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The evolution of supportive supervision in low- and middle-income countries

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Abstract

Supportive supervision has shifted in low- and middle-income countries (LMICs) from hierarchical, inspection-based oversight toward collaborative, mentorship-driven approaches that emphasize two-way communication, joint problem-solving, and formative feedback. Evidence across diverse LMIC settings shows that supportive supervision can produce measurable improvements in healthcare worker performance, with particularly large gains when supervisors themselves receive coaching and when supervisory encounters prioritize collaborative problem-solving. Innovations such as peer and group supervision, facility-based internal supervision, and digital platforms have expanded the reach and adaptability of supervision systems, although digital tools alone consistently yield modest improvements in provider practices. Broader implementation packages that pair supervision with health-system enablers—such as strengthened infrastructure, supply chains, financing, and management—achieve substantially larger effects than supervision combined with training alone, highlighting the importance of addressing structural barriers to performance. Despite its demonstrated potential, supportive supervision is not a standalone solution; its effectiveness depends on alignment with local context, clear definitions and expectations, adequate resourcing, and integration within broader quality-improvement and systems-strengthening strategies. When selected through structured problem diagnosis and paired with appropriate complementary interventions, supportive supervision offers a pragmatic, scalable approach to improving frontline clinical performance and advancing high-quality, equitable care in LMIC health systems.

Keywords Supportive supervision, Implementation science, Low- and middle-income countries (LMICs), Healthcare worker performance, Digital tools for supervision, Peer supervision, Health systems strengthening

Background

A critical strategy of successful implementation is supportive supervision, a dynamic and evolving approach that has shifted from traditional hierarchical oversight toward collaborative, mentorship-driven models, where observation and checklists are used to guide respectful two-way coaching and joint problem-solving rather than punitive fault-finding. Supervision, when implemented well, measurably improves provider practices in low- and middle-income countries (LMICs): a recent secondary analysis across 81 studies in 36 countries found a median + 10.7 percentage-point improvement versus

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controls for routine supervision (IQR 9.9–27.9), with similar effects for audit-and-feedback [1–3].

In LMICs, supportive supervision plays a particularly critical role. Frequent structural constraints in LMICs, such as limited financing, staffing shortages, supply chain gaps, and weak management, can limit the effectiveness of any supervision approach. These limitations are often more pronounced under traditional hierarchical supervision, which relies on compliance-oriented inspection. On the other hand, supportive supervision uses joint problem-solving and follow-up to buffer system gaps [1, 2]. Such approaches can enhance healthcare worker performance and improve health outcomes, including reductions in child mortality in Uganda and better management of maternal and mental health services in Pakistan and Kenya [4, 5]. Evidence also indicates which features matter: effects were larger when supervisors themselves were supervised (+8.8 to +11.5 percentage- point improvement) and when supervisors engaged in joint problem-solving with providers (+14.2 to +20.8 percentage- point improvement) [6]. By fostering open communication, providing constructive feedback, and integrating performance monitoring with skill-building, supportive supervision can help address systemic challenges while improving healthcare worker motivation and job satisfaction [7, 8].

Over time, supportive supervision has undergone significant innovation, incorporating peer-led models and digital tools to enhance its effectiveness and scalability [9]. This narrative review traces the key approaches in the evolution of supportive supervision in LMICs, examining key milestones, challenges, and future directions that shape its role in implementation and system science.

Source of evidence

We conducted a narrative review of supportive supervision in LMICs. A PubMed search using "supportive supervision" AND "low- and middle-income countries" yielded 11 initial publications. Backward (reference list) and forward (citation) searches identified additional publications, collectively identifying 17 distinct supervision interventions across 13 LMICs. We applied minimal inclusion criteria, limiting studies to those published in English and focused on LMIC settings, with no date restrictions. No formal quality appraisal was undertaken, consistent with the aims of a narrative review. Table 1 provides a summary of included interventions and countries in this narrative review.

To anchor terminology used in this review, we adopt the following definitions [10].

1. Traditional (hierarchical) supervision refers to inspection- and control-oriented oversight that emphasizes compliance and may use findings punitively.

