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# Performance of health workers in implementing the healthy Indonesia application

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**Abstract**

**Background:** My Healthy Indonesia Application is a cornerstone of Indonesia's health system digital transformation, designed to streamline vaccination recording and reporting. However, its implementation at community health centers in Padang City faces challenges, marked by data discrepancies and suboptimal vaccination coverage.
**Purpose:** To identify healthcare worker performance in implementing the healthy Indonesia application.
**Method:** A mixed-methods study was conducted in five Community Health Center in Padang City. The quantitative phase employed a cross-sectional design with total sampling of 127 health workers. Data were collected using validated questionnaires and analyzed using chi-square and multivariate logistic regression. The qualitative phase involved in-depth interviews with 13 key informants, analyzed using thematic analysis. This study investigates factors associated with health workers' performance in using My Healthy Indonesia Application and explores underlying reasons behind these challenges.
**Results:** Quantitative analysis revealed that motivation (p=0.014), leadership (p=0.018), and workload (p=0.009) were significantly associated with performance, with motivation as the most dominant factor (OR 0.254; p=0.011). Knowledge (p=0.602) was not significantly associated. Qualitative findings generated seven themes: complex motivational dynamics dominated by professional responsibility; significant infrastructure limitations (reliance on personal devices/internet); persistent application bugs (data loss, duplication); increased administrative workload; a digital generation gap; adaptive strategies (time management, team collaboration); and a clear recommendation for a single, integrated application.
**Conclusion:** Health worker performance in using My Healthy Indonesia Application presents a paradox: good performance persists despite significant systemic barriers, primarily driven by strong intrinsic motivation. However, this reliance on individual resilience is unsustainable. Improving My Healthy Indonesia Application effectiveness requires holistic interventions addressing technical issues, reducing workload, bridging the digital divide, and nurturing the professional dedication of health workers.

**Keywords**: **Health Information Systems; Health Personnel; Motivation; Vaccination Performance.**

## INTRODUCTION

Vaccination remains one of the most cost-effective public health interventions, saving millions of lives annually The success of any vaccination program is critically dependent on accurate, complete, and timely data for monitoring coverage, identifying missed children, and managing vaccine logistics (Ministry of Health of the Republic of Indonesia, 2021; World Health Organization, 2022). Recognizing this, the Indonesian Ministry of Health launched My Healthy Indonesia Application as a key initiative under the sixth pillar of its health transformation agenda: health technology transformation (Lestari, 2023). This digital platform is mandated for recording and reporting routine vaccination data across all primary healthcare facilities, integrating with the national "*SATU SEHAT*" ecosystem (Ministry of Health of the Republic of Indonesia, 2022).

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Despite its potential, national data reveals a concerning gap. In 2024, Indonesia's complete childhood vaccination coverage reported through My Healthy Indonesia Application was only 83.09%, far below the national target of 100% (Ministry of Health of the Republic of Indonesia, 2024). This issue is mirrored at the local level. In Padang City, West Sumatra, data from 2024 showed persistent discrepancies between manual and My Healthy Indonesia Application-reported vaccination figures across several Community Health Center (Padang City Health Office, 2024). For instance, Community Health Center Lubuk Buaya, with high service activity, reported a significant gap of 36 unreconciled reports, indicating that high caseloads do not automatically translate into complete digital reporting.

The successful implementation of any health information system hinges on the performance of its end-users: the health workers. Performance is a multifaceted concept influenced by a complex interplay of individual, organizational, psychological, and environmental factors (Silaen, Syamsuriansyah, Chairunnisah, Sari, Mahriani, Tanjung, Triwardhani, Haerany, Masyruroh, Satriawan, Lestari, Rialmi & Putra., 2021). Individual factors include knowledge and age, where younger, "digital native" workers may adapt more easily to technology (Moeins, Alhempi, Goenawan & Amos., 2024). Organizational factors, such as supportive leadership and manageable workload, are crucial for fostering a conducive work environment (Selvi, Ubaidillah, Syukri & Iskandar, 2024; Budiasa, 2021). Psychological factors, particularly motivation, serve as the internal engine that drives an individual's effort and persistence (Mardiana, Harokan & Wahyudi, 2025). Finally, environmental factors, including the availability and reliability of supporting infrastructure like hardware and internet, form the foundation upon which digital systems operate (Rahmadewi, Heryawan & Lazuardi, 2023).

