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Organizational Support for Green Hospital Initiatives in Indonesia: A Literature Review

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A B S T R A C T

Hospitals are resource-intensive institutions that contribute significantly to environmental burdens through energy use, water consumption, pharmaceuticals, chemicals, and waste production. In Indonesia, the green hospital concept has become increasingly important amid climate change and the pursuit of sustainable health governance. This study examines the organizational support that enables the implementation of green hospitals using a narrative literature review approach. The findings show that organizational support consists of leadership commitment, internal governance, employee engagement, budgeting, infrastructure, stakeholder collaboration, and environmental accountability systems. However, implementation remains constrained by policy fragmentation, limited funding, weak monitoring systems, and uneven organizational cultures. The study concludes that successful green hospital implementation depends not only on technology adoption but also on strong institutional capacity, integrated governance, and sustainable organizational support to achieve long-term environmental transformation in Indonesian hospitals.

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INTRODUCTION

Hospitals are healthcare organizations that operate 24 hours a day and, due to their functional nature, consume resources at a very high rate. In addition to consuming large quantities of energy, water, pharmaceuticals, chemicals, medical devices, and operational support materials, hospitals also generate a wide spectrum of environmental residues ranging from infectious waste to domestic waste all of which require strict, costly, and high-risk management if not handled properly. Activities such as room cooling, mechanical ventilation, sterilization, laundry services, water treatment, food management, internal transportation, and the operation of high-tech medical equipment collectively contribute to the institution's ecological footprint. Therefore, discussions regarding green hospitals are inadequate if treated as a peripheral issue or merely an extension of hospital sanitation. It must be understood as an integral part of the agenda for transforming healthcare organizations toward sustainability. Within the framework of Global Green and Healthy Hospitals (GGHH), the hospital's sustainability orientation is mapped into ten interconnected agendas: leadership, chemicals, waste, energy, water, transportation, food, pharmaceuticals, buildings, and procurement (Global Green and Healthy Hospitals, 2026a; Global Green and Healthy Hospitals, 2026b).

Conceptually, a green hospital refers to a hospital that strives to reduce its negative environmental impact without compromising quality, safety, or the continuity of care. Thus, this concept cannot be reduced to green building design, waste compliance, or energy efficiency alone. A green hospital requires an organizational reorientation that encompasses work system design, employee behavior management, technology choices, investment logic, and the establishment of a culture of sustainability across all service units. In this sense, the green hospital lies at the intersection of public health, environmental health, hospital management, organizational studies, institutional economics, and health sector governance. Its relevance lies precisely in the fact that a hospital's environmental impact is shaped not only by technical artifacts but by organizational decisions regarding priorities, coordination, resource allocation, and institutional learning. Therefore, a green hospital is more appropriately viewed as an organizational transformation project rather than merely a package of technical interventions (Marshal et al., 2021; Intarti, Khan, and Maretalinia, 2024).

In the Indonesian context, the development of the green hospital discourse has emerged from the convergence of academic initiatives, demands for environmental health governance, regulations on medical waste management, and growing attention to building a resilient health system in the face of climate change. Although the national regulatory framework has not yet been fully established as a single, coherent, and fully integrated policy regime, a number of instruments indicate that the environmental dimension of hospitals has gained an increasingly significant position on the health policy agenda. These include Minister of Health Regulation No. 7 of 2019 on Hospital Environmental Health, Minister of Health Regulation No. 18 of 2020 on the Management of Medical Waste from Regional-Based Healthcare Facilities, and

Minister of Health Regulation No. 2 of 2023 on the Implementing Regulations for Government Regulation No. 66 of 2014 on Environmental Health (Ministry of Health of the Republic of Indonesia, 2019; Ministry of Health of the Republic of Indonesia, 2020; Ministry of Health of the Republic of Indonesia, 2023).

However, the existence of regulatory frameworks does not automatically lead to institutional transformation. The Indonesian literature consistently indicates that the implementation of green hospitals remains fragmented, sectoral, and inconsistent across different domains. A preliminary review of green hospital implementation in Indonesia reveals that various hospitals have undertaken efforts such as energy efficiency, water management, waste management, and the provision of green open spaces; however, the adoption of these elements has not been uniform or systematic. Certain domains—particularly transportation and food—lag behind more established technical domains. These findings suggest that the primary barriers are not merely the absence of technology or environmental frameworks, but organizational limitations in orchestrating coherent, sustainable, and strategy-driven cross-unit change (Marshal et al., 2021).

