

# Analysis of Health Information Management Personnel Requirements in the Medical Records Unit Based on the ABK-Kes Method at Dr. Tjitrowardojo Regional General Hospital, Purworejo

**Annastasia Karmelia<sup>1</sup>, Abdul Hadi Kadarusno<sup>2</sup>, Nita Budiyan<sup>3</sup>, Syarah Mazaya Fitriana<sup>4</sup>, Erma Martiana<sup>5</sup>**

<sup>1,2,3</sup> Medical Records and Health Information Study Program, Poltekkes Kemenkes Yogyakarta, Yogyakarta, Indonesia

<sup>4,5</sup> RSUD dr. Tjitrowardojo Purworejo, Jawa Tengah, Indonesia

\* Correspondence to:

**Annastasia Karmelia**

Medical Records and Health  
Information Study Program,  
Poltekkes Kemenkes  
Yogyakarta, Yogyakarta,  
Indonesia.

Email:

[annastasiakarmelia@gmail.com](mailto:annastasiakarmelia@gmail.com)

**Received: 20-08-2026**

**Accepted: 21-08-2026**

**Published: 21-08-2026**

## Citation:

Karmelia, A., Kadarusno, A. H., Budiyan, N., Fitriana, S. M., & Martiana, E. (2026). Analysis of Health Information Management Personnel Requirements in the Medical Records Unit Based on the ABK-Kes Method at Dr. Tjitrowardojo Regional General Hospital, Purworejo. Indonesian Journal of Health Informatics.

## Abstract

### Objectives:

An imbalance between the number of Medical Record and Health Information Management (PMIK) personnel and their workload can compromise the quality of medical record services in hospitals (Zein et al., 2022). The rising number of patient visits at RSUD dr. Tjitrowardojo Purworejo has intensified the workload of medical record staff, highlighting the need for a systematic staffing needs analysis using the Health Workload Analysis (ABK-Kes) method.

### Methodology:

This study employed a descriptive qualitative approach with a case study design. Data were collected through in-depth semi-structured interviews, direct observation with time-motion measurements, and document review. The study involved 10 informants, including the head of the medical records unit and PMIK officers from each work section. Staffing needs were analyzed based on ABK-Kes components: available working time, workload standards, supporting task factors, and health human resource requirements.

### Results:

Based on the ABK-Kes method, the required number of PMIK personnel was 45, while only 16 PMIK-qualified staff were available, resulting in a deficit of 29. The most critical shortages were identified in the outpatient registration (TPPRJ), filing, and analysis units. Additionally, 19 of 35 existing staff (54.3%) lacked formal PMIK qualifications, which is inconsistent with the requirements set out in Permenkes No. 24 of 2022.

### Conclusion:

The Medical Records Unit of RSUD dr. Tjitrowardojo Purworejo faces a significant shortage of PMIK-qualified personnel, uneven staff distribution across work units, and qualification mismatches. Redistribution of existing staff and targeted recruitment of qualified PMIK personnel are recommended to enhance service quality and operational efficiency.

**Keywords**

ABK-Kes, staffing needs analysis, medical records, workload, qualification.

**Background**

Hospitals, as providers of health services, are responsible for delivering care that is high-quality, safe, and sustainable. Achieving this requires adequate Health Human Resources in terms of both quantity and competence (Kemenkes RI, 2023). A mismatch between the number of available personnel and their workload can lead to reduced productivity, delayed task completion, increased risk of errors, and diminished service quality for patients (Linda et al., 2025). Medical Record and Health Information Management (PMIK) professionals are key healthcare workers responsible for the management of medical records, encompassing the collection, processing, storage, maintenance, presentation, and reporting of patient health information (Kemenkes RI, 2022). Medical records hold administrative, legal, financial, educational, research, and documentation value; thus, their management must be carried out accurately, completely, and continuously (Tania & Dina, 2021).

