

## Human resource planning and service readiness: Health workforce intervention at Tora Belo Regional Hospital

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### ABSTRACT

Human resource management (HRM) planning is a key health system intervention to ensure service readiness, quality of care, and workforce sustainability, particularly in rural hospital settings. However, empirical evidence examining how HRM planning is implemented at the district hospital level remains limited. This study aims to analyze human resource planning at Tora Belo Regional General Hospital, Sigi Regency, as a facility-level intervention supporting effective health service delivery. A qualitative case study approach was conducted from July to August 2025. Data were collected through in-depth interviews, observation, and document review involving three purposively selected informants: the Hospital Director, Head of Administration, and hospital officers. Data were analyzed using systematic stages of data collection, reduction, presentation, conclusion drawing, and verification, supported by technical and source triangulation. The findings show that major components of human resource planning—procurement, development, compensation, maintenance, discipline, and termination—have generally been implemented well and contribute to workforce stability and continuity of services. Nevertheless, limitations remain in the absence of workload-based analysis and standardized competency frameworks, which restrict responsiveness to evolving service demands. This study highlights the importance of strengthening HRM planning as a strategic health intervention through the integration of human resource workload analysis, competency-based recruitment, and improved coordination between planning, budgeting, and service delivery. These measures are essential to support accurate, equitable, and sustainable workforce formation and to enhance the performance of rural hospitals.

### ABSTRAK

Perencanaan manajemen sumber daya manusia (SDM) merupakan intervensi penting dalam sistem kesehatan untuk menjamin kesiapan layanan, mutu pelayanan, dan keberlanjutan tenaga kerja, khususnya di rumah sakit daerah. Namun, bukti empiris yang mengkaji implementasi perencanaan SDM di tingkat rumah sakit kabupaten masih terbatas. Penelitian ini bertujuan untuk menganalisis perencanaan sumber daya manusia di Rumah Sakit Umum Daerah Tora Belo, Kabupaten Sigi, sebagai intervensi tingkat fasilitas dalam mendukung efektivitas pelayanan kesehatan. Penelitian ini menggunakan metode kualitatif dengan pendekatan studi kasus yang dilaksanakan pada Juli–Agustus 2025. Pengumpulan data dilakukan melalui wawancara mendalam, observasi, dan telaah dokumen terhadap tiga informan yang dipilih secara purposive, yaitu Direktur Rumah Sakit, Kepala Tata Usaha, dan petugas rumah sakit. Analisis data dilakukan melalui tahapan pengumpulan data, reduksi data, penyajian data, penarikan kesimpulan, dan verifikasi, dengan dukungan triangulasi teknik dan sumber. Hasil penelitian menunjukkan bahwa komponen utama perencanaan SDM—meliputi pengadaan, pengembangan, kompensasi, pemeliharaan, disiplin, dan pemberhentian—secara umum telah dilaksanakan dengan baik dan mendukung stabilitas tenaga kerja serta keberlanjutan layanan. Namun demikian, belum optimalnya penggunaan analisis beban kerja dan standar kompetensi membatasi ketepatan perencanaan terhadap kebutuhan layanan yang dinamis. Studi ini menegaskan perlunya penguatan perencanaan SDM sebagai intervensi kesehatan strategis melalui penerapan analisis beban kerja, rekrutmen berbasis kompetensi, serta peningkatan koordinasi antara perencanaan, penganggaran, dan pelayanan untuk mendukung pembentukan SDM yang berkelanjutan di rumah sakit daerah.

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## INTRODUCTION

Global health workforce planning remains a critical challenge, particularly in low- and middle-income countries (LMICs), where persistent shortages, maldistribution, and skill-mix imbalances undermine health system performance and progress toward universal health coverage (UHC). These challenges are driven by multiple structural factors, including aging health workforces, insufficient domestic investment in training and retention, weak governance, and limited fiscal space for sustainable workforce development (Boniol et al., 2022; Asamani et al., 2024). Inadequate forecasting methods, fragmented data systems, and unequal geographic distribution of health workers further exacerbate gaps between workforce supply and population health needs, especially in rural and underserved areas (Asamani et al., 2021; Lee et al., 2024). Emerging global pressures—such as pandemics, climate-related events, and increased health worker mobility—add complexity, requiring adaptive, data-driven, and resilient human resource for health (HRH) planning approaches (Zurynski et al., 2024).