It is at this point that the concept of organizational support becomes crucial. In the context of a green hospital, organizational support should not be understood merely as symbolic endorsement by leadership of environmental programs. It must be understood more broadly as a configuration of institutional capacity that encompasses the articulation of a strategic vision, the existence of written policies, the delegation of authority, the strengthening of human resources, incentive schemes, budgeting, information systems, evaluation mechanisms, and external partnerships. It is this configuration that determines whether the environmental agenda will remain a short-term project or a mere formality of compliance, or whether it will evolve into a stable institutional identity. Studies in Indonesia indicate that the quality of organizational support correlates with increased employee engagement, the adoption of energy-saving behaviors, the quality of waste management, and the broader sustainability of green hospital implementation (Rahman, Haris, and Febriyanto, 2024; Asmawati, Adisasmito, and Basabih, 2024).

From a hospital management perspective, organizational support is becoming increasingly important because hospitals operate under many competing priorities: quality of care, accreditation, patient safety, cost efficiency, drug availability, regulatory compliance, and daily operational pressures. In such a configuration, the green hospital agenda can easily be sidelined if it is not successfully positioned as part of the organization's core priorities. In other words, the success of a green hospital depends not only on the normative validity of the environmental principles it champions, but on the organization's ability to negotiate, prioritize, and embed that agenda into the policy architecture and daily operational routines. This means that the main issue is one of institutionalization, not merely adoption (Alatas and Ayuningtyas, 2019; Sutanto et al., 2020).

Unfortunately, most of the discourse on green hospitals in Indonesia remains technocentric. Attention is primarily focused on waste, energy,

building design, or eco-efficiency, while discussions regarding organizational support as a prerequisite for success remain scattered and have not been adequately integrated. This gap is significant because in many cases, implementation failures in the health sector occur more frequently at the level of organizational capacity to sustain change consistently than at the level of policy design itself. Therefore, this article aims to examine more specifically the forms of organizational support that underpin green hospital initiatives in Indonesia, as well as to explain how such support shapes the direction of institutional transformation in hospitals.

LITERATURE REVIEW

From an operational perspective, this article seeks to answer three main questions. First, what form of organizational support is most prevalent in the literature on green hospitals in Indonesia? Second, through what mechanisms does this support influence governance, organizational behavior, and program sustainability? Third, what barriers make it difficult for hospitals to move from partial implementation toward a more institutional transformation? By answering these questions, this article is expected to provide a theoretical contribution to the study of hospital management and organizational sustainability, as well as a practical contribution to the development of policies, implementation strategies, and evaluation instruments for green hospitals in Indonesia (Intarti, Khan, and Maretalinia, 2024; Sutanto et al., 2020).

METHODOLOGY

This article was written using a narrative literature review approach. This approach was chosen because the primary objective of this paper is not to quantify the magnitude of the effect of a specific intervention, as is typically done in meta-analyses, but rather to map, interpret, and synthesize conceptual and empirical themes regarding organizational support for green hospitals in Indonesia. A narrative review is appropriate when the available evidence is heterogeneous, whether in terms of research design, institutional context, indicators, or level of conceptual abstraction. Compared to a systematic review, which is designed to answer highly focused questions through strict selection procedures, a narrative review provides a broader analytical space to examine interconceptual relationships, policy dynamics, and more complex theoretical articulations. In the context of this topic, such analytical breadth is necessary because organizational support does not always emerge as an explicit variable, but is often dispersed within discussions of leadership, governance, organizational culture, funding, or employee behavior (Grant and Booth, 2009; Snyder, 2019).

A literature review was conducted using a purposive approach, drawing on scientific journals, academic repositories, policy portals, and official documents relevant to the topic. Prioritized sources included Indonesian articles on the implementation of green hospitals, hospital environmental health management, waste management, energy-saving behaviors among hospital staff, green accounting, as well as policy frameworks and institutional practices related to hospital sustainability. In addition to scientific articles, official

documents from the Ministry of Health of the Republic of Indonesia, WHO Indonesia, and GGHH were also included to enrich the regulatory and conceptual context. This strategy is employed to avoid reducing the issue to a single type of evidence and to allow for the placement of empirical studies, normative documents, and best practices within a single, mutually complementary framework of interpretation (Ministry of Health of the Republic of Indonesia, 2019; WHO Indonesia, 2022; Global Green and Healthy Hospitals, 2026a).

Operationally, the selection of literature was based on substantive relevance to the issue of organizational support. The search focus was not limited to documents that explicitly used the term "organizational support," but also included works discussing leadership, internal policies, governance, organizational culture, employee participation, financing, information systems, and evaluation mechanisms related to the implementation of green hospitals. This methodological decision is important because, in the practice of hospital management research, organizational support often manifests through concepts that are theoretically closely related but are not always labeled with the same terminology. Thus, this article seeks to capture organizational support as a form of institutional capacity that enables organizations to design, execute, evaluate, and sustain pro-environmental changes (Rahman, Haris, and Febriyanto, 2024; Intarti, Khan, and Maretalinia, 2024).

