

Original Article

HEALTH POST-BASED GK-MI MODEL OF HUMANITARIAN HEALTH RESPONSE IN COX'S BAZAR REFUGEE CAMPS AND KUTUBDIA, BANGLADESH: AN OPERATIONAL OVERVIEW (2022-2026)

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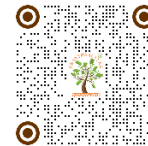
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ABSTRACT

The August 2017 influx of over 900,000 Forcibly Displaced Myanmar Nationals (FDMNs) into Cox's Bazar, Bangladesh, precipitated a major humanitarian crisis. This paper presents an operational overview of the localized healthcare model implemented by Gonoshasthaya Kendra (GK) in partnership with Malteser International (MI) from 2022 to 2026 within the Cox's Bazar refugee camps. It examines this approach within global refugee health paradigms, contrasting it with traditional top-down international frameworks. Utilizing primary operational data, epidemiological datasets from the published reports of Cox's Bazar Health Sector, and peer-reviewed literature, the study evaluates financial resource mobilization, health workforce allocation, pharmaceutical supply chain integrity, maternal and neonatal health, Expanded Program on Immunization (EPI) coverage, and community-based health promotion. The findings demonstrate that GK established a robust network of static health posts and community teams, mobilizing approximately USD 10.47 million and a multidisciplinary workforce of 167 personnel.

Key achievements include 15,597 antenatal care (ANC) and 3,298 postnatal care (PNC) consultations, 21,227 EPI vaccine doses administered, and 286,816 health education sessions. These interventions, implemented in coordination with other humanitarian and health sector partners, contributed to a reduction in the maternal mortality ratio from 168 to 135 per 100,000 live births between 2022 and 2025 across the selected project areas. The GK-MI framework offers a powerful proof-of-concept for humanitarian localization, showcasing how national NGOs can build resilient, cost-effective primary healthcare systems through local trust, community networks, and institutional knowledge, supported by international funding. This model highlights the necessity of prioritizing direct, rational un-earmarked funding, structural capacity building, and leadership roles for national entities to ensure sustainable healthcare in protracted displacement crises.

Keywords: Gonoshasthaya Kendra, Rohingya Refugees, Cox's Bazar, Humanitarian Health Response, Localized Healthcare, Maternal and Child Health, Vaccine Coverage, Primary Healthcare, Healthcare Supply Chains, Protracted Displacement

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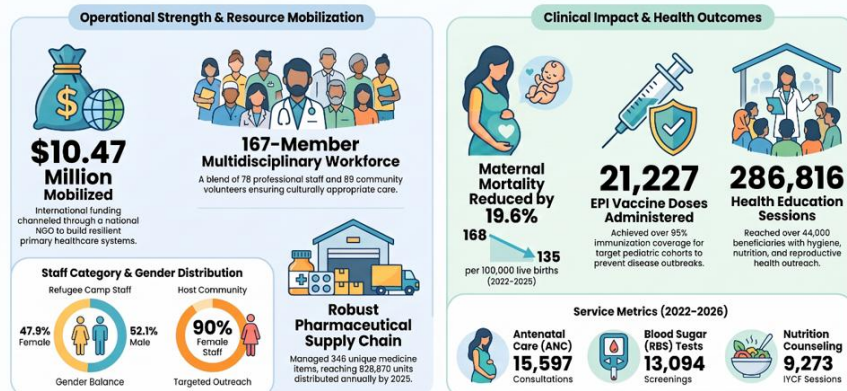
Transparency: The authors affirm that this manuscript presents an honest, accurate, and transparent account of the study. All essential aspects have been included, and any deviations from the original study plan have been clearly explained. The writing process strictly adhered to established ethical standards.

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With the license CC-BY, authors retain the copyright, allowing anyone to download, reuse, re-print, modify, distribute, and/or copy their contribution. The work must be properly attributed to its author.

The Power of Localization: Impact of the GK–MI Health Model (2022–2026)

This infographic outlines the operational achievements of the partnership between Gonoshasthya Kendra (GK) and Malteser International (MI), showcasing a localized model that combines national leadership with international support to deliver effective primary healthcare to nearly one million displaced individuals in Cox's Bazar, Bangladesh.



INTRODUCTION

The sudden and massive displacement of Forcibly Displaced Myanmar Nationals (FDMNs), historically and contextually recognized as Rohingya refugees, across the borders of Rakhine State into the Cox's Bazar district of Bangladesh in late August 2017 represents a watershed moment in contemporary humanitarian emergency response World Health Organization. (2024). Refugee and Migrant Health System Review: Challenges and Opportunities for Long-Term Health System Strengthening in Uganda. . Within a matter of weeks, more than 700,000 individuals fled systematic violence and persecution, joining an estimated 200,000 Rohingya refugees who had sought refuge in Bangladesh during prior waves of displacement Humanitarian Practice Network. (2018, October). Rohingya Refugees in Bangladesh: The Humanitarian Response (Humanitarian Exchange No. 73). Overseas Development Institute. . This sudden concentration of nearly one million vulnerable individuals within the sub-districts of Ukhiya and Teknaf created the largest and most densely populated refugee settlement complex in the world. The geopolitical and ecological realities of Cox's Bazar—characterized by hilly terrain, high vulnerability to monsoonal cycles, cyclones, and inadequate initial water, sanitation, and hygiene (WASH) infrastructure—exacerbated an acute public health crisis International Organization for Migration. (2017, October 19). Bangladesh (Rohingya influx): Health Situation Report. , Inter Sector Coordination Group. (2017, November 13). Situation Report: Rohingya Refugee Crisis, Cox's Bazar.