While the barriers to health information system adoption are well-documented globally, the specific interplay of these factors in the context of Indonesia's My Healthy Indonesia Application, particularly the paradoxical situation where health workers maintain good performance despite significant obstacles, is not fully understood. A preliminary survey in two Community health centers in Padang City revealed that 83.3% of health workers encountered obstacles, primarily delays in data entry due to workload, unstable signals, and fatigue. This study aims to fill this research gap by employing a mixed-methods approach to not only identify the quantitative factors associated with health worker performance in using My Healthy Indonesia Application but also to qualitatively explore the "how" and "why" behind these associations, providing a nuanced and contextualized understanding crucial for informing effective interventions.

## RESEARCH METHOD

This study employed a sequential explanatory mixed-methods design (Hardisman, 2020), combining quantitative and qualitative approaches to gain a comprehensive understanding of the factors influencing health worker performance. A cross-sectional study was conducted from October to November 2025. The study population was all 127 health workers responsible for managing and inputting vaccination data into My Healthy Indonesia Application across five Community Health Center in Padang City (Lubuk Buaya, Air Dingin, Pegambiran, Andalas, and Lapai). These Community Health Center were purposively selected based on documented data discrepancies in vaccination reporting. A total sampling technique was used, including all 127 eligible health workers who met the inclusion criteria: actively using My Healthy Indonesia Application for at least three months and directly involved in the vaccination program. Data were collected using a structured, validated questionnaire administered through face-to-face interviews. The questionnaire measured six independent variables: knowledge (15 items), motivation (14 items), leadership (11 items), and workload (13 items) using a 5-point Likert scale; age (categorized as <34 years and ≥34 years); and facilities (10 items) using a Guttman scale (Yes/No). The dependent variable, performance (11 items), was also measured using a 5-point Likert scale. All instruments underwent validity and reliability testing with 22 respondents from two comparable community health center, achieving Cronbach's alpha values >0.7, indicating good reliability. Data were analyzed using SPSS version 26. Univariate analysis described respondent characteristics and variable distributions. Bivariate analysis using the chi-square test explored associations between independent variables and

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performance. Variables with a p-value <0.25 in bivariate analysis were entered into a multivariate logistic regression model to identify the most dominant factor.

Following the quantitative analysis, a qualitative study was conducted from November 2025 to January 2026 to deepen the understanding of the quantitative findings, particularly the role of motivation. A total of 13 informants were purposively selected, including My Healthy Indonesia Application-using health workers, vaccination coordinators, community health center heads, and a representative from the Padang City Health Office. Data were collected through in-depth, semi-structured interviews using an interview guide developed from the quantitative results. Interviews were audio-recorded, transcribed verbatim, and analyzed using thematic analysis (Hardisman, 2020). Data credibility was ensured through source and method triangulation.

Ethical approval from the Research Ethics Committee of the Faculty of Medicine, Universitas Andalas (No. 610/UN.16.2/KEP-FK/2025). All respondents provided written informed consent before data collection. Anonymity and confidentiality were guaranteed.

## RESEARCH RESULTS

### Quantitative Findings

**Table 1. Characteristics of Respondents (N=127)**

| Variable | Results | p-value |
|---|---|---|
| **Age (Mean±SD)(Range)(Year)** | (32.4 ± 5.6) (22–45) | |
| **Age (n/%)** | | |
| < 34 | 20/15.7 | |
| ≥ 34 | 107/84.3 | |
| **Knowledge (n/%)** | | |
| Poor | 6/4.7 | 0.062 |
| Good | 121/95.3 | |
| **Motivation (n/%)** | | |
| Poor | 21/16.5 | 0.014 |
| Good | 106/83.5 | |
| **Leadership (n/%)** | | |
| Poor | 9/7.9 | 0.018 |
| Good | 118/92.9 | |
| **Workload (n/%)** | | |
| High | 39/30.7 | 0.009 |
| Moderate | 88/69.3 | |
| **Availability of Facilities (n/%)** | | |
| Incomplete | 40/31.5 | |
| Complete | 87/68.5 | |
| **Performance (n/%)** | | |
| Poor | 26/20.5 | |
| Good | 101/79.5 | |

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Among the 127 respondents, the majority were midwives (50.4%), with an age of at least 34 years (84.3%), and with a minimum of 10 years of experience (59.8%). Table 1 presents the distribution of the variables. Table 1 shows that the majority of respondents had good knowledge (95.3%), good motivation (83.5%), perceived good leadership (92.9%), and reported good performance (79.5%). However, a substantial proportion reported an above-normal workload (30.7%) and considered the supporting facilities to be incomplete (31.5%).