The inclusion criteria for this review are: (1) the document addresses green hospitals, hospital sustainability, or environmental aspects of hospitals; (2) the document is relevant to Indonesia, either as the primary empirical focus or as a policy context; and (3) the document contains information that can be linked to organizational support, such as leadership, policy, human resources, budgeting, governance, collaboration, or monitoring systems. Conversely, works that discuss purely technical aspects without organizational implications are not used as the primary basis for the synthesis, unless they provide meaningful illustrations of the need for institutional support. Global conceptual literature is still used to a limited extent to strengthen definitions and interpretive frameworks, but the main synthesis remains centered on Indonesian dynamics so that the arguments constructed remain contextual and relevant to the national health system (Rahman, Haris, and Febriyanto, 2024; Apriyanthi, Widayanti, and Laksmita, 2024).

After the literature was selected, the materials were read in depth and synthesized using a thematic-interpretive approach. Themes were developed based on recurring patterns that emerged across sources, particularly in the dimensions of leadership, policy and governance, human resource support, resource and infrastructure support, external support, and monitoring and accountability. This approach allows for the integration of findings from case studies, policy reviews, quantitative research, and best practice documents into a single, more analytical framework. Thus, this article does not stop at the level of inventorying findings but seeks to construct an interpretive model of how organizational support functions in the implementation of green hospitals in Indonesia (Grant and Booth, 2009; Snyder, 2019).

As a narrative literature review, this article naturally has methodological limitations. The literature was selected purposefully, so it is not intended to produce quantitative estimates that can be statistically generalized. However, this approach still holds significant scientific value because it allows for the articulation of knowledge gaps, brings together technical and managerial literature that is often separated, and establishes a conceptual agenda relevant to policy and further research. Thus, the primary validity of this article lies in the depth of the synthesis, the coherence of the argumentation, and the appropriateness of the interpretive framework, rather than in numerical aggregations across studies (Grant and Booth, 2009; Snyder, 2019).

RESULTS AND DISCUSSION

Overview of the Literature

The reviewed literature shows that the discourse on green hospitals in Indonesia has evolved from an initially dominant descriptive-technical approach toward a more organizational and managerial approach. In the early phase, much attention was focused on relatively visible and operational components, such as energy efficiency, building design, water management, waste management, and green open spaces. However, in more recent studies, it has become increasingly clear that successful implementation cannot be explained solely by technical readiness but is significantly influenced by an organization's capacity to set priorities, mobilize staff, establish governance, and sustain institutional learning (Marshal et al., 2021; Intarti, Khan, and Maretalinia, 2024).

This shift is analytically significant because it marks a change in how hospitals are understood as environmental institutions. Whereas hospitals were initially viewed solely as objects to be made more efficient, in more recent literature they have come to be understood as complex organizations requiring internal coordination mechanisms, behavioral changes, measurement systems, and governance frameworks that support sustainability. Such a shift affirms broader findings in organizational studies, namely that environmental innovations often fail not due to a lack of technology, but rather due to the organization's weak capacity to integrate such innovations into routines, incentives, and institutional culture. Consequently, the issue of green hospitals in Indonesia is increasingly shifting from the technical domain toward the domain of organizational capacity and the institutionalization of change (Sutanto et al., 2020; Ashari and Anggoro, 2021).

Based on the available evidence, it appears that research on green hospitals in Indonesia is still largely supported by case studies, literature reviews, and applied research at specific institutions. This situation indicates that this field of study is still in its early consolidation phase: researchers are primarily focused on identifying enabling factors, mapping barriers, and developing an adequate conceptual framework to understand the phenomenon. While this situation does create space for local innovation and institutional experimentation, it simultaneously underscores the need for more comparative, longitudinal, and organization-based research to systematically explain variations across hospitals, ownership types, and regions. Without

strengthening such an evidence base, discussions on green hospitals will continue to risk being trapped in normativity and pilot studies that are difficult to translate into system-scale policies (Marshal et al., 2021; Intarti, Khan, and Maretalinia, 2024).

Table 1. Key Literature used in the Synthesis

No	References	Type of study	Relevance to organizational support
1	Marshal et al. (2021)	Literature review	Mapping green hospital elements in Indonesia and showing that their implementation remains uneven
2	Sutanto et al. (2020)	A study on the development of sustainability attributes	Highlighting the institutional dimension as one of the core dimensions of a green hospital
3	Alatas and Ayuningtyas (2019)	Qualitative case study of a hospital	Demonstrating leadership, conducting regular evaluations, implementing the hospital management information system (HMIS), and securing additional funding
4	Rahman, Haris and Febriyanto (2024)	Observational study	Explaining the organizational factors that influence support for green hospitals
5	Asmawati, Adisasmito and Basabih (2024)	Organizational behavior studies	Shows that green hospital policies influence employees' energy-saving behavior

