

DAFTAR PUSTAKA

- Alhamyani, A.H., Alamri, M.S., Aljuaid, N.W., Aloubthani, A.H., Alzahrani, S., *et al.* (2024) "Sepsis in Aging Populations : A Review of Risk Factors , Diagnosis , and Management," 16(12).
- Anand, N., Nayak, I.M.N., Advaita, M. V, Thaikattil, N.J. and Kantanavar, K.A. (2016) "Antimicrobial agents ' utilization and cost pattern in an Intensive Care Unit of a Teaching Hospital in South India," (22), pp. **274–279**.
- Andarsari, M.R., Norachuriya, Z., Nabila, S.M., Aryani, T. and Rosyid, A.N. (2022) "Assessment of Antibiotic Use in ICU Patients with Pneumonia Using ATC/DDD as a Quantitative Analysis Method," *Jurnal Farmasi Dan Ilmu Kefarmasian Indonesia*, 9(2), pp. **138–145**.
- Andarsari, M.R., Zainu, L.A., Saleh, S.R., Sholichah, A., Shinta, D.W., *et al.* (2023) "Quantitative and Qualitative Analysis of Antibiotics in the Intensive Care Unit (ICU)," *Jurnal Sains dan Kesehatan*, 5(5), pp. **860–869**.
- Ang, S.P., Chia, J.E., Gregory, B. and Iglesias, J. (2025) "The American Journal of the Medical Sciences Sex differences in trends and outcomes among patients with septic shock in the United States," *The American Journal of the Medical Sciences*, 370(3), pp. **231–236**.
- Anggraeni Ria, Arozal Wawaimuli, Sumiyati Yati, R.S.M. (2024) "Evaluation Of Antibiotic Use In Sepsis Patients In The ICU Treatment Room, Gatot Soebroto Rspad Period January 2020– December 2021," *Jurnal Ekonomi*, 13(2), pp. **541–554**.
- Anugrahni, C.M. and Aryzki, S. (2025) "SENTRI : Evaluasi Penggunaan Antibiotik pada Pasien Sepsis di RSUD Ulin dengan Metode Gyssens dan ATC / DDD," 4(9), pp. **1742–1753**.
- Asiltürk, E., Doğanay, T. and Özdemir, Y. (2024) "Restrictive use of carbapenems in the ICU and its effect on resistance," *Antimicrobial Resistance and Infection Control*, 13(1), pp. **1–9**.
- Balkhy, H.H., El-saed, A., El-metwally, A., Arabi, Y.M., Aljohany, S.M., *et al.* (2018) "Antimicrobial consumption in five adult intensive care units : a 33-month surveillance study," 9, pp. **1–9**.

- Bergman, U., Popovich, N.G. and Tomson, G. (1998) "Drug Utilization 90%—A Simple Method for Assessing Prescribing," *European Journal of Clinical Pharmacology* [Preprint].
- Brook, I. (2015) "Spectrum and treatment of anaerobic infections," *Journal of Infection and Chemotherapy*, 1.
- Cory, D., Leiwakabessy, B., Yulia, R. and Herawati, F. (2024) "ANALISIS PENGGUNAAN ANTIBIOTIK PADA PASIEN SEPSIS DI INTENSIVE CARE UNIT (ICU) RSI SURABAYA JEMURSARI The Analysis of Antibiotic Use for Sepsis Patient in Intensive Care Unit of RSI Jemursari Surabaya," *Jurnal Kesehatan Madani Medika*, 15(01), pp. **67–76**.
- Díaz-martín, A., Martínez-gonzález, M.L., Ferrer, R., Ortiz-leyba, C., Piacentini, E., *et al.* (2012) "Antibiotic prescription patterns in the empiric therapy of severe sepsis : combination of antimicrobials with different mechanisms of action reduces mortality," *Critical Care*, 16(6), p. **R223**.
- Dolin, H.H., Papadimos, T.J., Chen, X. and Pan, Z.K. (2019) "Characterization of pathogenic sepsis etiologies and patient profiles: A novel approach to triage and treatment," *Microbiology Insights*, 12, pp. **1–8**.
- Evans, L., Rhodes, A., Alhazzani, W., Antonelli, M., Coopersmith, C.M., *et al.* (2021) "Surviving Sepsis Campaign: International guidelines for management of sepsis and septic shock 2021," *Intensive Care Medicine*, 47(11), pp. **1181–1247**.
- Fei Zhao, Zinan Zhao, Di Chen, Bolin Zhu, Tianqi Zhang, Yuanchao Zhu, Xuelin Sun, Liang Liang, Nan Zheng, Lili Zou, Wenfeng Xu, Sirui Guo, Yue Wang, Ming Zhao, Xin Hu, P.J. (2026) "Resistance in China : An Ecological Analysis from," 39(2), pp. **158–170**.
- Fleischmann, C., Scherag, A., Adhikari, N.K.J., Hartog, C.S., Tsaganos, T., *et al.* (2016) "Assessment of global incidence and mortality of hospital-treated sepsis: Current estimates and limitations," *The Lancet*, 387(10017), pp. **870–874**.
- Fredrik Sjoval, Anders Perner, M.H.M. and Department (2017) "Empirical mono-versus combination antibiotic therapy in adult intensive care patients with

