

DAFTAR PUSTAKA

1. Marrie TJ. *Acute bronchitis and community-acquired pneumonia*. Fishman AP. *Fishman's Pulmonary Diseases and Disorders New York: Mc Graw Hill Book Company*.2010.
2. WHO. *Pneumonia in children*. 2022.
3. Levison ME. *Pneumonia, including necrotizing pulmonary infections (lung abscess)*. *Harrisons Principles of Internal Medicine*. 2017. (2):1475–84.
4. Irawan R, Reviono, Harsini. Korelasi kadar copeptin dan skor PSI dengan waktu terapi sulih dari antibiotik intravena ke oral dan lama rawat pneumonia komunitas. *Jurnal Respirologi Indonesia*. 2019. (39):1
5. Rudan I, Boschi-Pinto C, Biloglav Z, et al. *Epidemiology and etiology of childhood pneumonia*. *Bulletin WHO*. 2018. 86:408-416B.
6. Jokinen C, Heiskanen L, Juvonen H, et al. *Incidence of community-acquired pneumonia in the population of four municipalities in eastern Finland*. *Am J Epidemiol*. 2016 (9):977–88.
7. Ruuskanen O, Lahti E, Jennings LC, et al. *Viral pneumonia*. *The Lancet*. 2018. 377:1264–75.
8. Badan Penelitian Dan Pengembangan Kesehatan. *Laporan Nasional RISKESDAS*. 2018; 80-6
9. Yudhianto K. *Laporan Provinsi Aceh, RISKESDAS Aceh 2018*. 2018;74-9
10. DINKES Aceh. *Profil Kesehatan Aceh Tahun 2017*. Banda Aceh. 2018; 20-3
11. Indonesia PDP. *Pneumonia komunitas: Pedoman diagnosis dan penatalaksanaan*. Edisi II Jakarta: Badan Penerbit FKUI. 2014. (22)1608-10
12. Price SA, Wilson LM. *Patofisiologi konsep klinis proses-proses penyakit*. Jakarta: Egc. 2016;4(2):127–8.
13. Gannon CJ, Pasquale M, Tracy JK, et al. *Male gender is associated with increased risk for postinjury pneumonia*. *Shock*. 2017. 21(5):410–4.
14. Neupane B, Walter SD, Krueger P, et al. *Predictors of inhospital mortality and re-hospitalization in older adults with community-acquired pneumonia: a prospective cohort study*. *BMC Geriatr*. 2018. 10:1–10.
15. Gold DR, Rotnitzky A, Damokosh AI, et al. *Race and gender differences in respiratory illness prevalence and their relationship to environmental exposures in children 7 to 14 years of age*. *American Review of Respiratory Disease*. 148:10.
16. Hardiana I, Laksmiawati DR, Ramadaniati HU. *Evaluasi penggunaan antibiotika pada pasien pneumonia komunitas di instalasi rawat inap RSPAD Gatot Subroto*. *Majalah Farmasi Dan Farmakologi*. 2021;25(1):1–6.
17. Metlay JP, Waterer GW, Long AC, Anzueto A, Brozek J, Crothers K, 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(7):45–67.
18. Hori S, Yamamoto Y, Ushida K, et al. *Impact of Frailty Risk on Oral Intake and Length of Hospital Stay in Older Patients with Pneumonia: A Historical Cohort Study*. *J Clin Med*. 2023 Jan 1;12(1).
19. Dahlan Z. *Pneumonia: Buku Ajar Ilmu Penyakit Dalam*. Jakarta: Fakultas Kedokteran Universitas Indonesia. 2014; (22):1608-20
20. Asbel LE, Levison ME. *Cephalosporins, carbapenems, and monobactams*. *Infectious Disease Clinics*. 2018.14(2):435–47.
21. Menendez R, Torres A, Reyes S, Zalacain R, Capelastegui A, Aspa J, et al. *Initial management of pneumonia and sepsis: factors associated with improved outcome*. *European Respiratory Journal*. 2012 Jan 1;39(1):156–62.