No	References	Type of study	Relevance to organizational support
6	Annura et al. (2022)	Energy Management Study	Highlighting the relationship between energy efficiency, costs, and hospital sustainability
7	Apriyanthi, Widayanti and Laksmita (2024)	A qualitative study of medical waste	Demonstrates the need for adequate internal policies and human resources
8	Ashari and Anggoro (2021)	Quantitative study of green accounting	Highlighting the importance of environmental accountability in hospitals
9	Intarti, Khan and Maretalinia (2024)	Literature and policy review	Identifying the lack of strong role models and stakeholder collaboration
10	WHO Indonesia (2022)	Documentation of best practices	Providing examples of hospital organizations that have successfully translated their environmental commitments into tangible results

Leadership Commitment and Strategic Direction

The most consistent theme emerging in the literature is the centrality of leadership. Within the GGHH framework, leadership is positioned as the top priority, implicitly affirming that hospital sustainability must begin at the level of the organization's strategic priorities, not at the level of technical units operating on the periphery. Without leadership commitment, green hospitals tend to be implemented only partially—for example, merely as energy-saving programs, waste management initiatives, or physical greening efforts—without being integrated into broader institutional strategies. This indicates that leadership is not merely a driving factor but an organizational condition that enables the environmental agenda to gain legitimacy, priority, and continuity (Global Green and Healthy Hospitals, 2026b; Marshal et al., 2021).

Empirical evidence from Indonesia confirms this argument. A study by Alatas and Ayuningtyas at R. Syamsudin, SH General Hospital showed that leadership received the highest score in the implementation of green hospital initiatives, while other dimensions—such as budget allocation, routine evaluations, and information system optimization—still require improvement. These findings indicate that leadership commitment can serve as a crucial entry point, but is insufficient unless supported by organizational infrastructure that enables the vision to be translated into sustainable actions. In this sense, leadership cannot be viewed merely as a personal attribute of managers, but rather as the ability to orchestrate institutional change, mobilize cross-unit support, and align environmental agendas with the organization's strategic interests (Alatas and Ayuningtyas, 2019).

In the context of green hospitals, leadership also involves top management's ability to frame environmental issues in terms that are relevant to the organization. Hospital leaders need to demonstrate that the green agenda is not an additional burden that competes with service quality, but rather a strategy that can improve energy efficiency, reduce waste, enhance workplace safety, improve the institution's image, and support operational sustainability. When environmental issues are positioned merely as an administrative obligation, the organization's commitment becomes highly vulnerable to weakening under the pressure of costs, management changes, or shifts in institutional priorities. Therefore, the strategic dimension of leadership lies in its ability to translate environmental issues into organizational rationality that is acceptable to diverse internal actors (Rahman, Haris, and Febriyanto, 2024; Intarti, Khan, and Maretalinia, 2024).

Thus, organizational support at the leadership level must be understood as the ability of top management to establish a vision, mobilize internal legitimacy, allocate resources, foster cross-departmental communication, and ensure accountability. In the context of Indonesian hospitals, effective leadership for a green hospital is leadership that can articulate the relationship between environmental goals, operational efficiency, safety, service quality, and institutional reputation. At this point, leadership functions as an anchor of transformation, not merely a provider of formal approval for a single program (Rahman, Haris, and Febriyanto, 2024; Intarti, Khan, and Maretalinia, 2024).

Internal Policies, Governance, and the Formation of a *Green Team*

Organizational support is also manifested through internal policies and implementation governance. Although national guidelines on hospital environmental health provide an important normative foundation, the literature indicates that internal hospital policies remain a determining factor in whether green hospital principles are actually translated into operational work procedures. Internal policies are needed to establish standards, targets, role assignments, reporting mechanisms, and follow-up on improvements. Without such instruments, the sustainability agenda tends to rely on individual initiatives or sporadic commitments from certain units, which in turn makes the program vulnerable to discontinuity (Indonesian Ministry of Health, 2019; Indonesian Ministry of Health, 2023).

A study on the management of solid medical waste at Saraswati Dental and Oral Hospital clearly demonstrates the limitations of technical compliance. Although waste management practices have been carried out in relative accordance with environmental health regulations, the hospital does not yet have a clear policy direction for becoming a green hospital. This finding is significant because it indicates that compliance with minimum requirements is not synonymous with organizational transformation. Without explicit policies that integrate various environmental activities into a single institutional framework, the hospital risks being trapped in a pattern of residual compliance rather than institutional change. It also demonstrates that the issue of a green hospital is not merely a matter of "whether the hospital is doing something," but rather "how that something is organized, coordinated, and made a shared agenda" (Apriyanthi, Widayanti, and Laksmita, 2024).

