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The corresponding author attests that all listed authors meet authorship criteria and that no others meeting the criteria have been omitted. All authors approved the final version of the article.

Informed consent statement: Not required.

Funding: The study was not sponsored (own resources).

Competing interests: The authors declare no conflict of interest.

Ethical approval: Not required.

Data sharing: All data used in this paper are publicly available.

Use of artificial intelligence: No artificial intelligence tools were used in the preparation of this manuscript.

Manuscript source: Unsolicited manuscript.

Country/territory of origin: India

Strengthening the public health systems in the BRICS countries through networking of national public health institutes: an operational framework

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ABSTRACT

The BRICS nations are demographically and geographically diverse but face shared public health challenges that require stronger and more coordinated public health cooperation. The National Public Health Institutes (NPHI) participating in The BRICS Network of National Public Health Institutes (BNN) are science-based national centres of excellence that support public health leadership, capacity building, disease prevention and control, surveillance, emergency preparedness, research, and evidence-informed policy. Building on established international experience with collaborative NPHI and public health networks, the BNN represents a BRICS-specific approach to institutional cooperation. The aim of this article is to examine the 2026 Operational Framework for the BNN in the context of current evidence and international experience, with particular attention to its strategic priorities, governance arrangements, and implementation challenges.

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Received: 01.07.2026

Accepted: 25.08.2026

Date of publication online: 10.09.2026

Date of publication: 29.09.2026

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The BNN focuses on NPHI capacity mapping, workforce and faculty exchange, knowledge sharing, public health workforce development, strengthening surveillance and response systems, and collaborative research and innovation across BRICS countries. The 2026 Operational Framework outlines a three-tiered governance model intended to support strategic alignment, coordination, and technical implementation, guided by the principles of collective leadership, country ownership, continuity across Chairships, and result-oriented collaboration. It also proposes mechanisms for strengthening other Public Health Institutes within member countries. The 2026 Operational Framework provides a structured basis for institutional collaboration across BRICS; however, its implementation, sustainability, and effects on public health system performance and population health remain to be evaluated over time.

Key Words: BRICS Network; public health institutes; BRICS; public health challenges; health security; institutional collaboration

Citation: Jayapal P, Kumar A, Shewale A, Yadav A, Nanda S. Strengthening the public health systems in the BRICS countries through networking of national public health institutes: an operational framework. *The BRICS Health Journal*. 2026;3(2):70–79. Epub ahead of print 10.09.2026. <https://doi.org/10.47093/3034-4700.2026.3.2.102>

MeSH terms:

PUBLIC HEALTH PRACTICE

INTERNATIONAL COOPERATION

LEADERSHIP

HEALTH WORKFORCE – ORGANIZATION & ADMINISTRATION

CAPACITY BUILDING – METHODS

Introduction

The COVID-19 pandemic exposed gaps in public health preparedness, early warning, coordination, laboratory and workforce capacity, risk communication, and access to medical countermeasures^{1,2} [1]. The World Health Organization pulse surveys also documented disruption of essential health services, highlighting the need for strengthened public health systems capable of maintaining routine services during emergencies^{3,4}. Together, these findings underscored the importance of sustained institutional capacity for both emergency response and health-system resilience.

The National Public Health Institutes (NPHI) are science-based national centers whose functions include surveillance and health intelligence, reference laboratory services, outbreak investigation and management, emergency preparedness and response, workforce development, risk communication, applied research, and translating evidence into national health policy [2–5]. Although their mandates and organizational structures vary across countries, they can provide an interface between national

¹ Main Report & accompanying work. Accessed 17.08.2026. <https://theindependentpanel.org/mainreport/>

² Independent review of WHO's response to COVID-19 in the Eastern Mediterranean Region: Report – February 2023. Accessed 13.08.2026. <https://www.who.int/publications/m/item/independent-review-of-who-s-response-to-covid-19-in-the-eastern-mediterranean-region>

³ Pulse survey on continuity of essential health services during the COVID-19 pandemic: interim report, 27 August 2020. Accessed 17.07.2026. https://www.who.int/publications/i/item/WHO-2019-nCoV-EHS_continuity-survey-2020.1

⁴ Second round of the national pulse survey on continuity of essential health services during the COVID-19 pandemic. Accessed 17.08.2026. https://www.who.int/publications/i/item/WHO-2019-nCoV-EHS_continuity-survey-2021.1

and subnational authorities, laboratories, universities, health services, and international partners [2–7].