severe sepsis e A systematic review with meta-analysis and trial sequential analysis.”

Frørup, N., Frederik, M., Hertz, B., Granholm, A., Bruun, K., *et al.* (2025) “Antibiotic Consumption in Danish Intensive Care Units , 2013 – 2023 : A Nationwide Study of Temporal Trends,” pp. **2013–2023**.

Halawiyah, A. (2015) *Evaluasi kualitatif penggunaan meropenem pada pasien sepsis BPJS*. Universitas Islam Negeri Syarif Hidayatullah Jakarta.

Hashimoto, M., Asai, S., Umezawa, K., Kohara, K., Miyazawa, M., *et al.* (2023) “Impact of ward pharmacist-led antimicrobial stewardship in intensive care units,” *Journal of Chemotherapy*, 35(3), pp. **188–197**.

Hu, J., Xie, S., Liao, Y., Chen, T., Qian, Z., *et al.* (2025) “The American Journal of Surgery The gender paradox in sepsis : Exploring male vulnerability and female resilience,” *The American Journal of Surgery*, 247(February), p. **116293**.

International, J.C. (2021) *Joint Commission International Accreditation Standards for Hospitals (7th ed.)*. Joint Commission Resources.

Irvan, I., Febyan, F. and Suparto, S. (2018) “Sepsis dan Tata Laksana Berdasar Guideline Terbaru,” *JAI (Jurnal Anestesiologi Indonesia)*, 10(1), p. **62**.

Kang, C., Choi, S., Jang, E.J., Joo, S., Jeong, J.H., *et al.* (2024) “Prevalence and outcomes of chronic comorbid conditions in patients with sepsis in Korea : a nationwide cohort study from 2011 to 2016,” *BMC Infectious Diseases*, pp. **1–11**.

Karizki, M.R., Puspitasari, I. and Asdie, R.H. (2021) “Rasionalitas Penggunaan Antibiotik Empirik dan Definitif pada Pasien Sepsis di Intensive Care Unit RSUP. Dr. Sardjito,” *Majalah Farmaseutik*, 17(3), pp. **343–354**.

Karnina, R., Sugiarto, A., Manggala, S.K. and Yulasutu, B. (2024) “Relationship between SOFA score and length of hospitalization for sepsis patients in the intensive care unit of a single institution,” 13(1), pp. **653–656**.

Kementerian Kesehatan Republik, I. (2015) “Peraturan Menteri Kesehatan Republik Indonesia Nomor 8 Tahun 2015 tentang Program Pengendalian Resistensi Antimikroba (PPRA).” Kemenkes RI.

Kementerian Kesehatan Republik Indonesia (2017) “Pedoman tatalaksana sepsis.”