Indonesian literature also emphasizes the importance of establishing a green team or a cross-departmental structure specifically tasked with coordinating implementation. In a strategic presentation on hospital environmental management toward a green hospital, the development of a roadmap, the formation of a green team, the cultivation of an environmentally friendly work culture, and budgetary support were identified as priorities. This indicates that the governance of a green hospital requires a clear organizational design and cannot be solely the responsibility of the sanitation or environmental health unit. A cross-departmental structure is necessary to bridge technical, clinical, administrative, logistical, and financial functions so that the environmental agenda truly becomes a collective responsibility, not a sectoral burden (Sutanto et al., 2020; IAHE, 2021).

Furthermore, adequate governance requires not only the existence of policy documents, but also consistency between policy, implementation, and evaluation. Many organizations have documents that are sound in theory but fail at the implementation level because they lack oversight structures, performance indicators, or feedback mechanisms. In the context of green hospitals, effective governance must be able to link institutional vision with daily operational practices, so that every unit can understand the role, contribution, and consequences of its actions. Without such a governance design, the sustainability of the program will depend heavily on individual initiative and will be difficult to sustain in the long term. Here, governance functions as a mechanism for institutionalization: it bridges the gap between strategic intent and daily practice (Alatas and Ayuningtyas, 2019; Sutanto et al., 2020).

Human Resource Support: Engagement, Training, and Green Culture

The next dimension is organizational support for human resources. A study by Rahman, Haris, and Febriyanto shows that organizational support for green hospital initiatives is significantly influenced by employee engagement and motivation, participation and initiative, and job satisfaction. In the multivariate model they developed, job satisfaction emerged as the largest contributor to the perception of organizational support, followed by engagement/motivation and participation/initiative. This finding is important

because it demonstrates that a green hospital is not merely a project driven hierarchically from the top down, but is heavily influenced by how employees experience their work environment and whether they feel they are part of the change. In other words, organizational support is relational: it is shaped not only by formal policies, but by employees' subjective experiences of the organization (Rahman, Haris, and Febriyanto, 2024).

The behavioral dimension is further supported by a study by Asmawati, Adisasmito, and Basabih, which shows that green hospital implementation policies correlate with hospital employees' attitudes, subjective norms, behavioral control, intentions, and energy-saving behaviors. The analytical implications of these findings are quite profound: organizational support, manifested in the form of policies, awareness campaigns, and the reinforcement of norms, can shape pro-environmental behavior in the workplace. Thus, the success of a green hospital is determined not only by investments in energy-saving technology but also by the organization's ability to influence the daily micro-decisions made by its workforce. The environmental agenda, therefore, must be understood as a matter of institutionalized behavior, not merely a matter of technical artifacts (Asmawati, Adisasmito, and Basabih, 2024).

From a change management perspective, support for human resources must be understood in a broader sense than just technical training. It encompasses internal communication, leadership by example, employee participation, recognition of initiatives, and reward systems that support environmentally friendly behavior. Without these elements, green hospital programs are easily perceived as an additional administrative burden unrelated to professional identity or service objectives. The literature indicates that a green culture in hospitals does not emerge spontaneously; it must be built through consistent, repetitive organizational interventions integrated into both formal and informal work systems. In this sense, organizational culture is not a passive backdrop but an active mechanism that determines the sustainability of change (Rahman, Haris, and Febriyanto, 2024; Asmawati, Adisasmito, and Basabih, 2024).

This complexity is further compounded by the fact that hospitals are professional organizations with a high degree of role differentiation. Doctors, nurses, medical support staff, sanitation workers, technicians, and administrative staff operate according to different professional logics, rhythms, and cultures. Therefore, human resource support strategies for green hospitals cannot be designed in a one-size-fits-all manner. Interventions in waste management require a different approach from energy-saving behavioral interventions, just as environmentally friendly procurement practices require a different training logic from chemical management. This indicates that organizational support for human resources must be contextual, differentiated, and sensitive to the hospital's work structure. A one-size-fits-all approach risks overlooking the actual work configurations within the hospital organization.

Ultimately, a green culture in hospitals can be understood as the result of the interaction between policies, leadership behavior, work experiences, and incentive structures. Employees are more likely to participate when they see

that the organization genuinely supports change, provides the necessary resources, and links pro-environmental behavior with professionalism. Therefore, HR support cannot be treated as incidental training but must be understood as a project to foster a sustainable, reflective, and institutionalized organizational culture (Rahman, Haris, and Febriyanto, 2024; Asmawati, Adisasmito, and Basabih, 2024).

Resource Support: Budget, Infrastructure, Technology, and Information Systems

No organizational support can be operational without resource support. The Indonesian literature indicates that one of the fundamental weaknesses in the implementation of green hospitals is the disconnect between normative commitments and resource readiness. In a number of hospitals, environmental programs have been launched, but their implementation remains hampered by budget constraints, a shortage of personnel, inadequate infrastructure, or the absence of information systems capable of consistently monitoring environmental performance. In other words, there is a significant gap between organizational intent and the actual capacity to execute it. It is this gap that often becomes the point of failure in the institutionalization of change (Alatas and Ayuningtyas, 2019; Apriyanthi, Widayanti, and Laksmita, 2024).