The Chi-square tests revealed significant associations between health worker performance and motivation (p=0.014), leadership (p=0.018), and workload (p=0.009). Health workers with good motivation were nearly four times more likely to have good performance. Similarly, those under good leadership were almost six times more likely to have good performance. Knowledge (p=0.602) was not significantly associated with performance.

**Table 2. Multivariate Logistic Regression Analysis**

| Variable | p-value | Exp (B) | 95% CI. For (Exp (B) | |
|---|---|---|---|---|
| | | | Lower | Upper |
| Motivation | 0.011 | 0.254 | 0.088 | 0.734 |
| Leadership | 0.084 | 0.267 | 0.060 | 1.193 |
| Workload | 0.034 | 0.351 | 0.133 | 0.926 |
| **Nagelkerke R Square** | | 0.195 | | |

Table 2 presents the results of the multivariate logistic regression model. The final model (Table 2) identified motivation as the most dominant factor influencing health worker performance (p=0.011). The Nagelkerke R Square value of 0.195 indicates that these three factors collectively explain 19.5% of the variance in performance.

## Qualitative Findings

Thematic analysis of the in-depth interviews produced seven themes that illuminate the quantitative results.

### Complex Dynamics of Motivation

Motivation was confirmed as the central driver, but its nature was multifaceted. **Intrinsic Motivation (Dominant):** A strong sense of professional responsibility and accountability was the most frequently cited driver. *"It's the job. Responsibility." (IF1, Health Worker).* This was coupled with personal satisfaction from task completion (*"puas udah selesai"*) and a genuine belief in the long-term benefits of My Healthy Indonesia Application for patients, such as accessible digital vaccination records.

**Extrinsic Motivation (Ineffective):** The official reward system, linked to the electronic performance (EKIN) platform, was largely perceived as ineffective. The "jempol" (digital thumbs-up) was seen as an administrative formality rather than meaningful appreciation.

**Forced Motivation (Pervasive):** A strong undercurrent of forced motivation existed, stemming from top-down mandates, fear of administrative sanctions (e.g., EKIN not being approved), and pressure to meet regional targets. There's that EKIN, if it's not signed, no thumbs-up. (IF2, Coordinator).

### Limitations of Supporting Facilities

A major systemic barrier was the reliance on personal resources. All health workers reported using their personal smartphones and mobile data for My Healthy Indonesia Application input, creating an inequitable financial burden. *"For the device, I use my personal phone because there's no special phone for it." (IF1).* While community health center provided Wi-Fi, it was often unstable or overloaded. Technical support was minimal, with no formal training and a notable absence of physical or digital manuals, forcing workers to learn from peers.

### Functional Problems with the Application (Bugs)

Recurring technical issues severely undermined efficiency and trust. Workers consistently reported data loss after input, data duplication that could not be deleted, and a frustrating 24-hour data waiting period that rendered real-time reporting impossible. *"We save the data, and then when we look for it again, it's gone." (IF3, Coordinator).*

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**Increased Administrative Workload and Inefficiency**

Contrary to its purpose, My Healthy Indonesia Application was perceived as adding to, rather than reducing, the workload. The system mandates double entry maintaining manual logs alongside digital input which was seen as inefficient and time-consuming. *"It adds to the workload... work twice. Manual and the application." (IF4, Health Worker).*

**Digital Generation Gap**

A clear divide in digital literacy was observed. Senior health workers (≥34 years), or "digital immigrants," openly acknowledged greater difficulty adapting to the application. *"For those of us who are older, it's more complicated." (IF2).* They relied heavily on their younger, "digital native" colleagues for assistance.

**Adaptive Strategies**

Despite the challenges, health workers developed ingenious strategies to cope. Team collaboration was key, with task-sharing between those providing services and those inputting data. Effective time management, such as inputting data during quiet periods or at the end of the day, was also a common practice.

**A Unified Call for Integration**

A unanimous and powerful recommendation emerged from all informant groups: the need for a single, integrated application. The current proliferation of program-specific apps (e.g., EPPGBM, e-Kohort, CKG) was cited as a primary source of confusion and increased workload. *"If possible, just one application. One application from pre-wedding, pregnancy, childbirth, infants, toddlers, to the elderly." (IF7, Coordinator).

## DISCUSSION

A critical paradox at the heart of Indonesia's digital health transformation: health workers in Padang City demonstrate good performance in using My Healthy Indonesia Application, despite facing significant systemic barriers and heavy workloads.