At the facility level, human resource (HR) planning is a central determinant of hospital service readiness, quality of care, and patient safety. Effective HR planning aligns staffing levels and competencies with service demand, reduces operational bottlenecks, and supports continuity of care under both routine and crisis conditions (Chamberland-Rowe et al., 2021; Drennan et al., 2023). Evidence from emergency and disaster contexts consistently demonstrates that deficiencies in workforce planning, training, and governance directly compromise hospital preparedness and resilience (Latief et al., 2020; AlDulijand et al., 2023). Consequently, integrated and needs-based HR planning has become increasingly recognized as a foundational component of hospital performance and health system strengthening.

Despite growing recognition of its importance, HR planning in district and regional hospitals in LMICs frequently remains misaligned with service needs, regulatory requirements, and financing mechanisms. Persistent gaps between planned and actual staffing levels, weak implementation of evidence-based planning tools, and limited use of workforce data constrain hospital readiness and service quality, particularly in rural settings (Zalwango et al., 2025; Gupta et al., 2021). General solutions proposed in the literature emphasize strengthening integrated HRH planning through improved data systems, adoption of health labor market analysis (HLMA), alignment of planning with budgeting and service delivery, and governance reforms that link national policy frameworks with facility-level implementation (Garg et al., 2022; Deussom et al., 2022).

Scientific literature highlights the effectiveness of evidence-based and needs-driven HR planning approaches in improving district hospital performance. Studies employing HLMA, stock-and-flow models, and scenario-based forecasting demonstrate improved alignment between workforce supply, service demand, and fiscal capacity when these tools are embedded in regional and district planning processes (Garg et al., 2022; Berman et al., 2022). Modeling experiences from LMICs, such as Malawi, show that systematic forecasting supports sustainable HRH investments and more equitable deployment of health workers across districts (Melyda et al., 2022).

In addition, qualitative and mixed-methods studies emphasize the importance of governance, coordination, and capacity building in translating planning into practice. Decentralized systems require clear performance indicators, monitoring mechanisms, and coordination between health, education, and finance sectors to ensure that workforce plans are implemented effectively (Zalwango et al., 2025; Sumiarsih & Nurlinawati, 2020). Strengthening data infrastructure, improving local capacity for data use, and integrating qualitative insights from frontline managers are consistently identified as enablers of effective HR planning at the district hospital level (Zelvia et al., 2024; Malakoane et al., 2020).

In Indonesia, hospital HR planning is shaped by a complex interaction of decentralization, national health financing, and regulatory frameworks. While national initiatives such as Nusantara Sehat aim to address workforce maldistribution, empirical studies reveal persistent discrepancies between regulatory staffing requirements, financing incentives, and actual workforce availability at regional and district hospitals (Abdillah et al., 2024; Meilianti et al., 2022). Financing mechanisms under

the national health insurance system further influence staffing patterns and competencies, yet coordination between planning, budgeting, and service delivery remains suboptimal (Mardiyanti et al., 2021). Weak data systems and inconsistent use of standardized registries continue to limit accurate workforce planning and policy evaluation (Gondhowiardjo et al., 2020).

Existing literature largely focuses on national or provincial-level HRH policies, with limited empirical evidence examining how HR planning is implemented and experienced at the district hospital level, particularly in rural settings. This gap is evident in the lack of in-depth qualitative analyses exploring planning processes, perceived adequacy of staffing, and governance practices within individual hospitals. Addressing this gap, the present study aims to analyze human resource planning at Tora Belo Regional General Hospital, Sigi Regency, using a qualitative case study approach. By examining procurement, development, compensation, maintenance, discipline, and dismissal practices, this study contributes novel, context-specific evidence to inform data-based, competency-driven, and sustainable HR planning in district hospitals.

## METHODS

This study employed a qualitative research method with a case study approach to obtain an in-depth understanding of human resource planning practices at Tora Belo Regional General Hospital, Sigi Regency. The case study design was selected to allow comprehensive exploration of organizational processes, managerial practices, and contextual factors influencing human resource planning within a single district hospital setting.

The study was conducted at Tora Belo Regional General Hospital, Sigi Regency, during July–August 2025. This hospital was purposively selected due to its role as a government-owned regional referral facility and the identified challenges related to human resource availability and planning effectiveness. The study population consisted of hospital management and staff directly involved in human resource planning and implementation.

