri Kesehatan Republik Indonesia nomor 28 tahun 2021 tentang pedoman penggunaan antibiotik. Jakarta: Menkes RI;2021.
2. Estiningsih D, Puspitasari I, Nuryastuti T. Identifikasi infeksi multidrug-resistant organisms (MDROs) pada pasien yang dirawat di bangsal neonatal intensive care unit (NICU) RSUP DR. Soeradji Tirtonegoro Klaten. *JMPF*. 2016;6(3):243–8.
3. Morrison L, Zembower TR. Antimicrobial resistance. *Gastrointest Endosc Clin N Am*. 2020;30(4):619–35.
4. Otto C. Antibiotic use in the united states progress and opportunities. *J Antimicrob Chemother*. 2017;1–9.
5. Parathon H, Kuntaman K, Widiastoety TH, Muliawan BT, Karuniawati A, Qibtiyah M, et al. Progress towards antimicrobial resistance containment and control in Indonesia. *BMJ*. 2017;358:31–5.
6. Laboratorium Mikrobiologi Klinik. Antibiogram RSUP Dr. M. Djamil Padang tahun 2022. Padang: RSUP Dr. M. Djamil;2022.
7. Mayr FB, Yende S, Angus DC. Epidemiology of severe sepsis. *Virulence*. 2014;5(1):4–11.
8. Purwanto DS, Astrawinata DAW. Mekanisme kompleks sepsis dan syok septik. *J Biomedik*. 2018;10(3):143.
9. Singer M, Deutschman CS, Seymour C, Shankar Hari M, Annane D, Bauer M, et al. The third international consensus definitions for sepsis and septic shock (sepsis-3). *JAMA*. 2016;315(8):801–10.
10. Wicaksono A, Adisasmita A, Harijanto E. Frekuensi dan mortalitas pasien sepsis dan syok sepsis di ICU rumah sakit swasta tipe B di Tangerang Selatan. *J Epidemiol Kesehat Indones*. 2022;6(1):13–20.
11. Menteri Kesehatan Republik Indonesia. Keputusan Menteri Kesehatan

Republik Indonesia nomor HK.01.07/MENKES/342/2017 tentang pedoman nasional pelayanan kedokteran tata laksana sepsis. Jakarta: Menkes RI;2017.

12. Fataya E, Fadrian, Mustafa Noer, Dwitya Elvira, Yuliarni Syafrita, Netti Suharti. Characteristics of adult sepsis patients admitted to Department of Internal Medicine, Dr. M. Djamil General Hospital, Padang, Indonesia. *Biosci Med J Biomed Transl Res.* 2023;7(3):3191–8.
13. Umemura Y, Ogura H, Takuma K, Fujishima S, Abe T, Kushimoto S, et al. Current spectrum of causative pathogens in sepsis: a prospective nationwide cohort study in Japan. *Int J Infect Dis.* 2021;103:343–51.
14. Pradipta IS, Sodik DC, Lestari K, Parwati I, Halimah E, Diantini A, et al. Antibiotic resistance in sepsis patients: evaluation and recommendation of antibiotic use. *N Am J Med Sci.* 2013;5(6):344–52.
15. Nainggolan JJP, Kumaat LT, Laihad ML. Gambaran sumber terjadinya infeksi pada penderita sepsis dan syok septik di ICU RSUP Prof. Dr. R. D. Kandou Manado periode agustus 2016 sampai dengan september 2017. *e-CliniC.* 2017;5(2):3–7.
16. Rudd KE, Johnson SC, Agesa KM, Shackelford KA, Tsoi D, Kievlan DR, et al. Global, regional, and national sepsis incidence and mortality, 1990–2017: analysis for the global burden of disease study. *Lancet.* 2020;395(10219):200–11.
17. Bauer M, Gerlach H, Vogelmann T, Preissing F, Stiefel J, Adam D. Mortality in sepsis and septic shock in Europe, North America and Australia between 2009 and 2019-results from a systematic review and meta-analysis. *Crit Care.* 2020;24(1):1–9.
18. Dumas G, Lavillegrand JR, Joffre J, Bigé N, De-Moura EB, Baudel JL, et al. Mottling score is a strong predictor of 14-day mortality in septic patients whatever vasopressor doses and other tissue perfusion parameters. *Crit Care.* 2019;23(1):1–9.
19. Wang R, Cosgrove SE, Tschudin-Sutter S, Han JH, Turnbull AE, Hsu AJ, et