22. Suyono S. *IPD, Penyakit Paru karena Mikobakterium Atipik*. 2017. (22):1610-1615

23. Djojodibroto DRRD. *Respirologi*. In Egc; 2009. (16) 120-22
24. Mandell LA, Wunderink RG, Anzueto A, et al. *Infectious Diseases Society of America/American Thoracic Society consensus guidelines on the management of community-acquired pneumonia in adults*. *Clinical infectious diseases*. 2007; 44(2):S27–72.
25. Lim WS, Baudouin S V, George RC, et al. *BTS guidelines for the management of community acquired pneumonia in adults: update 2009*. *Thorax*. 2009;64(Suppl 3):iii1–55.
26. Shi X, Ma Y, Li H, Yu H. *Association between FCGR2A rs1801274 and MUC5B rs35705950 variations and pneumonia susceptibility*. *BMC Med Genet*. 2020;21(1):1–13.
27. Kumar V, Abbas AK, Aster JC. *Robbins basic pathology e-book*. Elsevier Health Sciences; 2017. (13):514-32
28. Suyono S, di Indonesia DM. *Buku Ajar Ilmu Penyakit Dalam Jilid III Edisi 4*. Jakarta: Pusat Penerbit Departemen Ilmu Penyakit Dalam Fakultas Kedokteran Universitas Indonesia. 2006; (22): 1608-20.
29. Almirall J, Serra-Prat M, Bolívar I, et al. *Risk Factors for Community-Acquired Pneumonia in Adults: A Systematic Review of Observational Studies*. *Respiration*. 2017; 94(3):299–311.
30. Hartati S, Nurhaeni N, Gayatri D. *Faktor risiko terjadinya pneumonia pada anak balita*. *Jurnal Keperawatan Indonesia*. 2012;15(1):13–20.
31. Putri RM, Hasan H. *Tinjauan imunologi pneumonia pada pasien geriatri*. *Cermin Dunia Kedokteran*. 2014;41(1):14–8.
32. Marrie TJ, File TM. *Bacterial pneumonia in older adults*. *Clin Geriatr Med*. 2016;32(3):459–77.
33. Ochoa-Gondar O, Vila-Córcoles A, de Diego C, et al. *The burden of community-acquired pneumonia in the elderly: the Spanish EVAN-65 study*. *BMC Public Health*. 2008; 8:1–7.
34. Jackson ML, Neuzil KM, Thompson WW, et al. *The burden of community-acquired pneumonia in seniors: results of a population-based study*. *Clinical infectious diseases*. 2004;39(11):1642–50.
35. Gambassi G, Sultana J, Trifirò G. *Antipsychotic use in elderly patients and the risk of pneumonia*. Vol. 14, *Expert Opinion on Drug Safety*. Taylor & Francis; 2015. p. 1–6.
36. Paul KJ, Walker RL, Dublin S. *Anticholinergic medications and risk of community-acquired pneumonia in elderly adults: A population-based case-control study*. *J Am Geriatr Soc*. 2015;63(3):476–85.
37. Eurich DT, Lee C, Marrie TJ, et al. *Inhaled corticosteroids and risk of recurrent pneumonia: a population-based, nested case-control study*. *Clinical infectious diseases*. 2013;57(8):1138–44.
38. Ho JC, Chan KN, Hu WH, et al. *The effect of aging on nasal mucociliary clearance, beat frequency, and ultrastructure of respiratory cilia*. *Am J Respir Crit Care Med*. 2001;163(4):983–8.
39. Donowitz GR, Cox HL. *Bacterial community-acquired pneumonia in older patients*. *Clin Geriatr Med*. 2007;23(3):515–34.
40. Janssens JP, Pache JC, Nicod LP. *Physiological changes in respiratory function associated with ageing*. *European Respiratory Journal*. 1999;13(1):197–205.
41. Kikuchi R, Watabe N, Konno T, et al. *High incidence of silent aspiration in elderly patients with community-acquired pneumonia*. *Am J Respir Crit Care Med*. 1994;150(1):251–3.
42. Metlay JP, Schulz R, Li YH, et al. *Influence of age on symptoms at presentation in patients with community-acquired pneumonia*. *Arch Intern Med*. 1997;157(13):1453–9.
43. Metlay JP, Fine MJ. *Testing strategies in the initial management of patients with community-acquired pneumonia*. *Ann Intern Med*. 2003;138(2):109–18.
