

The Socio-Economic Role of Muhammadiyah's Health Network in Indonesia

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Abstract

This article examines the socio-economic role of Muhammadiyah's faith-based healthcare network in advancing public health and social welfare in Indonesia, tracing its development from the early Penolong Kesengsaraan Oemoem (PKO) initiative to the network operating by 2022. It uses qualitative historical-institutional document analysis rather than a systematic literature review, drawing on organizational records, policy documents, institutional histories, and selected scholarly studies published no later than 2022. The findings show that Muhammadiyah transformed al-Ma'un-inspired charity into durable health infrastructure through decentralized replication, professional management, partnerships with medical education, participation in national health insurance, and networked emergency response. Its socio-economic contribution extends beyond inpatient treatment to healthcare access, financial protection, workforce development, health promotion, tuberculosis control, disaster medicine, research, and pandemic management. The COVID-19 crisis demonstrated the value of distributed facilities, social capital, and religious legitimacy, while also exposing uneven infection-control capacity, fragmented information systems, and dependence on hospital-centered curative care. The article argues that Muhammadiyah's future contribution to social welfare depends less on expanding hospital numbers than on integrating hospitals, clinics, universities, community programs, and shared data into an accountable, equitable, and population-oriented health system.

Keywords: Muhammadiyah; faith-based healthcare; social welfare; socio-economic role; public health; social protection; Islamic philanthropy; Indonesia.

INTRODUCTION

Muhammadiyah's contribution to Indonesian health care is often represented by the number of hospitals and clinics carrying the names Muhammadiyah, PKU, Islam, or 'Aisiyiah. The count matters because it indicates organizational reach, capital formation, and the persistence of a non-state provider across a highly diverse archipelago. By 2022, organizational reports referred to approximately 116-119 operating Muhammadiyah-'Aisiyiah hospitals, alongside clinics and other health facilities; 117 hospitals and 30 clinics participated in a coordinated month of community health service before the forty-eighth Muhammadiyah congress (Pimpinan Pusat Muhammadiyah, 2022a, 2022b; Antara, 2022). Yet institutional quantity is not equivalent to public-health contribution. A hospital may expand service capacity while remaining concentrated in profitable urban markets, may treat disease without influencing its distribution, or may possess a religious identity without providing demonstrably more equitable care. The relevant question is therefore not simply how many facilities Muhammadiyah owns, but what functions its network has performed within Indonesia's health system.

Public health is broader than clinical treatment. It includes preventing disease, protecting populations, producing and using health information, developing the workforce, reducing barriers to care, coordinating emergency response, and addressing the social conditions that shape illness. Hospitals contribute when they provide referral capacity, surveillance, laboratories, specialist services, teaching, research, and continuity with primary and community care. They can also undermine public-health goals when financing incentives reward high-cost curative interventions, when services are geographically unequal, or when organizational expansion is measured without population-level outcomes. The World Health Organization's health-system frameworks emphasize that service delivery, workforce, information, medicines, financing, and governance must function together rather than as isolated assets (World Health Organization, 2007, 2016). This systems perspective is necessary for evaluating a large faith-based hospital network.

Muhammadiyah entered health service long before the Indonesian republic or contemporary health insurance. Its early *Penolong Kesengsaraan Oemoem* (PKO, Relief of Public Suffering) combined a clinic, poor relief, orphan care, and organized assistance. The initiative arose from the reformist conviction that Qur'anic teaching, particularly Surat al-Ma'un, required institutional action for people exposed to poverty and neglect. Kiai Sudja' translated Ahmad Dahlan's practical theology into a proposal for organized health and welfare services at a time when modern medicine was associated primarily with colonial institutions and Christian missions (Noer, 1973; Shihab, 1998; Syuja', 2009). This origin is important, but it should not be romanticized. A charitable clinic and a modern hospital operate under radically different regimes of professional licensing, technology, financing, accreditation, and clinical risk. The history of Muhammadiyah health care is consequently a history of institutional transformation rather than the uninterrupted reproduction of one original model.