A total of three informants participated in the study, comprising the Hospital Director, the Head of Administration, and selected hospital officers (see [Table 1](#)). Informants were chosen using purposive sampling techniques based on their positions, responsibilities, and direct involvement in human resource planning activities. This sampling strategy ensured that the data collected were relevant, information-rich, and aligned with the study objectives. This variation in positions, educational backgrounds, and ages was intended to ensure comprehensive and balanced information relevant to human resource planning practices at the hospital.

Data were collected using multiple qualitative techniques, including in-depth interviews, non-participant observation, and document review. In-depth interviews were conducted using semi-structured interview guides to explore informants' perspectives on human resource procurement, development, compensation, maintenance, discipline, and termination. Observations focused on organizational practices, work processes, and interactions related to human resource management. Documentation review included hospital policies, staffing plans, organizational structures, and relevant administrative records to support and contextualize interview findings.

Data analysis was conducted using a matrix-based qualitative analysis technique. The analytical process followed systematic stages of data collection, data reduction, data display, and conclusion drawing and verification. Interview transcripts, observation notes, and documents were organized into thematic matrices to facilitate comparison across informants and HR planning components. Although qualitative research does not rely on standardized data presentation formats, the analysis emphasized clarity, coherence, and logical linkage between themes, supported by the researcher's analytical interpretation.

To ensure data credibility and trustworthiness, triangulation techniques were applied. Technical triangulation was achieved by comparing findings from in-depth interviews, observations, and documentation. Source triangulation was conducted by cross-validating information obtained from key informants, regular informants, and additional informants. These triangulation strategies enhanced the validity of the findings and reduced potential researcher bias.

**Table 1**  
Research informants

Initials	Age	Education	Occupation	Informant
DR	43	Bachelor's	Director	Key Informant
NA	45	Master's	Head of Administration	Regular Informant
D	28	Bachelor's	Personnel Staff	Additional Informant

Ethical considerations were observed throughout the study. Informants were provided with clear information regarding the study objectives and procedures, and informed consent was obtained prior to data collection. Confidentiality and anonymity of participants were maintained, and all data were used solely for research purposes.

## RESULTS AND DISCUSSION

### Procurement, development, and compensation

The findings indicate that key components of human resource planning—namely procurement, development, and compensation—have been implemented effectively at Tora Belo Regional General Hospital, Sigi Regency.

Procurement processes, including recruitment and selection, were reported by informants to function adequately in meeting organizational staffing needs. Interview and observation data suggest that recruitment and placement are conducted in alignment with institutional requirements, supporting the availability of personnel required for service delivery. This indicates that, despite broader workforce shortages at the regional level, the hospital has established functional mechanisms to manage workforce entry and allocation.

From the results of in-depth interviews conducted with key informants regarding “How is recruitment carried out to ensure the quality and quantity of staff meets hospital needs?”, informant DR stated:

*“Skills and non-skills training are always provided at the beginning.”* (DR, Director)

From the results of interviews with regular informants regarding the same question, informant NA stated:

*“Planning, quality, selection, and non-discrimination.”* (NA, Head of Administration)

Furthermore, regarding the question “How is the selection process carried out to ensure the quality and quantity of staff meets the hospital's needs?”, informant NA stated:

*“Initial selection, competency testing, potential and psychological tests, interviews, and placement.”* (NA, Head of Administration)

Furthermore, regarding the question “How is the selection process carried out to ensure the quality and quantity of staff meets the hospital's needs?”, informant D stated:

*“Through planning, training, interviews, and evaluation.”* (D, Personnel Staff)

Based on the overall results of the interviews and observations with informants, the researcher concluded that procurement in human resource planning has been implemented effectively by hospital. Recruitment and selection processes are conducted systematically, ensuring that the quality and quantity of staff meet the hospital's needs.

Human resource development was also found to be well implemented. Informants reported that education and training activities are provided to enhance technical, theoretical, and ethical competencies of staff, and are generally aligned with current job demands. These development practices contribute to staff readiness and adaptability, particularly in a district hospital context where multitasking and role flexibility are often required. Similarly, compensation practices were perceived as fair and appropriate, with remuneration provided in accordance with performance and basic

needs. Compensation was reported to support staff motivation and continuity, reinforcing its role as an integral element of HR planning.