The health profile of the arriving population was defined by severe physical trauma, psychological stress, acute malnutrition, and a near-complete lack of prior preventative healthcare, resulting from decades of systematic exclusion from state services in Myanmar. Outbreak vulnerabilities were extraordinarily high; the camps quickly faced major epidemics of vaccine-preventable diseases, including diphtheria, measles, and circulating vaccine-derived polioviruses, alongside endemic threats of acute watery diarrhoea and cholera Polonsky, J. A., Ivey, M., Mazhar, M. K. A., Rahman, Z., Le Polain de Waroux, O., Karo, B., et al. (2021). Epidemiological, Clinical, and Public Health Response Characteristics of a Large Outbreak of Diphtheria Among the Rohingya Population in Cox's Bazar, Bangladesh, 2017 to 2019: A Retrospective Study. PLoS Medicine, 18(4), e1003587. , Médecins Sans Frontières. (2017, December 23). Bangladesh Crisis Update., World Health Organization. (2017, December 13). Diphtheria Outbreak – Bangladesh. Disease Outbreak News. , Gavi, the Vaccine Alliance. (n.d.). Rohingya Refugee Camps: Diphtheria Outbreak Sends Warning to All Countries. , ReliefWeb. (n.d.). Bangladesh: Diphtheria Outbreak (2017–2019). . Confronting this emergency, the Government of Bangladesh, operating via the Ministry of Health and Family Welfare (MoHFW) and the Refugee Relief and Repatriation Commissioner (RRRC), mobilized an institutional response Jeffries, R., Abdi, H., Ali, M., Bhuiyan, A. T. M. R. H., El Shazly, M., Harlass, S., et al. (2021). The Health Response to the Rohingya Refugee Crisis Post August 2017: Reflections from Two years of Health Sector Coordination in Cox's Bazar, Bangladesh. PLoS ONE, 16(6), e0253013..

Despite the large scale of the international response, the operational reality on the ground highlighted a persistent structural challenge in global humanitarian action: the deep divide between international non-governmental organizations (INGOs) and local, national responders. While large international agencies possess significant capital and logistics networks, they often face challenges related to high overhead costs, rapid staff turnover, language barriers, and a lack of baseline familiarity with national public health systems Inter-Agency Standing Committee. (2022, November). Research Report: Overhead Cost Allocation in the Humanitarian Sector.. These limitations underscore the importance of the "localization agenda," formalized globally during the 2016 World Humanitarian Summit and enshrined in the Grand Bargain Agenda for Humanity. (2016). World Humanitarian Summit 2016.. This agenda calls for a fundamental shift in humanitarian governance by transferring funding, decision-making, and operational leadership to local and national organizations, which possess the context-specific knowledge, community access, and long-term commitment needed to sustain services beyond the lifecycle of short-term international grants Humanitarian Practice Network. (2021, May 25). Localisation and Local Humanitarian Action (Issue 79)., McGrath, M., Kurt, G., Davis, E., Lekkeh, S. A., Beetar, A., Mozumder, M. K., et al. (2025). The Localisation of Humanitarian Response to Conflict and Displacement: A Scoping Review from a

Health Systems Perspective. *BMJ Global Health*, 10(9). , Frennesson, L., Kembro, J., de Vries, H., Jahre, M., and Van Wassenhove, L. (2022). International Humanitarian Organizations' Perspectives on Localization Efforts. *International Journal of Disaster Risk Reduction*, 83, 103410. .

In this localized operational space, Gonoshasthaya Kendra World Solidarity Movement. (n.d.). Thematic Report from Asia: Gonoshasthaya Kendra—From the Right to Health to Integral Community Development in Bangladesh. (GK; translated as "The People's Health Center") emerged as a pivotal national actor within the Cox's Bazar humanitarian response. Founded in 1972 by a group of patriotic physicians following the Bangladesh Liberation War, GK pioneered the community health worker (CHW) model, proving that essential primary care, family planning, and preventative health services could be safely delivered by trained local individuals Gonoshasthaya Kendra. (n.d.). Disaster management. Retrieved March 15, 2026, from. Having established a field presence in Cox's Bazar as early as 1991 during previous refugee influxes and cyclones, GK possessed the institutional memory and operational infrastructure needed to pivot its resource base immediately when the August 2017 crisis erupted. Within days of the initial influx, GK deployed frontline medical teams to the border entry points and established makeshift clinical facilities to address immediate trauma and triage needs Gonoshasthaya Kendra. (n.d.). Disaster management. Retrieved March 15, 2026, from.