At RSUD dr. Tjitrowardojo Purworejo, Electronic Medical Records (EMR) have been fully implemented in outpatient services since 2023, while inpatient services continue to operate under a hybrid system. As a result, some medical record management processes still involve physical documents, making adequate PMIK staffing essential. In 2025, the hospital recorded 247,215 patient visits, reflecting a high service volume with significant implications for medical record staff workload. Ensuring that PMIK staffing levels are proportionate to the actual workload is critical for seamless medical record management. The Health Workload Analysis (ABK-Kes) method regulated under Ministry of Health Regulation (Permenkes) No. 33 of 2015 offers an objective, workload-based approach to calculating staffing needs by considering work volume, time norms, and available working time (Zein et al., 2022). This study aimed to analyze the staffing needs of PMIK personnel in the Medical Records Unit of RSUD dr. Tjitrowardojo Purworejo using the ABK-Kes method (Widhiastuti et al., 2022).

**Research Method**

This study employed a descriptive qualitative approach with a case study design. It was conducted at the Medical Records Unit (Instalasi Rekam Medis) of RSUD dr. Tjitrowardojo Purworejo between February and April 2026. Ethical approval was granted through Research Permit No. 400.7.3.5/1080/2026. The study involved 10 informants selected purposively based on their direct involvement in medical record workload management. These included: 1 Head of the Supporting Services and Health Information Management Division (as triangulator), 1 Head of the Medical Records Unit, and 1 officer each from the following units: outpatient registration (TPPRJ), inpatient and emergency registration (TPPRI/TPPIGD), inpatient coding, outpatient coding, filing, assembling, reporting, and analysis.

Data were collected through three methods: (1) in-depth semi-structured interviews to explore types of tasks, frequency, and operational challenges; (2) direct observation with time-motion measurements using a stopwatch to determine task time norms; and (3) document review, including patient visit data, job descriptions, and unit activity reports. Staffing needs analysis was conducted using the six steps of the ABK-Kes method: (1) identification of the healthcare facility and HHR type; (2) calculation of Available Working Time (WKT); (3) determination of workload components and time norms; (4) calculation of the Workload Standard (SBK); (5) calculation of the Supporting Task Factor (FTP) and Supporting Task Standard (STP); and (6) calculation of total HHR requirements. Data validity was ensured through source triangulation and method triangulation.

## Result and Discussion

### Informant Characteristics

Table 1. Characteristics of Informants at RSUD dr. Tjitrowardojo Purworejo.

| Informant    | Age (Years) | Sex    | Last Education                  | Position                                                           | Interview Date |
|--------------|-------------|--------|---------------------------------|--------------------------------------------------------------------|----------------|
| 1.           | 39          | Female | Bachelor of Public Health       | Head of Medical Records Unit & SKM and visum officer               | April 16, 2026 |
| 2.           | 36          | Female | Master of Public Administration | Assembling Officer                                                 | April 18, 2026 |
| 3.           | 24          | Female | Diploma III RMIK                | Inpatient Coding Officer                                           | April 18, 2026 |
| 4.           | 27          | Female | Diploma III RMIK                | Reporting Officer                                                  | April 18, 2026 |
| 5.           | 37          | Female | Diploma III RMIK                | Outpatient Coding Officer                                          | April 18, 2026 |
| 6.           | 36          | Female | Diploma III RMIK                | Analysis Officer                                                   | April 18, 2026 |
| 7.           | 39          | Female | Diploma III Manajement          | Emergency Department Admissions Officer                            | April 21, 2026 |
| 8.           | 46          | Male   | Senior High School              | Filing Officer                                                     | April 22, 2026 |
| 9.           | 50          | Female | Bachelor of Management          | Outpatient Admissions Officer                                      | April, 22 2026 |
| Triangulator | 55          | Female | Bachelor of Dentistry           | Head of Medical Service and Health Information Management Division | April 2026     |

Source: Primary data, 2026.

Table 1 presents the characteristics of the informants involved in this study. A total of nine informants and one triangulator participated in the research. The informants consisted of medical record and health information management officers from various work units, while the triangulator was the Head of the Medical Service and Health Information Management Division.