44. Chang KH, Liou TH, Chen CI, et al. *Pathogen colonization in patients with acute cerebral stroke*. *Disabil Rehabil*. 2013;35(8):662–7.

45. Berk SL. *Bacterial pneumonia in the elderly: the observations of Sir William Osler in retrospect*. J Am Geriatr Soc. 1984;32(9):683–5.
46. Elfidasari D, Noriko N, Mirasaraswati A, Feroza A, Canadianti SF. Deteksi bakteri Klebsiella pneumonia pada beberapa jenis rokok konsumsi masyarakat. Jurnal Al Azhar Indonesia: Seri Sains dan Teknologi. 2013;2(1):41–7.
47. Tanigawa T, Araki S, Nakata A, et al. *Increase in memory (CD4+ CD29+ and CD4+ CD45RO+) T and naive (CD4+ CD45RA+) T-cell subpopulations in smokers*. Archives of Environmental Health: An International Journal. 1998;53(6):378–83.
48. Strzelak A, Ratajczak A, Adamiec A, et al. *Tobacco smoke induces and alters immune responses in the lung triggering inflammation, allergy, asthma and other lung diseases: a mechanistic review*. Int J Environ Res Public Health. 2018;15(5):1033.
49. Rivero-Calle I, Pardo-Seco J, Aldaz P, et al. *Incidence and risk factor prevalence of community-acquired pneumonia in adults in primary care in Spain (Neumo-Es-Risk project)*. BMC Infect Dis. 2016;16(1):1–8.
50. Rivero-Calle I, Cebey-López M, Pardo-Seco J, et al. *Lifestyle and comorbid conditions as risk factors for community-acquired pneumonia in outpatient adults (Neumo-Es-Risk project)*. BMJ Open Respir Res. 2019;6(1):359.
51. de Miguel-Yanes JM, Lopez-de-Andres A, Jiménez-García R, et al. *Incidence, outcomes and sex-related disparities in pneumonia: A matched-pair analysis with data from Spanish hospitals (2016–2019)*. J Clin Med. 2021;10(19):4339.
52. Quero BG, Fernandez LS, Moyano MG, et al. *Differences in community acquired pneumonia according to gender*. Eur Respiratory Soc; 2017;20
53. Kadioglu A, Cuppone AM, Trappetti C, et al. *Sex-based differences in susceptibility to respiratory and systemic pneumococcal disease in mice*. J Infect Dis. 2011;204(12):1971–9.
54. Guibault C, Stotland P, Lachance C, Tam M, Keller A, Thompson-Snipes L, et al. *Influence of gender and interleukin-10 deficiency on the inflammatory response during lung infection with Pseudomonas aeruginosa in mice*. Immunology. 2002;107(3):297–305.
55. Aomatsu M, Kato T, Kasahara E, Kitagawa S. *Gender difference in tumor necrosis factor- α production in human neutrophils stimulated by lipopolysaccharide and interferon- γ* . Biochem Biophys Res Commun. 2013;441(1):220–5.
56. Chamekh M, Deny M, Romano M, et al. *Differential susceptibility to infectious respiratory diseases between males and females linked to sex-specific innate immune inflammatory response*. Front Immunol. 2017;8:1806.
57. Indonesia PDP. *Pneumonia komunitas: Pedoman diagnosis & penatalaksanaan di Indonesia*. Jakarta, Indonesia: Perhimpunan Dokter Paru Indonesia. 2003.(1):9
58. Dahlan Z. *Pneumonia bakteri*. Dalam: Dahlan Z, Amin Z SurotoYA. *Tata Laksana Respirologi Respirasi Kritis Edisi ke-2 Jakarta: PERPARI*. 2013;53–87.
59. Kollef MH, Afessa B, Anzueto A, et al. *Silver-coated endotracheal tubes and incidence of ventilator-associated pneumonia: the NASCENT randomized trial*. JAMA. 2008;300(7):805–13.