Direktorat Jenderal Pelayanan Kesehatan.

Ko, R.E., Kang, D., Cho, J., Na, S.J., Chung, C.R., *et al.* (2023) “Influence of gender on age - associated in - hospital mortality in patients with sepsis and septic shock : a prospective nationwide multicenter cohort study,” pp. **1–9**.

Kowel, F. C. E. P., Lalenoh, D. C., & Laihad (2025) “Profil Penggunaan Antibiotik pada Pasien Sepsis dan Syok Septik di Ruang,” 13(2), pp. **248–255**.

Kumar, A., Krishna, V.V., P Sindusha, S. and M Susritha, S. (2020) “Point Prevalence Study of use and Consumption of Antibiotics by using Anatomical and Therapeutic Chemical Classification and Defined Daily Dose Methodology in Tertiary Care Hospital,” *Indian Journal of Pharmacy Practice*, 13(2), pp. **151–155**.

Kuntaman, K., Santoso, S., Wahjono, H., Mertaniasih, N.M., Lestari, E.S., *et al.* (2018) “The sensitivity pattern of extended spectrum β -lactamase-producing bacteria against fosfomycin in several hospitals in Indonesia,” *The American Journal of Tropical Medicine and Hygiene*, 99(6), pp. **1431–1436**.

Legg, A., Carmichael, S., Chai, M.G. and Roberts, J.A. (2023) “Beta-Lactam Dose Optimisation in the Intensive Care Unit: Targets , Therapeutic Drug Monitoring and Toxicity,” pp. **1–14**.

Li, A., Ling, L., Qin, H., Arabi, Y.M., Myatra, S.N., *et al.* (2022) “Epidemiology, Management, and Outcomes of Sepsis in ICUs among Countries of Differing National Wealth across Asia,” *American Journal of Respiratory and Critical Care Medicine*, 206(9), pp. **1107–1116**.

Lindner, A., Kofler, M., Rass, V., Ianosi, B., Gaasch, M., *et al.* (2019) “Early Predictors for Infectious Complications in Patients With Spontaneous Intracerebral Hemorrhage and Their Impact on Outcome,” 10(August), pp. **1–9**.

Loeches, M., Intensive, A., Loeches, I.M., Guia, M.C., Vallecoccia, M.S., *et al.* (2019) “Risk factors for mortality in elderly and very elderly critically ill patients with sepsis : a prospective , observational , multicenter cohort

- study,” *Annals of Intensive Care* [Preprint].
- Luyt, C.E., Bréchet, N., Trouillet, J.L. and Chastre, J. (2014) “Antibiotic stewardship in the intensive care unit,” *Critical Care*, 18(5), pp. **1–12**.
- Luyt, C.E., Bréchet, N., Trouillet, J.L. and Chastre, J. (2020) “Antibiotic stewardship in the intensive care unit,” *Critical Care*, 24(1), pp. **1–10**.
- Mahmudah, F., Sumiwi, S.A. and Hartini, S. (2016) “Study of the Use of Antibiotics with ATC/DDD System and DU 90% in Digestive Surgery in Hospital in Bandung,” *Indonesian Journal of Clinical Pharmacy*, 5(4), pp. **293–298**.
- Matuszak, S.S., Kolodziej, L., Micek, S. and Kollef, M. (2025) “Antibiotic De-escalation in the Intensive Care Unit : Rationale and Potential Strategies,” pp. **1–14**.
- Mazuski, J.E., Tessier, J.M., May, A.K., Sawyer, R.G., Nadler, E.P., *et al.* (2017) “The Surgical Infection Society Revised Guidelines on the Management of Intra-Abdominal Infection,” 18(1).
- Mehta, Y. and Kochhar, G. (2017) “Sepsis and Septic Shock,” *Journal of Cardiac Critical Care TSS*, 01(01), pp. **003–005**.
- Meriyani, H., Sanjaya, D.A., Sutariani, N.W., Juanita, R.A. and Siada, N.B. (2021) “Antibiotic Use and Resistance at Intensive Care Unit of a Regional Public Hospital in Bali: A 3-Year Ecological Study,” *Indonesian Journal of Clinical Pharmacy*, 10(3), pp. **180–189**.
- Micek, S.T., Welch, E.C., Khan, J., Pervez, M., Doherty, J.A., *et al.* (2010) “Empiric Combination Antibiotic Therapy Is Associated with Improved Outcome against Sepsis Due to Gram-Negative Bacteria : a Retrospective Analysis,” 54(5), pp. **1742–1748**.
- Mittal, N., Verma, M., Siwach, S., Bansal, P. and Singhal, S.K. (2023) “Drug Utilization Research and Predictors of Outcomes in the Intensive Care Unit of a Tertiary Care Hospital : A Prospective Observational Study,” 15(12).
- Mokrani, D., Chommeloux, J., Pineton de Chambrun, M., Hékimian, G. and Luyt, C.E. (2023) “Antibiotic stewardship in the ICU: time to shift into overdrive,” *Annals of Intensive Care*, 13(1).