- al. Cefepime therapy for cefepime- susceptible extended-spectrum  $\beta$ -lactamase-producing enterobacteriaceae bacteremia. *Open Forum Infect Dis.* 2016;3(3):1–4.
20. Tamma PD, Han JH, Rock C, Harris AD, Lautenbach E, Hsu AJ, et al. Carbapenem therapy is associated with improved survival compared with piperacillin-tazobactam for patients with extended-spectrum  $\beta$ -lactamase bacteremia. *Clin Infect Dis.* 2015;60(9):1319–25.
21. Prasetya YG, Ihsan I, Izzah AZ. Profil klinis dan luaran syok sepsis pada pasien anak yang dirawat di PICU RSUP Dr. M. Djamil Padang. *JIKESI.* 2021;1(3):234–8.
22. Dorland WAN. Kamus saku kedokteran Dorland. In: Mahode AA, editor. 31st ed. Jakarta: EGC; 2010.
23. Setiati S, Alwi I, Sudoyo AW, Simadibrata M, Setiyohadi B, Syam AF. Buku ajar ilmu penyakit dalam edisi keenam. *Ilmu Penyakit Dalam.* 2014. 692–99 p.
24. Niederman MS, Baron RM, Bouadma L, Calandra T, Daneman N, De Waele J, et al. Initial antimicrobial management of sepsis. *Crit Care.* 2021;25(1):1–11.
25. Tjokroprawiro A, Setiawan PB, Santoso D, Soegiarto G, Rahmawati LD. Buku ajar ilmu penyakit dalam Universitas Airlangga Edisi 2. 2015. 701–07 p.
26. Hidayati, Arifin H, Raveinal. Kajian penggunaan antibiotik pada pasien sepsis dengan gangguan ginjal. *JSFK.* 2016;2(2):129–37.
27. Ljungström L, Andersson R, Jacobsson G. Incidences of community onset severe sepsis, sepsis-3 sepsis, and bacteremia in Sweden - A prospective population-based study. *PLoS One.* 2019;14(12):1–17.
28. Manapa AM. Karakteristik penderita sepsis yang dirawat di beberapa rumah sakit di Indonesia periode tahun 2003 sampai dengan tahun 2019. Universitas Bosowa; 2020.

29. Cecconi M, Evans L, Levy M, Rhodes A. Sepsis and septic shock. *Lancet*. 2018 Jul;392(10141):75–87.
30. Sejati A, Pitoyo CW, Suhendro, Abdullah M. Faktor-faktor prognostik mortalitas pasien sepsis berat fase lanjut di ruang rawat intensif rumah sakit Dr. Cipto Mangunkusumo. *Ina J CHEST Crit Emerg Med*. 2015;2(1):1–99.
31. Ramachandran G. Gram-positive and gram-negative bacterial toxins in sepsis. *Landes Biosci*. 2014;5(1):213–8.
32. Seymour CW, Angus DC. Sepsis and septic shock. In: *Harrison's principles of internal medicine 20th edition*. 2018, p. 2044–52.
33. Kumar V AAA. *Robbins Basic Pathology 10th edition*. In 2018.
34. Font MD, Thyagarajan B, Khanna AK. Sepsis and septic shock – basics of diagnosis, pathophysiology and clinical decision making. *Med Clin N Am*. 2020;104(4):573–85.
35. Caraballo C, Jaimes F. Organ dysfunction in sepsis: An ominous trajectory from infection to death. *Yale J Biol Med*. 2019;92(4):629–40.
36. Woznica EA, Ingot M, Woznica RK, Lysenko L. Liver dysfunction in sepsis. *Adv Clin Exp Med*. 2018;27(4):547–51.
37. Seymour CW. *Handbook of sepsis*. Wiersinga WJ, editor. Pennsylvania: Springer; 2018.
38. Huang Y, Chen R, Jiang L, Li S, Xue Y. Basic research and clinical progress of sepsis-associated encephalopathy. *JIM*. 2021;1(2):90–5.
39. Wentowski C, Mewada N, Nielsen ND. Sepsis in 2018 : a review. *Anaesth Intensive Care Med*. 2019;20(1):6–13.
40. Evans L, Rhodes A, Alhazzani W, Antonelli M, Coopersmith CM, French C, et al. Surviving sepsis campaign: international guidelines for management of sepsis and septic shock 2021. *Intensive Care Med*. 2021;47(11):1181–247.
41. Westwood M, Ramaekers B, Whiting P, Tomini F, Joore M, Armstrong N, et al. Procalcitonin testing to guide antibiotic therapy for the treatment of