Results of in-depth interviews conducted with key informants regarding *"What is the educational process for improving the technical, theoretical, conceptual, and moral skills of hospital staff?"* informant DR stated:

*"Through various training and simulations."* (DR, Director)

Results of interviews with regular informants regarding the same question, informant NA stated:

*"The need for program planning, training, field implementation, monitoring, and evaluation."* (NA, Head of Administration)

Furthermore, in interviews with additional informants regarding the question *"What is the educational process for improving the technical, theoretical, conceptual, and moral skills of hospital staff?"* Informant D stated:

*"Through training."* (D, Personnel Staff)

Based on the overall results of interviews and observations with informants, the researcher concludes that development in human resource planning has been effectively implemented at hospital. Education and training are conducted systematically to improve the technical, theoretical, conceptual, and moral skills of hospital staff.

These findings are consistent with established human resource management theory, which emphasizes that effective procurement, development, and compensation are foundational to achieving organizational goals (Hasibuan, 2021). Empirical studies have similarly shown that well-structured recruitment and selection processes enhance organizational performance when aligned with strategic planning (Becker, 2016; Pangestu, 2025). The positive assessment of development practices at Tora Belo Hospital aligns with evidence that competency-based training and planned human resource development improve institutional performance and readiness, particularly in dynamic healthcare environments (Garavan, 2021; Khaeruman, 2024).

In terms of compensation, the findings support prior research demonstrating that fair and structured compensation systems positively influence employee performance and output (Agustini, 2023; Jenkins, 2018). However, contrasts with studies reporting inadequate compensation and its negative effects on job satisfaction and performance (Abdillah, 2024) suggest that the relative effectiveness observed at Tora Belo Hospital may reflect contextual strengths in local management practices rather than broader systemic conditions.

From the results of in-depth interviews conducted with key informants regarding *"How is money given as direct and indirect compensation to staff in return for services rendered by the hospital?"*, informant DR stated:

*"Salaries and honorariums are paid monthly via bank transfer."* (DR, Director)

From the results of interviews with regular informants regarding the same question, informant NA stated:

*"Through bank transfer."* (NA, Head of Administration)

Furthermore, regarding the question *"How are goods provided as direct and indirect compensation to staff in exchange for services provided by the hospital?"*, key informant DR stated:

*"There are no goods provided in the provision of services."* (DR, Director)

Based on the overall results of interviews and observations with informants, the researcher concludes that compensation in human resource planning has been implemented effectively by hospital, primarily through direct and indirect monetary compensation provided via bank transfer to staff in return for services rendered.

The effective implementation of procurement, development, and compensation has important implications for hospital service readiness and workforce stability. These findings suggest that

even within resource-constrained settings, structured HR planning can support staff motivation, skill development, and service continuity. For district hospitals, strengthening these components can mitigate some effects of workforce shortages and improve the quality of care. Nevertheless, sustaining these gains requires continuous monitoring, alignment with workload demands, and integration with broader health system planning.

## Maintenance and discipline

The study found that maintenance and discipline functions within human resource planning at Tora Belo Regional General Hospital have been implemented effectively. Maintenance activities, including welfare programs and organizational support, were reported to contribute positively to employee loyalty and retention. Informants indicated that these efforts help maintain physical and mental well-being, thereby reducing turnover and supporting long-term workforce stability.

From the results of an in-depth interview conducted with a key informant regarding *"What activities are used to maintain or improve the physical and mental condition of staff so that they remain committed to working together until retirement?"*, informant DR stated:

*"Such as weekly exercise activities, appropriate shifts, providing rewards, family gatherings, and job rotation."* (DR, Director)

In an interview with a regular informant regarding the same question, informant NA stated:

*"Through regular exercise, family gatherings, rewards, and vacations."* (NA, Head of Administration)

Furthermore, regarding the question *"What activities are used to maintain or improve officer loyalty so that they remain willing to work together until retirement?"*, informant DR stated:

*"Providing rewards, employee career development, training, appropriate incentives, good communication, motivation, and ensuring a sense of security."* (DR, Director)

Furthermore, in an interview with an additional informant, the question "What activities are used to maintain or improve the physical and mental condition of officers so that they remain willing to work together until retirement?" was answered by D, who stated:

*"Through family gatherings and regular exercise."* (D, Personnel Staff)

Based on the results of interviews and overall observations with informants, the researcher concluded that maintenance in human resource planning has been implemented well at hospital, including efforts to maintain physical and mental health as well as staff loyalty to ensure long-term commitment.