- Molly, P., Susanto, F.H. and Nugraha, D.P. (2023) "EVALUASI PENGGUNAAN ANTIBIOTIK PADA PASIEN ICU Intensive Care Unit DI RUMAH SAKIT MITRA SEHAT DENGAN METODE DDD Defined Daily Dose DAN GYSENS," *Sainsbertek Jurnal Ilmiah Sains & Teknologi*, 4(1), pp. **24–31**.
- Nasution, E.S., Tanjung, H.R. and Putri, I. (2023) "Evaluation of antibiotics using ATC/DDD and DU 90% methods on ICU patients at Universitas Sumatera Utara Hospital," *Pharmacia*, 70(4), pp. **1223–1229**.
- Nugraha, P.O., Mida, P. and WidadAnisatul (2020) "Evaluation of Antibiotics in Covid-19 Intensively Hospitalized Patients with Pneumonia at the H.S Samsoeri Mertojoso Hospital," *Journal Economic and Strategy (JES)*, 1(1), pp. **1–10**.
- Nugraheni, A.Y., Shintya, M., Utami, P., Saputro, A.Y., Farmasi, F., *et al.* (2021) "Evaluasi Ketepatan Antibiotik pada Pasien Sepsis Evaluation of Antibiotic Therapy in Sepsis Patients," 18(2), pp. **194–207**.
- Nunes, P.H.C., Moreira, J.P. de L., Thompson, A. de F., Machado, T.L. da S., Cerbino-Neto, J., *et al.* (2022) "Antibiotic Consumption and Deviation of Prescribed Daily Dose From the Defined Daily Dose in Critical Care Patients: A Point-Prevalence Study," *Frontiers in Pharmacology*, 13(June), pp. **1–9**.
- Patel, S., Shah, A., Shah, R. and Buch, J. (2016) "Evaluation of drug utilization pattern of antimicrobials using ATC/DDD system in intensive care unit of a tertiary-care teaching hospital," *International Journal of Medical Science and Public Health*, 5(1), p. **80**.
- Pea, F., Viale, P. and Furlanut, M. (2005) "Antimicrobial Therapy in Critically Ill Patients A Review of Pathophysiological Conditions Responsible for Altered Disposition and Pharmacokinetic Variability," 44(10), pp. **1009–1034**.
- Pereira, L.B., Zanetti, M.O.B., Sponchiado, L.P., Rodrigues, J.P.V., Campos, M.S. de A., *et al.* (2021) "Antibiotic use in brazilian hospitals in the 21st century: A systematic review," *Revista da Sociedade Brasileira de Medicina*

Tropical, 54, pp. 1–11.

Permenkes RI (2021) “Pedoman Penggunaan Antibiotik,” *Permenkes RI*, pp. 1–97.