As the crisis transitioned from an acute emergency into a protracted displacement situation between 2017 and 2026, GK structured its operations through strategic bilateral partnerships. A core component of this structural stabilization was its collaboration with Malteser International (MI), a prominent international humanitarian organization. This partnership combined international financial accountability and technical oversight with GK's contextual capital, operational agility, and community trust. Operating under this collaborative framework, GK started providing care in a network of health facilities, including three static health posts located in Camps 1E, 11, and 22, alongside comprehensive health programs in the host community of Kutubdia. This network delivered an integrated package of primary healthcare (PHC), maternal, newborn, and child health (MNCH) services, Expanded Programme on Immunization (EPI) support, routine laboratory diagnostics, pharmaceutical supply management, and community-based health and hygiene promotion.

This study provides a comprehensive case analysis of the GK-MI humanitarian health response in Cox's Bazar from 2022 to 2026, positioning its empirical outcomes within the global landscape of refugee healthcare models. This paper seeks to provide an empirical evaluation of a localized public health response during protracted displacement, offering a roadmap for integrating national NGOs into the global humanitarian architecture.

METHODOLOGY

To evaluate the operational efficacy, structural characteristics, and health outcomes of the GK-MI humanitarian health response in Cox's Bazar, we applied an umbrella review methodology integrated with a comparative case-study analysis. This approach allowed for the systematic synthesis of primary institutional data, operational monitoring metrics, and secondary epidemiological reports, alongside peer-reviewed literature examining international refugee healthcare delivery systems.

DATA ACQUISITION AND INFORMATION SOURCES

The primary datasets evaluated in this study were obtained directly from the institutional archive of the GK-MI project management team. These sources included:

- 1) Annual and mid-term project progression briefs, monitoring logs, and project evaluation documents covering the active implementation phases from 2022 through May 2026.
- 2) Granular internal data tracking medical item supplies, pharmacy consumption logs, and human resource registers detailing staffing configurations across camp and host-community operations.
- 3) Clinical performance records documenting antenatal care (ANC) visits, postnatal care (PNC) checkups, institutional and external referral logs, and facility-level laboratory diagnostic registries.

To validate, contextualize, and benchmark these primary organizational data points, we conducted a systematic secondary literature search across global public health and humanitarian databases, including PubMed, Google Scholar, ScienceDirect, and the Cochrane Database of Systematic Reviews. The search strategies utilized combinations of Boolean operators and specialized MeSH terms, including: ("Cox's Bazar" OR "Rohingya" OR "Refugee" OR "Forcibly Displaced Myanmar Nationals") AND ("Gonoshasthaya Kendra" OR "Humanitarian Health Response" OR "Localization" OR "Primary Healthcare") AND ("Maternal Health" OR "Immunization Coverage" OR "Supply Chain Management").

Additionally, grey literature was sourced from official repositories of GK-MI. These documents provided camp-level epidemiological updates and ensured that the localized outcomes reported by GK were calibrated against broader camp-wide trends.

INCLUSION AND EXCLUSION CRITERIA

Documents, datasets, and peer-reviewed articles were rigorously selected for inclusion based on the following criteria:

Temporal Scope: Material published or compiled between August 2017 and July 2026, aligning with the chronological boundaries of the Rohingya refugee crisis evaluated herein.

Geographic Focus: Interventions localized within the refugee settlements of Cox’s Bazar (specifically Camps 1E, 11, and 22) and identified vulnerable host communities (such as Kutubdia).

Thematic Relevance: Literature and data directly addressing primary healthcare execution, health workforce allocation, gender-responsive staffing models, vaccine administration, pharmaceutical logistics, mental health and psychosocial support (MHPSS), and comparative analyses of international refugee camp governance.

Studies focusing strictly on geopolitical security dynamics, macroeconomic evaluations of foreign aid, or clinical trials unrelated to humanitarian healthcare delivery models were excluded from the analysis.

DATA SYNTHESIS AND ANALYTICAL FRAMEWORK

Data synthesis was conducted using a thematic matrix approach, categorizing information into distinct analytical dimensions: human resources for health (HRH), supply chain management, maternal/neonatal health outcomes, immunization metrics, and diagnostic laboratory performance. Quantitative data points—such as medicine consumption units, patient consultation volumes, and test counts—were aggregated, cross-verified across project logs, and compiled into structured matrices to track annual progression trends.

For the comparative discussion component, the study utilized the policy analysis framework adapted from the WHO health systems building blocks (governance, financing, workforce, medicines/technologies, information systems, and service delivery). This framework allowed for a systematic comparison of GK’s localized approach against the structural models observed in dominant refugee-hosting countries globally, including Uganda, Jordan, Turkey, Kenya, Lebanon, Thailand, Germany, and Greece. The final outputs were structured to provide an exhaustive, multi-dimensional narrative that transitions logically from operational micro-data to global macro-policy insights.