sepsis in intensive care settings and for suspected bacterial infection in emergency department settings: a systematic review and cost-effectiveness analysis. *NHS*. 2015;19(96):3–236.

42. Dewi J. Peran procalcitonin sebagai marker infeksi. *Medicinus*. 2019;32(3):52–6.
43. Purwanto DS, Astrawinata DAW. Pemeriksaan laboratorium sebagai indikator sepsis dan syok septik. *JBM*. 2019;11(1):1–9.
44. Magiorakos AP, Srinivasan A, Carey RB, Carmeli Y, Falagas ME, Giske CG, et al. Multidrug-resistant, extensively drug-resistant and pandrug-resistant bacteria: an international expert proposal for interim standard definitions for acquired resistance. *Clin Microbiol Infect*. 2012;18(3):268–81.
45. Siegel JD, Rhinehart E, Jackson M, Chiarello L. Management of organisms in healthcare settings, 2006. *CDC*. 2017;1–74.
46. Soedarsono S, Widyaningsih PD, Mertaniasih NM. The risk factors of multidrug-resistant organisms in hospitalized patients with community-acquired pneumonia in Dr. Soetomo Hospital Surabaya, Indonesia. *Acta Med Indones*. 2021;53(2):169–76.
47. Kurniawati AF, Satyabakti P, Arbianti N. Perbedaan risiko multidrug resistance organisms (MDROS) menurut faktor risiko dan kepatuhan hand hygiene. *J Berk Epidemiol*. 2015;3(3):277–89.
48. Webb BJ, Dascomb K, Stenehjem E, Vikram HR, Agrwal N, Sakata K, et al. Derivation and multicenter validation of the drug resistance in pneumonia clinical prediction score. *Antimicrob Agents Chemother*. 2016;60(5):2652–63.
49. Fadrian, Chen K, Kumalawati J, Rumende CM, Shatri H, Nelwan EJ. The validation of drug resistance in pneumonia (DRIP) score in predicting infections due to drug-resistant pathogens in community-acquired pneumonia at Cipto Mangunkusumo Hospital, Jakarta, Indonesia. *Acta Med*

Indones. 2021;53(4):416–22.

50. Cesur S, Demiroz AP. Antibiotics and the mechanisms of resistance to antibiotics. *Med j Islam world acad sci.* 2013;21(4):138–42.
51. Reygaert WC. An overview of the antimicrobial resistance mechanisms of bacteria. *AIMS Microbiol.* 2018;4(3):482–501.
52. Katzung BG, Masters SB, Trevor AJ. *Farmakologi dasar dan klinik.* Buku Kedokteran EGC, Jakarta. Jakarta: EGC; 2012. 640 p.
53. Sugiyono PD. *Metode penelitian kuantitatif, kualitatif dan R&D.* Alfabeta; 2013. 189–190 p.
54. Notoatmodjo S. *Metodologi penelitian kesehatan.* Jakarta: Rineka Cipta; 2018.
55. Suwondo VN, Dwi Jatmiko H, Hendrianingtyas M. Karakteristik dasar pasien sepsis yang meninggal ICU RSUP Dr. Kariadi Semarang periode 1 Januari-31 Desember 2014. *MMM.* 2015;4(4):1586–96.
56. Wilson C. Are there sex differences in the immune system? *New Sci.* 2023;
57. Harding AT, Heaton NS. The impact of estrogens and their receptors on immunity and inflammation during infection. *Cancers (Basel).* 2022;14(4):1–16.
58. Firmansyah J, Wahyuni A, Ratna MG, Carolia N. Hubungan sensitivitas antibiotik terhadap luaran pasien sepsis di ruang intensive care unit (ICU) RSUD Dr.H. Abdul Moeloek Provinsi Lampung tahun 2018-2021. Vol. 12. Universitas Lampung; 2023.
59. Hatman FA, Semedi BP, Budiono B. Analisis faktor risiko terhadap lama perawatan pasien sepsis yang meninggal di ruang perawatan intensif RSUD Dr. Soetomo Surabaya. *JAI.* 2021;13(2):78–87.
60. Fuentes E, Fuentes M, Alarcón M, Palomo I. Immune system dysfunction in the elderly. *An Acad Bras Cienc.* 2017;89(1):285–99.
61. Siregar FM. Immunosenescence : penuaan pada sel makrofag. *JIK.*