Pramono Adi, Nova Maryani, Ufita Dauma Ummi Nusuka Wardhani, Muhammad Tahfiz Ramadhan, S.F.A. (2025) “Analisis Faktor Komorbiditas sebagai Prediktor Mortalitas Sepsis di Unit Perawatan Intensif,” 13(September), pp. 71–76.

Prasetya, A.A.N.P.R., Wijaya, I.G.E.J.S. and Kurnianta, P.D.M. (2023) “Evaluasi Penggunaan Antibiotik dengan Metode ATC/DDD dan DU90% pada Pasien Pneumonia di RSD X Tahun 2022,” *Jurnal Mandala Pharmacon Indonesia*, 9(2), pp. 408–418.

Pratama, N.Y.I., Suprapti, B., Ardiansyah, A.O. and Shinta, D.W. (2019) “Analisis Penggunaan Antibiotik pada Pasien Rawat Inap Bedah dengan Menggunakan Defined Daily Dose dan Drug Utilization 90% di Rumah Sakit Universitas Airlangga,” *Indonesian Journal of Clinical Pharmacy*, 8(4), p. 256.

Purba, A.K.R., Mariana, N., Aliska, G., Wijaya, S.H., Wulandari, R.R., *et al.* (2020) “The burden and costs of sepsis and reimbursement of its treatment in a developing country: An observational study on focal infections in Indonesia,” *International Journal of Infectious Diseases*, 96, pp. 211–218.

Purnamasari, D., Yasin, N.M. and Andayani, T.M. (2025) “Evaluasi Penggunaan Antibiotik Empiris pada Pasien Sepsis di Intensive Care Unit RSUD Dr. H. Abdul Moeloek Provinsi Lampung,” *Jurnal Surya Medika*, 11(2), pp. 103–109.

Putri, S.C., Untari, E.K. and Yuswar, M.A. (2019) “Profil Antibiotik pada Pasien Intensive Care Unit (ICU) di Rumah Sakit Dr. Soedarso Pontianak Periode Januari – Juni 2019,” *Jurnal Mahasiswa Farmasi Fakultas Kedokteran UNTAN*, 5(2), pp. 293–303.

Puvvada, S.M. (2024) “Evaluating Antibiotic Utilization in Intensive Care Units Using WHO Defined Daily Dose and Drug Utilization 90 % Methods,” 44(4), pp. 328–336.

Rachmawati, H., Hasmono, D., Kusumaningtyas, A.P., Yunita, S.L. and Yusetyani,

- L. (2023) “using DDD and Gyssens Methods Evaluasi Penggunaan Antibiotik di ICU / HCU Rumah Sakit Umum Universitas Muhammadiyah Malang menggunakan Metode DDD dan Gyssens,” 32(3), pp. **177–181**.
- Rahmadi, A., Susilowati, S.I. and Pahriyani, A. (2024) “Profil Sebaran Antibiotik Berdasarkan Klasifikasi AWARe dan Potensi Risiko Resistensi di Indonesia,” *Indonesian Journal of Pharmaceutical Education*, 4(2), pp. **325–335**.
- Rifdah, D.A., Ih, H., Liana, D.F., Mardhia, M. and Mahyarudin, M. (2024) “Evaluation of Antibiotic Use in the Internal Medicine Ward and ICU at Universitas Tanjungpura Hospital Pontianak with ATC/DDD,” *JURNAL MANAJEMEN DAN PELAYANAN FARMASI (Journal of Management and Pharmacy Practice)*, 14(4), p. **281**.
- Ristanti, S., Adiwino, R.P., Wijaya, R.A. and Putro, S. (2025) “Antibiotic Therapy Evaluation of Patients Diagnosed with Sepsis in ICU of dr . Mohamad Soewandhie General Hospital based on the Gyssens Method,” 31(3), pp. **125–138**.
- Rohman, A.F., Radji, M., Rianti, A. and Rachman, A. (2023) “Evaluation of the Use of Antibiotics on Therapy Results of Sepsis Patients in the Intensive Care Unit (ICU) of Fatmawati Hospital, Jakarta,” *Journal of Medicinal and Chemical Sciences*, 7(1), pp. **262–274**.
- Rose, N., Agrama, I., Nachtigall, I., Pletz, M.W., Rosendahl, J., *et al.* (2025) “Sex differences in sepsis outcomes across the lifespan : a population-based cohort study in Germany.”
- Rowe, T.A. and Mckoy, J.M. (2017) “S e p s i s in O l d e r A d u l t s Older adults Sepsis Outcomes Infections,” *Infectious Disease Clinics of NA*, 31(4), pp. **731–742**.
- Rudd, K.E., Johnson, S.C., Agesa, K.M., Shackelford, K.A., Tsoi, D., *et al.* (2020) “Global , regional , and national sepsis incidence and mortality , 1990 – 2017 : analysis for the Global Burden of Disease Study,” *The Lancet*, 395(10219), pp. **200–211**.
- Rybak, M., Le, J. and Lodise, T. (2020) “Therapeutic monitoring of vancomycin