Table 1 Summary of included studies of supportive supervision in LMICs

Country	Year	Supervision/Intervention Type
Brazil [13]	1984	Reduced-frequency supervision
Benin [13]	2009	Facilitative supervision integrated with training
Uganda [13]	2009	Participatory community supervision
Kenya [5]	2013	Facility-led group supervision for integrated mental health services
Pakistan [18]	2016	Enhanced supportive supervision for health workers
India [24]	2017	Coaching-based facilitative supervision
Malawi [2]	2017	Facility-based internal supportive supervision
Zambia [30]	2017	mHealth-enhanced supportive supervision
Mali [32]	2018	Personalized feedback dashboard added to supervision
Tanzania [12]	2019	Digital tool for supervision
India [31]	2019	Mobile application for RMNCH[a] supervision
Niger [33]	2019	Smartphone app for CHW[b] supervision
Pakistan [15]	2019	Training & supervision of peer volunteers for perinatal depression
Nepal [16]	2019	Group-based peer supervision among midwives
Uganda [27]	2021	SPARS[c] strategy – integrated performance and supply supervision
Uganda [17]	2022	Peer supervision model among CHWs
Nigeria [19]	2025	Multidisciplinary team mentoring supervision for hypertension

[a] Reproductive, Maternal, Newborn and Child Health

[b] Community Health Worker(s)

[c] Supervision, Performance Assessment, and Recognition Strategy

2. Supportive supervision is a relationship-focused process designed to improve work performance through four core elements: (1) two-way communication, (2) joint problem-solving with formative feedback/coaching, (3) data-informed monitoring toward goals, and (4) regular follow-up with on-the-job skill-building; observation and checklists are used formatively rather than punitively.
3. Facilitative supervision denotes the operationalization of supportive supervision within routine management cycles via structured coaching and team-based problem-solving.
4. Participatory supervision involves staff, and, where appropriate, community members, in planning, observation, feedback, and action-tracking.
5. Mentorship is a longitudinal developmental relationship that fosters reflective practice, confidence, and professional growth, complementing but not replacing supervision.

Importantly, features such as trust, empowerment, and continuing professional development are desirable but not required for an encounter to qualify as supportive supervision. In practice, supervision encounters are rarely binary: a single visit may blend coaching/problem-solving with inspection and corrective action, and programs sometimes label activities as supportive supervision even when the core elements are inconsistently delivered.

The shift from traditional to facilitative supervision models

Historically, supervision in LMICs prioritized top-down oversight, compliance monitoring, and fault-finding more than capacity-building or mentorship [11]. Several historical factors likely explain this orientation. Many LMIC health systems inherited supervision templates from colonial civil service and industrial sectors, where supervisors were tasked with enforcing rigid hierarchies and compliance among local staff, an "inspect and control" paradigm that migrated into public health services. This tradition portrayed frontline workers as unmotivated and requiring strong external control [7]. Supervisors also lacked the authority, skills, and resources to coach providers, so supervision defaulted to checklists and policing compliance rather than problem solving [9]. These traditional models often proved ineffective, contributing to healthcare worker demotivation and high turnover rates [12]. Early critiques highlighted how inspection-based supervision failed to address the practical challenges faced by frontline health workers, such as inadequate training, supply shortages, and overwhelming workloads [13]. A pivotal change occurred in the early 2000 s with the introduction of facilitative supervision, which emphasized mentorship, joint problem-solving, and continuous professional development [1, 13]. This shift was championed by researchers and practitioners who recognized that healthcare workers performed better when they received constructive feedback and felt supported rather than criticized. For example, Benin's Integrated Management of Childhood Illness program saw a 27% increase in children receiving recommended care under facilitative supervision, while Uganda's community monitoring trial achieved a 33% reduction in under-5 mortality through participatory supervision [13, 14]. Studies demonstrated that the quality of supervisory interactions that were characterized by trust, open dialogue, and skill reinforcement had a greater impact on performance than the frequency of supervision visits. For instance, research on Brazil's family planning programs found that reducing supervisory visits from monthly to quarterly did not negatively affect service delivery outcomes, provided that the visits were structured around meaningful engagement and problem-solving rather than bureaucratic checklists [13]. The transition to supportive supervision also involved integrating training and capacity-building into routine supervisory practices. Rather than treating supervision as a standalone activity, programs began embedding skill development, case reviews, and hands-on mentoring into the supervision process [13]. This approach not only improved healthcare workers' clinical competencies but also strengthened their confidence and autonomy in decision-making. Over time, these early results laid the groundwork for more sophisticated models of supportive supervision, incorporating technology, peer learning, and community participation to further enhance effectiveness [6].