Indonesia's health system changed substantially across the twentieth and early twenty-first centuries. Colonial segregation gave way to post-independence state building, then to rapid private-sector expansion, decentralization, and the creation of *Jaminan Kesehatan Nasional* (JKN) in 2014. JKN increased demand for services and drew private non-profit hospitals more deeply into publicly financed care, while exposing them to claim administration, standardized tariffs, referral rules, and cost pressures (Pisani et al., 2017; Agustina et al., 2019). Indonesia also continued to face unequal geographic distribution of facilities and professionals, variable quality, and weak integration between public health and clinical care (Mahendradhata et al., 2017; Suryanto et al., 2017). Muhammadiyah's hospitals developed within these constraints and cannot be assessed apart from them.

The COVID-19 pandemic made the network's public role unusually visible. Muhammadiyah established a cross-organizational command center, designated dozens of affiliated hospitals for COVID-19 care, trained health workers, distributed equipment, built information systems, delivered risk communication, supported vaccination, and linked hospital treatment with social and religious guidance. A study of Islamic faith-based organizations documented that Muhammadiyah combined primary prevention, clinical treatment, psychological support, social assistance, and vaccine advocacy through a multi-level organizational structure (Rachmawati et al., 2022). Research across 15

affiliated referral hospitals also generated clinical evidence on chronic disease, smoking, and acute respiratory distress among hospitalized COVID-19 patients (Rachmawati et al., 2021). These activities demonstrate that the hospital network could act as an emergency platform rather than merely as a collection of independent providers.

However, emergency visibility can conceal long-term weaknesses. Official statements in 2022 reported that roughly half of Muhammadiyah-'Aisyiyah hospitals had achieved the highest national accreditation category, implying that substantial variation remained across the network (Pimpinan Pusat Muhammadiyah, 2022a). Digital systems created during the pandemic initially covered only a subset of facilities. Long chains of coordination and insufficient information technology were identified as operational challenges (Rachmawati et al., 2022). The movement also publicly considered strengthening services for middle- and upper-income patients while promising continued service to poorer groups, revealing the unresolved relationship between social mission and competitive hospital finance (Pimpinan Pusat Muhammadiyah, 2022e). These are not marginal concerns. They determine whether growth increases public value or simply institutional scale.

This article asks three questions. First, how did Muhammadiyah's health institutions develop from early charitable services into a national hospital network? Second, through which mechanisms has that network contributed to public health rather than only individual medical care? Third, what structural tensions limit its contribution? The study is not a systematic literature review. It is a qualitative historical-institutional analysis of selected organizational documents, policy sources, institutional histories, and scholarly publications available up to 2022.

The central argument is that Muhammadiyah's most consequential health contribution has been the institutionalization of socially motivated care in a durable civil-society network. Its hospitals expanded referral capacity, trained professionals, participated in JKN, supported emergency response, and provided organizational channels through which religious legitimacy could be converted into health communication and collective action. Nevertheless, the public-health value of the network remains uneven because hospital-centered expansion can overshadow prevention, primary care, population data, and explicit equity measurement. The next stage of development therefore requires a shift from owning many hospitals to governing an integrated Muhammadiyah health system.

METHOD

This study applies qualitative historical-institutional document analysis. Historical analysis reconstructs major phases in the formation of Muhammadiyah health services, while institutional analysis identifies the organizational mechanisms that made services durable, reproducible, and connected to the national health system. The approach is appropriate because the research question concerns the transformation of an organizational field over time rather than the pooled effect of a defined intervention. It does not use PRISMA, database saturation, bibliometric counting, or exhaustive study selection and should not be interpreted as a systematic literature review.

The documentary corpus comprised four categories. The first consisted of Muhammadiyah sources: statutes and ethical guidance, historical accounts of Ahmad Dahlan and PKO, public statements from the Majelis Pembina Kesehatan Umum, reports from the Muhammadiyah COVID-19 Command Center, and institutional communications concerning hospital accreditation, networking, medical education, community service, and strategic market positioning. The second category contained Indonesian laws, health-system profiles, and policy studies concerning hospitals, health insurance, workforce distribution, and universal health coverage. The third included academic histories of Muhammadiyah, Islamic philanthropy, and faith-based social service. The fourth consisted of empirical health studies undertaken in or concerning Muhammadiyah-'Aisyiyah facilities, especially during COVID-19. Only references dated 2022 or earlier were included in the final manuscript.

