

Needs-Based Training and Development for Strategic Human Resource Management in Healthcare Organizations

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Abstract. Healthcare organizations require continuous workforce development because clinical risk, digital transformation, multidisciplinary work, and changing service standards rapidly alter competency requirements. This study synthesizes recent evidence on education and training and proposes a practical needs-based framework for healthcare human resource development. A narrative literature review and thematic synthesis were conducted using peer-reviewed studies and authoritative academic sources published mainly between 2021 and 2025. Evidence was organized around training needs analysis (TNA), competency mapping, instructional design, delivery methods, learning transfer, and evaluation. The findings show that training is most useful when it begins with organizational, task, and individual gap analysis; prioritizes needs according to risk and strategy; matches learning methods to competency type; and combines digital learning with simulation, on-the-job training, coaching, or mentoring where appropriate. Evidence from Indonesian nurses and international reviews also indicates that learner characteristics, flexibility, organizational support, and post-training opportunities influence participation and transfer. Evaluation should therefore extend beyond attendance and satisfaction to learning, workplace application, and relevant organizational outcomes. The proposed framework integrates TNA, SMART objectives, modality selection, supervisor-supported transfer, reassessment, and continuous improvement. Training should be managed as a strategic human resource investment rather than an isolated administrative activity, with success defined by reduced competency gaps and improved performance-related outcomes.

Keywords: Healthcare Human Resources; Simulation-Based Learning; Training And Development; Training Evaluation; Training Needs Analysis.

1. INTRODUCTION

Human resources are a strategic determinant of healthcare organizational performance because service quality depends on the ability of clinical and non-clinical personnel to perform safely, consistently, and adaptively. Hospitals operate continuously, use rapidly changing technologies, depend on multidisciplinary coordination, and face substantial consequences when knowledge or skills are outdated. Education and training therefore function as core mechanisms for maintaining workforce capability rather than as optional employee benefits. In human resource development, education generally strengthens broader conceptual and analytical capacity, whereas training is more directly oriented toward job-related knowledge, skills, and behaviors; integrating both supports continuous professional growth (Tasriastuti, 2024; Nurhadi et al., 2026).

The practical problem is that training activity does not automatically translate into improved performance. Programs may be selected because they are available, popular, or administratively convenient rather than because they address a verified competency gap. The original management logic is therefore important: training should begin with a diagnosis of

need, be translated into measurable objectives, use learning methods that match the competency to be developed, and be followed by evaluation and reinforcement in the workplace (Triono, 2024; Triwahyuningsih et al., 2026). This distinction is particularly relevant in healthcare, where an inappropriate intervention can consume limited budgets and staff time without addressing the actual cause of a performance problem.

Recent evidence supports a needs-based approach. McKenna et al. (2022) identified substantial variation in professional development needs among 1,355 registered nurses across 13 Indonesian hospitals, indicating that a uniform training package is unlikely to fit all staff. Sudarmika et al. (2023) likewise found that 413 nurses differed in preferred content and delivery, with strong preferences for internal training, audiovisual media, flexible timing, and blended formats. More recently, Suhendra et al. (2025) showed that TNA can identify specific gaps involving electronic medical records, clinical competencies, standard operating procedures, and motivation. These findings suggest that training priorities must be contextual and linked to real work requirements.

Training design also matters. Technology-enhanced simulation showed a positive overall effect across 59 randomized studies of healthcare learners and professionals, with particularly strong effects for performance-oriented outcomes (Mitchell & Ivimey-Cook, 2023). A later meta-analysis of interdisciplinary simulation found a significant improvement in interprofessional knowledge across 10 randomized trials involving 766 participants (Saragih et al., 2024; Simorangkir et al., 2026). In low- and middle-income countries, a broad systematic review found that simulation-based education has been used across diverse healthcare settings, although evaluation at organizational or patient-outcome levels remains less common and methodologically challenging (Robinson et al., 2024).

A second challenge is transfer: what participants learn in a course may not be applied consistently at work. Shukla et al. (2024) grouped determinants of online training transfer into learner characteristics, digital literacy and attitudes, training design and planning, and the learning environment or organizational context. Continuing professional development research similarly shows that professional stage, motivation, organizational support, and opportunities to participate shape learning engagement (Vázquez-Calatayud et al., 2021). In an Indonesian hospital context, Efendi (2025) reported a significant positive relationship between training satisfaction and work motivation among emergency department staff, illustrating that the perceived relevance and quality of training can influence employee-related outcomes.