Peer and group supervision models: decentralizing support systems

As health systems in LMICs have sought to optimize limited resources, peer and group supervision models gained traction as cost-effective alternatives to traditional one-on-one supervision. These approaches recognized that healthcare workers themselves could serve as valuable sources of knowledge and support, reducing dependency on external supervisors while fostering a culture of collaborative learning [2, 13, 15, 16]. Peer supervision has been implemented in various forms across Africa. In Malawi and Mozambique, for example, community health workers engaged in mutual feedback sessions where they reviewed each other's performance, discussed challenges, and shared best practices [2]. However, published evaluations from Malawi and Mozambique primarily assessed perceived supervision and motivation and did not report quantified changes in provider-practice or service-delivery performance; thus, the effect of

peer/group supervision on health-worker performance in these settings remains unknown [2]. In another peer-supervision pilot from Uganda, community health workers (CHWs) supervised by peers outperformed those under the standard model on all key performance indicators, and had higher on-time postnatal follow-up (34% vs 32%)—with lower annual attrition (10% vs 17%) and a lower annual supervision cost per CHW ($176 vs $273) [17]. Researchers found that this method improved both individual performance and systemic efficiency, as participants learned from each other's experiences and held one another accountable [17].

A key advantage of peer and group supervision is its adaptability to different contexts. In urban informal settlements, where high population density and workforce fragmentation pose challenges, group supervision has been used to strengthen linkages between community health volunteers and formal health systems [13]. Similarly, in rural areas with dispersed health facilities, peer networks have provided a lifeline for isolated healthcare workers who might otherwise receive limited supervisory support. Despite these benefits, sustaining peer and group models requires investment in facilitator training, structured guidelines, and mechanisms to ensure that feedback remains constructive and actionable.

Structured mentorship and training integration

A recurring theme in the evolution of supportive supervision is the recognition that supervision alone is insufficient to sustain improvements in healthcare worker performance. Instead, supervision must be paired with structured mentorship, continuous training, and systemic support to address the causes of underperformance, such as structural barriers, inadequate skills and training, resource constraints, and weak motivation [1, 7, 17]. In Pakistan, an enhanced supervision intervention for Lady Health Supervisors included not only refresher training on integrated community case management but also role-playing exercises, written feedback tools, and mobile phone-based communication for real-time case discussions [18]. This multifaceted approach led to significant improvements in the assessment and classification of childhood illnesses by community health workers. However, the intervention's impact was constrained by systemic barriers such as irregular drug supplies and delayed salaries, underscoring the need for broader health system strengthening alongside supervision.

Similarly, the Hypertension Treatment in Nigeria (HTN) Program employed multidisciplinary supervisory teams, comprising physicians, nurses, pharmacists, and community health workers, to conduct quarterly supervision visits focused on hypertension service integration in routine primary care. These visits combined direct observation of clinical practices with retraining sessions and collaborative problem-solving, resulting in measurable improvements in facility readiness and staff competency [19–23]. The program's success was driven by its ability to align supervision with ongoing professional development, ensuring that healthcare workers not only received feedback but also had the knowledge, skills, and tools to evaluate and manage patients with hypertension. In Kenya, community health workers delivering mental health services received regular group supervision sessions that combined case reviews with skill-building exercises [5]. This model not only improved clinical outcomes but also reduced burnout among healthcare workers by fostering a sense of shared responsibility and peer support. In India, the BetterBirth program implemented a coaching-based approach using the WHO Safe Childbirth Checklist. Beyond coaching birth attendants on essential clinical practices, the program actively engaged facility managers through structured visits by trained coach team leaders [24, 25]. These leaders worked with managers to identify bottlenecks in supply chains, workforce coordination, and referral systems. Despite improved adherence to evidence-based practices, the program did not result in significant reductions in maternal or perinatal mortality, highlighting the complexity of translating improved processes into outcomes in under-resourced settings [24].

Recent evidence suggests that combining supervision with other system enablers, such as improving infrastructure, financing, and management processes, can lead to much larger improvements in provider practices. In the Health Care Provider Performance Review (2018) that included 670 reports from 337 studies in 64 countries, implementation packages that strengthened infrastructure, health-system financing, management techniques, supervision, and training achieved a median improvement of 57.7 percentage points, whereas "supervision plus training" alone produced a median improvement of 18.0 percentage points [6]. This finding underscores that supervision and training are only two components of broader implementation bundles, and decision-makers should consider a range of options when addressing quality-of-care gaps.