Documents were selected purposively for their relevance to one or more analytical dimensions: institutional origin, network expansion, access and financing, workforce and education, population-health activity, emergency response, information infrastructure, quality, or governance. Corporate publicity and organizational news were not treated as neutral evidence. They were used primarily to identify official claims, program scale, and stated priorities, then interpreted alongside independent scholarship, health-system research, and empirical studies. Numerical claims were presented with their date and source because institutional totals vary according to whether clinics, hospitals under construction, 'Aisyiyah facilities, and inactive units are included.

Analysis proceeded in three stages. First, events and institutional changes were arranged chronologically from the early PKO period to 2022. Second, the material was coded according to public-health functions adapted from health-system frameworks: service access, workforce development, financing and financial protection, health information and research, prevention and community engagement, and emergency preparedness. Third, tensions were coded across the corpus, including mission-market conflict, curative-preventive imbalance, central coordination versus local autonomy, network scale versus standardization, and religious identity versus universal clinical obligations.

The unit of analysis is the Muhammadiyah-'Aisyiyah health network as an organizational field, not every hospital. Local hospitals differ in size, accreditation, ownership history, specialty, finances, and regional context. Accordingly, the article does not infer that evidence from one facility applies uniformly to all facilities. Nor does it estimate causal effects on mortality, morbidity, financial protection, or equity, because network-wide longitudinal data were not publicly available in a form suitable for such analysis. Claims of contribution are therefore institutional and functional: the study identifies capacities, services, coordination mechanisms, and documented outputs rather than attributing national health trends to Muhammadiyah.

The source cut-off creates an additional limitation. Developments after 2022, including changes in hospital numbers, digital health regulation, financing, accreditation, and organizational strategy, are intentionally excluded. This restriction preserves consistency

with the research specification but means that the study should be read as an assessment of the network's development and position by the end of 2022.

Table 1. Historical phases of Muhammadiyah health-service development

Period	Institutional development	Public-health function	Principal tension
1920s-1945	PKO clinic, poor relief, early hospital and social services	Organized access to biomedical care and relief outside colonial institutions	Fragile finance and dependence on local pioneers
1945-1998	Expansion of hospitals, maternity care, clinics, and professional management	Additional referral capacity and workforce formation	Uneven regional growth and increasing bureaucratization
1998-2013	Network consolidation, accreditation, university-health links, humanitarian coordination	Quality improvement, teaching, disaster health, and community programs	Local autonomy versus common standards
2014-2019	Deeper participation in JKN and rapid service demand	Financial protection and publicly financed access through non-state providers	Tariff, claim, and mission-market pressures
2020-2022	COVID-19 referral hospitals, MCCC coordination, digital case management, mass training	Emergency response, surveillance, communication, research, and vaccination support	Variable preparedness, fragmented data, and curative overload

RESULTS AND DISCUSSION

The findings indicate that Muhammadiyah's contribution developed through six overlapping functions rather than a single line of hospital growth. These functions were historically sequenced but became increasingly interdependent: institutionalizing care, extending referral capacity, participating in financial protection, producing the workforce, linking hospitals to community health, and coordinating emergencies. Table 1 summarizes the major historical phases.

1. From PKO relief to organized biomedical service

The PKO initiative established in the early 1920s marked a transition from interpersonal almsgiving to organized service. Its importance lay less in technical sophistication than in institutional form. A clinic required premises, medicines, practitioners, schedules, records, and continuing finance. It also made care available through an association rather than through the personal discretion of a patron. In the colonial context, this represented a claim that Indonesian Muslims could organize modern welfare institutions for the public, including people outside a narrow membership circle (Noer, 1973; Shihab, 1998; Syuja', 2009). The initiative was linked to poor relief and orphan care, showing that early Muhammadiyah did not separate disease from material deprivation as sharply as later hospital administration often does.