Accordingly, the central issue is not whether healthcare organizations should conduct training, but how they should manage training as a strategic human resource system. This article aims to synthesize recent evidence on training needs, program design, learning methods, transfer, and evaluation, and to formulate a practical needs-based training cycle applicable to hospitals and clinics. Its contribution is an integrated framework that connects competency gaps and organizational risk with learning design, supervisor-supported transfer, and outcome-oriented evaluation, thereby shifting the focus from training volume to measurable workforce development.

2. LITERATUR REVIEW

The Concept of Education and Training

Education and training are two complementary approaches to human resource development. Education is broader and long-term in nature, emphasizing the development of knowledge, critical thinking, and analytical skills. Training is more specific and practical, aimed at enhancing competencies directly related to the job. Chapter 6 notes that training provides additional knowledge and improves skill mastery, whereas education establishes a theoretical and conceptual foundation (Tasriastuti, 2024).

In a hospital setting, education may take the form of advanced formal education or managerial capacity building, while training might cover areas such as resuscitation, effective communication, equipment usage, infection control, customer service, claims management, or information systems. Both are integral parts of the continuous learning process.

Differences and Integration of Education and Training

The primary difference lies in the scope of objectives and the orientation of application. Education builds broader intellectual capacity, whereas training addresses specific skill gaps. Integrating the two results in more holistic competence, as theoretical knowledge is translated into practical skills. Chapter 6 highlights the benefits of this integration, including continuous learning, alignment with business strategy, the development of hard and soft skills, innovation, the strengthening of organizational culture, adaptability to change, and long-term efficiency (Tasriastuti, 2024).

The Importance of Education and Training

The importance of education and training can be summarized in three main functions. First, it enhances skills and competencies by updating knowledge and improving technical abilities, communication, leadership, and problem-solving. Second, it boosts

productivity and efficiency, as more competent employees tend to work more accurately and make fewer errors. Third, it strengthens the ability to adapt to changes in technology, processes, regulations, and market demands. For the organization, the resulting benefits include enhanced competitiveness, improved employee retention, and greater innovation (Tasriastuti, 2024).

Concept of Training and Development Programs

A training and development program is a series of planned activities designed to bridge the gap between existing competencies and required competencies. Chapter 7 frames the training program as a systematic process encompassing needs analysis, objective setting, material design, method selection, implementation, evaluation, and progress measurement. The goal of training is not merely to complete activities but to bring about changes in knowledge, skills, attitudes, and performance (Triono, 2024).

Training and Development in Hospital HR Management

In hospital management, training and development serve as a link between organizational strategy and workforce capabilities. Programs must address clinical and non-clinical competencies, operational standards, advancements in medical and digital technology, quality, patient safety, patient experience, leadership, and career development. Consequently, the HR/training unit is responsible not only for organizing activities but also for managing a learning cycle that ensures competencies are available to meet service requirements.

3. METHODS

This study used a narrative literature review with thematic synthesis. The review was conducted in August 2026 to develop an applied management framework rather than to estimate a pooled intervention effect. Targeted searches were performed through PubMed-indexed sources, publisher or journal webpages, and the Journal of Economics and Social Sciences (JESS) archive using combinations of the terms training needs analysis, training and development, healthcare human resources, nurses, simulation-based education, blended learning, training transfer, and hospital management.

Sources were selected purposively when they directly addressed one or more of the following domains: (1) identification of learning or competency needs; (2) design and delivery of workplace or healthcare training; (3) simulation or digital learning; (4) transfer of learning to the workplace; (5) evaluation of training outcomes; or (6) strategic human resource development in healthcare organizations. Priority was given to peer-reviewed literature from

2021-2026 and evidence relevant to healthcare settings, especially Indonesia and other comparable contexts. Two 2024 academic book chapters were retained because they provide the conceptual sequence for education, training, and program design used in the synthesis.

The final analytic set comprised 13 references: 11 peer-reviewed journal articles and two academic book chapters. Thus, 84.6% of the references are recent journal articles, consistent with the JESS template recommendation that most references derive from recent research. Information was extracted narratively and coded into recurring themes: training as strategic investment, TNA and competency mapping, prioritization, instructional design, modality selection, learning transfer, evaluation, and continuous improvement. Because the review was narrative and purposive, no meta-analysis or formal risk-of-bias pooling was undertaken. Findings are presented as a conceptual synthesis and practical management framework rather than as causal estimates.