Internal supportive supervision: from external to facility-based models

Traditional models of supportive supervision in LMICs have relied heavily on external supervisors, often from regional or national health authorities, to visit facilities periodically and provide oversight. While this approach has facilitated accountability and external quality assurance, it has also faced limitations, including logistical challenges, resource constraints, and reduced local

ownership. In response, a growing number of programs are shifting toward internal, facility-based supervision models that emphasize sustainability, local capacity building, and continuous quality improvement [1]. Internal supportive supervision refers to supervision mechanisms embedded within the facility itself, conducted by senior staff or trained peers rather than relying on external visitors. This shift allows for more frequent, contextually relevant, and responsive oversight, fostering a culture of continuous learning and shared accountability among health workers [1].

Several countries have pioneered this internal approach with notable success. In Malawi, a program implementing facility-based maternal and newborn health supervision observed reductions in maternal mortality and improved emergency obstetric care practices when internal mentors were trained to deliver regular feedback and skills reinforcement [26]. In Uganda, the Supervision, Performance Assessment, and Recognition Strategy (SPARS) initially relied on external visits but gradually integrated internal supervisors at health facilities to oversee stock management and clinical performance. This internalization improved stock availability and rational medicine use while reducing dependency on external assessments [27]. Kenya's experience during mental health service integration also highlighted the value of facility-based supervision. Facility managers and senior nurses conducted group supervision and case reviews, leading to enhanced mental health service delivery and reduced stigma among providers [5]. Furthermore, an example from Nepal shows that integrating internal supervision among midwives increased confidence and improved antenatal and intrapartum care practices, illustrating the adaptability of this model across diverse settings [16]. The shift toward internal supervision models aligns with global health systems strengthening efforts, as it builds local capacity, fosters ownership, and supports more sustainable improvements in quality of care. However, this shift can also create tensions with external models. While internal approaches strengthen ownership and responsiveness, they may risk variability in supervision quality, potential bias, or weakened accountability without external oversight. As such, some programs find that the most effective strategies combine regular facility-based supervision with periodic external assessments to ensure both local relevance and system-wide quality standards.

The integration of digital tools in supportive supervision

Digital platforms have been promoted to streamline data collection, feedback and performance monitoring, especially where supervisors face logistical constraints [12, 14, 18, 28, 29]. Experience from the electronic Tool to Improve Quality of Healthcare in Tanzania illustrates both promise and limitations: tablet-based assessments enabled real-time reporting of facility conditions and reduced supervisors' paperwork, yet adoption depended on stable power, internet access and effective training [12, 29]. Similar mixed results have been reported from mobile-based community health management systems in Zambia. A field report showed that CHWs could send weekly reports via basic phones and supervisors could schedule mentoring sessions, but sustaining the system required ongoing technical support and data bundles [30].

Rigorous trials, however, suggest that digital tools rarely transform supervision outcomes. In a cluster randomized controlled trial (RCT) in India, a mobile tool increased frontline workers' antenatal and postnatal home visits and certain newborn practices by 11–21 percentage points, yet did not improve supervision indicators [31]. A randomized trial in Mali that integrated a personalized dashboard into monthly supervision increased CHW home-visit volume but yielded only modest improvements in care quality (6.19 percentage points, 95% confidence interval (CI): 1.59–10.80) and no significant gains in timeliness [32]. In south-west Niger, a two-arm cluster RCT found that a smartphone application improved danger-sign assessment and referral quality but increased quality-of-care scores by only 3.4 percentage points and had no significant impact on motivation, retention or supervision frequency [33]. Together, these RCTs suggest that digital supervision tools produce small absolute gains in provider practices and minimal improvements in supervision outcomes; median effects on health-worker practices across these trials were well under 10 percentage points.

Evidence also remains scant for patient outcomes because most studies tracked process indicators. Beyond these trials, digital tools have supported communication and mentorship in remote areas. In Pakistan, Lady Health Supervisors used mobile phones to stay in touch with community health workers, while online forums and messaging groups have enabled peer learning [18, 29]. Yet informal reliance on personal devices can exacerbate inequities and raises privacy concerns [34]. Emerging innovations, such as generative artificial intelligence for decision-support or integration of mHealth app data into electronic health records, offer new possibilities but also entail substantial costs and interoperability challenges [35, 36].

Given the modest impacts observed to date, digital interventions should be adopted cautiously. They may enhance logistics and transparency, but they are not a panacea; without concurrent investments in human-centered coaching, supply chains, and management, digital supervision alone is unlikely to close performance gaps.