RESULTS

Gonoshasthaya Kendra Malteser International Health Response Strengths at Refugee Camps & Host Communities in Kutubdia, Cox’s Bazar:

HUMAN RESOURCES FOR HEALTH AND GENDER-RESPONSIVE SERVICE DELIVERY

The operational foundation of the GK-MI humanitarian health response was the strategic deployment of a multidisciplinary health workforce tailored to the cultural, language, and structural realities of the refugee population. Across its operational nodes in Cox’s Bazar, the project maintained a human resource base comprising 167 professional personnel and community operatives. This workforce was split between 78 salaried institutional staff members and 89 community health volunteers (CHVs) mobilized directly from the refugee and host populations. The professional staff layer included 6 medical doctors, 7 certified midwives, 6 clinical medical assistants, 3 specialized Infant and Young Child Feeding (IYCF) counsellors, and 66 community health workers (CHWs). This staffing mix was designed to balance clinical primary care with active, community-based preventative outreach.

Recognizing that displacement alters community dynamics and introduces unique gender-based barriers to healthcare access, GK implemented a dual-pronged, gender-responsive human resource strategy. This approach was calibrated to account for the distinct sociocultural realities of the camp environments versus the rural host communities. Within the Rohingya camps, maintaining a balanced gender ratio (47.9% female to 52.1% male) was crucial for overcoming structural barriers to care. In conservative social settings, female healthcare providers are often essential for ensuring access to sensitive services, particularly for women and adolescent girls. In the host community of Kutubdia, the gender ratio among GK’s health workforce was even more pronounced, with 90% female staff. This strategic allocation directly addressed the specific needs of the host community, where cultural norms and limited mobility for women necessitate female-led health outreach.

PHARMACEUTICAL SUPPLY CHAIN MANAGEMENT

The GK-MI project developed a robust and adaptive pharmaceutical supply chain, ensuring the consistent availability of essential medicines and consumables across its health posts and community outreach programs. Between 2022 and 2026, GK clinical teams successfully managed a comprehensive inventory of 346 unique items of medicines and consumables. The project experienced a significant demand expansion, with consumption increasing from 665,724 units in 2022 to 828,870 units in 2025. This growth was managed through a decentralised procurement and distribution system, which included local sourcing where feasible and strategic partnerships for international supplies. The system prioritised cold chain maintenance for vaccines and temperature-sensitive medications, crucial in the tropical climate of Cox’s Bazar. Throughout the 2024-2026 total distributed medicine and associated

consumables price was 224,654.03 Euro, which was in kind donation for the refugee population and nearby host population by Malteser International.

MATERNAL AND NEONATAL HEALTH OUTCOMES

GK's integrated maternal and neonatal health (MNH) program demonstrated significant impact through a combination of facility-based care and community outreach. Key maternal care indicators between 2022 and 2026 included 15,597 antenatal care (ANC) and 3,298 postnatal care (PNC) consultations. The program also facilitated the safe referral of 352 high-risk pregnancies to higher-level facilities, ensuring timely access to specialised obstetric care. These interventions directly contributed to camp-wide health improvements, including a reduction in maternal mortality from 168 to 135 per 100,000 live births between 2022 and 2025. This reduction highlights the effectiveness of comprehensive MNH services in resource-constrained humanitarian settings.

EXPANDED PROGRAMME ON IMMUNIZATION (EPI) COVERAGE

The GK-MI project achieved high immunization coverage rates, critical for preventing outbreaks of vaccine-preventable diseases in densely populated refugee settings. Over the reporting period, GK administered 21,227 EPI vaccine doses to 12,106 beneficiaries. This included:

Maternal Immunization Cohort: 4,015 pregnant women received recommended vaccinations (such as Tetanus Toxoid), protecting both mothers and neonates from neonatal tetanus.

Paediatric Immunization Cohort: 8,091 infants and children were successfully immunized in strict accordance with the national EPI schedule, covering crucial vaccines against tuberculosis (BCG), diphtheria, pertussis, tetanus, hepatitis B, Hemophilus influenzae type b (pentavalent vaccine), poliomyelitis, pneumococcal infections, and measles-rubella. Granular tracking across locations showed that Camp 22 recorded the highest overall immunization coverage, followed closely by Camp 11 and Camp 1E. This high level of coverage was achieved by integrating vaccination services with routine maternal and child health consultations, minimizing missed opportunities for preventative care when families visited the clinics. This sustained immunization effort helped maintain camp-wide vaccination coverage above 95% for target paediatric cohorts by 2025, contributing to effective herd immunity and preventing large-scale outbreaks of vaccine-preventable diseases. In case of paediatric immunization, we achieved gender equality.

LABORATORY AND DIAGNOSTIC SERVICES

A common limitation of primary healthcare in humanitarian settings is an over-reliance on empirical diagnosis, which can lead to inappropriate medication use, antimicrobial resistance, and delayed treatment for complex conditions. GK-MI addressed this gap by upgrading and expanding the diagnostic capacities of its on-site laboratories within the camp health posts. This expansion provided clinical staff with reliable diagnostic support, enabling evidence-based clinical decisions, early disease detection, and more accurate patient triaging.