The theological vocabulary later identified as al-Ma'un theology supplied an ethical interpretation of this institutional change. The poor and the ill were not objects of sporadic generosity but people whose abandonment exposed defective religiosity. Muhammadiyah's practical response connected worship, social responsibility, and

disciplined organization (Baidhawry, 2009; Nashir, 2015). This orientation distinguished the movement's self-understanding from a purely commercial provider, although it did not eliminate fees or guarantee free treatment. The historical contribution was to make care a recurring organizational obligation.

Early services also had a political meaning. Modern medicine was part of colonial governance and missionary influence, and Muhammadiyah's clinic demonstrated that biomedical knowledge could be appropriated without abandoning Islamic identity. The movement did not reject modern clinical science as foreign. It separated the instrumental value of medicine from the religious and political institutions through which it had entered Indonesia. This selective appropriation became a recurring feature of Muhammadiyah modernism: professional knowledge was accepted, while its social use was redirected through Muslim institutions (Peacock, 1978; Alfian, 1989).

2. Expansion into a distributed hospital network

Hospital development accelerated unevenly after independence and especially during the expansion of private and non-profit health provision. Local Muhammadiyah and 'Aisyiyah boards mobilized land, donations, waqf, professional networks, and community trust to establish clinics that could later become hospitals. Decentralization was crucial. A fully centralized capital plan would have limited growth, whereas local initiative allowed communities to adapt facilities to regional demand. The resulting network was therefore federated rather than corporate: common ownership norms and identity coexisted with considerable variation in managerial capacity and local history.

This structure generated resilience and inequality simultaneously. Local embeddedness helped institutions obtain land, recruit donors, build legitimacy, and identify unmet need. It also produced uneven capital, specialist availability, technology, and governance. By the end of 2021, official reports indicated 116 hospitals and rapid recent expansion; almost half had achieved the highest accreditation level and one had international accreditation (Pimpinan Pusat Muhammadiyah, 2022a). The accreditation distribution suggests meaningful progress, but it also demonstrates that a common name did not guarantee common quality.

Scale expanded Indonesia's referral capacity. Hospitals provided emergency care, surgery, maternity services, diagnostic imaging, laboratories, specialist clinics, and inpatient beds in cities and districts where government capacity alone was insufficient. In 2022, Muhammadiyah reported 119 operating hospitals, more than half involved in frontline COVID-19 care (Pimpinan Pusat Muhammadiyah, 2022b). The network's contribution was therefore additive and spatial: it placed non-state referral infrastructure inside a national system characterized by uneven distribution and continuing facility deficits (Mahendradhata et al., 2017; Suryanto et al., 2017).

The network also allowed coordinated campaigns that an isolated hospital could not easily conduct. Before the forty-eighth congress, 117 hospitals and 30 clinics organized free treatment, cataract surgery, circumcision, food distribution, and activities selected according to local need (Antara, 2022). Such events are episodic and cannot substitute for routine access, but they illustrate the ability to mobilize multiple facilities under a

common social narrative. The network converts organizational identity into surge capacity.

3. Access, JKN, and financial protection

The introduction of JKN changed the relationship between Muhammadiyah hospitals, patients, and the state. Indonesia's universal health coverage project pooled previously fragmented schemes and expanded utilization through a single national purchaser (Pisani et al., 2017; Agustina et al., 2019). Private non-profit hospitals became important contracted providers because public hospitals alone could not absorb demand. Muhammadiyah facilities thereby contributed to financial protection when they accepted JKN patients and delivered services under public reimbursement rather than requiring full payment at the point of care.

Participation in JKN was not simply charitable. It created predictable patient volume and public financing, but it also imposed tariffs, coding rules, referral restrictions, verification, and claim delays. A 2022 study at Muhammadiyah Hospital Bandung identified pending BPJS claims as a management problem affecting the pursuit of service quality (Ramalinda et al., 2022). The example is local, yet the underlying tension is structural: a mission-oriented hospital must remain solvent while serving patients under reimbursement levels and administrative processes it does not control. Financial sustainability can support access, but pressure to cross-subsidize may also encourage premium services and market segmentation.