60. Dahlan Z. *Pneumonia*, dalam Sudoyo AW, dkk. *Buku Ajar Ilmu Penyakit Dalam Edisi V Jakarta: Pusat Penerbitan Departemen Ilmu Penyakit Dalam Universitas Indonesia*. 2009. 1608-23
61. Miyashita N. *Atypical pneumonia: Pathophysiology, diagnosis, and treatment*. Respir Investig. 2022 Jan;60(1):56–67.
62. Hoo GWS, Wen YE, Nguyen T V, Goetz MB. *Impact of clinical guidelines in the management of severe hospital-acquired pneumonia*. Chest. 2005;128(4):78–87.

63. Lewis SM, Giddens JF, Tashiro J, et al. *Medical-surgical nursing: Assessment and management of clinical problems*. C.V.2003.(5):46
64. Singh YD. *Pathophysiology of community acquired pneumonia*. *J Assoc Physicians India*. 2012 Jan;60 Suppl:7–9.
65. Van Der Poll T. *Tissue factor as an initiator of coagulation and inflammation in the lung*. *Crit Care*. 2008;12(6):1–9.
66. Pahal P, Rajasurya V, Sharma S. *Typical Bacterial Pneumonia*. 2023.(1):5
67. Mandell LA, Wunderink RG, Anzueto A, et al. *Infectious Diseases Society of America/American Thoracic Society Consensus Guidelines on the Management of Community-Acquired Pneumonia in Adults*. *Clinical Infectious Diseases*. 2007 Mar 1;44(Supplement_2): S27–72.
68. Lutfiyya MN, Henley E, Chang LF, et al. *Diagnosis and treatment of community-acquired pneumonia*. *Am Fam Physician*. 2006;73(3):442–50.
69. ATS. *Guidelines on Community-Acquired Pneumonia*. 2020;(1):12
70. CPG. *Philippines management guidelines on CAP*. 2015;(1):20
71. 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 Oct 1;200(7): 45–67.
72. Khairunnisa C, Siagian A, Siregar FA, Zuska F, et al. *Pulmonary Tuberculosis Control Model With Social Medicine By Medical Students And Community Leaders In North Aceh District*. *Neuro Quantology*. 2022;20.
73. Peroni DG, Boner AL. *Atelectasis: mechanisms, diagnosis and management*. *Paediatr Respir Rev*. 2000 Sep;1(3):274–8.
74. GOLD 2020. *Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease*. 2020.(9):35
75. Palaty C, Shum M. *Health effects from mould exposure or dampness in indoor environments*. National Collaborating Centre for Environmental Health at the British. 2013;(12):44
76. Sari Y, Sidabutar RR. Pengaruh Pemberian Terapi Inhalasi Dan Oksigenasi Terhadap Kepatenan Jalan Nafas Pada Pasien Asma Bronkial di Ruang Rawat Inap RSUD Sundari. *Jurnal Kebidanan, Keperawatan Dan Kesehatan (Bikes)*. 2022;2(1):50–5.
77. Nair GB, Niederman MS. *Pneumonia: considerations for the critically ill patient*. In: *Critical care medicine: principles of diagnosis and management in the adult*. Elsevier/Saunders, Philadelphia; 2013.(1):9
78. Rahajoe NN, Supriyatno B, Setyanto DB. *Buku ajar respirologi anak edisi I*. Badan Penerbit IDAI; 2010.34-45
79. Allen JN. *Drug-induced eosinophilic lung disease*. *Clin Chest Med*. 2004 Mar;25(1):77–88.
80. Dunn L. *Pneumonia: classification, diagnosis and nursing management*. *Nursing Standard*. 2005 Jun 29;19(42):50–4.
81. WHO. *Global action plan for prevention and control of pneumonia (GAPP)*. World Health Organization; 2009.
82. Loscalzo J. *Harrison's Pulmonary and Critical Care Medicine*. McGraw-Hill Education; 2013.(1):17
83. Kuhajda I, Zarogoulidis K, Tsirgogianni K, Tsavlis D, Kioumis I, Kosmidis C, et al. *Lung abscess-etiology, diagnostic and treatment options*. *Ann Transl Med*. 2015 Aug;3(13):183.
84. Yusuf SW, Hassan SA, Mouhayar E, Negi SI, Banchs J, O'Gara PT. *Pericardial disease: a clinical review*. *Expert Rev Cardiovasc Ther*. 2016;14(4):525–39.