for serious A revised consensus guideline and review by the American Society of America , the Pediatric Infectious Diseases Society ,” 77(11), pp. **835–863.**

Sadli, N.K., Halimah, E., Winarni, R. and Widyatmoko, L. (2023) “Implementasi Rasionalitas Penggunaan Antibiotik pada Beberapa Rumah Sakit di Indonesia: Kajian Literatur Mengenai Kualitas dan Tantangannya,” *Jurnal Sains Farmasi & Klinis*, 9(3), p. **227.**

Saleem, Z., Sheikh, S., Godman, B., Haseeb, A., Afzal, S., *et al.* (2025) “JAC-Antimicrobial Resistance Increasing the use of the WHO AWaRe system in antibiotic surveillance and stewardship programmes in low- and middle-income countries,” *JAC-Antimicrobial Resistance*, 7(2), pp. **1–20.**

Sanjaya, D.A., Juanita, R.A., Meriyani, H. and Budiarta, N. (2023) “Tren Penggunaan Antibiotik dan Profil Resistensi pada Kelompok Critical-Priority Bacteria di ICU Rumah Sakit ‘ X ’ Provinsi Bali (2017-2019),” pp. **301–316.**

Saxena, S., Priyadarshi, M., Saxena, A. and Singh, R. (2019) “Antimicrobial consumption and bacterial resistance pattern in patients admitted in I.C.U at a tertiary care center,” *Journal of Infection and Public Health*, 12(5), pp. **695–699.**

Scholze, K., Wenke, M., Schierholz, R., Groß, U., Bader, O., *et al.* (2015) “The Reduction in,” 2011(December 2013).

Sebilah Sabil Noer, Rika Yulia, Fauna Herawati, A.Z. (2022) “ANALISIS PENGGUNAAN ANTIBIOTIK PADA PASIEN BEDAH SARAF DI RUANG ICU RSUD Dr. R SOSODORO DJATI KOESOEMO BOJONEGORO,” *Syntax Literate: Jurnal Ilmiah Indonesia*, 7(2), pp. **107–115.**

Shah, S., Barton, G. and Fischer, A. (2015) “Pharmacokinetic considerations and dosing strategies of antibiotics in the critically ill patient,” 16(2), pp. **147–153.**

Sinanjung, K., Fatrinawati, Istiqomah and Mayasari, G. (2024) “Faktor risiko infeksi bakteri penghasil Extended Spectrum Beta-Lactamase (ESBL) pada