The pandemic further demonstrated that capable national institutions are necessary but not sufficient [3]. Cross-border threats require trusted relationships, agreed communication routes, shared technical approaches, and joint work before emergencies. A network of NPHI can turn multilateral contacts into an institutional platform for peer consultation, joint risk assessment, workforce exchange, collaborative research, and coordinated preparedness and response without displacing national authority or obligations under the International Health Regulations (2005)⁵ [8–11].

The International Association of NPHI supports countries in strengthening NPHI through institutional assessment, peer assistance, leadership development, and shared technical expertise [8]. Experience following the West African Ebola epidemic similarly emphasized strong national institutes and regional cooperation for outbreak detection, laboratory support, operational research, and workforce development [9–11].

BRICS countries have substantial but diverse public health capacities in surveillance, epidemiology, vaccine and pharmaceutical development and production, laboratory science, genomics, digital health, workforce training, environmental health, and large-scale programme implementation [12–14]. The group represents nearly half of the global population and spans marked demographic, epidemiological, ecological, and institutional diversity [15]. This provides an opportunity for reciprocal collaboration among NPHI: pooling complementary strengths and sharing technical knowledge while respecting national priorities and sovereignty.

Collaborative networks of NPHI and regional public health institutions can strengthen operational capacity, workforce development, surveillance, emergency preparedness, and institutional resilience [11, 16, 17]. Their effectiveness may depend also on governance, sustainable financing, institutionalized leadership, and continuity [17]. Recent literature has described BRICS health cooperation and the 2025 Conference of BRICS NPHI; the strategic and governance arrangements of the 2026 Operational Framework have received limited examination [18].

The First BRICS Experts' Meeting on Public Health hosted by Russia in September 2024 initiated discussions on institutionalized public health cooperation, and the subsequent XIV BRICS Health Ministers' Meeting established the BRICS Public Health Institutes Network as a standing expert platform⁶. During the 2025 Brazilian Chairship, the Conference of the BRICS NPHI further advanced cooperation and mutual support among BRICS countries in public health [18]. Following these developments, under the 2026 Indian Chairship, the BRICS Health Ministers endorsed the 2026 Operational Framework for the BRICS Network of National Public Health Institutes (BNN)⁷.

The aim of this article is to examine the 2026 Operational Framework for the BRICS Network of NPHI in the context of current evidence and international experience, with particular attention to its strategic priorities, governance arrangements, and implementation challenges.

A focused search of PubMed and Google Scholar was conducted through August 2026 using the keywords “NPHI”, “public health networks”,

⁵ International health regulations (2005) as amended in 2014, 2022 and 2024. Accessed 12.06.2026. https://apps.who.int/gb/bd/pdf_files/IHR_2014-2022-2024-en.pdf

⁶ MOSCOW Declaration of the XIV BRICS Health Ministers' Meeting 11 October 2024. Accessed 13.08.2026. <https://brics.br/pt-br/documentos/acervo-de-presidencias-antiores/health-ministerial-declarations/2024-brics-health-ministers-declaration.pdf/@download/file>

⁷ 16th BRICS Health Ministers' Meeting Concludes Successfully under India's BRICS Chairship 2026. Accessed 16.06.2026. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2288267&lang=1®=3>

“governance”, “sustainability”, and “BRICS”. Relevant peer-reviewed studies and reviews were selected, prioritizing recent evidence and key seminal publications. Official institutional and government sources were also reviewed. The 2026 Operational Framework for BNN was analyzed as the primary document for its strategic priorities, governance, and proposed operational mechanisms. Sources outside NPHI or public health network organization and governance were excluded.

The BRICS Network of National Public Health Institutes: vision, objectives and strategic pillars

The 2026 Operational Framework envisions BNN to support collaboration on the prevention and control of priority diseases and contribute to health security. Participating NPHI would serve as national hubs linking relevant public health institutions within a coordinated structure. The BNN aims to address shared public health challenges through institutional strengthening, knowledge exchange, coordinated applied research and agreed governance^{8,9}. Its objectives focus on institutional capacity mapping and building, workforce and faculty exchange, strengthening other public health institutions within member countries, and multi-country applied research and innovation. The full objectives and proposed operational arrangements are provided in the Supplementary File (supplementary materials on the journal website <https://doi.org/10.47093/3034-4700.2026.3.2.102-annex>).