During the reporting period, GK laboratory technicians performed a high volume of diagnostic tests, addressing both the infectious disease burden and the growing prevalence of chronic conditions. This diagnostic data highlights several important aspects of the health response:

Chronic Disease Management Support: The high volume of Random Blood Sugar (RBS) tests (13,094) demonstrates the substantial need for active screening, monitoring, and management of Diabetes Mellitus within the displaced population.

Maternal Health Support: The laboratories performed 6,691 haemoglobin tests to screen for and manage gestational anaemia, 5,364 pregnancy tests for early confirmation, 4,094 VDRL screenings for maternal syphilis, 3,063 routine urinalyses to monitor for pre-eclampsia or infections, and 2,582 blood grouping procedures to ensure referral readiness for obstetric emergencies.

Epidemiological Surveillance: The 1,329 dengue diagnostic assays allowed clinical teams to quickly confirm dengue virus infections, supporting real-time epidemiological tracking and rapid outbreak responses during seasonal spikes. Provision of hepatitis B and hepatitis C screening was available at our health posts. During the period from January 2025 to June 2026, a total of 4,589 individuals were investigated for hepatitis B and 4,587 for hepatitis C.

This step further strengthened the camps' integrated infectious disease surveillance network.

DISEASE TRENDS AND SEASONAL ADAPTATION

The GK–MI project optimized its resource allocation by analysing seasonal epidemiological patterns and adapting its supply chain and staffing schedules accordingly. By tracking medicine consumption and diagnostic trends over several years, project managers were able to anticipate seasonal health variations and adjust procurement to prevent stock-outs.

The operational calendar was shaped by three primary seasonal cycles:

Pre-Monsoon and Monsoon Stabilization Window (May–September): This period was characterized by sharp increases in waterborne pathogens and vector-borne diseases. GK anticipated these trends by increasing its inventory of Oral Rehydration Salts (ORS), IV fluids, water purification options, and Dengue NS1 diagnostic kits, allowing clinics to manage surges in acute watery diarrhoea and dengue cases.

Winter Respiratory Adaptation Window (November–February): As cooler temperatures led to a surge in acute respiratory infections (ARI)—particularly among pediatric and elderly cohorts—GK shifted procurement toward respiratory medications, bronchodilators, antibiotics, and personal protective equipment, including face masks.

Ramadan Operational Shift: During the holy month of Ramadan, outpatient clinic attendance typically decreased during daytime hours due to religious fasting practices. GK adjusted by altering clinical staff scheduling and expanding community-based evening outreach, ensuring continuity of care without disrupting community norms. This flexible approach allowed GK to maintain a reliable supply chain, minimize stock-outs, and remain prepared for unexpected disease outbreaks.

COMMUNITY OUTREACH AND HEALTH EDUCATION

To complement its clinic-based primary care services, GK–MI implemented an extensive community-based health promotion and hygiene education program. This outreach strategy relied on CHWs and community volunteers who acted as trusted intermediaries, delivering culturally appropriate health information directly to refugee households.

During the implementation period, outreach teams conducted 286,816 health and hygiene education sessions, reaching a total of 44,229 individual beneficiaries. The demographic distribution of these sessions included 26,988 women and girls alongside 17,241 men and boys. In parallel, teams delivered 22,759 focused sexual and reproductive health (SRH) education sessions, addressing family planning, birth preparedness, and the prevention of sexually transmitted infections.

The high participation of women and adolescent girls (26,988) reflects the program's focus on maternal health and reproductive rights. Concurrently, the active engagement of 17,241 men and boys helped foster supportive family health practices and reduced social stigma surrounding reproductive healthcare within the camps.

INTEGRATED NUTRITION AND INFANT FEEDING SERVICES

Rather than operating as an isolated program, nutrition interventions were integrated directly into GK’s maternal and child health services. This structural integration allowed healthcare providers to assess nutritional status during routine clinical visits and provide immediate counselling or supplementation.

Throughout the implementation period, the project delivered 9,273 dedicated Infant and Young Child Feeding (IYCF) counselling sessions. These sessions provided 2,523 mothers with individualized, culturally appropriate guidance on exclusive breastfeeding practices, appropriate complementary feeding schedules, and monitoring for childhood growth delays. To prevent gestational anaemia and micronutrient deficiencies, clinics routinely distributed iron-folic acid, zinc, and calcium supplements during prenatal and postnatal checkups. By focusing on nutrition during the critical first 1,000 days of life, this integrated approach helped improve childhood feeding practices and supported better long-term maternal and child health outcomes across the settlements.

DISCUSSION

COMPARATIVE ANALYSIS OF REFUGEE HEALTH RESPONSE MODELS

To understand the broader implications of Gonoshasthaya Kendra's localized humanitarian health model, its operational structure must be evaluated against refugee healthcare frameworks globally. Refugee-hosting nations navigate complex trade-offs between building parallel, camp-specific health systems or integrating displaced populations directly into national public health structures.