The digital transformation of primary health services, including vaccination programs, represents a strategic step toward improving coverage, data accuracy, and efficiency. My Healthy Indonesia Application embodies this transformation, yet its success fundamentally depends on human resources the health workers at primary health facilities. Data from 127 health workers across five Community Health Center in Padang City reveals a fascinating portrait of the workforce at the frontline of Indonesia's digital health revolution.

Our findings reveal that midwives constitute the majority of My Healthy Indonesia Application users (50.4%), a pattern that reflects their central role in maternal and child health services, including vaccination at the community health center level. Affirms that midwives in Indonesia play a pivotal role in vaccination programs due to their direct involvement in maternal and child care (Emilia, 2024). This professional group is essential for achieving universal health coverage, as they translate national and local policies into tangible services at the community level (Yuliwati & Sulistyaningrum, 2025).

The predominance of midwives in this study represents both a strength and a potential vulnerability. On one hand, midwives typically demonstrate strong documentation skills, having long managed manual recording systems. The Indonesian Ministry of Health has long recognized that primary health facilities are often dominated by midwives and nurses to address the shortage of specialist physicians in districts and villages. Beyond midwives and nurses, the presence of laboratory analysts and environmental health workers is crucial for supporting integrated information systems like My Healthy Indonesia Application. Midwives and nurses serve as the frontline implementers of health information systems, making their role absolutely critical (Coffetti, Paans, Roodbol, & Zuidersma, 2023).

The high proportion of midwives as primary My Healthy Indonesia Application users has significant implications for digital workload and subsequent performance. Demonstrated that health workers' performance in using information systems does not correlate directly with educational attainment, but is rather influenced by task-oriented training adequacy, frequency of use, and sufficient technical support . This explains why both diploma (DIII) and bachelor-degree (DIV/S1) workers can demonstrate similar performance patterns when these supporting factors are absent.

The representation of diverse professions including doctors, laboratory analysts, pharmacists, nutritionists, and others demonstrates that My Healthy Indonesia Application can be utilized across all health

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disciplines through interprofessional collaboration. This diversity potentially supports collaborative performance where systems are well-integrated. However, when systems fail to align with complex and demanding clinical workflows, they paradoxically increase cognitive load, reducing valuable patient interaction time.

Our findings show that the majority of health workers (75.6%) have used My Healthy Indonesia Application for more than one year. The Ministry of Health of the Republic of Indonesia explains that duration of health information system use significantly influences successful application adoption (Ministry of Health of the Republic of Indonesia, 2025). Continuous training for new users is essential to overcome barriers such as technology resistance. In this study, the high proportion of long-term users suggests potential for My Healthy Indonesia Application success, yet this very familiarity carries hidden risks. Without systematic innovation and improvement, prolonged use may breed complacency, fatigue, or boredom subtle but powerful threats to sustained performance.

More than half of respondents (59.8%) have worked for over a decade, representing a deeply experienced workforce. Such experienced health workers are invaluable for mitigating the challenges of high turnover that plague many health facilities. Contrasting sharply with this experienced cohort are newer workers with less than five years of experience members of Generation Z, born into the digital era. These younger workers demonstrate superior technological aptitude and adaptability, though they lack clinical experience. Moeins et al. characterize Generation Z as "digital natives," possessing innate advantages in technology adaptation that position them uniquely in an era of industrial revolution and digital transformation across all sectors (Moeins et al., 2024).

The presence of both highly experienced and digitally native workers creates a rich organizational tapestry. Experienced workers bring stability, clinical wisdom, and institutional memory, while younger colleagues bring technological fluency and adaptability. Emphasize that effective health systems must strategically integrate both groups to ensure sustainability, leveraging the strengths of each while compensating for their respective limitations (United States Agency for International Development, 2021; World Health Organization, 2021, 2024).

Nearly all respondents (84.3%) were aged 34 years or older, indicating a mature workforce characterized by stability and clinical expertise. This age profile aligns with the description of the 30-50 year age group as possessing superior workload management capabilities, though they simultaneously face higher burnout risks (Moeins et al., 2024; United States Agency for International Development, 2021; World Health Organization, 2022, 2024).