The BNN is proposed as a collaborative technical platform operating within the mandates of participating NPHI and priorities agreed upon by BRICS member states. Its activities would be guided by country ownership and respect for national laws, equality and inclusivity, evidence-based decision-making, knowledge exchange, complementarity with existing global and regional public health initiatives, and sustainability of governance and financing arrangements.

The 2026 Operational Framework is structured on seven Strategic Pillars and Policy and Advisory Support. These pillars define broad areas for collaboration while allowing member countries to accommodate their respective national priorities (Figure).

These priorities are broadly consistent with established approaches to NPHI development and international public health collaboration, which emphasize institutional capacity, core public health functions, workforce development, surveillance and response, applied research, peer learning, and sustained institutional cooperation¹⁰ [8, 11, 16]. The BNN extends these principles by combining cross-country collaboration among designated NPHI with a national coordination role while participating institutes are expected to strengthen other public health institutions within their countries. This dual network-and-national-institutional model may link shared BRICS priorities with country-specific public health needs.

Strategic areas of collaboration within the BRICS Network of National Public Health Institutes

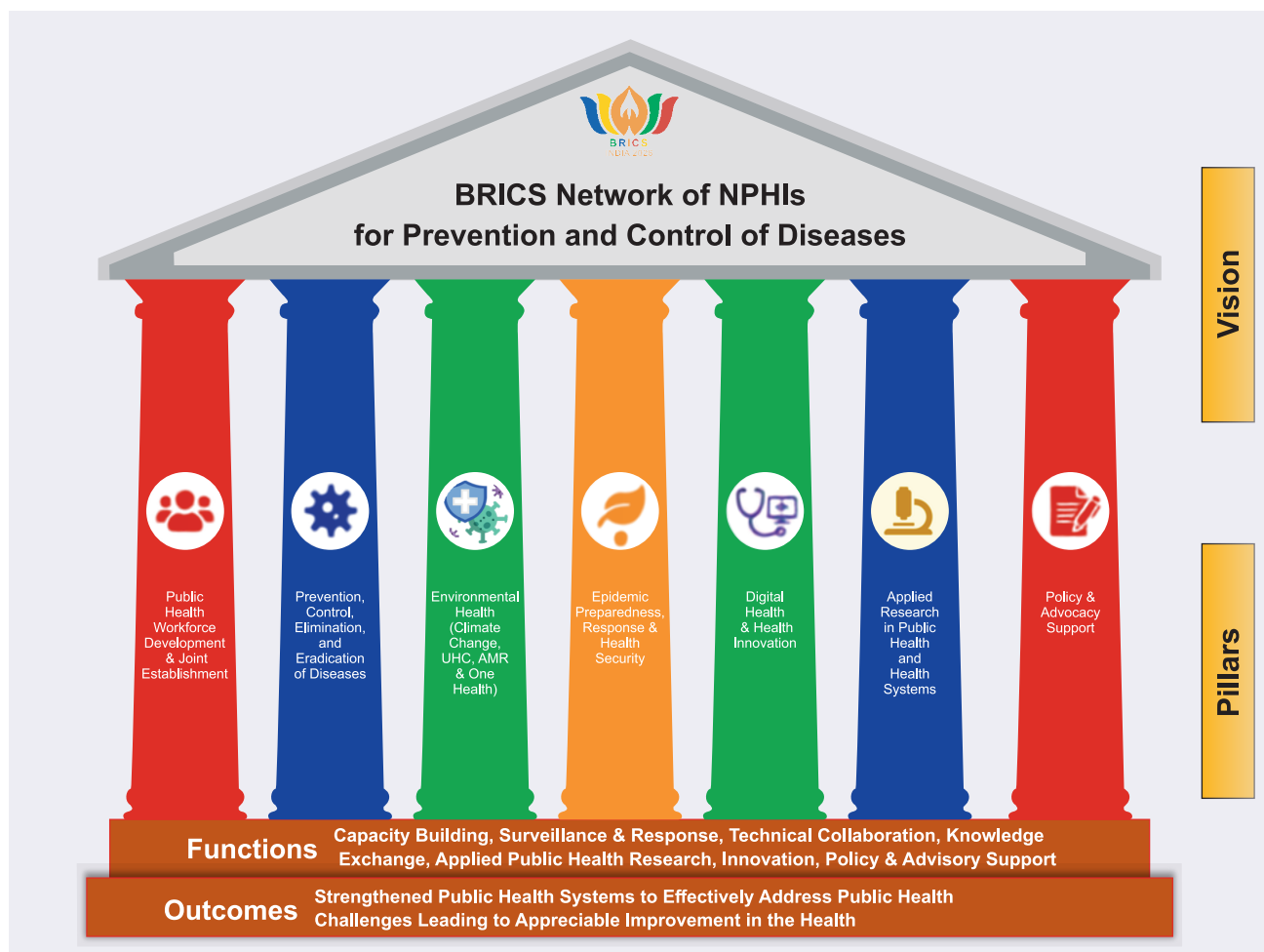
Aligned with the vision and objectives of the BNN, the 2026 Operational Framework proposes the following strategic areas of collaboration for the BNN and NPHI.