Muhammadiyah leaders openly addressed this tension in 2022 by proposing stronger services for middle- and upper-income groups while affirming the commitment to the poor (Pimpinan Pusat Muhammadiyah, 2022e). The strategy can be defended as cross-subsidization and competitive upgrading. It can also produce mission drift if profitable service lines receive investment while community prevention, primary care, and uncompensated care remain underfunded. Public-health contribution therefore requires evidence about who receives care, at what effective cost, and with what outcomes. The existence of JKN contracts or charity funds is insufficient without distributional reporting.

The network's religious and community legitimacy may reduce non-financial barriers. Patients can seek modern treatment in an institution that recognizes Islamic practices, offers spiritual care, and is locally familiar. However, Islamic identity should not be confused with public accessibility. Hospitals remain legally and ethically obligated to treat patients without religious discrimination, and the strongest historical interpretation of PKO is universal relief rather than sectarian service. A faith-based institution contributes to public health when religious identity strengthens compassion, trust, and accountability while clinical eligibility remains universal.

4. Workforce development and the hospital-university connection

Muhammadiyah's hospital network increasingly interacted with its universities, medical faculties, nursing schools, public-health programs, and allied health education. This relationship addresses a central Indonesian problem: unequal distribution and variable preparation of health workers (Mahendradhata et al., 2017; Suryanto et al., 2017). Hospitals supply clinical placements, teaching cases, specialist mentorship, and

employment; universities supply graduates, research, continuing education, and managerial expertise. In 2022, Muhammadiyah described collaboration between health faculties and hospitals as a strategic response to the demand for professionals who combined technical competence with knowledge of the movement's ethical orientation (Pimpinan Pusat Muhammadiyah, 2022c).

The institutional advantage is circular. A hospital without a training pipeline competes for scarce professionals; a health faculty without clinical sites cannot provide adequate education. Networked planning can direct graduates toward underserved facilities, develop specialist pathways, and spread protocols. During COVID-19, more than 5,000 health workers received training through a Muhammadiyah-USAID partnership, while a digital case-management platform supported standardized care and clinician consultation in participating hospitals (U.S. Embassy and Consulates in Indonesia, 2021). This illustrates how a faith-based network can function as a continuing professional education system during crisis.

Teaching and research also extend contribution beyond service volume. The multicenter study of 490 COVID-19 patients in 15 Muhammadiyah-'Aisyiyah referral hospitals showed that the network could produce clinically relevant evidence across institutions, including associations between chronic disease, smoking, and acute respiratory distress syndrome (Rachmawati et al., 2021). Multicenter data are particularly valuable in Indonesia because single-hospital studies often have limited external relevance. Yet this capacity remained underdeveloped. Shared data definitions, interoperable records, ethical governance, and stable research units were not uniform across the network.

Professionalization created another tension. Muhammadiyah values and spiritual service can support humane care, but they cannot substitute for competence, patient safety, evidence-based practice, or independent clinical judgment. Conversely, technically skilled staff may know little about the social mission that distinguishes a Muhammadiyah institution. Sustainable workforce development therefore requires dual accountability: professional standards and a clearly operationalized ethic of service. Ceremonial religious training without changes in communication, access, integrity, and patient rights would be inadequate.

5. Hospitals as platforms for population health

Muhammadiyah's contribution cannot be reduced to inpatient care. Hospitals and clinics have supported screening, health education, maternal and child services, tuberculosis programs, vaccination, cataract surgery, community outreach, and responses to disasters and displacement. These activities connect clinical infrastructure to prevention and social protection. They are also consistent with the broader history of Muhammadiyah social service, in which health, poverty, education, and relief were institutionally related rather than separate sectors (Fauzia, 2013; Sakai, 2012).

The network's organizational reach gives health communication unusual social pathways. Muhammadiyah can distribute advice through hospitals, universities, mosques, women's organizations, youth groups, schools, philanthropic agencies, and disaster volunteers. During COVID-19, the movement combined medical guidance with religious rulings and public communication on worship, hygiene, distancing, and vaccination. Rachmawati et

al. (2022) found that Islamic faith-based organizations used their membership structures and philanthropic resources for primary prevention, psychological consultation, treatment, socioeconomic assistance, and vaccine support. Religious legitimacy was not an alternative to science; it was a channel through which scientific guidance could reach communities and overcome moral uncertainty.