SERVICE DELIVERY MODELS: CAMP-BASED, URBAN, AND INTEGRATED APPROACHES

GK's operational structure in Cox's Bazar relies on an organized, camp-based primary healthcare framework. Static health posts are embedded directly within the high-density refugee camps, allowing for targeted care, maternal-child health monitoring, and rapid outbreak tracking. This model contrasts with the integrated approach implemented in Uganda World Health Organization. (2026, January 6). Public Health Situation Analysis: Sudan Conflict and Complex Emergency. . Under Uganda's Health Sector

Integrated Refugee Response Plan, refugees are legally permitted to access the national public health system alongside citizens Turinawe, E. B., Rwemisisi, J. T., Musinguzi, L. K., de Groot, M., Muhangi, D., de Vries, D. H., et al. (2015). Selection and Performance of Village Health Teams (VHTs) in Uganda: Lessons from the Natural Helper Model of Health Promotion. *Human Resources for Health*, 13, 73.. While Uganda's integrated model supports long-term sustainability, it often places immense pressure on local public health infrastructure, frequently leading to stock-outs of medicines and staffing shortages in rural, refugee-hosting districts Komakech, H., Elnakib, S., Karroum, L. B., Samy, E., Mubiri, P., Saleh, K., et al. (2024). Examining the Integration of Refugees Into the National Health System in Uganda: An Analysis Using the Policy Triangle Framework. *Conflict and Health*, 18(Suppl. 1), 78. .

In contrast, countries like Kenya and Ethiopia have historically maintained parallel, camp-based health systems for large settlements like Kakuma and Dadaab World Health Organization. (2024). Refugee and Migrant Health System Review: Challenges and Opportunities for Long-Term Health System Strengthening in Uganda. . In these settings, healthcare delivery is managed almost exclusively by UNHCR and international partners, operating independently from national public health frameworks United Nations High Commissioner for Refugees. (n.d.). Health. UNHCR Help Kenya.. While these parallel systems are often well-funded during the acute phase of a crisis, they risk creating dependency and face severe challenges when international funding declines United Nations High Commissioner for Refugees. (2024, February 22). Jordan: Health Thematic Factsheet. .

In the Middle East, Jordan United Nations High Commissioner for Refugees. (2024, February 22). Jordan: Health Thematic Factsheet. , World Health Organization. (2024). Refugee and Migrant Health System Review: Challenges and Opportunities for Long-Term Health System Strengthening in Uganda. and Turkey World Health Organization. (2021). Turkey. In Results Report 2020: Programme Budget 2020–2021. ,Hakimi, S., Turfan, E. C., Allahqoli, L., Ahmadi, M., Sogukpinar, N., Akyüz, M. D., et al. (2025). Maternal and Newborn Health Inequality Among Syrian Refugees in Turkey: A Systematic Review and Meta-Analysis. *International Journal for Equity in Health*, 24(1), 160. present alternative models. Jordan initially allowed Syrian refugees subsidized access to its public healthcare system, but later had to restrict this access due to rising costs, shifting back toward a reliance on camp-based clinics and international aid. Turkey implemented a comprehensive hybrid model by establishing national Migrant Health Centers staffed by Syrian Humanitarian Practice Network. (2018, October). Rohingya Refugees in Bangladesh: The Humanitarian Response (Humanitarian Exchange No. 73). Overseas Development Institute. healthcare professionals, integrating refugee care directly into the state's public health infrastructure while addressing language barriers.

In Europe, nations like Greece Farmakioti, E., Pylli, M., and Giannakou, K. (2023). Access to Healthcare Services and Essential Medicines in Greek Migrant Camps: An Online Cross-Sectional Study. *Journal of Immigrant and Minority Health*, 25(3), 580–588. and Germany Frank, L., Yesil-Jürgens, R., Razum, O., Bozorgmehr, K., Schenk, L., Gilsdorf, A., et al. (2017). Health and Healthcare Provision to Asylum Seekers and Refugees in Germany. *Journal of Health Monitoring*, 2(1), 22–42. , InfoMigrants. (n.d.). Explainer: Healthcare for Asylum Seekers and Refugees in Germany. shifted toward urban integration models. In these contexts, refugees access national insurance or state health programs, though they frequently face complex administrative hurdles, language barriers, and long wait times for specialized care. The global evidence suggests that while integrated models offer greater long-term sustainability, localized camp-based models like GK's provide essential flexibility and speed in high-density, restricted-movement environments.

LOCAL VERSUS INTERNATIONAL LEADERSHIP: THE LOCALIZATION AGENDA

The GK-MI framework provides an empirical study of the humanitarian localization agenda. By placing a national NGO at the center of field operations, GK-MI was able to leverage institutional knowledge, local trust, and structural continuity that international organizations often struggle to maintain. In many global refugee responses, such as in South Sudan, eastern Democratic Republic of Congo World Health Organization. (2025, March 4). Public Health Situation Analysis: Democratic Republic of the Congo. , World Health Organization Regional Office for Africa. (2026). Uganda Strengthens Its Health System to Better Serve 1.9 Million Refugees., or Lebanon, emergency health responses remain dominated by international agencies. That top-down structures may promote an incomplete understanding of local sociocultural dynamics.