⁸ 16th BRICS Health Ministers' Meeting Concludes Successfully under India's BRICS Chairship 2026. Accessed 16.06.2026. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2288267&lang=1®=3>

⁹ Senior Officials' Meeting Held in Chandigarh as Part of Ongoing BRICS Health Ministerial Meetings Under India's Chairship. Accessed 13.08.2026. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2287898®=48&lang=2>

¹⁰ IANPHI Framework for the Creation and Development of National Public Health Institutes [2026]. Accessed 13.08.2026. <https://ianphi.org/tools-resources/nphi-framework.html>

FIG. Schematic structure of the BRICS Network of National Public Health Institutes



Note: UHC – Universal Health Coverage; NPHIs – National Public Health Institutes. Full description of the 2026 Operational Framework is provided in Supplementary File.

Each BRICS member country would identify and designate a NPHI to serve as the focal institution for participation in the BNN and to coordinate public health institutions and activities within the country^{11,12}. The BNN would map the expertise and capacities of participating NPHI to identify complementary strengths, capacity gaps, and opportunities for targeted capacity building and technical collaboration. Member NPHI would also jointly identify shared public health priorities, including pandemic and epidemic response and antimicrobial resistance. Such capacity mapping and identification of priority needs are consistent with established approaches to NPHI development, which emphasize assessment of institutional capacities, identification of gaps, and strengthening of core public health functions according to the national context¹³ [6].

The BNN would support the development of public health workforce through thematic training programmes and collaborative learning initiatives. Technical collaboration, knowledge exchange, and sharing

¹¹ 16th BRICS Health Ministers' Meeting Concludes Successfully under India's BRICS Chairship 2026. Accessed 16.06.2026. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2288267&lang=1®=3>

¹² Senior Officials' Meeting Held in Chandigarh as Part of Ongoing BRICS Health Ministerial Meetings Under India's Chairship. Accessed 13.08.2026. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2287898®=48&lang=2>

¹³ IANPHI Framework for the Creation and Development of National Public Health Institutes (2026). Accessed 13.08.2026. <https://ianphi.org/tools-resources/nphi-framework.html>

of best practices could include institutional and faculty exchanges, joint training, and exchange of experience across surveillance, laboratory systems, epidemic preparedness and other agreed public health priorities (Supplementary File). Similar collaborative approaches have been used within NPHI and regional public health networks to support workforce development, technical exchange, and operational public health capacity [11, 16]. The BNN would encourage joint research initiatives and multi-country studies addressing priority public health challenges through mechanisms for institutional cooperation.

The BNN would further support national health programmes by providing technical expertise, facilitating cross-country learning, and strengthening monitoring and evaluation, operational research, and implementation of priority interventions. It would also provide technical advice to relevant health authorities and working groups. Thematic Working Groups (TWG) would serve as the main technical platform for focused dialogue, knowledge sharing, and joint action on agreed priority areas (Supplementary File). Experience from other public health networks suggests that regular communication, clear priorities and deliverables, institutional leadership, and continuity are important for effective collaboration [17]. These considerations may be particularly relevant for the BNN because of differences in institutional mandates, capacities, and public health priorities across BRICS countries.