Strikingly, all 20 respondents under 34 years demonstrated good performance in using My Healthy Indonesia Application. This finding suggests that younger workers, as digital natives, adapt more readily to technological applications. However, the older age group, while showing some performance challenges, also demonstrated meaningful variation, with nearly one-quarter achieving good application proficiency. This nuanced finding suggests that while age influences technology acceptance and usage patterns, appropriate training and mentorship can enable workers across all age groups to enhance their performance.

Prensky's conceptualization of technology users as either "natives" (under 34 years) or "immigrants" (34 years and older) provides a useful framework (Yang & Shih, 2020). Digital natives, born into the era of advanced technology, demonstrate unique characteristics compared to previous generations. Their command of science and technology now positions them to dominate global technology use (Lubis & Handayani, 2022). Yet our findings temper this narrative: while younger workers adapt more quickly, older workers compensate through heightened responsibility and commitment a crucial balancing factor in overall team performance.

Age influences not only technology adoption but also healthcare-seeking behavior and service delivery (Pakpahan, Siregar, Susilawaty, Tasnim, Ramdany, Manurung, Tompunu, Sitanggang & Maisyarah, 2021). Our findings align with Febianti et al, who identified age as a determinant of work productivity, particularly regarding physical capacity workers of productive age generally demonstrate superior physical condition compared to those beyond productive age. Motor, sensory, and cognitive abilities degrade with advancing age, particularly evident among workers aged 55 years and above a stark contrast to the vitality and achievement of younger workers (Arifin & Kesuma, 2024).

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Statistical analysis revealed no significant relationship between knowledge and health worker performance in My Healthy Indonesia Application usage (p=0.602). This finding dramatically contradicts conventional logic that positions knowledge as performance's foundation. Yet the dynamics of health worker performance reveal otherwise, exposing what knowledge factors alone cannot explain.

Health worker knowledge of health digitalization correlates with performance, the association was not statistically significant (Abdel Wahed, Hefzy, Ahmed, & Hamed, 2020). Other factors practical training or systemic support may more dominantly influence performance. Knowledge influences performance only when accompanied by practical skills and intrinsic motivation.

Knowledge does not automatically contribute directly to performance improvement (Abuaddous, Sokkar, & Abualodous, 2018). Although knowledge is a critical asset, knowledge management's effect on health worker performance is highly diverse, influenced by numerous factors knowledge management as asset, as support, and as mediator (Kosklin, Lammintkanen, & Kivinen, 2023).

Good knowledge does not always translate to good performance, identifying three causal categories: knowledge factors encompassing theoretical understanding that does not guarantee clinical application; institutional factors such as high workload, suboptimal patient visit ratios, inadequate supportive supervision, and deficient motivation creating environments unconducive to optimal knowledge application; and complex procedures where convoluted clinical practice steps and documentation impede knowledge application, especially in high-pressure situations (Anaman-Torgbor, Divine, Gyapong, Tarkang, Adedia, & Konlan, 2025).

This finding carries profound practical implications. While continuous training to enhance knowledge remains important, knowledge alone cannot ensure optimal performance. In public health services, My Healthy Indonesia Application can achieve greater effectiveness when supported by holistic interventions encompassing motivational and infrastructural aspects.

Our research demonstrated a significant relationship between motivation and health worker performance in My Healthy Indonesia Application usage (p=0.014). Higher motivation correlates with better performance in My Healthy Indonesia Application recording and reporting. The odds ratio (OR=3.926; 95% CI 1.433-10.759) indicates that health workers with good motivation are nearly four times more likely to demonstrate good performance compared to those with poor motivation.

This finding aligns with Nirwana's meta-analysis showing that highly motivated health workers are twice as likely to demonstrate good service performance compared to low-motivation counterparts (Nirwana, 2025). The researcher emphasizes that work motivation is a crucial factor in improving health service effectiveness and efficiency. High motivation drives health workers to work with greater commitment and responsibility in delivering quality services.

Motivation influences health worker performance primarily through workers' capacity to handle assigned tasks with full responsibility, supported by work distribution aligned with team skills and capabilities (Sholeha Arafah, Sety, & Liaran, 2025).

Motivation can be understood as an internal drive influencing the magnitude, direction, and persistence of workplace effort. Highly motivated individuals work diligently, producing positive outcomes. Conversely, poorly motivated individuals tend to work carelessly, without enthusiasm, approaching task completion unseriously (Foster & Sidharta, 2019). Motivation represents an internal force influencing work spirit and desire for optimal performance. Highly motivated workers tend to be more disciplined, meticulous, and responsible in task execution (Mardiana et al., 2025).