Tuberculosis illustrates the potential value of network coordination beyond episodic campaigns. The USAID partnership announced in 2021 linked the hospital information and training program to future improvement in tuberculosis testing, diagnosis, and treatment (U.S. Embassy and Consulates in Indonesia, 2021). A distributed hospital network can identify cases, standardize referral, monitor treatment, and connect laboratories across regions. Its public-health value depends, however, on continuity with primary care and community follow-up. Hospitals alone are poorly positioned to address missed screening, treatment interruption, household exposure, and social determinants.

Disaster response created another bridge between hospitals and population health. Muhammadiyah's disaster organization, hospitals, ambulances, universities, and volunteers have cooperated in natural-hazard response. During the pandemic, disaster operations had to manage infection risk while responding to floods, earthquakes, and other hazards. Ichsan (2022) described Muhammadiyah's integrated strategy as combining health protocols, coordination, volunteers, and institutional resources. The network thus contributed to health security, but its effectiveness depended on pre-existing coordination rather than spontaneous charity.

6. COVID-19 as a stress test of networked public health

COVID-19 revealed both the strategic value and the institutional limits of Muhammadiyah's health assets. By the end of 2020, 84 affiliated hospitals were serving as COVID-19 referral facilities, according to data reproduced in the study of Islamic faith-based organizations (Rachmawati et al., 2022). In 2021, the movement reported expenditures exceeding Rp346 billion across health, social, economic, and educational responses and more than 31 million beneficiaries, although such aggregate beneficiary figures combine different forms of assistance and should not be interpreted as unique clinical patients (Pimpinan Pusat Muhammadiyah, 2021a).

The network enabled rapid diffusion of protocols, training, equipment, and consultation. A USAID-supported information system initially involved 30 treatment centers, trained more than 400 users, and was intended for expansion across the network. The partnership reported equipment and training support to 84 hospitals, treatment of more than 10,000 COVID-19 patients, and dissemination of a hospital outbreak-preparedness plan beyond Muhammadiyah facilities (U.S. Embassy and Consulates in Indonesia, 2021). These outputs show public value beyond organizational boundaries: knowledge products developed in one network could strengthen other hospitals.

The pandemic also exposed fragmentation. The need to build a new information platform indicated that network-wide clinical data were not already integrated. Rachmawati et al. (2022) identified long coordination pathways and inadequate information technology as barriers. Facility readiness varied, and shortages of protective equipment affected services during the early pandemic. Muhammadiyah's distributed structure produced

local responsiveness, but without common data and mandatory minimum capacities it also complicated situational awareness.

Most importantly, the crisis demonstrated that hospital beds are only one component of public-health resilience. Treatment capacity could not compensate for delayed testing, weak surveillance, misinformation, economic insecurity, or inconsistent public policy. Muhammadiyah was most effective when hospitals were connected with communication, religious guidance, philanthropy, volunteerism, and community support. The pandemic therefore confirmed the article's main institutional finding: the network's contribution arises from connections across organizational sectors, not from hospitals in isolation.

Discussion

The historical record supports an interpretation of Muhammadiyah's hospital network as civil-society health infrastructure. It occupies a position between household charity, commercial medicine, and state provision. The network mobilizes religious commitment and community resources, but it operates through professional organizations subject to national law, clinical standards, accreditation, and insurance contracts. This hybrid position explains both its durability and its recurring tensions.

Table 2. Framework for evaluating the public-health contribution of the hospital network

Mechanism	Documented contribution by 2022	Main risk	Priority for accountability
Distributed service capacity	Hospitals and clinics add beds, diagnostics, emergency, maternity, and specialist care	Geographic concentration and uneven quality	Map capacity against population need and referral gaps
JKN participation	Public insurance channels patients to non-state facilities and reduces point-of-care payment	Claim pressure, payer discrimination, and cost shifting	Report access, denial, waiting time, and cross-subsidy by payer group
Workforce and education	Hospital-university links support clinical training and continuing education	Shortages outside major centers and weak mission integration	Joint workforce planning, rural rotations, competency and ethics metrics
Information and research	Multicenter studies and pandemic systems support learning and standardized care	Fragmented records and inconsistent data quality	Interoperable minimum datasets and independent research governance
Prevention and community reach	Health education, screening, TB, vaccination, psychosocial and outreach programs	Episodic campaigns disconnected from continuity of care	Coverage, follow-up, and outcome indicators linked to communities
Emergency and humanitarian response	Network mobilization combines hospitals, volunteers, philanthropy, and religious communication	Coordination delays and variable preparedness	Permanent preparedness standards, drills, supplies, and shared command protocols