A study on hospital energy management shows that energy efficiency can provide dual benefits: reducing costs while strengthening operational sustainability. However, these benefits will not be realized if hospitals lack the institutional capacity to conduct audits, set targets, integrate energy savings into daily operations, and maintain the technologies used. Therefore, organizational support must be reflected in investment decisions, facility maintenance, and the strengthening of energy data management capacity—not merely in abstract statements of commitment. This argument demonstrates that resources in a green hospital cannot be limited to the presence of financial capital but must be understood as the organization's capacity to convert resources into measurable outcomes (Annura et al., 2022).

The WHO's documentation of best practices at Dr. Sardjito General Hospital provides a concrete illustration of how organizational support can transform environmental programs into sources of efficiency. The success of the 3R program and the waste bank did not arise spontaneously, but was supported by an integrated budget, oversight by environmental health staff, relationships with cooperatives and third parties, and clear internal regulations. The fact that the hospital is able to process some of its waste while generating cost savings demonstrates that the right resource support can transform the environmental agenda from a compliance obligation into an asset for institutional learning. Thus, resources are not merely tools for implementation, but a medium that enables the organization to derive organizational benefits from the environmental agenda (WHO Indonesia, 2022).

Resource support must also include information technology. Hospitals require reliable data to monitor electricity, water, and chemical consumption, waste volume, recycling rates, and the savings generated by efficiency programs. Without an adequate information system, leadership finds it difficult to evaluate whether environmental programs are truly effective or merely result

in symbolic claims. It is this lack of data that often makes it difficult to sustain a green hospital because its benefits are not strongly documented. Therefore, investment in information and reporting systems must be understood as an integral part of organizational support, equally as important as investment in physical technology. In modern organizations, data is not an accessory but a prerequisite for accountability and learning (Alatas and Ayuningtyas, 2019; Ashari and Anggoro, 2021).

In the context of hospital policy, resource support should not be viewed solely as an additional cost. In fact, many studies show that initial investments in green programs can yield returns through energy efficiency, reduced waste volume, water savings, and an enhanced institutional reputation. The problem is that such benefits often only become apparent in the medium term, while many hospitals operate under short-term fiscal pressures. This is where strategic management capacity is crucial: viewing the green hospital as an organizational investment, not as an extra operational burden. Thus, the challenge is both temporal and institutional—namely, how to justify short-term costs for medium- and long-term benefits (Annura et al., 2022; WHO Indonesia, 2022).

External Support: Regulations, Networking, and Stakeholder Collaboration

The literature indicates that internal organizational support must be reinforced by external support. A green hospital is not an initiative that can be implemented by a single hospital in isolation, as many of its components depend on regulations, technology providers, third-party waste management, learning networks, and the exchange of best practices. In the Indonesian context, national regulations regarding environmental health and medical waste have indeed provided a legal foundation, but their implementation still requires stronger integration with the hospital's overall sustainability agenda. In other words, hospital organizations operate within an institutional ecosystem that can either strengthen or, conversely, limit their scope of action (Ministry of Health of the Republic of Indonesia, 2020; Ministry of Health of the Republic of Indonesia, 2023).

A policy review by Intarti, Khan, and Maretalinia indicates that one of the main challenges in Indonesia is the lack of a truly representative national role model, coupled with limited collaboration among stakeholders. This finding is significant because it underscores that organizational support for green hospitals is not merely an internal institutional issue, but also a matter of the policy ecosystem. Without a strong learning network, hospitals tend to develop their own initiatives with highly varying levels of maturity. Under such conditions, knowledge transfer proceeds slowly, and the success of a particular institution is difficult to replicate more broadly (Intarti, Khan, and Maretalinia, 2024).

International and regional networks such as GGHH and Health Care Without Harm can serve as significant sources of external support by providing a framework of objectives, learning resources, and communities of practice. GGHH, for example, places hospitals within a broad global network, while the Health Care Without Harm initiative in Indonesia once involved a number of

hospitals in Denpasar as the starting point of the movement. This indicates that Indonesia actually already has access to global learning networks, but participation in these networks still needs to be translated into consistent institutional changes at the hospital level. Global connectivity does not automatically lead to local institutionalization; it requires adequate mechanisms for translating policies and learning (Global Green and Healthy Hospitals, 2026a; Health Care Without Harm Southeast Asia, 2026).

External support also serves as a source of legitimacy. Hospitals are more likely to prioritize environmental agendas when there are policy incentives, assessment standards, awards, or national learning mechanisms that reinforce the relevance of such agendas. Conversely, when the policy environment is too fragmented or ambiguous, hospitals tend to opt for a strategy of minimum compliance. Therefore, strengthening the policy ecosystem is a critical component for organizations seeking to move toward a more mature green hospital model. In other words, the success of institutionalizing the green agenda in hospitals cannot be separated from the quality of the surrounding normative infrastructure (Intarti, Khan, and Maretalinia, 2024; Indonesian Ministry of Health, 2023).