Data were collected through in-depth interviews conducted between April 16 and April 22, 2026. Each interview lasted approximately 15–25 minutes and was guided by a semi-structured interview guide. After the interviews were completed, the recorded data were transcribed and organized into a data matrix to facilitate analysis. The data were then reduced, categorized, and interpreted to identify themes related to the workload and staffing requirements of Medical Record and Health Information Management (PMIK) personnel at RSUD dr. Tjitrowardojo Purworejo.

### Workload Identification

Workload overload across every unit within the Medical Records Unit. The Head of the Unit noted that several sections are staffed by only one officer required to perform two to three different types of tasks simultaneously, resulting in document and task backlogs across multiple units.

Operational challenges identified include: delayed radiology expertise results impeding coding processes; incomplete medical summaries by the attending physician (DPJP) slowing down the analysis process; limited filing rack capacity; and inadequate SIMRS features to support SIRS reporting. The filing unit also maintains a backlog of inpatient medical record files from 2023 that remains unresolved.

### Available Working Time (WKT)

The WKT was calculated

Table 2. Available Working Time

| No.                                           | Component                             | Description                     | Formula                                                                             | Total         | Unit                |
|-----------------------------------------------|---------------------------------------|---------------------------------|-------------------------------------------------------------------------------------|---------------|---------------------|
| 1.                                            | Working days                          | 6 days/week                     | 52 week                                                                             | 312           | days/year           |
| 2.                                            | Employee leave                        | Employee regulations            | Based on the annual leave entitlement according to employee regulations             | 12            | days/year           |
| 3.                                            | National Holidays                     | Within one year (calendar year) | Based on the number of national holidays in year                                    | 19            | days/year           |
| 4.                                            | Training Attendance                   | Average per year                | Average number of days employees attend training in one year                        | 5             | days/year           |
| 5.                                            | Absence (Sick Leave, etc.)            | Average per year                | Average number of days employees are absent in one year                             | 12            | days/year           |
| 6.                                            | Working Hours (per week)              | Kepres No. 68/1995              | Perpres No. 21/2023                                                                 | 37,5          | hours/week          |
| 7.                                            | Effective Working Hours (EWH)         | Permen PAN-RB 26/2011           | 75% x 37.5 hours                                                                    | 28.125        | hours/week          |
| 8.                                            | Working Hours (WH) per Day            | 6 working days/week             | JKE/6                                                                               | 4.688         | hours/week          |
| 9.                                            | Available Working Time (AWT) in Days  | 6 working days/week             | Working Days – (Employee Leave + National Holidays + Training Attendance + Absence) | 264           | hours/week          |
| 10.                                           | Available Working Time (AWT) in Hours | 6 working days/week             | Available Working Time (days) × WH                                                  | 1.237         | hours/week          |
| <b>Available Working Time ..... (Hours)</b>   |                                       |                                 |                                                                                     | <b>1.200</b>  | <b>Hours/year</b>   |
| <b>Available Working Time ..... (Minutes)</b> |                                       |                                 |                                                                                     | <b>72.000</b> | <b>Minutes/year</b> |

### Time Norms and Workload Standard (SBK)

Time norms were obtained through direct measurement (time-and-motion study) using a stopwatch for each task description across all work units. The results are presented in Table 2.

Table 3. Workload Standars (SBK) at RSUD dr. Tjitrowardojo Purworejo

| No. | Work Unit/ Main Task Activity | Time Norm        | WKT (min/year) | SBK (WKT/time norm) |
|-----|-------------------------------|------------------|----------------|---------------------|
| 1.  | Outpatient registration       | 5,11 min/patient | 72.000         | 14.090,01           |
| 2.  | Inpatient registration        | 9,1 min/patient  | 72.000         | 7.912,10            |

|     |                              |                     |        |            |
|-----|------------------------------|---------------------|--------|------------|
| 3.  | Emergency (IGD) registration | 3,17<br>min/patient | 72.000 | 22.712,93  |
| 4.  | SKM dan visum                | 420 min/file        | 72.000 | 171,43     |
| 5.  | Assembling                   | 2.34 min/file       | 72.000 | 30.769,23  |
| 6.  | Inpatient coding             | 2,49 min/file       | 72.000 | 28.915,66  |
| 7.  | Filing                       | 9,32 min/file       | 72.000 | 7.725,32   |
| 8.  | Reporting                    | 540 min/report      | 72.000 | 133,33     |
| 9.  | Analysis                     | 12,78 min/file      | 72.000 | 5.633,80   |
| 10. | Outpatient coding            | 0,56 min/file       | 72.000 | 128.571,42 |

Source: Primary data, 2026.