Discipline was also identified as a well-functioning component of HR planning. The hospital enforces rules related to attendance, punctuality, and adherence to organizational regulations. Informants perceived disciplinary procedures as clear and consistently applied, fostering a sense of responsibility among staff. This indicates that discipline functions not only as a control mechanism but also as a supportive structure that reinforces professional conduct.

Results of in-depth interviews conducted with key informants regarding *"How are staff members willing and aware of complying with hospital regulations?"* informant DR stated:

*"Yes, because we explain the regulations according to the SOP, and work must be carried out according to the SOP."* (DR, Director)

Results of interviews with regular informants regarding the same question, informant NA stated:

*"It's good, because they have complied with the explanations according to the work SOP."* (NA, Head of Administration)

Furthermore, in the interview with additional informants, regarding the question "How are staff members willing and aware of complying with hospital regulations?", informant D stated:

*"It's good, in accordance with work SOPs."* (D, Personnel Staff)



Based on the overall results of interviews and observations with informants, the researcher concluded that discipline in human resource planning has been effectively implemented at Tora Belo Regional Hospital, Sigi Regency, reflected in staff compliance with regulations and adherence to professional ethics.

These findings are in line with human resource management literature that identifies maintenance and discipline as critical to sustaining employee performance and organizational effectiveness (Hasibuan, 2021). Empirical studies have shown that integrated retention strategies—combining career development, compensation, and organizational support—enhance job satisfaction and reduce attrition in hospital settings (Prayoga, 2025; Reiche, 2018). The positive assessment of maintenance practices at Tora Belo Hospital contrasts with research highlighting gaps between retention policies and practice due to limited monitoring and resources (Rosyida, 2024), suggesting comparatively stronger local implementation.

Similarly, effective discipline observed in this study aligns with evidence linking fair and transparent disciplinary systems to improved motivation and productivity (Heery, 2017; Rahmadhani, 2024). However, inconsistencies with studies reporting persistent disciplinary problems in healthcare organizations (Setyawati, 2024) indicate that such effectiveness is not uniform and may depend heavily on leadership and enforcement capacity at the facility level.

Effective maintenance and discipline practices contribute directly to workforce stability, accountability, and service quality. In district hospitals, where staffing flexibility is limited, retaining experienced staff and ensuring disciplined work practices are essential for maintaining service continuity. These findings underscore the importance of embedding retention and discipline strategies within broader HR planning frameworks, supported by leadership commitment and routine evaluation.

## Termination (Separation)

The results indicate that termination or separation processes at Tora Belo Regional General Hospital are implemented in a structured and orderly manner. Informants reported that employment termination—whether due to retirement, resignation, contract completion, or dismissal—follows established procedures. This structured approach minimizes organizational disruption and provides clarity for both management and employees regarding employment transitions.

From the in-depth interview conducted with key informants regarding “*What is the process for terminating employees from the hospital?*”, informant DR stated:

*“There hasn’t been any, but if there is, it will be done according to the regulations.”* (DR, Director)

From the interview with a regular informant regarding the same question, informant NA stated:

*“To date, there have been no terminations.”* (NA, Head of Administration)

Furthermore, in an interview with a secondary informant, regarding the question “*What is the process for terminating hospital staff?*”, informant D stated:

*“There have been no layoffs so far.”* (D, Personnel Staff)

Based on the overall results of interviews and observations with informants, the researcher concluded that the termination process in human resource planning has been implemented effectively at Tora Belo Regional Hospital, Sigi Regency, in accordance with applicable regulations and provisions.

These findings align with human resource management theory, which emphasizes that well-planned termination processes are necessary to maintain organizational stability and fairness (Hasibuan, 2021). Prior studies have similarly noted that clearly defined termination procedures support administrative efficiency and reduce conflict within organizations (Sari, 2022). Research on outplacement and supportive separation practices further suggests that professionally managed termination can mitigate negative impacts on both employees and institutions (Babelova, 2019).

In contrast, other studies have identified weaknesses in termination practices, including procedural non-compliance and adverse socio-economic consequences for affected employees

(Madaniah, 2024). The divergence suggests that while termination planning at Tora Belo Hospital is perceived as effective, broader regulatory oversight and standardized guidelines remain necessary to ensure consistency and fairness across institutions.