A significant partial influence of motivation on health worker performance: higher motivation correlates with better individual performance in providing optimal health services, whether in efficiency, quality, or task responsibility (Argaheni, Azizah, Sianturi, Hutomo, Sirait, Bangun, & Pujiani, 2022). High motivation encourages nurses or health workers to work with discipline, deliver quality services, and maintain professional work ethics. In My Healthy Indonesia Application context, motivation can enhance health worker thoroughness, discipline, and consistency in digital vaccination recording and reporting (Nirwana, 2025).

Strong motivation was affirmed to originate from intrinsic factors, such as responsibility and pride in work and extrinsic factors, appreciation and

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organizational support, both playing vital roles in improving employee performance (Prabowo, Samsudin, Ghoniyah, Elvarreta, Wally, & Carolina, 2024). Work motivation was found to have a positive and significant relationship with performance, with job satisfaction strengthening this relationship (Sari, Thoibah, Ayenti, & Sofi, 2024). Thus, health workers who feel motivated and satisfied with their work tend to demonstrate optimal performance in My Healthy Indonesia Application usage; satisfaction with technical support, supervision, and system ease become supporting factors enhancing work motivation, ultimately affecting performance.

Our findings strengthen Herzberg's work motivation theory, which states that motivation emerges from motivating factors achievement, recognition, responsibility, and growth opportunities. These factors can trigger health worker engagement with digital health information systems like My Healthy Indonesia Application (Tarumingkeng, 2025). We conclude that motivation plays a crucial role in improving health worker performance. Strong motivation whether intrinsic, extrinsic, or forced encourages optimal My Healthy Indonesia Application usage, task execution with full responsibility, and maintenance of vaccination service quality. Efforts to enhance motivation can include supervisor appreciation, continuous training, strengthened leadership support, and creation of conducive work environments appreciative of digital innovation.

Our findings confirmed a significant relationship between leadership and health worker performance in My Healthy Indonesia Application usage (p=0.018). Health workers under good leadership were nearly six times more likely to demonstrate good performance (OR=5.774; 95% CI 1.428-23.340) compared to those under poor leadership.

Leadership was found to influence health worker performance when workers perceive their leaders as adequate and when individual performance aligns with this positive perception. This indicates that leaders at these facilities have executed their duties effectively, providing appropriate guidance (Sholeha Arafat et al., 2025).

These findings strengthen leadership theory's emphasis on leadership's crucial role in determining health worker performance direction. Leaders capable of providing direction, guidance, and creating conducive work atmospheres enhance work spirit and productivity. Effective leadership improves performance through leader capacity to provide direction, motivation, and role modeling to subordinates (Sholeha Arafat et al., 2025; Nasution & Ichsan, 2021).

Providing role models, conducting supervision, and creating effective two-way communication enhances health worker responsibility, motivation, and discipline (Sulaiman, Efendy, & Utami, 2024). The positive influence of leadership was quantified at 44.6%, indicating that organizational success fundamentally depends on implemented leadership approaches (Selvi et al., 2024).

My Healthy Indonesia Application represents a technological innovation requiring health workers to adopt new work methods. Mekonnen and Bayissa revealed that both transformational and transactional leadership can enhance organizational readiness for change (Mekonnen & Bayissa, 2023). These leadership styles are not contradictory but complementary, particularly in complex health systems (Gruessner, 2023).

Transformational leadership in telehealth implementation offers enriching perspectives. Transformational leadership was emphasized transformational leadership's role in creating continuous innovation cultures. Transformational leaders build cultures where vaccination data accuracy and completeness become non-negotiable values (Honorata, Suparno, & Emiliana, 2024).

The transformational leader establishes digitalization of My Healthy Indonesia Application vaccination data as imperative for better health services, building enthusiasm and collective commitment. Meanwhile, transactional leaders ensure My Healthy Indonesia Application data input proceeds through clear target-setting and transparent reward-and-punishment structures contingent rewards appreciating workers who completely and promptly report vaccination data, or providing corrective feedback through active management-by-exception for those lagging (Gruessner, 2023).

We conclude that good leadership enhances health worker performance through motivation, guidance, and role-modeling mechanisms. Effective leaders are not merely decision-makers but primary drivers shaping positive work cultures, enhancing spirit, and directing health workers toward innovation adaptation like My Healthy Indonesia Application usage.