### Supporting Task Factor (FTP) and Supporting Task Standard (STP)

Supporting activities applicable to all PMIK staff include: Monday morning roll call 30 minutes/week = 1,560 minutes/year), training and seminars (900 minutes/year), and routine meetings (720 minutes/year). Total supporting task time = 3,180 minutes/year.  $FTP = 3,180 / 72,000 \times 100\% = 4.41\%$ .  $STP = 1 / (1 - 4.41/100) = 1.05$  (for units participating in roll call) and 1.02 (for registration units not attending roll call).

### PMIK Requirements and Comparison

Based on ABK-Kes calculations, the total PMIK staffing requirement for the Medical Records Unit is 45 personnel. A comparison with currently available PMIK staff is presented in Table 3.

Table 4. Comparison of PMIK Staffing Requirements at RSUD dr. Tjitrowardojo Purworejo

| No.   | Work Unit                            | Available PMIK staff | Required Staff (ABK-Kes) | Conclusion (Needs of professional) |
|-------|--------------------------------------|----------------------|--------------------------|------------------------------------|
| 1.    | Outpatient Registrasion              | 6                    | 14                       | - 8                                |
| 2.    | Inpatient and Emergency Registration | 1                    | 8                        | -7                                 |
| 3.    | Outpatient Coding                    | 1                    | 3                        | -2                                 |
| 4.    | Inpatient Coding                     | 5                    | 1                        | +4                                 |
| 5.    | Filing                               | 0                    | 8                        | -8                                 |
| 6.    | Analysis                             | 1                    | 5                        | -4                                 |
| 7.    | Assembling                           | 0                    | 1                        | -1                                 |
| 8.    | Reporting                            | 1                    | 4                        | -3                                 |
| 9.    | SKM and visum                        | 1                    | 1                        | 0                                  |
| TOTAL |                                      | 16                   | 45                       | Additional 29 PMIK required        |

Source: Primary data, 2026.

Intepretation of Table 3 is:

1. Only the SKM and visum unit has met its staffing requirement. The inpatient coding unit has a surplus of 4 PMIK, attributable to the integration of the ward monitoring system into SIMRS, which has reduced manual coding workload. In contrast, seven other units face staffing shortages, with the most critical deficits in the outpatient registration unit (TPPRJ, shortage of 8), filing unit (shortage of 8), and analysis unit (shortage of 4).
2. The TPPRJ unit requires 14 PMIK to handle 188,678 outpatient visits per year, encompassing online and walk-in registration, BPJS verification, and label printing. The outpatient registration unit serves as the frontline of medical record services and is most vulnerable to overload when staffing is disproportionate to patient volume (Noor et al., 2025).  
The filing unit represents the most critical case, with only one non-PMIK officer managing tasks that ideally require 8 PMIK staff. Insufficient filing personnel leads to accumulation of medical records, delays in document management, and increased workload burden, reducing overall service effectiveness (Budiyanti et al., 2025).
3. The analysis unit requires 5 PMIK to review the completeness of 53 form items per file, yet only 2 staff members are currently available. This shortage compels officers to consistently work beyond official office hours, serving as a clear indicator of workload overload. Persistent overtime has been significantly correlated with increased turnover intention among healthcare workers (Pamungkas et al., 2023).
4. The inpatient coding unit, despite its surplus, continues to face challenges stemming from delayed diagnostic support results and incomplete medical summaries submitted by the attending physician (DPJP). These issues require coders to perform repeated confirmations, thereby adding to the effective working time in coding and claims processes (Budi et al., 2022).