85. Singer M, Deutschman CS, Seymour CW, 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.
86. Angus DC, Van der Poll T. *Severe sepsis and septic shock*. *N Engl J Med*. 2013;369:840–51.
87. Singh Lamba T, Sharara RS, Leap J, Singh AC. *Management of respiratory failure*. *Crit Care Nurs Q*. 2016;39(2):94–109.
88. Christ-Crain M, Stolz D, Bingisser R, Muller C, Miedinger D, Huber PR, et al. *Procalcitonin guidance of antibiotic therapy in community-acquired pneumonia: a randomized trial*. *Am J Respir Crit Care Med*. 2006;174(1):84–93.
89. Hosizah YM. *Sistem Informasi Kesehatan II: Statistik Pelayanan Kesehatan*. Jakarta Pusat Pendidikan Sumber Daya Manusia Kesehatan Kementerian Kesehatan RI. 2018;(5):21
90. Almirall J, Bolibar I, Vidal J, Sauca G, Coll P, Niklasson B, et al. *Epidemiology of community-acquired pneumonia in adults: a population-based study*. *European respiratory journal*. 2000;15(4):757–63.
91. Gracia JAC, Mayoral TN, Ridruejo AIA, Sola YL, Gutiérrez MAM, Sanquirico CT. *Neumonía adquirida en la comunidad remitida al medio hospitalario*. *Epidemiología y actitud diagnóstica y terapéutica*. *Arch Bronconeumol*. 1999;35(1):27–32.
92. Monge V, González A. *Hospital admissions for pneumonia in Spain*. *Infection*. 2001;29:3–6.
93. Monge V, San-Martín M, González A. *The burden of community-acquired pneumonia in Spain*. *The European Journal of Public Health*. 2001;11(4):362–4.
94. Guest JF, Morris A. *Community-acquired pneumonia: the annual cost to the National Health Service in the UK*. *European Respiratory Journal*. 1997;10(7):1530–4.
95. Fine MJ, Pratt HM, Obrosky DS, et al. *Relation between length of hospital stay and costs of care for patients with community-acquired pneumonia*. *Am J Med*. 2000;109(5):378–85.
96. Niederman MS, McCombs JS, Unger AN, et al. *The cost of treating community-acquired pneumonia*. *Clin Ther*. 1998;20(4):820–37.
97. Fine MJ, Auble TE, Yealy DM, et al. *A prediction rule to identify low-risk patients with community-acquired pneumonia*. *New England journal of medicine*. 1997;336(4):243–50.
98. Angus DC, Marrie TJ, Obrosky DS, et al. *Severe community-acquired pneumonia: use of intensive care services and evaluation of American and British Thoracic Society Diagnostic criteria*. *Am J Respir Crit Care Med*. 2002;166(5):717–23.
99. Siegel RE. *How long a stay in the hospital is needed for patients with community-acquired pneumonia?*. *Am J Med*. 2010;109 (5):34–6.
100. Fine MJ, Medsger AR, Stone RA, et al. *The hospital discharge decision for patients with community-acquired pneumonia: results from the Pneumonia Patient Outcomes Research Team cohort study*. *Arch Intern Med*. 1997;157(1):47–56.
101. Fine MJ, Auble TE, Yealy DM, et al. *A prediction rule to identify low-risk patients with community-acquired pneumonia*. *New England journal of medicine*. 1997;336(4):243–50.
102. Rhew DC, Tu GS, Ofman J, et al. *Early switch and early discharge strategies in patients with community-acquired pneumonia: a meta-analysis*. *Arch Intern Med*. 2001;161(5):22–7.
103. Metersky ML, Tate JP, Fine MJ, Petrillo MK, Meehan TP. *Temporal trends in outcomes of older patients with pneumonia*. *Arch Intern Med*. 2000;160(22):35–41.
104. Rafiudeen R. *“A study of clinical and etiological profile of community acquired pneumonia with special reference to atypical pneumonia.” [Bangalore]: Rajiv Gandhi University of Health Sciences; 2012.(3):12*

105. Aljufri AQ, Yasin NM, Wahyono D. Rasionalitas Terapi Antibiotik Empiris Pada Pasien Pneumonia di Instalasi Rawat Inap RSUP Dr. Kariadi Semarang. *Majalah Farmaseutik*. 2021 Jan 7;17(1):89.