- 2019;13(1):14.
62. Kradin RL, Mark EJ. Pathology of pulmonary infection. In: Diagnostic Pathology of Infectious Disease. 2018. p. 143–206.
  63. Ann E. McCullough M, Kevin O. Leslie M. Lung infections. In: Practical Pulmonary Pathology. 2017. p. 147–70.
  64. Hasan H, Arusita M R. Perubahan fungsi paru pada usia tua. *J Respirasi*. 2017;3(2):52–7.
  65. Sheetu Singh, Neeraj Sharma, Udaiveer Singh, Tejraj Singh, Mangal DK, Singh V. Nasopharyngeal wash in preventing and treating upper respiratory tract infections: could it prevent COVID-19? *Lung India*. 2018;35(1):41–6.
  66. Fadrian F, Linosefa L, Ridwan M, Hasnah H, Ayuni A. Multidrug-resistant organisms and determinant factors in sepsis patients. *Iran J Med Microbiol*. 2023;17(5):596–605.
  67. Hsu CY, Lai JN, Kung WM, Hung CH, Yip HT, Chang YC, et al. Nationwide prevalence and outcomes of long-term nasogastric tube placement in adults. *Nutrients*. 2022;14(9).
  68. Van Schayck CP, Mommers M, Dompeling ED. Nasogastric tube feeding is a cause of aspiration pneumonia in ventilated patients. *Eur Respir J*. 2006;27(2):435–6.
  69. Meriyanti, Rohana N, Windyastuti. Penggunaan nasogastric tube berhubungan dengan terjadinya pneumonia. *J Ners Widya Husada*. 2020;4(1):1–8.
  70. Chiu C, Legrand M. Epidemiology of sepsis and septic shock. *Curr Opin Anaesthesiol*. 2021;34(2):71–6.
  71. Sanjaya BD, Djuang MH, Muniro FD, Chiuman L. Sepsis risk factors in elderly patients at Royal Prima Medan general hospital. *Jambura J Heal Sci Res*. 2022;4(3):596–603.
  72. Chen C, Wu X, Zhang W, Pu Y, Xu X, Sun Y, et al. Predictive value of risk

factors for prognosis of patients with sepsis in intensive care unit. *Med (United States)*. 2023;102(23):E33881.

73. Legese MH, Asrat D, Aseffa A, Hasan B, Mihret A, Swedberg G. Molecular epidemiology of extended-spectrum beta-lactamase and ampC producing enterobacteriaceae among sepsis patients in Ethiopia: a prospective multicenter study. *Antibiotics*. 2022;11(2).
74. Oliveira J, Reygaert WC. Gram-negative bacteria. *StatPearls*. 2024;
75. James W, Elston D TJ et al. Enterobacteriaceae. *Andrew's Dis Ski Clin Dermatology*. 20AD;
76. World Health Organization. WHO priority pathogens list for R&D of new antibiotics. 2017.
77. Van Duin D, Paterson DL. Multidrug-Resistant Bacteria in the Community: Trends and Lessons Learned. *Infect Dis Clin North Am*. 2016;30(2):377–90.
78. CDC. Public health strategies to prevent the spread of novel and targeted multidrug-resistant organisms (MDROs). 2023;
79. Kang CI, Song JH. Antimicrobial resistance in Asia: Current epidemiology and clinical implications. *Infect Chemother*. 2013;45(1):22–31.
80. Wijaksana DS, Anggraeni N, Endriani R. Pola bakteri dan resistensi antibiotik pada pasien sepsis di intensive care unit (ICU) RSUD Arifin Achmad Provinsi Riau periode 1 Januari – 31 Desember 2017. *J Ilmu Kedokt*. 2019;13(2):46.
81. Agatha C, Liana P, Susilawati. Perbedaan angka kejadian multidrug resistant organisms tahun 2015 dan 2016 pada pasien GICU RSUP Dr. Mohammad Hoesin Palembang. *Maj Kedokt Sriwij*. 2018;3(Juli):105–14.
82. Lestari PI, Ika S, Huda R. The sensitivity pattern of bacteria against antibiotics at the intensive care unit of Sulianti Saroso Infectious Diseases Hospital Jakarta. *Indones J Infect Dis*. 2017;23–7.
83. Fida A. Angka kejadian pneumonia pada pasien sepsis di ICU RSUP Dr.