Beyond quantitative shortfalls, the qualification gap presents a significant concern. Of 35 available personnel, only 16 (45.7%) hold formal PMIK qualifications, while 19 (54.3%) are non-PMIK staff performing medical record functions. Under Article 1 of Permenkes No. 24 of 2022, medical record management must be carried out by personnel with PMIK qualifications. Therefore, the actual staffing deficit is not merely 10 (in terms of total headcount) but 29 when assessed on a qualitative basis.

Background education staff non-PMIK has potential affect the quality of health information management. More education their performance in managing medical records and health information (Garmelia et al., 2021). Medical record units with a higher proportion of PMIK-qualified staff consistently demonstrate better performance in the completeness and timeliness of health information management (Irmawati et al., 2024).

Data shows that the ABK-Kes method serves as an objective and standardized analytical tool for identifying workforce gaps based on actual workload, thereby supporting more evidence-based health human resource planning (Putri & Hidayati, 2021).

## Conclusion

Based on the ABK-Kes calculation, the Medical Records Unit of RSUD dr. Tjitrowardojo Purworejo requires 45 PMIK personnel, yet only 16 PMIK-qualified staff are currently available, resulting in a deficit of 29. Staffing shortages were identified in the TPPRJ, TPPRI, TPPIGD, outpatient coding, filing, analysis, assembling, and reporting units. The inpatient coding unit has a surplus of 4 PMIK, while the SKM and visum unit has met its required staffing level.

In addition, a significant qualification gap exists, with 19 out of 35 officers (54.3%) being non-PMIK personnel performing medical record functions, which is inconsistent with the provisions of Permenkes No. 24 of 2022. Redistribution of PMIK staff from surplus units to units experiencing shortages and targeted recruitment of qualified PMIK personnel are recommended to enhance service quality and operational efficiency in the Medical Records Unit.

## Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial

relationships that could be construed as a potential conflict of interest.

### Ethical Considerations

Ethical approval for this study was obtained from the Ethics Committee under Ethical Clearance No. 060/KEPK/15/2026. Research permission was also granted by RSUD dr. Tjitrowardojo Purworejo through Research Permit No. 400.7.3.5/1080/2026. All informants provided informed consent prior to participation, and all data were anonymized and used exclusively for research purposes.

### Use of artificial intelligence (AI)

Portions of this manuscript were edited using AI tools to improve grammar and clarity of the English translation. All AI-assisted content was reviewed and validated by the authors, who take full responsibility for the accuracy, integrity, and originality of all content.

### Declaration of Conflicting Interest

The authors declared no potential conflicts of interest regarding the research, authorship, and publication of this article.

### Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

### Acknowledgment

The authors extend their gratitude to the Director of RSUD dr. Tjitrowardojo Purworejo for granting research permission, to the Head of the Medical Records Unit and all PMIK officers who participated as informants, and to all supervisors and examiners who provided guidance throughout this research.

### Authors' Contributions

AK planned and designed the research study. AK carried out data collection and analysis. AK, AHK, and NB drafted and revised the manuscript. All authors read and approved the final manuscript.