106. Farida Y, Putri VW, Hanafi M, Herdianti NS. Profil Pasien dan Penggunaan Antibiotik pada Kasus *Community-Acquired Pneumonia* Rawat Inap di Rumah Sakit Akademik wilayah Sukoharjo. *JPSCR: Journal of Pharmaceutical Science and Clinical Research*. 2020 Oct 27;5(2):151.
107. Lopardo GD, Fridman D, Raimondo E, Albornoz H, Lopardo A, Bagnulo H, et al. *Incidence rate of community-acquired pneumonia in adults: a population-based prospective active surveillance study in three cities in South America*. *BMJ Open*. 2018;8(4):6.
108. Marsono Y. Evaluasi Penggunaan Antibiotik Pada Pasien Pneumonia Dengan Metode Gyssens Di Instalasi Rawat Inap Rumah Sakit Umum Daerah Dokter Moewardi Surakarta Tahun 2013. [surakarta]: Universitas Muhammadiyah Surakarta; 2015;(1):9
109. Henig O, Kaye KS. *Bacterial pneumonia in older adults*. *Infectious Disease Clinics*. 2017;31(4):689–713.
110. Hardiana I, Ratih Laksmiawati D, Utami Ramadaniati H, Ilmu Kefarmasian M, et al. Evaluasi penggunaan antibiotika pada pasien pneumonia komunitas di instalasi rawat inap rspad Gatot Subroto. *Original Article MFF*. 2021;25(1):1–6.
111. Sari EF, Rumende CM, Harimurti K. Faktor–Faktor yang Berhubungan dengan Diagnosis Pneumonia pada Pasien Usia Lanjut. *Jurnal Penyakit Dalam Indonesia*. 2017 Jan 27;3(4):183.
112. Cillóniz C, Cardozo C, García-Vidal C. *Epidemiology, pathophysiology, and microbiology of community-acquired pneumonia*. *Ann Res Hosp*. 2018;2(1):1–11.
113. Halim S. Faktor-faktor prediksi mortalitas pada pasien *hospital acquired pneumonia*. *Universitas Indonesia*; 2013.(11):14
114. Ulfa Cf, Supadmi W, Perwitasari Da. Hubungan ketepatan persepsian antibiotik dengan metode gyssens dengan perbaikan klinis pasien rawat inap pneumonia komunitas. 2021; (4):23
115. Pradipta IS, Febrina E, Ridwan MH, Ratnawati R. Identifikasi pola penggunaan antibiotik sebagai upaya pengendalian resistensi antibiotik. *Indonesian Journal of Clinical Pharmacy*. 2012;1(1):16–24.
116. Syahniar R, Akbar AM, Kharisma DS, Nabila AN. *Comparison between monotherapy and combination therapy among inpatients with community-acquired pneumonia*. *Scientific Journal of Pharmacy*. 2021;17(1):13–14.
117. Lukitasari N, Radji M, Rianti A. Analisa Perbandingan Monoterapi dengan Dualterapi Antibiotik Empiris terhadap *Outcome* pada Pasien *Community Acquired Pneumonia* (CAP) di IGD RSUP Fatmawati Jakarta. *Jurnal Sains Farmasi & Klinis*. 2019 Aug 29;6(2):147.
118. Setiadi F, Kumala S, Utami R H, Subhan A. Analisis faktor-faktor yang mempengaruhi outcome terapi pasien pneumonia di rumah sakit umum pusat fatmawati jakarta. *Healthy Tadulako Journal (Jurnal Kesehatan Tadulako)*. 2019;5(3):18–28.
119. Arianti RE. Hubungan lanjut usia dengan kejadian pneumonia komunitas di rsud provinsi ntb tahun 2019: UIN Syarif Hidayatullah Jakarta; 2020;(9):17
120. Dewi H. Hubungan usia penderita *ventilator associated pneumonia* dengan lama rawat inap di icu rsup dr. kariadi semarang. *Jurnal Media Medika Muda*. 2014;(1):19-20