Effective termination planning is an often-overlooked component of human resource planning but is essential for workforce renewal and organizational sustainability. For district hospitals, clear and fair separation processes support governance, reduce legal and managerial risks, and contribute to overall HR system credibility. Strengthening termination planning through transparent procedures and supportive mechanisms can further enhance institutional trust and workforce management outcomes.

## CONCLUSION

This study concludes that human resource planning at Tora Belo Regional General Hospital, Sigi Regency, functions as an essential facility-level health system intervention that supports service readiness, workforce stability, and continuity of care in a rural setting. Core components of human resource planning—procurement, development, compensation, maintenance, discipline, and termination—have been implemented effectively and collectively contribute to strengthening the hospital's capacity to deliver health services. Structured recruitment and selection support staffing availability, while development initiatives enhance workforce competencies in line with service demands. Fair compensation, together with effective maintenance and disciplinary mechanisms, promotes staff motivation, retention, professional accountability, and adherence to organizational standards. Orderly termination procedures further support governance and minimize disruption to hospital operations.

Despite these strengths, the findings indicate that the interventional impact of human resource planning can be substantially enhanced through the systematic use of data-based workload analysis to inform workforce projections and deployment. Standardizing competency-based recruitment, strengthening governance mechanisms, and improving coordination between human resource planning, budgeting, and service delivery are critical to ensuring that HR planning remains responsive to evolving health needs. By providing an in-depth qualitative analysis of human resource planning as a health intervention at the district hospital level, this study contributes to the limited evidence base on workforce-focused interventions in rural health systems. The findings underscore the importance of positioning human resource planning not merely as an administrative function, but as a strategic intervention to improve service quality, system resilience, and health system performance. Future research should expand this evidence through larger samples, comparative multi-site studies, and mixed-method designs to further assess the effectiveness and scalability of human resource planning interventions in diverse health system contexts.

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## AUTHORS' CONTRIBUTION

Muhammad Barkah Afrilianto designed the conceptualization; data collection and field coordination, qualitative data analysis, writing original draft. Muhammad Ryman Napirah designed the study design and methodology, supervision and project



administration, review and editing the manuscript. Miranti Miranti performed the validation of findings, interpretation of results, writing, review and editing.

## COMPETING INTEREST

The author(s) declare no potential conflict of interest with respect to the research, authorship, or publication