1. Institutionalizing public service outside the state

Muhammadiyah's first contribution was institutional rather than technological. It demonstrated that an Indonesian Muslim association could establish modern health services, sustain them across leadership succession, and replicate them geographically. Faith-based organizations are often described as gap fillers where governments lack

capacity, but that formulation is incomplete. Muhammadiyah did not merely occupy empty space. Its hospitals helped shape the Indonesian mixed health system by normalizing non-profit religious provision, creating professional careers, educating communities, and negotiating public contracts. The relationship with the state has consequently involved partnership, regulation, subsidy, and occasional critical distance (Sakai, 2012; Fauzia, 2013).

The network's legitimacy rests on more than ownership. It derives from the historical connection between health care and al-Ma'un, from local boards and donors, and from the wider Muhammadiyah ecosystem. This social capital can support compliance, fundraising, volunteering, and trust during emergencies. Yet legitimacy can decay when patients experience poor quality, opaque fees, discrimination, or managerial arrogance. Religious reputation is therefore a governance resource that must be renewed through measurable conduct.

2. Six mechanisms of public-health contribution

The evidence identifies six mechanisms. First, distributed facilities expand referral capacity and geographic availability. Second, JKN participation can translate non-state infrastructure into publicly financed access and financial protection. Third, links with universities develop the health workforce and create teaching capacity. Fourth, multicenter hospitals can produce research and shared clinical knowledge. Fifth, the network's social organizations extend prevention and communication beyond hospital walls. Sixth, common identity and coordination enable emergency mobilization. Table 2 summarizes these mechanisms, their evidence, and their principal risks.

These mechanisms are mutually reinforcing. A teaching hospital improves workforce supply; a trained workforce strengthens emergency response; an integrated information system supports research and quality improvement; community trust improves uptake of prevention and vaccination; and JKN financing sustains service volume. The institutional challenge is that the same components can also conflict. High JKN volume may strain quality, teaching goals may compete with throughput, local autonomy may obstruct interoperability, and premium services may redirect investment from underserved populations.

3. The curative bias

The largest conceptual weakness is the risk of equating hospital expansion with public-health progress. Hospitals are indispensable, but most determinants of population health are not controlled by hospitals. Tobacco use, nutrition, sanitation, occupational risk, environmental pollution, gender inequality, and delayed primary care shape the demand that reaches inpatient wards. Indonesia's health-system literature has repeatedly identified fragmentation and the need to strengthen primary and preventive care (Mahendradhata et al., 2017; Agustina et al., 2019). Muhammadiyah's historic PKO model was socially broad, yet modern hospital professionalization can narrow attention to billable clinical episodes.

A public-health strategy should therefore measure prevention and population outcomes, not merely beds, buildings, revenue, accreditation, and patient counts. Relevant indicators

would include screening coverage, vaccination, avoidable admissions, treatment completion, maternal and neonatal outcomes, tobacco cessation, referral continuity, catastrophic expenditure, and access among low-income households. Without such indicators, the network may know its institutional size while remaining unable to demonstrate its effect on community health.

4. Mission, market, and equity

The mission-market tension is unavoidable rather than evidence of automatic failure. Hospitals require costly technology, medicines, specialist salaries, utilities, maintenance, accreditation, and emergency reserves. A facility that cannot finance these inputs cannot provide safe care. The problem begins when financial sustainability becomes the primary definition of success or when cross-subsidization is asserted without transparent evidence. The 2022 plan to strengthen services for higher-income segments could improve technology and diversify revenue, but it requires explicit safeguards for access by poorer patients (Pimpinan Pusat Muhammadiyah, 2022e).