### References

- Budi, A. P., Sasti, I., & Widiyanto, W. W. (2022). Perbandingan Beban Kerja Tenaga Rekam Medis Elektronik dan Manual Menggunakan Metode ABK-Kes. *Jurnal Manajemen Informasi Dan Administrasi Kesehatan (JMIK)*, 5, 38–47. <https://doi.org/10.32585/jmiak.v5i2.2831>
- Budiyanti, shifa A., Indira, Z. N., Romodon, D., & Praptanti, A. F. (2025). Analisis Kebutuhan Tenaga Kerja Unit Filing Rekam Medis Menggunakan WISN di RSUD dr. Soedirman Kebumen. *Jurnal Kesehatan Tambusai*, 6, 1457–1465. <https://doi.org/10.31004/jkt.v6i1.41763>
- Garmelia, E., Lestari, S., & Golo, Z. A. (2021). Tinjauan Efektivitas Kerja Penanggung Jawab Rekam Medis (PJRM) di Bangsal Perawatan Sesuai dengan Kompetensi Perekam Medis dan Informasi Kesehatan (PMIK). *Jurnal Manajemen Informasi Kesehatan Indonesia*, 9, 1–5. <https://doi.org/10.33560/jmiki.v9i1.324>
- Irmawati, Garmelia, E., Golo, Z. A., & Ilyas, A. A. (2024). Analisis Kinerja Unit Rekam Medis Berdasarkan Standar Kompetensi PMIK di Rumah Sakit Wilayah Sulawesi Selatan. *Jurnal Rekam Medis Dan Informasi Kesehatan*, 7(1), 70–77. <https://doi.org/10.31983/jrmik.v7i1.11312>
- Kemkes RI. (2022). *Peraturan Menteri Kesehatan RI No. 24 Tentang Rekam Medis*. <https://peraturan.bpk.go.id/Details/245544/permenkes-no-24-tahun-2022>
- Kemkes RI. (2023). *Undang Undang Republik Indonesia Nomor 17 Tahun 2023 Tentang Kesehatan*. <https://peraturan.bpk.go.id/Details/275526/permenkes-no-17-tahun-2023>
- Linda, H., Afriantari, N., Nurrahmani, Muhibbudin, & Ningtyas, A. (2025). Hubungan Beban Kerja Pegawai Rekam Medis dengan Mutu Pelayanan RSUD Langsa Tahun 2024. *Journal Getsempena Health Science Journal*, 4(1), 1–11. <https://doi.org/10.46244/gh.sj.v4i1.2846>

- Noor, H. L., Fanny, N., & Rejeki, T. S. (2025). Analisis Kebutuhan Tenaga Kerja Bagian Pendaftaran Rumah Sakit Dengan Metode Analisis Beban Kerja Kesehatan (Abk Kes). *Jurnal Informasi Kesehatan Indonesia*, 11(1), 53–59. <https://doi.org/10.31290/jiki.v11i1.5357>
- Pamungkas, G., Surtimanah, T., & Yunilestari, A. S. (2023). Hubungan Jam Lembur dengan Turnover Intention di Rumah Sakit Hermina Sukabumi Tahun 2023 Abstrak PENDAHULUAN Manajemen sumber daya manusia memegang peranan yang penting dan fundamental dalam sebuah organisasi . Keberhasilan suatu organisasi dalam mempert. *Jurnal Ilmu Kesehatan Immanuel*, 17. <https://doi.org/10.36051/jiki.v17i2.232>
- Putri, C. A., & Hidayati, M. (2021). Analisis Kebutuhan Sumber Daya Manusia Petugas Rekam Medis Dengan Putri, C. A., & Hidayati, M. (2021). Analisis Kebutuhan Sumber Daya Manusia Petugas Rekam Medis Dengan Menggunakan Metode Analisis Beban Kerja Kesehatan(Abk-Kes). *Jurnal Manajemen Kesehatan. Jurnal Manajemen Kesehatan Yayasan RS.Dr. Soetomo*, 7(2), 257. <https://doi.org/10.29241/jmk.v7i2.637>
- Tania, N., & Dina, S. (2021). Peran Perekam Medis Dan Informasi Kesehatan (Pmik) Dalam Pelaksanaan Vaksinasi Covid-19 Di Rs X. *Jurnal Kesehatan Tambusai*, 2(September), 57–62. <https://doi.org/10.31004/jkt.v2i3.1949>
- Widhiastuti, A., Nisaa, A., & Asriati, Y. (2022). Analisis Perencanaan SDM Kesehatan Berdasarkan Metode ABK Kes Unit Rekam Medis Rawat Jalan Di UPTD Puskesmas Jatiroto Wonogiri. *Indonesian Journal of Health Information Management (IJHIM)*, 2(3), 1–8. <https://ijhim.stikesm hk.ac.id/index.php/ojsdata/article/download/63/56/375>
- Zein, E. R., Ramadhani, M., Ajeng, T., Nera, J., & Rosyi, R. (2022). Analisis Beban Kerja Petugas Rekam Medis dengan Metode ABK Kes di Puskesmas Ciptomulyo Malang. *Jurnal Kesehatan Tambusai*, 3(September), 534–542. <https://doi.org/10.31004/jkt.v3i3.13408>