Governance, operational mechanisms and sustainability

The 2026 Operational Framework defines a set of collaboration, implementation, and governance mechanisms intended to support coordination across BRICS member countries. The BRICS Health Ministers' Annual Meeting would provide the strategic direction and priorities for the BNN, while the BNN Secretariat under the BRICS Chair would provide technical and secretarial support and facilitate continuity across successive BRICS Chairship. The Chair country would provide leadership and host the annual Conference. Collaboration would be facilitated through designated NPHI as national focal institutions, TWG for joint technical work, and periodic consultations and expert meetings^{14,15}. The detailed collaboration and operational mechanisms are presented in Supplementary File.

Member NPHI would implement agreed activities at the national level, supported by TWG with defined deliverables. The NPHI would also support capacity building and institutional strengthening of other public health institutions within their respective countries. The annual Conference, hosted by the BRICS Chairship country, would serve as a convening and coordination forum for policy dialogue, knowledge exchange, joint planning, and cooperation among member countries. The BNN would also engage with international organizations and national academic and research partners for technical cooperation, training, and institutional strengthening, while National Steering Committees would coordinate implementation within member countries.

The 2026 Operational Framework proposes a three-tiered governance structure to support strategic alignment, coordination, and technical implementation across BRICS countries. This structure reflects collective leadership, country ownership, continuity across Chairships,

¹⁴ 16th BRICS Health Ministers' Meeting Concludes Successfully under India's BRICS Chairship 2026. Accessed 16.06.2026. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2288267&lang=1®=3>

¹⁵ Senior Officials' Meeting Held in Chandigarh as Part of Ongoing BRICS Health Ministerial Meetings Under India's Chairship. Accessed 13.08.2026. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2287898®=48&lang=2>

and results-oriented collaboration. The three tiers define the proposed governance architecture, while the annual Conference and TWG provide complementary convening and technical mechanisms for Network activities (Table).

Experience from other public health networks suggests that institutionalized leadership, regular communication, strategic planning, and continuity are important for network sustainability [17]. These considerations are particularly relevant to the BNN because the Secretariat and leadership rotate with the annual BRICS Chairship. The proposed governance arrangements provide mechanisms for continuity; however, their effectiveness will depend on consistent handover of ongoing activities and institutional knowledge, sustained participation of member NPHI, and implementation of agreed work plans across successive Chairships.

Network sustainability would depend on adequate financing. The 2026 Operational Framework identifies potential financing through BRICS cooperation mechanisms, including the Science, Technology and Innovation Framework, national sources, and other multilateral or multi-country mechanisms (Supplementary File). Evidence from NPHI and public health networks also identifies sustainable financing as an important factor for institutional continuity and network development [17, 19]. These financing mechanisms represent potential sources of support, and the extent to which they can provide adequate and predictable financing for BNN activities remains to be established.

International experience for the BRICS Network of National Public Health Institutes

A systematic review of African NPHI reported improvements in outbreak detection, surveillance, workforce capacity, inter-institutional cooperation, health equity, and evidence-informed policy, while noting persistent gaps in governance, communication, outbreak preparedness, and system resilience [20]. More recent African evidence similarly highlights sustainable financing, workforce development, sound governance, and integration into regional networks as for NPHI maturation and resilience [19]. These findings indicate that strengthening individual NPHI and linking them through regional cooperation may be complementary approaches to public health capacity development.

Complementary lessons come from academic and institutional public health networks. The Global Network for Academic Public Health illustrates the role of supporting education, competency development,

Table. Three-tier governance structure of the BRICS Network of National Public Health Institutes

Tier	Activities	Mandate
Tier 1 BRICS Health Ministers	Ministers' meeting (annual)	Policy direction, political mandate, strategic endorsement and resource mobilization for the BNN
Tier 2 BNN Secretariat under BRICS Chair	Assembly session (annual)	Guidance, operational coordination, and documentation for the BNN
Tier 3 National Steering Committee located at NPHI	Assembly/ Meeting (twice yearly)	Strategic support, coordination, implementation, and oversight of agreed activities within the respective member country

Note: BNN – BRICS Network of National Public Health Institutes; NPHI – National Public Health Institute. Full description of the 2026 Operational Framework is provided in Supplementary File.

academic exchange, collaborative research, and links between evidence and policy^{16,17,18,19} [21].

The International Association of NPHI and other collaborative models show that NPHI with different legal and organizational structures can cooperate around shared public health functions without adopting a uniform institutional model. Such cooperation is supported by peer learning, institutional partnerships, capacity mapping, and technical exchange²⁰ [8, 11].