Environmental Monitoring, Evaluation, and Accountability

The next dimension is monitoring, evaluation, and accountability. The implementation of a green hospital will be difficult to sustain if the hospital lacks the tools to measure progress and account for the results. Research by Sutanto et al. indicates that hospital environmental management toward green hospitals in Indonesia can be analyzed through six major dimensions—ecological, economic, social, technological, environmental health, and institutional—with dozens of interrelated attributes and sub-attributes. The implication is clear: the implementation of a green hospital cannot be narrowly measured solely by the presence of gardens, waste reduction, or electricity savings, but must be understood in a multidimensional way. This complexity is important because without sufficiently robust evaluation tools, organizations tend to reduce success to the most easily observable indicators—which are not necessarily the most meaningful (Sutanto et al., 2020).

From a governance perspective, environmental accountability also manifests through green accounting practices. Research on public hospitals in the Greater Malang area indicates that these practices have been adopted with a reasonably high degree of consistency in some hospitals, although implementation remains uneven. These findings suggest that organizational support for green hospitals requires reporting and evaluation systems that incorporate environmental aspects into managerial accountability. In other words, the environment should not be treated as an additional dimension separate from core performance reports, but must be an integral part of the institution's accountability framework. Such integration is crucial because what is not measured tends not to be prioritized within an organization (Ashari and Anggoro, 2021).

Hospital organizations that support the concept of a green hospital should ideally have indicators, targets, internal audits, periodic reporting, and

feedback mechanisms for improvement. Without these tools, many green initiatives will remain ad hoc and highly vulnerable to leadership changes, budget pressures, or shifts in institutional priorities. Monitoring and evaluation, therefore, cannot be understood merely as tools of control, but rather as instruments of organizational learning that enable hospitals to identify successful practices, recognize failures, and continuously adjust strategies. In this context, accountability functions not only administratively but also epistemically: it generates organizational knowledge about itself (Sutanto et al., 2020; Ashari and Anggoro, 2021).

Furthermore, environmental accountability serves to build internal legitimacy for the green hospital agenda. When program results can be demonstrated concretely—for example, through reduced energy consumption, waste reduction, increased recycling rates, or cost efficiency—the organization will have a stronger foundation for sustaining and expanding the program. Conversely, without proper documentation, the benefits of a green hospital are easily perceived as abstract and difficult to defend in decision-making forums. Therefore, monitoring and accountability should be positioned as core elements of organizational support, not merely an administrative step placed at the end of the program. This is where accountability becomes one of the primary mechanisms for transforming normative commitments into institutional sustainability (Ashari and Anggoro, 2021; WHO Indonesia, 2022).

Key Barriers to Implementing Organizational Support

Based on a literature review, there are several key barriers to building organizational support for green hospitals in Indonesia. First, policies remain scattered across various instruments related to the environment, waste, and environmental health, so hospitals do not always have a comprehensive, operational, and easily translatable implementation framework for internal management. Second, leadership commitment is not always translated into adequate budgetary support, evaluation systems, or incentives. Third, there is significant variation in human resource capacity, training, and pro-environmental work culture among hospitals. Fourth, not all hospitals have access to strong role models and learning networks. Taken together, these barriers indicate that the challenges of green hospitals in Indonesia cannot be resolved solely through the addition of technology or administrative compliance, but rather require a more fundamental strengthening of institutional capacity (Intarti, Khan, and Maretalinia, 2024; Alatas and Ayuningtyas, 2019).

Another fundamental obstacle is the tendency to view green hospitals as technical or symbolic projects rather than as an agenda for organizational transformation. When the focus is placed solely on physical greening or minimal compliance with waste management, dimensions such as leadership, employee behavior, budgeting, and accountability are sidelined. Indonesian literature, however, indicates that institutional aspects are the key differentiator between hospitals that merely carry out eco-friendly activities and those that are genuinely moving toward sustainable transformation. Thus, the primary obstacle actually lies in the organizational mindset that still views

environmental issues as an add-on, rather than as a strategic component of institutional performance (Marshal et al., 2021; Sutanto et al., 2020; Rahman, Haris, and Febriyanto, 2024).

Barriers can also arise from the high operational workload of hospitals. In many situations, service units focus more on clinical targets, service administration, accreditation, and daily patient care. In such a setup, the environmental agenda is easily perceived as additional work that is not directly related to core services. This situation indicates that the main issue is not always explicit resistance to the green hospital concept, but rather the weak integration between environmental goals and the hospital's operational systems. In other words, one of the greatest challenges is making the green agenda operationally relevant to the various professions within the hospital. Until that happens, the green hospital will likely be viewed as a managerial project detached from the realities of clinical work.