Nations like Uganda and Turkey World Solidarity Movement. (n.d.). Thematic Report from Asia: Gonoshasthaya Kendra—From the Right to Health to Integral Community Development in Bangladesh. , Hakimi, S., Turfan, E. C., Allahqoli, L., Ahmadi, M., Sogukpinar, N., Akyüz, M. D., et al. (2025). Maternal and Newborn Health Inequality Among Syrian Refugees in Turkey: A Systematic Review and Meta-Analysis. *International Journal for Equity in Health*, 24(1), 160. have demonstrated the value of local ownership by ensuring that national systems and local personnel lead response efforts. However, in many other protracted crises, local and national NGOs are often relegated to sub-contractors for international agencies, receiving short-term, tightly earmarked funding with minimal investment in their long-term institutional capacity. The GK model demonstrates that when a national organization is trusted with financial resources and operational leadership, it can manage complex, multi-sectoral health programs effectively, offering a more sustainable and culturally aligned alternative to international-led responses.

COMMUNITY HEALTH WORKER PROGRAMS AND OUTREACH EFFICIENCY

A core operational strength of the GK model was its extensive use of community health workers and local volunteers to bridge the gap between static clinics and refugee households. This approach is central to GK's institutional philosophy and has parallels in other successful refugee responses. In Uganda, the deployment of Village Health Teams (VHTs)—which frequently include refugees themselves—has been vital for improving health literacy, tracking defaulting patients, and boosting routine immunization coverage Turinawe, E. B., Rwemisisi, J. T., Musinguzi, L. K., de Groot, M., Muhangi, D., de Vries, D. H., et al. (2015). Selection and Performance of Village Health Teams (VHTs) in Uganda: Lessons from the Natural Helper Model of Health Promotion. *Human Resources for Health*, 13, 73.. Similarly, Turkey's use of Syrian patient navigators and community health workers helped bridge cultural and systemic divides within its national healthcare system.

Conversely, in settings where CHW networks are under-resourced or face regulatory barriers, health outcomes often suffer. For example, in certain parallel camp models in Kenya and Ethiopia, CHWs face restrictions regarding professional credentialing and lack formal pathways for compensation, which can undermine program continuity. In several Middle Eastern contexts, community-based outreach remains secondary to facility-based, tertiary care models, leaving public health campaigns vulnerable to gaps in community trust and access. The GK experience confirms that active, adequately compensated community health networks are essential for sustaining primary care delivery in protracted displacement settings.

MATERNAL, CHILD, AND REPRODUCTIVE HEALTH OUTCOMES

The measurable public health outcomes achieved by GK—including its contribution to lowering camp-wide maternal mortality and maintaining high immunization rates—highlight the effectiveness of its integrated care approach. In comparison, evaluating maternal health policies in other refugee contexts reveals mixed results. In Kenya International Rescue Committee, Centre for Global Development, Open Capital, Kampala Capital City Authority, and Nairobi City County Government. (2022). *An Analysis and Evaluation of Refugee-Related Policies and Legislation: Kenya and Uganda*. , the implementation of a free maternal healthcare policy in public facilities increased utilization rates by nearly 30% Gitobu, C. M., Gichangi, P. B., and Mwanda, W. O. (2018). The Effect of Kenya's Free Maternal Health Care Policy on the Utilization of Health Facility Delivery Services and Maternal and Neonatal Mortality in Public Health Facilities. *BMC Pregnancy and Childbirth*, 18(1), 77. . However, corresponding reductions in maternal and neonatal mortality were initially limited due to structural challenges, including shortages of essential supplies and delayed obstetric referrals.

Uganda's integrated model succeeded in increasing facility-based deliveries, but rural clinics faced persistent shortages of midwives and essential medicines, which impacted the overall quality of obstetric care. In Jordan's Zaatari refugee camp United Nations Population Fund. (2016, May 20). *Safe Birth Even Here: Jordan's Zaatari Refugee Camp*, maternal health indicators remained strong due to well-resourced reproductive health clinics. However, Syrian Kayali, N. (2020, November 24). *Syrian Refugees Navigate Turkey's Shifting Health Care Terrain*. Middle East Report, (297). refugees living outside the camps faced higher barriers to maternal care due to shifting subsidization policies and out-of-pocket costs. The GK model demonstrates that combining community-based pregnancy tracking with clinical prenatal care and an explicit, high-risk referral network can achieve consistent health outcomes even within resource-constrained camp environment.

FUNDING MECHANISMS, SUSTAINABILITY, AND DONOR DEPENDENCE

Between 2022 and 2026, GK mobilized approximately USD \$ 10.47 million channelled through its partnership with Malteser International.

GK achieved significant operational scale with a lower cost-per-beneficiary ratio than many international agencies, primarily due to lower institutional overhead and the strategic use of national professionals. However, like most refugee health responses globally, the model remains heavily dependent on international humanitarian funding cycles.