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Our findings showed that workers with above-normal workload demonstrated significantly poorer performance (35.9%) compared to those with normal workload (13.6%). This identifies that most workers experience work pressure exceeding ideal capacity, whether in task volume, work complexity, or My Healthy Indonesia Application usage demands. Workload at health facilities is typically influenced by high administrative demands, service programs, and limited health worker numbers.

High workload without adequate human resources and tools affects performance quality. Excessively high or low workload potentially correlates with low performance. Performance fluctuations can worsen employee performance, with workload curve increases becoming more sensitive (Mardiana et al., 2025; Budiasa, 2021).

Workload was defined as tasks requiring completion within specific timeframes, with excessive workload causing fatigue, productivity decline, and performance implications (Tarwaka & Bakri, 2016).. Workload originates from physical demands field activities and direct service and mental demands recording, reporting, and digital system use. My Healthy Indonesia Application adds administrative demands, increasing mental workload, particularly for midwives and nurses heavily involved in vaccination services. This overwhelms health workers facing time pressure, increasing tasks and reducing task completion accuracy (Sugesti, Triputranto, & Akbar, 2022; Rahayu, Rahatisya, & Audia, 2021).

The adoption of digital health technology was found to improve long term efficiency; however, the initial implementation stages may increase workload through training needs, adaptation, and workflow adjustments. Immature digitalization creates additional administrative burdens, especially for workers dividing time between direct service and complex digital data entry (Jeilani & Hussein, 2025).

The high percentage of workers experiencing heavy workload in this study reflects community health center service complexity encompassing MCH activities, vaccination, posyandu, and daily My Healthy Indonesia Application reporting. This situation demands strengthened workload management, additional health workers, enhanced My Healthy Indonesia Application training, and improved support systems including internet networks and work devices.

The quantitative finding that motivation is the most dominant factor is powerfully illuminated by the qualitative data, which shows this performance is largely driven by deep-seated intrinsic professional responsibility. This finding aligns with Herzberg's Two-Factor Theory, in which motivators like responsibility and a sense of achievement are key to job satisfaction and effort (Tarumingkeng, 2025). However, the study also uncovers a pervasive layer of forced motivation, stemming from administrative pressure and fear of sanctions a dynamic that is likely unsustainable and risks long-term burnout (Wu, Wu, Wang, Lin, Liu & Liu, 2024).

The finding that intrinsic motivation serves as the primary driver of health worker performance aligns with the view that intrinsic motivation fosters discipline and meticulousness in work (Mardiana et al., 2025),. Furthermore, the belief in My Healthy Indonesia Application benefits for patients, such as easy access to vaccination histories, emerged as a key motivator. High motivation was emphasized to correlates positively with improved performance (Sholeha Arafat et al., 2025).

Extrinsic motivation derived from the *E-Kinerja (EKIN)* reward system was found to be suboptimal. Health workers perceived this mechanism as an administrative burden rather than genuine appreciation. Forced motivation arose from rigid top-down policies, compelling My Healthy Indonesia Application use through supervisor mandates and threats of administrative sanctions within the *EKIN* system, such as withheld approval or evaluation. These directives and pressures primarily aim to achieve territorial targets rather than fostering awareness of the digital recording system's benefits. Administrative pressure without adequate support can actually diminish health workers' intrinsic motivation (Silva et al., 2024). The direct consequence of such policies is decreased intrinsic motivation, creating a workplace culture based on fear (compliance out of fear) rather than innovation.

Inadequate infrastructure presents a systemic barrier to My Healthy Indonesia Application utilization. Health workers depend on personal smartphones and data packages for My Healthy Indonesia Application data entry. Nearly all workers use personal devices and internet connections for vaccination data input. Internet networks provided at community health center are often unstable. Furthermore, technical

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support, including physical manuals and training, is minimal, forcing health workers to learn autodidactically or from colleagues. This situation creates inequity and additional financial burden. These findings support emphasizing the critical importance of facilities such as computers, mobile phones, and internet networks in supporting performance (Rahmadewi et al., 2023).

Recurring technical issues stem from My Healthy Indonesia Application application functionality. The application experiences persistent technical problems including system errors, data loss after input, and irremovable duplicate data. Verification mechanisms, such as the 24-hour data waiting period, actively impede workflow. The direct consequences include diminished user trust in the system, wasted time on re-input, and creation of inaccurate data. Technical reliability was emphasized as a determining factor in successful digital system implementation (Borges do Nascimento, Abdulazeem, Vasanthan, Martinez, Zucoloto, Østengaard, Azzopardi-Muscat, Zapata, & Novillo-Ortiz, 2023).