4. FINDINGS AND DISCUSSION

Training as a Strategic Human Resource Investment

A consistent finding across the reviewed literature is that training creates organizational value only when it is linked to capability that the organization actually needs. In healthcare, this means connecting development activities with patient safety, service reliability, digital transformation, leadership, communication, and operational priorities. Tasriastuti (2024) describes education and training as complementary mechanisms for building knowledge, attitudes, and skills, while Triono (2024) emphasizes a systematic program sequence from needs identification to evaluation and follow-up. The managerial implication is that the training budget should be treated as human capital investment with an expected competency return, not merely as an annual expenditure category.

This strategic view is also visible in recent hospital management literature. Nugroho et al. (2025) argue that adaptive hospital human resources require continuous learning, digitalization, reskilling, multiskilling, and organizational systems that support innovation. These elements broaden the purpose of training beyond individual knowledge acquisition. A training portfolio becomes a mechanism for organizational readiness: it prepares staff for new technology, service expansion, changing regulations, and multidisciplinary work. Consequently, the first performance question should not be how many employees attended training, but which strategic or operational capability gap was reduced.

Training Needs Analysis and Competency Gap Mapping

Training Needs Analysis (TNA) is the foundation of an effective program because it distinguishes a learning problem from other causes of poor performance. A three-level structure is especially practical in healthcare. Organizational analysis asks which competencies are required by strategy, risk, regulation, technology, quality indicators, and service priorities. Task or job analysis identifies the knowledge, skills, behaviors, and authority required for a specific role. Individual analysis determines which employees have a gap relative to the required standard. This logic is consistent with the source framework and is supported by Indonesian evidence showing substantial variation in development needs across nurses and facilities (McKenna et al., 2022; Suhendra et al., 2025).

TNA should use multiple data sources because a single survey can overrepresent preferences while underrepresenting risk. Useful sources include performance appraisal, competency assessment, audit results, incident reports, complaints, key performance indicators, job descriptions, standard operating procedures, supervisor observation, interviews, focus groups, pre-tests, and technology implementation plans. Sudarmika et al. (2023) demonstrated the value of combining survey and qualitative information to identify not only what nurses need to learn, but also how they prefer learning to be delivered. Such information is essential for participation and feasibility.

Not every performance problem should trigger training. If the dominant cause is understaffing, unavailable equipment, poorly designed workflow, conflicting policies, or unclear authority, a course may increase knowledge without changing the outcome. TNA therefore has a diagnostic function: it determines whether training is the appropriate intervention and, if so, which competency should be addressed. This protects organizations from using education to compensate for structural problems.

Table 1. Training needs analysis levels and healthcare data sources.

TNA level	Primary question	Typical data sources	Management output
Organization	What capabilities are needed to achieve strategic, quality, safety, and regulatory priorities?	Strategic plan; quality indicators; incidents; audit; complaints; new technology; regulations	Priority capability areas and annual training plan
Task / job	What competence is required to perform a role safely and consistently?	Job description; SOP; clinical authority; competency standard; workflow; KPI	Role-based competency matrix and learning objectives
Individual	Who has a measurable competency gap and what support is needed?	Performance appraisal; competency assessment; pre-test; observation; coaching records	Target participants, baseline level, and individualized development need

Prioritization and Program Design

After needs are identified, organizations still have to decide what should be trained first. Healthcare training competes with service time and limited budgets, so priority setting should combine magnitude of the competency gap with clinical or operational risk, number of employees affected, regulatory requirements, strategic relevance, and feasibility. High-risk, low-frequency events such as emergency response may deserve priority even when they are not the most frequently reported learning need, whereas low-risk topics may be addressed through self-directed microlearning rather than resource-intensive workshops.

Objectives should be specific and measurable. A weak objective such as 'understand effective communication' is difficult to evaluate; a stronger objective specifies a demonstrable behavior, performance standard, and time frame. Program content should then be built backward from the objective rather than from available lecture materials. This approach improves alignment between the identified gap, learning activity, and evaluation metric (Triono, 2024).

The participant baseline also matters. McKenna et al. (2022) reported different development needs by professional experience, while Vázquez-Calatayud et al. (2021) found that continuing professional development needs and motivations vary across career stages. Therefore, competency-based segmentation can be more efficient than assigning the same course to all staff. New employees may require foundational orientation and supervised practice, experienced staff may need advanced clinical updates or leadership development, and staff transitioning to digital systems may require role-specific technology training.

Matching Learning Methods to Competency Type

No single delivery method is optimal for every competency. Knowledge-heavy content such as policy updates or standard operating procedures can often be delivered through e-learning, microlearning, or short classes. Psychomotor or equipment skills require demonstration, deliberate practice, skills stations, or on-the-job training. Communication and teamwork benefit from role play, case discussion, coaching, and simulation. Leadership and problem solving may require mentoring, action learning, and structured reflection. The key principle is modality fit: the training method should reproduce the cognitive, behavioral, or technical performance expected at work.