## REFERENCES

- Abdillah, A., Harum, H., Jumadi, H., & Pratiwi, S. (2024). Analysis of planning for health workforce needs at Lasinrang Pinrang Regional General Hospital. *Journal of Community Health Provision*, 4(2), 111–117. <https://doi.org/10.55885/jchp.v4i2.422>
- Abdillah, R., Tampubolon, E. D. Y., & Siagian, R. (2024). Dampaknya Rendahnya Kompensasi Terhadap Kinerja Karyawan. *Jurnal Intelek Insan Cendikia*, 1(10), 6433-6439. <https://jicnusantara.com/index.php/jiic/article/view/1668>
- Agustini, A. (2023). Pengaruh Pengembangan Sumber Daya Manusia Dan Kompensasi Terhadap Kinerja Pegawai Pada Kantor Sekretariat DPRD Kepulauan Selayar. *Jurnal Bisnis Dan Kewirausahaan*, 12(1), 1-12. <https://doi.org/10.37476/jbk.v12i1.3667>
- AlDulijand, N., Al-Wathinani, A., Abahussain, M., Alhallaf, M., Farhat, H., & Goniewicz, K. (2023). Sustainable healthcare resilience: Disaster preparedness in Saudi Arabia's Eastern Province hospitals. *Sustainability*, 16(1), 198. <https://doi.org/10.3390/su16010198>
- Asamani, J., Bediakon, K., Boniol, M., Mung'atu, J., Christmals, C., Okoroafor, S., & Moeti, M. (2024). State of the health workforce in the WHO African Region: Decade review of progress and opportunities for policy reforms and investments. *BMJ Global Health*, 7(Suppl 1), e015952. <https://doi.org/10.1136/bmjgh-2024-015952>
- Asamani, J., Christmals, C., & Reitsma, G. (2021). Modelling the supply and need for health professionals for primary health care in Ghana: Implications for health professions education and employment planning. *PLOS ONE*, 16(9), e0257957. <https://doi.org/10.1371/journal.pone.0257957>
- Berman, L., Prust, M., Mononga, A., Boko, P., Magombo, M., Teshome, M., & Gunda, A. (2022). Using modeling and scenario analysis to support evidence-based health workforce strategic planning in Malawi. *Human Resources for Health*, 20(1), 30. <https://doi.org/10.1186/s12960-022-00730-3>
- Boniol, M., Kunjumen, T., Nair, T., Siyam, A., Campbell, J., & Diallo, K. (2022). The global health workforce stock and distribution in 2020 and 2030: A threat to equity and "universal" health coverage? *BMJ Global Health*, 7(6), e009316. <https://doi.org/10.1136/bmjgh-2022-009316>
- Chamberland-Rowe, C., Simkin, S., & Bourgeault, I. (2021). An integrated primary care workforce planning toolkit at the regional level (Part 1): Qualitative tools compiled for decision-makers in Toronto, Canada. *Human Resources for Health*, 19(1), 63. <https://doi.org/10.1186/s12960-021-00610-2>
- Deussom, R., Mwarey, D., Bayu, M., Abdullah, S., & Marcus, R. (2022). Systematic review of performance-enhancing health worker supervision approaches in low- and middle-income countries. *Human Resources for Health*, 20(1), 2. <https://doi.org/10.1186/s12960-021-00692-y>
- Drennan, V., Halter, M., Taylor, F., Gabe, J., & Jarman, H. (2023). Non-medical practitioners in the staffing of emergency departments and urgent treatment centres in England: A mixed qualitative methods study of policy implementation. *BMC Health Services Research*, 23(1), 120. <https://doi.org/10.1186/s12913-023-10220-4>
- Garg, S., Tripathi, N., McIsaac, M., Zurn, P., Zapata, T., Mairembam, D., & Graeve, H. (2022). Implementing a health labour market analysis to address health workforce gaps in a rural region of India. *Human Resources for Health*, 20(1), 59. <https://doi.org/10.1186/s12960-022-00749-6>
- Gondhowiardjo, S., Ekaputra, E., Randi, A., & Jayalie, V. (2020). The challenge of the implementation and evaluation of hospital-based cancer registry in Indonesia's national referral hospital. *Medical Journal of Indonesia*, 29(4), 431–435. <https://doi.org/10.13181/mji.bc.203785>
- Gupta, J., Patwa, M., Khuu, A., & Creanga, A. (2021). Approaches to motivate physicians and nurses in low- and middle-income countries: A systematic literature review. *Human Resources for Health*, 19(1), 4. <https://doi.org/10.1186/s12960-020-00522-7>
- Gyurák Babelová, Z., Stareček, A., Cagáňová, D., Fero, M., & Čambál, M. (2019). Perceived serviceability of outplacement programs as a part of sustainable human resource management. *Sustainability*, 11(17), 4748.. <https://doi.org/10.3390/su11174748>
- Khaeruman, K., Mukhlis, A., Bahits, A., & Tabroni, T. (2024). Strategi perencanaan sumber daya manusia untuk meningkatkan kinerja organisasi. *Jurnal Riset Bisnis Dan Manajemen Tirtayasa*, 7(1), 41-50.
- Latief, J., Syahrul, S., & Kadar, K. (2020). Factors affecting hospital readiness in pandemic situation: A literature review. *Strada Jurnal Ilmiah Kesehatan*, 9(2), 478–480. <https://doi.org/10.30994/sjk.v9i2.331>
- Lee, J., Crettenden, I., Tran, M., Miller, D., Cormack, M., Cahill, M., & Xiang, F. (2024). Methods for health workforce projection model: Systematic review and recommended good practice reporting guideline. *Human Resources for Health*, 22(1), 18. <https://doi.org/10.1186/s12960-024-00895-z>
- Madaniah, L. H., & Supendi, P. (2024). Analisis Pemutusan Hubungan Kerja (PHK) pada Pegawai Negeri Sipil (PNS) di Indonesia Definisi, Alasan, Dampak, dan Dasar Hukum. *BISMA: Business and Management Journal*, 2(4), 305-312.
- Malakoane, B., Heunis, C., Chikobvu, P., Kigozi, G., & Krüger, W. (2020). Public health system challenges in the Free State, South Africa: A situation appraisal to inform health system strengthening. *BMC Health Services Research*, 20(1), 58. <https://doi.org/10.1186/s12913-019-4862-y>