The digital capability gap between senior and junior health workers affects adaptation speed and technology acceptance. This digital generational divide manifests as senior health workers (aged >34 years) experiencing greater adaptation difficulties due to limited digital literacy. Younger health workers adapt more rapidly. The immediate impact is disparity in application usage speed and ease, increasing dependency on younger workers. This finding aligns with the categorization of digital technology users as digital natives (below 34 years) and digital immigrants (above 34 years) (Yang & Shih, 2020). However, senior health workers tend to demonstrate higher responsibility, serving as a balancing factor in overall performance.

Rather than alleviating workload, My Healthy Indonesia Application was perceived as increasing administrative burden. The double-entry system, requiring simultaneous manual and digital recording, adds rather than reduces administrative tasks. High workload can decrease performance and job satisfaction. The direct consequence is that time and energy that could be allocated to patient care is diverted to inefficient administrative tasks. Beyond workload issues, infrastructure and technical problems, along with psychological barriers, comprehensively affect the adoption of digital health technologies (Borges do Nascimento et al., 2023).

Quantitatively, the majority of health workers (79.5%) demonstrated good performance in using the My Healthy Indonesia vaccination application. However, qualitative findings revealed that the core issue is not health worker incapability, but rather that this good performance is achieved through considerable effort, accompanied by a sense of coercion, and paradoxically generates additional burden. My Healthy Indonesia Application, intended as an efficient monitoring tool, potentially erodes health workers' intrinsic motivation over the long term. The observed performance appears fragile, influenced by negative external motivation (fear of sanctions) and individual adaptive strategies, rather than genuinely supportive systems.

Revealed that successful health information system implementation is measured not only by high adoption rates but also by sustainability of use and impact on worker workload (Susanto, 2022). My Healthy Indonesia Application, intended as a digital solution for efficiency, in practice becomes a new source of workload. This phenomenon supports the critique of technological determinism that technology does not automatically generate efficiency within healthcare organizations

The aforementioned impacts increase workload and stress. Health workers experience emotional and physical exhaustion from managing technical problems, meeting administrative demands, and simultaneously delivering services. The risk of burnout and turnover from forced motivation and high workload potentially causes long-term exhaustion, potentially leading to turnover of experienced health workers. It was found that 40.4% of health workers, particularly nurses, experienced extraordinary burnout related to digital health utilization (Wu et al., 2024). Alternative solutions include reducing manual documentation workload or separating personnel between digital application users and manual recording staff. Digital application use correlates positively with workload dissatisfaction but not with burnout, stress, satisfaction with administrative work, or work-life balance (Jendly, Santschi, Tancredi, Von Wyl, & Chiolero, 2025). Burnout frequently affects younger, unmarried individuals with limited work experience and longer working hours (Lee, Dai, Li, Chiang, Chen, Lin, & Wang, 2024).

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Poor data quality, characterized by inaccuracies from duplicate or missing data, threatens data reliability for national program monitoring and evaluation. Digital health application implementation encounters common challenges including poor connectivity and system integration problems, emphasizing factors leading to success (Olu-Abiodun, Faturoti, Adepoju, Adeloye, Adebiyi, & Abiodun, 2025). Interventions to improve data quality were demonstrated to generally focus on three levels: health facilities, district staff, and district health management in a Sub-Saharan African study. The objective extends beyond improving data accuracy to promoting data utilization (Lemma, Janson, Persson, Wickremasinghe, & Källestål, 2020).

Despite encountering the aforementioned obstacles, health workers developed adaptive strategies including time management inputting vaccination records during patient lulls or after service hours and team collaboration through task distribution between vaccination providers and data entry personnel. These strategies demonstrate health workers' capacity for innovation and adaptation amid challenges.

Health workers provided input regarding daily-use applications, recommending a single integrated application encompassing adolescents, pre-marital individuals, pregnant women, breastfeeding mothers, postpartum women, newborns, toddlers, school-aged children, and the elderly. This would eliminate duplicate data entry (2-3 times) and prevent input errors or duplicate data. This recommendation aligns with the Global Strategy on Digital Health 2020-2025 regarding the importance of interoperability in digital health systems (Dhingra & Dabas, 2020).

## CONCLUSION

While health workers in Padang City maintain good performance in using the My Healthy Indonesia Application vaccination application, this performance is paradoxically achieved despite significant systemic barriers, driven primarily by unsustainable forced motivation and resilient intrinsic motivation.

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