- pasien ICU di RS Jogja Tahun 2023,” *Informasi Dan Promosi Kesehatan*, 3(2), pp. **118–229**.
- Singer, M., Deutschman, C.S., Seymour, C.W., Shankar-Hari, M., Annane, D., *et al.* (2016) “The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3),” *JAMA*, 315(8), pp. **801–810**.
- Siregar H, A., Lubis, B. and Solihat, Y. (2022) “Perbandingan Efektivitas Pemberian Antibiotik Empiris Ceftriaxone dan Levofloxacin pada Pasien Sepsis dengan Community Acquired Comparison of the Effectiveness of Antibiotic Administration,” pp. **201–207**.
- Sitompul, F., Radji, M. and Bahtiar, A. (2016) “Evaluasi Penggunaan Antibiotik Dengan Metode Gyssens Pada Pasien Stroke Rawat Inap di RSUD Koja Secara Retrospektif (Periode KJS dan BPJS) Evaluation of Antibiotic Used With Gyssens Method On Stroke Inpatient At RSUD Koja using Retrospective Approach (K,” *Jurnal Kefarmasian Indonesia*, 6(1), pp. **30–38**.
- Strich, J.R., Heil, E.L. and Masur, H. (2021) “Considerations for empiric antimicrobial therapy in sepsis and septic shock in an era of antimicrobial resistance,” *Journal of Infectious Diseases*, 222(Suppl 2), pp. **S119–S131**.
- Subhan, A., Oktamauri, A., Haifa, A. and Wardani, T.K. (2024) “Pola Penggunaan Antibiotik Reserve Di Unit Intensif Dan Non Intensif Rawat Inap Rsup Fatmawati,” *Jurnal Farmasi Klinik Base Practice*, 3(1), pp. **36–46**.
- Sukriya, Manggau, M.A. and Djaharuddin, I. (2022) “Evaluasi Penggunaan Terapi Antibiotik Empiris Terhadap Luaran Klinis Pasien Pneumonia Komunitas Rawat Inap,” *Majalah Farmasi dan Farmakologi*, 26(1), pp. **19–25**.
- Sundariningrum, R.W., Setyanto, D.B. and Natadidjaja, R.I. (2020) “Qualitative Evaluation of Antibiotic with Gyssens Method by RASPRO Concept for Pneumonia at Pediatric Intensive Care Unit,” *Sari Pediatri*, 22(2), p. **109**.
- Suri, N., Junando, M. and Afriyana, R. (2024) “A Comprehensive Evaluation of Antibiotic Usage: Establishing a Foundation for Effective Antimicrobial Stewardship,” *Jurnal Farmasi Dan Ilmu Kefarmasian Indonesia*, 11(3), pp. **298–311**.

- Sutanto, H. (2025) "HOSPITAL LENGTH OF STAY IN SEPSIS PATIENTS ACROSS AGE , COMORBIDITY , AND INVASIVE DEVICE USE CATEGORIES HOSPITAL LENGTH OF STAY IN SEPSIS PATIENTS ACROSS AGE , COMORBIDITY , AND," 61(1), pp. **108–115**.
- Tanaka, R. (2025) "Pharmacokinetic variability and significance of therapeutic drug monitoring for broad- spectrum antimicrobials in critically ill patients," 6, pp. **1–9**.
- Tang, L., Li, Y., Zhang, J., Zhang, F. and Tang, Q. (2025) "Machine learning model to predict sepsis in ICU patients with intracerebral hemorrhage," pp. **1–11**.
- Thompson, K.J., Finfer, S.R., Woodward, M., Neil, R., Leong, F., *et al.* (2022) "Sex differences in sepsis hospitalisations and outcomes in older women and men : A prospective cohort study," *Journal of Infection*, 84(6), pp. **770–776**.
- Timsit, J.F., Bassetti, M., Cremer, O., Daikos, G., Waele, J. De, *et al.* (2019) "Rationalizing antimicrobial therapy in the ICU : a narrative review," *Intensive Care Medicine*, 45(2), pp. **172–189**.
- Timsit, J.F., Lipman, J. and Bassetti, M. (2020) "Antimicrobial de - escalation is part of appropriate antibiotic usage in ICU," *Intensive Care Medicine*, 46(5), pp. **1039–1042**.
- Torisson, G., Madsen, M. and Davidsen, A. (2021) "A Multicenter Observational Study Evaluating Outcomes Associated With Antibiotic Combination Versus Monotherapy in Patients With Septic Shock," pp. **1–10**.
- Trejnowska, E., Deptuła, A., Tarczyńska-Słomian, M., Knapik, P., Jankowski, M., *et al.* (2018) "Surveillance of Antibiotic Prescribing in Intensive Care Units in Poland," *Canadian Journal of Infectious Diseases and Medical Microbiology*, 2018.
- Tsuzuki, S., Koizumi, R., Aoyagi, K., Asai, Y. and Ohmagari, N. (2025) "Rethinking the WHO AWaRe classification : the need for more," *eClinicalMedicine*, 90, p. **103660**.
- Ungureanu, A., Dumitru, A., Ozon, E., Rogoz, A. and Blebea, N. (2026) "Analysis of Antibiotic Consumption Trends and Pathogens ' Epidemiological Profile Within a Multidisciplinary Clinical Hospital from Romania," pp. **1–18**.