- Mardiyanti, S., Rahayu, D., Karbito, A., & Adyas, A. (2021). Management of free health services in hospital. *Indonesian Journal of Global Health Research*, 3(3), 341–352. <https://doi.org/10.37287/ijghr.v3i3.525>
- Meilianti, S., Smith, F., Kristianto, F., Himawan, R., Ernawati, D., Naya, R., & Bates, I. (2022). A national analysis of the pharmacy workforce in Indonesia. *Human Resources for Health*, 20(1), 69. <https://doi.org/10.1186/s12960-022-00767-4>
- Melyda, M., Gondhowirdjo, S., Jackson, L., & Oppong, R. (2022). Planning human resources and facilities to achieve Sustainable Development Goals: A decision-analytical modelling approach to predict cancer control requirements in Indonesia. *BMJ Open*, 12(5), e059555. <https://doi.org/10.1136/bmjopen-2021-059555>
- Pangestu, N. F. C., & Isnawaty, N. W. (2025). Perencanaan Sumber Daya Manusia Pada Badan Kepegawaian Dan Pengembangan Sumber Daya Manusia (BKPSDM) Kota Cirebon. *JANE-Jurnal Administrasi Negara*, 16(2), 172-181.
- Prayoga, R. M., Armansyah, A., Hendri, A., & Friassantano, R. (2023). Pengaruh Perencanaan Sumber Daya Manusia Terhadap Pelayanan Umum Pada RSUD Kabupaten Kepulauan Anambas. *JEMBA: JURNAL EKONOMI, MANAJEMEN, BISNIS DAN AKUNTANSI*, 2(2), 141-148.
- Rosyida, Y. F., & Zatadini, N. (2024). Implementasi Fungsi Pemeliharaan Sumber Daya Manusia terhadap Kinerja Karyawan pada PT. Amaan Sejahtera Indonesia Ponorogo. *Journal of Sharia Economics, Banking and Accounting*, 1(2), 185-196.
- Saputra, R. T., & Darmawan, D. (2023). Improving Teacher Performance through Effective Leadership, Work Discipline, and Work Motivation. *Bulletin of Science, Technology and Society*, 2(2), 31-36.
- Sari, N., & Pratiwi, S. N. (2022). Analisis Manajemen Perencanaan Sumber Daya Manusia di Perguruan Tamansiswa Pematangsiantar. *Jurnal Genta Mulia*, 13(1).
- Setiawati, F., & Prahawan, W. (2024). Analisis Pengaruh Budaya Organisasi, Gaya Kepemimpinan Transformasional Dan Motivasi Kerja Terhadap Kinerja Pegawai:(Study pada Dinas Perumahan, Kawasan Permukiman dan Pertanahan Kabupaten Pandeglang). *Jurnal Manajemen dan Bisnis*, 6(2), 98-108.
- Sumiarsih, M., & Nurlinawati, I. (2020). Permasalahan dalam perencanaan kebutuhan sumber daya manusia kesehatan di kabupaten/kota. *Jurnal Penelitian dan Pengembangan Pelayanan Kesehatan*, 182–192. <https://doi.org/10.22435/jpppk.v3i3.2657>
- Zalwango, M., Migisha, R., Kwesiga, B., Bulage, L., Kadobera, D., & Ario, A. (2025). Using a quality improvement approach to improve reporting of malaria deaths in Namutumba District, Eastern Uganda, 2022–2023. *PLOS Global Public Health*, 5(6), e0003324. <https://doi.org/10.1371/journal.pgph.0003324>
- Zelvia, S., Nasution, S., Girsang, E., & Nasution, S. (2024). Obstacles to the implementation of clinical practice guidelines at Mandau District General Hospital. *Folia Medica Indonesiana*, 60(2), 147–155. <https://doi.org/10.20473/fmi.v60i2.42556>
- Zurynski, Y., Fisher, G., Wijekulasuriya, S., Leask, E., Dharmayani, P., Ellis, L., & Braithwaite, J. (2024). Bolstering health systems to cope with the impacts of climate change events: A review of the evidence on workforce planning, upskilling, and capacity building. *The International Journal of Health Planning and Management*, 39(3), 781–805. <https://doi.org/10.1002/hpm.3769>