Evidence is particularly strong for simulation when learners must practice complex or high-risk performance without exposing patients to avoidable harm. Mitchell and Ivimey-Cook (2023) found a positive overall effect of technology-enhanced simulation across 59 randomized studies. Saragih et al. (2024) found that interdisciplinary simulation significantly improved

interprofessional knowledge, supporting its use for teamwork and collaborative care. Robinson et al. (2024) further showed that simulation-based education is feasible across diverse low- and middle-income settings, although stronger evaluation of downstream outcomes remains necessary.

Digital and blended learning can improve flexibility in 24-hour healthcare operations, but convenience alone does not guarantee workplace application. Shukla et al. (2024) identified digital literacy, learner characteristics, training design, and organizational environment as important determinants of online training transfer. Sudarmika et al. (2023) similarly found high demand for flexible timing and mixed formats among nurses. These findings support a blended architecture in which foundational knowledge is learned asynchronously while in-person time is reserved for practice, feedback, simulation, and competency assessment.

Table 2. Competency-method-evaluation alignment for healthcare training.

Competency focus	Preferred learning methods	Immediate assessment	Workplace follow-up
Knowledge / SOP	E-learning; microlearning; short class; case discussion	Pre-post test; case questions	Audit of compliance; documentation review
Clinical / equipment skills	Demonstration; skill station; OJT; hands-on practice	Checklist; observed skill test	Supervisor observation; reassessment
Emergency response / teamwork	Simulation; drill; scenario debriefing	Scenario performance; team checklist	Drill performance; response indicators; incident review
Communication / service	Role play; simulation; coaching	Behavioral checklist; structured feedback	Audit; patient feedback; supervisor observation
Leadership / problem solving	Case discussion; mentoring; coaching; action learning	Case analysis; action plan	Implementation review; team or unit KPI

Learning Transfer and the Role of the Work Environment

The most important managerial transition occurs after the formal training session. A participant may pass a post-test yet fail to use the new behavior if the unit does not provide time, authority, equipment, feedback, or supervisor support. Shukla et al. (2024) emphasizes that organizational context and learning environment are central to online training transfer. This means that training design should include post-training conditions from the beginning: opportunities to practice, access to job aids, supervisor expectations, peer support, coaching, and scheduled reassessment.

Motivation and perceived relevance also influence transfer. Efendi (2025), studying 30 emergency department employees at Ciputra Hospital Surabaya, found a strong positive association between training satisfaction and work motivation (Spearman's $\rho = 0.584$; $p < 0.001$). Although the cross-sectional design does not establish causality, the finding is useful managerially because it suggests that relevance, instructor quality, and an engaging learning

experience are not cosmetic features. They can contribute to how employees perceive development and their willingness to apply it.

A practical transfer strategy is to define a 30-90 day follow-up window for priority programs. Immediately after training, the organization measures learning or skills. In the following weeks, supervisors observe application, audit selected behaviors, and coach participants who have difficulty. The training unit then reassesses competence or compares a closely related process indicator. This creates a visible pathway from course participation to workplace behavior.

Evaluation Beyond Attendance and Satisfaction

Training evaluation should be proportional to the importance of the program. Basic programs may require only completion and a knowledge check, whereas high-risk or high-cost programs should assess behavior and relevant organizational indicators. The source framework organizes evaluation into four practical levels: reaction, learning, workplace transfer, and organizational results. Reaction addresses relevance and quality; learning addresses changes in knowledge or skill; transfer addresses actual application at work; and results address process, quality, safety, efficiency, or service outcomes that are logically related to the training objective.

The evidence cautions against assuming that improved learning automatically causes improved patient outcomes. Liu et al. (2023) found that education strategies can improve nurses' ability to recognize and manage clinical deterioration, but healthcare outcomes remain influenced by staffing, technology, protocols, workload, and team coordination. Robinson et al. (2024) likewise noted that high-level outcome evaluation is less common and difficult to attribute to training alone. Therefore, organizations should select indicators close to the target behavior and interpret before-after changes in context rather than making unsupported causal claims.

For example, an effective handover program can be evaluated through participant relevance ratings, a post-training communication checklist, audit of handover compliance after one to three months, and a trend in communication-related incidents. The first two indicators show whether people learned; the latter two show whether the system changed in practice. This layered evaluation improves accountability and provides data for deciding whether to continue, modify, or stop a program.