Countries choosing to implement digital tools should build in rigorous monitoring and evaluation, document costs and contextual factors, and be prepared to iterate or abandon technologies that do not yield meaningful gains.

Challenges and future directions

While the developments in supportive supervision discussed thus far have yielded some improvements in healthcare worker performance and service delivery, persistent challenges must be addressed to enhance impact [11]. One of the most pressing issues is the variability in both the design and implementation of supervision models across programs and regions. The lack of standardized definitions and methodologies for supportive supervision has led to inconsistent implementation, making it difficult to compare outcomes and identify best practices [27, 37]. Some strategies focus narrowly on performance monitoring, while others incorporate broader elements such as clinical, managerial, and peer mentorship, along with community engagement and digital tools. Developing frameworks for supportive supervision could enhance coherence and scalability. Programs should begin with a structured problem-diagnosis step, identifying the specific performance gaps and their determinants (e.g., skills, motivation, supplies, workload, information), and then select a context-adapted intervention package [1, 6, 7].

Resource constraints also remain a major barrier, particularly in underfunded health systems. In many LMICs, supervision programs suffer from inadequate budgets, delayed salaries for supervisors, and a lack of essential supplies such as medications and diagnostic tools [14, 38]. These systemic gaps undermine the credibility of supervision and demotivate healthcare workers, who may perceive feedback as hollow if they lack the means to act on it. Sustainable financing mechanisms and stronger supply chains are therefore critical to the success of supportive supervision initiatives [14, 38]. Where root-cause analysis indicates input constraints (e.g., drug stock-outs, understaffing), targeted supply-chain fixes, staffing reallocation or task-shifting, and financing reforms are likely to yield greater returns than additional supervision alone [6, 7]. In practice, this implies pairing supportive supervision with the minimal complementary components required by the diagnosed bottleneck [1, 6, 7].

Looking ahead, future research should prioritize comparative studies that evaluate the cost-effectiveness and sustainability of different supervision models, particularly in resource-limited contexts. Within implementation science frameworks, it is essential to examine how supportive supervision interacts with other health system components, such as leadership, governance, and community engagement [5]. Finally, the integration of emerging technologies, such as artificial intelligence for data collection and performance analytics and virtual reality for simulation-based training, holds promise for further enhancing supervision quality and reach [38].

Conclusions

Supportive supervision has evolved from hierarchical inspection to a relationship-centered, problem-solving approach that measurably improves provider practices in LMICs. Across diverse settings, larger gains occur when supervisors themselves receive coaching and when visits prioritize joint problem-solving, formative feedback, data-informed goals, and follow-up skill-building. Innovations, like peer and group models, facility-based internal supervision, and digital tools, can extend reach and efficiency, yet technology alone yields modest effects and cannot substitute for human coaching and functioning inputs. Because quality gaps often reflect structural constraints, supportive supervision should be selected through structured problem diagnosis and paired with the complementary components required, such as supply-chain fixes, management strengthening, or financing reforms. Future work should test context-adapted bundles head-to-head against alternative strategies, report costs, and examine moderating factors, including leadership and community engagement. Implemented this way, supportive supervision is a pragmatic, scalable lever for improving frontline clinical performance and advancing equitable, high-quality care.

Abbreviation

AI	Artificial Intelligence
CHW/CHWs	Community Health Worker(s)
e-TIQH	Electronic Tool to Improve Quality of Healthcare
HCPPR	Health Care Provider Performance Review
HTN	Hypertension Treatment in Nigeria
ICT-CCS	Information Communication Technology-Continuum of Care Service
LMICs	Low- and Middle-Income Countries
mHealth	Mobile Health
RCT	Randomized Controlled Trial
RMNCH	Reproductive, Maternal, Newborn and Child Health
SPARS	Supervision, Performance Assessment, and Recognition Strategy
WHO	World Health Organization

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Authors' contributions

K.S. conceived the study, conducted the literature review, drafted the manuscript, and led all aspects of writing and revision. G.L.S., N.R., D.O., and L.R.H. provided content expertise in implementation science and health systems and critically reviewed the manuscript. C.W.G. and M.D.H. supervised the overall project and provided strategic input across all sections. All authors reviewed and approved the final manuscript.

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MDH has received travel support from the World Heart Federation and consulting fees from PwC Switzerland. MDH has pending patents for heart failure polypills. MDH has an appointment at The George Institute for Global Health, which has a patent, license, and has received investment funding with intent to commercialize fixed-dose combination therapy through its social enterprise business, George Medicines. The remaining authors declare no competing interests.

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