Regional public health networks provide further lessons for BNN design and sustainability. The Eastern Mediterranean Public Health Network combines workforce development, surveillance, emergency preparedness, research, and knowledge exchange across countries [16]. Evidence from networks in the Eastern Mediterranean and Arab region suggests that institutionalized leadership, regular communication, strategic planning, and diversified financing support sustainability, whereas fragmented governance and unstable financing undermine it [17]. These experiences are relevant to the BNN, which depends on continuity across rotating BRICS Chairships, sustained institutional participation, and adequate financing.

The BNN adds a BRICS-specific dimension by linking cross-country collaboration with national institutional coordination. Designated NPHI and national coordination mechanisms would connect surveillance, laboratory systems, workforce development, applied research, and other public health institutions within each country. This model is broadly consistent with international experience, but its sustainability will depend on implementation of the proposed governance, financing, and continuity mechanisms.

Strengths, implementation challenges and evidence gaps

The 2026 Operational Framework has broad scope, linking workforce development, disease prevention and control, epidemic preparedness and health security, the One Health and antimicrobial resistance, digital health, applied research, and policy support within a common governance structure. By combining cross-country coordination through the BNN with national implementation through designated NPHI and National Steering Committees, it may help align shared BRICS priorities with country-specific public health needs²¹.

Implementation may nevertheless be affected by institutional, governance, and financial differences among BRICS countries, including variations in NPHI mandates and capacities, public health structures, and administrative systems [17, 19]. Continuity across successive BRICS Chairships and sustainable financing will therefore be important. Differences in institutional capacity may also affect participation in joint activities and translation of agreed BNN priorities into national implementation. To our knowledge, published evaluative evidence on BNN implementation and effectiveness is not yet available. Future evaluation should consider participation, collaborative activities,

¹⁶ Global Network For Academic Public Health. Accessed 13.08.2026. <https://globalnetworkpublichealth.org/>

¹⁷ ASPHER course: Ethics, Law and Governance for Climate and Environmental Action in Public Health. Accessed 13.08.2026. <https://www.aspher.org/>

¹⁸ Vision and Mission. Accessed 13.08.2026. <https://www.apacph.org/wp/about/vision-and-mission/>

¹⁹ Arab Network for Academic Public Health (ANAPH) Officially Launched. Accessed 13.08.2026. <https://globalnetworkpublichealth.org/arab-network-for-academic-public-health-anaph-officially-launched/>

²⁰ IANPHI Framework for the Creation and Development of National Public Health Institutes [2026]. Accessed 13.08.2026. <https://ianphi.org/tools-resources/nphi-framework.html>

²¹ Senior Officials' Meeting Held in Chandigarh as Part of Ongoing BRICS Health Ministerial Meetings Under India's Chairship. Accessed 13.08.2026. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2287898®=48&lang=2>

workforce development, joint research, surveillance and response capacity, governance continuity, and financial sustainability, while distinguishing between implementation and process indicators, intermediate public health system outcomes, and longer-term population health effects [19]. Whether these mechanisms lead to stronger public health systems or population health benefits remains to be established.

Several limitations should be considered. Experience from established NPHI and regional networks may not be directly transferable to BRICS because of differences in institutional mandates, health-system organization, governance, resources, and national priorities. Evidence on recent BRICS public health cooperation also relies substantially on official and institutional sources rather than peer-reviewed evaluations. In addition, the 2026 Operational Framework was formally endorsed only in July 2026 and is provided in full as the Supplementary File. Evidence on its implementation and outcomes is not yet available, and the present analysis is limited to the proposed design of the BNN and its comparison with international experience.

Conclusion

The BNN concept rests on a simple progression: strong public health systems require capable national institutions, and capable national institutions can benefit from reliable mechanisms for international collaboration when public health threats, such as COVID-19, cross the borders. COVID-19 exposed the cost of fragmentation, while experience from the International Association of NPHI and regional NPHI networks suggests that institute-to-institute cooperation can support national and regional public health capacities.

Building on these lessons, the BNN through a reciprocal platform among public health institutions with diverse and complementary capabilities across BRICS nations is intended to strengthen national public health systems and collective capacity to effectively address existing and emerging public health challenges. Its proposed strategic priorities and governance mechanisms provide a BRICS-specific approach for institutional collaboration; however, the extent to which implementation of the 2026 Operational Framework translates into improved public health system performance will depend on its implementation by the BRICS countries and the future evaluation.

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