This vulnerability is evident in protracted crises worldwide. As newer global emergencies emerge, older displacement situations—such as the Syrian refugee responses in Jordan and Lebanon or the Afghan refugee populations in Pakistan—frequently face severe donor fatigue Concern Worldwide. (n.d.). *What is Crisis Fatigue, and Why is it a Threat to Humanitarian Aid?* and funding reductions. In Lebanon United Nations Development Programme. (2022). *Lebanon Crisis Response Plan 2022–2023*. Retrieved March 12, 2026, from, declining international assistance combined with a national economic crisis has severely impacted refugee access to primary and secondary healthcare, leading to rising out-of-pocket expenses. Uganda has sought to mitigate these risks by integrating refugee health financing into its national development plans, securing long-term development grants rather than relying solely on short-term humanitarian appeals. The GK-MI model, while demonstrating strong operational efficiency, underscores the broader challenge of ensuring sustainable, predictable funding for localized humanitarian actors in protracted crises.

CONCLUSION

The GK-MI operational framework offers a powerful proof-of-concept for the localization agenda in humanitarian action. By combining local trust, community-rooted volunteer networks, and deep institutional knowledge with international financial support, national NGOs can build resilient, adaptive, and highly cost-effective primary healthcare systems in volatile settings. Transforming global humanitarian policies to prioritize trust, structural capacity building, and leadership roles for national entities is essential to sustain healthcare delivery across protracted displacement crises.

ACRONYMS

ANC	: Antenatal Care
ARI	: Acute Respiratory Infection
BCG	: Bacillus Calmette–Guérin (Tuberculosis Vaccine)
CHW	: Community Health Worker
CHV	: Community Health Volunteer
EPI	: Expanded Programme on Immunization
FDMN	: Forcibly Displaced Myanmar National
GK	: Gonoshasthaya Kendra
HRH	: Human Resources for Health
INGO	: International Non-Governmental Organization
ISCG	: Inter-Sector Coordination Group
IYCF	: Infant and Young Child Feeding
JRP	: Joint Response Plan
MCH	: Maternal and Child Health
MNCH	: Maternal, Newborn, and Child Health
MHPSS	: Mental Health and Psychosocial Support
MI	: Malteser International
MoHFW	: Ministry of Health and Family Welfare
NCD	: Non-Communicable Disease
NGO	: Non-Governmental Organization
ORS	: Oral Rehydration Salts
PHC	: Primary Healthcare
PNC	: Postnatal Care
RBS	: Random Blood Sugar
RRRC	: Refugee Relief and Repatriation Commissioner
SRH	: Sexual and Reproductive Health
UNHCR	: United Nations High Commissioner for Refugees
VDRL	: Venereal Disease Research Laboratory (Syphilis Screening Test)
WASH	: Water, Sanitation, and Hygiene
WHO	: World Health Organization

ETHICAL PERSPECTIVES

The execution of humanitarian health interventions within high-density refugee settlements involves complex ethical considerations regarding equity, autonomy, and protection. This study was conducted using aggregated, de-identified administrative and operational monitoring data from the GK-MI project, ensuring complete anonymity and preventing the exposure of any personally identifiable or sensitive information. The clinical and community health programs evaluated were carried out in accordance with national guidelines established by the Ministry of Health and Family Welfare of Bangladesh, alongside international humanitarian standards outlined by the WHO Health Sector and the Sphere Charter.

To respect cultural norms and individual autonomy, all community-based interventions, clinical consultations, vaccinations, and diagnostic procedures were conducted based on informed verbal consent, adapted to accommodate varying literacy levels within the camps. The implementation of a gender-balanced human resource model directly addressed localized cultural barriers, ensuring that female refugees could access reproductive, maternal, and neonatal healthcare from female providers in a manner that respected privacy and community norms. Additionally, healthcare services were delivered equitably across all target camp zones, ensuring free access based strictly on clinical need, without discrimination based on ethnicity, age, gender, or legal status.

FUNDING

This study is based on health service delivery implemented from 2022 to 2026 through three health posts serving the Rohingya refugee camps and four community clinics in Kutubdia, Bangladesh. All healthcare interventions were exclusively funded by Malteser International, Germany.

GENERATIVE AI STATEMENT

During the preparation and restructuring of this manuscript, generative artificial intelligence technologies (GPT 5.6) were utilized exclusively to assist with grammatical refinement, technical editing, and standardizing the text to align with formal academic prose conventions and specific publishing citation styles. All core analytical frameworks, data aggregations, comparative interpretations, and policy recommendations were developed entirely by the human authors, drawing directly from primary institutional archives and validated secondary literature. The authors review all generated output to ensure empirical accuracy, technical integrity, and compliance with academic plagiarism standards, and accept full responsibility for the final content of the manuscript.

CONFLICT OF INTERESTS STATEMENT

The authors declare that they have no competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. The operational and data-tracking metrics synthesized herein were extracted from routine institutional progress monitoring frameworks designed to ensure transparency, donor accountability, and public health evaluation quality.

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