In addition, there are disparities in capacity among hospitals. Large hospitals in urban areas generally have better access to technology, human resources, partnerships, and learning resources, whereas hospitals with limited resources may only be able to meet minimum requirements. This indicates that the development of green hospitals in Indonesia cannot be separated from broader institutional inequalities. Hospitals with weaker capacities require more affirmative technical and policy support so that the sustainability agenda does not actually widen institutional disparities within the health care system (Intarti, Khan and Maretalinia, 2024; WHO Indonesia, 2022).

A Conceptual Framework for Organizational Support of *Green Hospitals*

Based on the reviewed literature, organizational support for green hospitals in Indonesia can be understood as the integration of six interrelated layers. The first layer is strategic leadership commitment, which establishes vision, priorities, and accountability. The second layer is internal governance, which includes written policies, a green team, standard operating procedures (SOPs), and coordination mechanisms. The third layer is support for human resources, including training, participation, communication, motivation, and job satisfaction. The fourth layer is resource support, which includes budgeting, infrastructure, information systems, and technology. The fifth layer is external support, which comes from regulations, networks, learning, and partnerships. The sixth layer is organizational accountability, which ensures that all environmental initiatives can be monitored, measured, evaluated, and continuously improved. When these six layers work synergistically, green hospitals have the opportunity to evolve from partial activities into institutionalized organizational capacity (Rahman, Haris, and Febriyanto, 2024; Intarti, Khan, and Maretalinia, 2024; WHO Indonesia, 2022).

This framework demonstrates that organizational support does not operate in a linear fashion, but rather as an interdependent system. Leadership without resources will only yield symbolic commitment; policies without an organizational culture will be difficult to implement; HR support without indicators and accountability will be difficult to sustain; and external networks without strong internal governance will amount to nothing more than symbolic

legitimacy. Conversely, when all layers reinforce one another, hospitals have a greater chance of making the green hospital initiative an integral part of their institutional identity and strategy. Therefore, this framework can be used not only as a conceptual synthesis but also as an analytical tool for further research or as a reflective guide for hospitals seeking to assess their organizational readiness. The primary value of this framework lies in its ability to demonstrate that the issue of the "green hospital" is fundamentally one of interconnectedness among organizational elements, not merely a list of standalone components.

CONCLUSIONS AND RECOMMENDATIONS

The implementation of green hospitals in Indonesia has shown tangible progress, particularly in the areas of waste management, energy efficiency, water conservation, and environmental stewardship. However, this progress remains fragmented, inconsistent, and has not yet been fully institutionalized. Key barriers include limited funding, the absence of a strong national model hospital, weak integration between units, limited monitoring infrastructure, and the lack of a solid organizational behavioral transformation.

Within this framework, the green hospital initiative must be positioned as an institutional transformation strategy directly linked to service quality, accreditation, climate resilience, financial efficiency, and institutional legitimacy. The success of implementation will be largely determined by leadership, standardization of indicators, phased investment, stakeholder collaboration, and the strengthening of an environmentally friendly work culture. Hospitals that are able to integrate sustainability into their core governance have the potential to reap ecological, economic, reputational, and operational benefits simultaneously.

From a more conceptual perspective, this study demonstrates that the future of green hospitals in Indonesia will be largely determined by the ability of policymakers and organizations to shift sustainability from a complementary to a constitutive status. As long as sustainability is treated as an additional layer atop the old management logic, its implementation will remain selective and fragile. Conversely, when sustainability is positioned as a foundational principle of hospital governance, green hospitals can evolve from merely an environmental agenda into a strategic framework for restructuring hospitals to be more efficient, resilient, and socially and ecologically responsible.

1. Hospitals need to develop a green hospital roadmap based on the institution's baseline conditions, resource capacity, and local priorities.
2. Hospital leadership needs to incorporate environmental indicators into the hospital's performance metrics and ensure the existence of a regular reporting system.
3. Implementation should begin with quick wins that can rapidly generate organizational learning and internal support.
4. The government needs to develop national model hospitals, a benchmarking system, and more standardized assessment indicators.

5. Further research needs to measure the impact of green hospitals on costs, service quality, safety, user satisfaction, and emissions in a more quantitative manner.
6. Strengthening human resource capacity and organizational culture must be treated as the core of the implementation strategy, not merely as a complement to technical interventions.
7. National policies need to encourage the integration of the green hospital agenda with accreditation, disaster risk management, and broader health system transformation.

FURTHER STUDY

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Author's Contribution

Author 1: Conceptualization, literature review, drafting of the initial manuscript.
Author 2: Methodological review, synthesis of results, substantive revisions.
Author 3: Content validation, final editing, and approval of the final manuscript.

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