- WHO (2025) *Guidelines for ATC classification and DDD assignment 2025, Proceedings of the National Academy of Sciences*. Available at: <http://dx.doi.org/10.1016/j.bpj.2015.06.056><https://academic.oup.com/bioinformatics/article-abstract/34/13/2201/4852827><https://semisupervised-3254828305/semisupervised.ppt><http://dx.doi.org/10.1016/j.str.2013.02.005><http://dx.doi.org/10.1016/j.str.2013.02.005>
- Wijaksana, D.S., Anggraeni, N. and Endriani, R. (2019) “Pola Bakteri dan Resistensi Antibiotik pada Pasien Sepsis di Intensive Care Unit (ICU) RSUD Arifin Achmad Provinsi Riau Periode 1 Januari – 31 Desember 2017,” *Jurnal Ilmu Kedokteran*, 13(2), p. 46.
- Wijaya, A.P. (2021) *Kajian Penggunaan antibiotika secara kualitatif dan kuantitatif pada ruangan ICU (intensive Care Unit) Rumah Sakit Umum Daerah Petala Bumi Provinsi Riau Tahun 2018*.
- World Health Organization (2020) *Global report on the epidemiology and burden of sepsis: current evidence, identifying gaps and future directions*, World Health Organization. Available at: <http://apps.who.int/bookorders><http://apps.who.int/bookorders><https://apps.who.int/iris/bitstream/handle/10665/334216/9789240010789-eng.pdf>
- World Health Organization (2025) *The selection and use of essential medicines, 2025: WHO AWaRe (Access, Watch, Reserve) classification of antibiotics for evaluation and monitoring of use*. Available at: <https://www.who.int/publications/i/item/B09489>.
- Woro, O.Q.L., Suryani, D. and Dewi, N.M.A.R. (2023) “Quantitative Evaluation Of Antibiotic Usage In ICU Ward at West Nusa Tenggara Province Hospital in 2018,” *Jurnal Kedokteran Syiah Kuala*, 23(1), pp. 152–157.
- Zador, Z., Landry, A., Cusimano, M.D. and Geifman, N. (2019) “Multimorbidity states associated with higher mortality rates in organ dysfunction and sepsis : a data-driven analysis in critical care,” pp. 1–11.
- Zanichelli, V., Sharland, M., Cappello, B., Moja, L., Getahun, H., *et al.* (2023) “The

WHO AWaRe (Access, Watch, Reserve) antibiotic book and prevention of antimicrobial resistance,” *Bulletin of the World Health Organization*, 101(4), pp. **290–296**.

Zarb, P., Versporten, A., Goossens, H. and Network, G.-P. (2021) “Merging metrics for global antimicrobial stewardship: Connecting DDD, days of therapy, and point prevalence surveys,” *Clinical Microbiology and Infection*, 27(1), pp. **12–14**.

Zay Ya, K., Win, P.T.N., Bielicki, J., Lambiris, M. and Fink, G. (2023) “Association Between Antimicrobial Stewardship Programs and Antibiotic Use Globally: A Systematic Review and Meta-Analysis,” *JAMA Network Open*, 6(2), p. **E2253806**.