Such safeguards should include published charity-care policies, monitoring of JKN acceptance, prohibition of informal discrimination by payer class, cross-subsidy accounting, complaint systems, and board-level review of equity indicators. Muhammadiyah's theology offers a strong normative vocabulary, but accountability must be administrative. Al-Ma'un becomes institutionally meaningful when it changes budgets, service design, and patient rights.

5. From a collection of hospitals to an integrated health system

The pandemic information platform showed the benefit of common data but also the weakness of creating integration during crisis. A mature network should possess interoperable minimum datasets, standardized quality indicators, shared procurement where efficient, referral coordination, teleconsultation, outbreak surveillance, and research governance before the next emergency. Local autonomy need not be eliminated. It should be bounded by mandatory standards for patient safety, data, financial accountability, and public benefit.

Integration should also connect hospitals with clinics, universities, community health programs, Lazismu, 'Aisyiyah, disaster services, and local Muhammadiyah branches. A patient with tuberculosis, diabetes, pregnancy risk, or post-disaster trauma requires continuity that a hospital episode cannot provide alone. The network's comparative advantage is precisely that it already contains educational, philanthropic, religious, and social institutions. The unresolved task is to govern them as a coordinated health ecosystem rather than parallel organizational sectors.

Workforce policy is central to that transformation. Collaboration between hospitals and Muhammadiyah-'Aisyiyah universities should move beyond filling vacancies. It can establish rural rotations, shared specialist appointments, continuing education, leadership training, and research careers. Recruitment should remain merit-based, because ideological loyalty cannot compensate for clinical incompetence. At the same time, professional education should clarify that Muhammadiyah identity requires

universal service, honesty, scientific responsibility, and special attention to vulnerable populations, not merely ritual symbols.

6. A framework for future evaluation

A credible evaluation agenda would combine institutional, clinical, and population indicators. Institutional measures include facility distribution, accreditation, workforce vacancies, financial health, and data completeness. Clinical measures include mortality, readmission, infection, waiting time, treatment adherence, and patient-reported experience adjusted for case mix. Population measures include service coverage, financial protection, prevention, and disparities by income, sex, age, disability, religion, and geography. Network contribution should be compared with local need, not celebrated through totals alone.

The present study cannot perform that evaluation because comparable network-wide data were unavailable through 2022. This absence is itself a result. Muhammadiyah possessed sufficient scale to become a major health-system actor, but public reporting remained oriented toward institutional counts, achievements, and program outputs. The next stage of professionalization requires making outcomes and inequities visible, including findings that may be unfavorable. Transparency would not weaken the movement; it would convert moral claims into accountable public-health practice.

CONCLUSION

Muhammadiyah's contribution to public health developed from a practical religious response to suffering into one of Indonesia's most extensive non-state health-service networks. The historical innovation of PKO was to convert charity into an organizational duty. Over time, local replication, waqf and philanthropy, professional medicine, universities, public insurance, and national coordination transformed that duty into hospitals capable of providing referral care, teaching, research, community service, and emergency response.

The network's contribution is real but should not be overstated. Hospital numbers demonstrate institutional capacity, not population impact. JKN participation can expand financial access, yet reimbursement pressure may distort priorities. Accreditation and professionalization improve quality, yet standards remain uneven. Religious legitimacy can strengthen health communication and trust, yet it does not guarantee equitable treatment. COVID-19 showed that Muhammadiyah could mobilize facilities, staff, data systems, philanthropy, and religious guidance at national scale, while simultaneously exposing fragmented information and variable preparedness.

The strategic question after 2022 is therefore not whether Muhammadiyah should continue building hospitals. It is whether its hospitals can become components of an integrated population-health system. That requires common data, network-wide quality standards, transparent equity measures, stronger primary and preventive care, coordinated referral, research infrastructure, and explicit protection of the poor within competitive hospital finance.

Muhammadiyah's historical strength has been its ability to make religious ethics

organizationally durable. Its future public-health relevance will depend on applying the same institutional imagination to integration and accountability. Al-Ma'un should function not merely as an origin story or hospital slogan, but as a test of whose health improves, whose suffering is prevented, and whether professional institutions remain answerable to the public purposes for which they were created.

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