Kariadi Semarang. Universitas Diponegoro; 2014.

84. Sakellariou C, Gürntke S, Steinmetz I, Kohler C, Pfeifer Y, Gastmeier P, et al. Sepsis caused by extended-spectrum beta-lactamase (ESBL)-positive *K. pneumoniae* and *E. coli*: comparison of severity of sepsis, delay of anti-infective therapy and ESBL genotype. *PLoS One*. 2016;11(7):1–13.
85. Sianipar O, Asmara W, Dwiprahasto I, Mulyono B. Mortality risk of bloodstream infection caused by either *Escherichia coli* or *Klebsiella pneumoniae* producing extended-spectrum  $\beta$ -lactamase: a prospective cohort study. *BMC Res Notes*. 2019;12(1):1–7.
86. Breijyeh Z, Jubeh B, Karaman R. Resistance of gram-negative bacteria to current antibacterial agents and approaches to resolve it. *Molecules*. 2023;28(2).
87. Fitzpatrick JM, Biswas JS, Edgeworth JD, Islam J, Jenkins N, Judge R, et al. Gram-negative bacteraemia; a multi-centre prospective evaluation of empiric antibiotic therapy and outcome in English acute hospitals. *Clin Microbiol Infect*. 2016;22(3):244–51.
88. Al-Sunaidar KA, Aziz NA, Hassan Y, Jamshed S, Sekar M. Association of multidrug resistance bacteria and clinical outcomes of adult patients with sepsis in the intensive care unit. *Trop Med Infect Dis*. 2022;7(11):1–15.
89. Raniputri KA, Harsini H, Harsini H, Reviono R, Reviono R, Saptawati L, et al. Correlation of antibiotic resistance with sepsis incidence, hospital mortality, and time of sepsis onset in community acquired bacterial pneumonia. *J Respirologi Indones*. 2022;42(3):185–91.
90. Capsoni N, Bellone P, Aliberti S, Sotgiu G, Pavanello D, Visintin B, et al. Prevalence, risk factors and outcomes of patients coming from the community with sepsis due to multidrug resistant bacteria. *Multidiscip Respir Med*. 2019;14(1):1–11.
91. Vélez JW, Aragon DC, Donadi EA, Carlotti APCP. Risk factors for mortality from sepsis in an intensive care unit in Ecuador a prospective study. *Med*

(United States). 2022;101(11):1–7.

92. Mohamed AKS, Mehta AA, James P. Predictors of mortality of severe sepsis among adult patients in the medical Intensive Care Unit. *Lung India*. 2018;35(1):41–6.
93. Lindström AC, Eriksson M, Mårtensson J, Oldner A, Larsson E. Nationwide case–control study of risk factors and outcomes for community-acquired sepsis. *Sci Rep*. 2021;11(1):1–9.
94. Li M, Huang P, Xu W, Zhou Z, Xie Y, Chen C, et al. Risk factors and a prediction model for sepsis: A multicenter retrospective study in China. *J Intensive Med*. 2022;2(3):183–8.
95. Oktomalioputri B, Mahata LE, Irrahmah M, Yulistini, dkk. Panduan penulisan skripsi. Padang: Fakultas Kedokteran Universitas Andalas;2022.