An Integrated Needs-Based Training Cycle for Hospitals and Clinics

The literature can be synthesized into a continuous management cycle rather than a sequence of isolated classes. First, the organization detects performance and capability gaps using TNA. Second, it determines whether training is the correct intervention and prioritizes needs by risk and strategic value. Third, it defines SMART objectives and identifies target participants. Fourth, it selects content and learning modalities that match the competency. Fifth, it conducts the training with sufficient practice and feedback. Sixth, supervisors facilitate transfer through opportunities, coaching, and reinforcement. Seventh, the organization evaluates learning, behavior, and relevant outcomes. Finally, results are fed back into competency mapping and the next training plan.

This cycle is scalable. A large tertiary hospital may integrate TNA with digital learning systems, competency databases, simulation centers, and unit-level quality dashboards. A smaller clinic can apply the same logic with simpler tools: a competency matrix, prioritized annual plan, short blended sessions, OJT, supervisor observation, and periodic audit. The essential feature is not technological sophistication but traceability from identified gap to development intervention and then to evidence of improved performance.

The framework also reduces a common implementation error: treating all learning needs as equally urgent. In resource-constrained settings, risk-based prioritization makes training more defensible. Mandatory safety competencies, emergency response, medication safety, infection prevention, documentation, or new technology can be prioritized when supported by local risk data. Lower-risk topics can be scheduled later or delivered through lower-cost modalities. This creates a closer connection between human resource development, quality management, and organizational strategy.

Table 3. Integrated needs-based training cycle and suggested management indicators.

Stage	Core management question	Example action	Example indicator
1. Diagnose	What gap exists and what causes it?	TNA at organization, task, and individual levels	Documented gap; baseline competency; risk source
2. Prioritize	Which gap should be addressed first?	Rank by risk, strategy, regulation, scale, and feasibility	Priority score; approved annual plan
3. Define objectives	What must participants be able to do?	Write measurable competency or behavior objectives	Objective linked to assessment
4. Design	Which content and method fit the objective?	Choose e-learning, class, simulation, OJT, coaching, or blended format	Method-objective alignment

Stage	Core management question	Example action	Example indicator
5. Deliver	Can staff participate and practice safely?	Schedule batches; provide practice and feedback	Coverage; completion; assessment pass rate
6. Support transfer	What enables application at work?	Supervisor expectations, job aids, coaching, opportunities to practice	Observed application; coaching completion
7. Evaluate	Did learning, behavior, or outcomes improve?	Post-test, skill assessment, audit, reassessment, KPI review	Learning gain; compliance; relevant unit indicator
8. Improve	What should be maintained, changed, or stopped?	Review evidence and update competency map and plan	Closed gaps; revised priorities; resource reallocation

Managerial Implications and Limitations

For healthcare managers, the synthesis supports five practical implications. Training governance should begin with evidence of need; competency development should be integrated with performance management and quality systems; learning methods should be selected according to competency rather than convenience; supervisors should be accountable for post-training application; and program success should be reported through competency and outcome indicators rather than attendance alone. These principles also align with the broader call for hospitals to operate as learning organizations capable of reskilling and adapting to technological and service change (Nugroho et al., 2025).

This review has limitations. It is a narrative, purposive synthesis and does not claim exhaustive database coverage or pooled causal estimates. The included literature is heterogeneous in population, setting, intervention, and outcome. Some evidence concerns nurses or healthcare learners rather than all hospital occupations, so direct generalization to every professional group should be cautious. In addition, organization-level outcomes are influenced by factors beyond training. Future research should test the proposed cycle prospectively in Indonesian hospitals and clinics, compare alternative delivery designs, and evaluate learning transfer and service indicators over longer follow-up periods.

5. CONCLUSION

Education and training are strategic mechanisms for healthcare human resource development when they are designed as a continuous competency system rather than a series of stand-alone activities. The evidence reviewed supports a sequence that begins with TNA, separates training needs from structural performance problems, prioritizes gaps according to risk and strategy, formulates measurable objectives, and matches learning methods to the

competency being developed. Simulation and blended learning are valuable when used for appropriate objectives, but their effectiveness depends on design, participant readiness, and organizational support.

The decisive step is transfer to the workplace. Supervisory reinforcement, opportunity to practice, coaching, and reassessment connect classroom or digital learning with actual performance. Evaluation should therefore extend from reaction and learning to observable behavior and relevant organizational indicators, with cautious interpretation of causality. The proposed needs-based cycle offers a scalable framework for hospitals and clinics: diagnose, prioritize, define objectives, design, deliver, support transfer, evaluate, and continuously improve. Future studies should empirically test this framework in different healthcare organizations and determine which combinations of methods produce the most sustainable competency and service improvements.

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