

# Learning Health Systems to Bridge the Evidence-Policy-Practice Gap in Primary Health Care: Lessons From the African Health Initiative

Colin Baynes,<sup>a</sup> Lola Adedokun,<sup>b</sup> John Koku Awoonor-Williams,<sup>c</sup> Lisa R. Hirschhorn<sup>d,e</sup>

## INTRODUCTION

Universal health coverage (UHC) can be achieved by strengthening the implementation of public health and clinical policies and programs in health systems.<sup>1</sup> For decades, research has established a substantial evidence base on the primary health care interventions that policies should emphasize. Conversely, the need for replicable knowledge on how to transform evidence-based policies into effective large-scale action has received less attention.<sup>2</sup> As a corollary, efforts to advance the use of evidence-based interventions (EBIs) in global health are replete with experiences of lengthy delays between the recognition of EBIs and their equitable and high-quality delivery throughout health systems and their integration into policies, which is needed to ensure sustainability.<sup>3,4</sup> Demonstrating ways to bridge the gap between the promulgation of sound health policy and changes in real-world practice, including how systems support these changes, is essential to achieving UHC.<sup>5</sup> The articles in this *Global Health: Science and Practice* supplement showcase the experience of action research projects led by policy-implementation-academic partnerships that aimed to address this gap in 3 sub-Saharan African countries: Ethiopia, Ghana, and Mozambique.

Implementation leaders can maximize the impact of EBI if they identify and implement delivery strategies that are contextually appropriate, driven by data, and feasible to use and spread within health systems. Moreover, they should include measures to ensure equity and quality of care.<sup>6</sup> As the articles in this *GHSP* supplement discuss, when these strategies are combined with work to generate actionable evidence and facilitate knowledge translation, then bridging the “know-do” gap becomes increasingly attainable.<sup>7</sup> For example, in Mozambique, the combination of an audit and feedback

intervention led by district health officials with research capacity strengthening of health workers led by local research groups led to improvements in maternal and newborn health EBI implementation in public health facilities.<sup>8</sup> Embedded implementation research (EIR) is a promising tool in this endeavor. EIR integrates scientific inquiry within practice through decision maker-led research partnerships whereby knowledge “users” (i.e., policy makers, managers, implementers) are also knowledge “producers.”<sup>9</sup> As such, decision makers take a prominent role throughout the research process—identifying needs for research and specific implementation problems, selecting methodology, interpreting findings, and stimulating the use of evidence in programmatic decisions.<sup>10</sup>

## AHI'S HISTORY OF LEVERAGING EIR TO STRENGTHEN POLICY AND PRACTICE

Since 2009, the African Health Initiative (AHI) of the Doris Duke Charitable Foundation has funded partnerships between (1) ministries of health that led the integration of research in primary health care policy implementation, (2) embedded scientists from local research institutions that conducted EIR from within primary health care systems, and (3) local-level implementation teams that were involved in the design of delivery strategies and use of data to improve how they work. The partnership structure aimed to enable projects to leverage EIR as a tool to strengthen primary health care delivery and demonstrate ways to maximize the impact of EIR by incorporating research capacity strengthening and knowledge translation support in policy implementation processes. The AHI supported partnerships in 6 countries in 2 phases of grants: Ghana, Mozambique, Rwanda, Tanzania, and Zambia in phase 1 (2009–2015), and Ghana, Ethiopia, and Mozambique in phase 2 (2016–2022), each with grants of US\$8–US\$13 million. In addition, each AHI partnership included a U.S.-based university with a history of supporting health development and building research capacity in sub-Saharan Africa.

In 2013, the partnership teams co-authored a journal supplement that described their individual intervention designs and cross-cutting components, which included

<sup>a</sup> Department of Global Health, University of Washington, Seattle, WA, USA.

<sup>b</sup> Formerly of the Doris Duke Charitable Foundation, New York, NY, USA.

<sup>c</sup> Formerly of the Department of Policy, Planning, Monitoring and Evaluation, Ghana Health Service Accra, Ghana.

<sup>d</sup> Feinberg School of Medicine, Northwestern University, Chicago, IL, USA.

<sup>e</sup> Ryan Family Center for Global Primary Care, Havey Institute for Global Health, Northwestern University, Chicago, IL, USA.

Correspondence to Colin Baynes (cbaynes@uw.edu).

improving data and service delivery quality and strengthening health information systems, and a common evaluation framework that was based on the World Health Organization's 6 building blocks for health systems strengthening.<sup>11-15</sup> By 2015, key lessons emerged that were useful for informing the replication and scale of delivery strategies formulated and evaluated by the AHI phase 1 partnerships. In Ghana, the AHI project informed the Ministry of Health's strategy on how to accelerate the pace of scaling up national primary health care policy.<sup>16</sup> The Mozambican partnership strengthened district-level management capacities in the context of decentralization.<sup>17</sup> In Rwanda, the project developed guidelines on quality improvement with a focus on newborns.<sup>18</sup> The Tanzanian partnership designed and tested the impact of introducing a national community health worker program.<sup>19</sup>

These achievements were disseminated in a second AHI supplement, in which authors from the 5 teams harvested new knowledge and synthesized findings into lessons that were generalizable across partnerships. Cross-cutting effective strategies used in 2 or more countries included mentoring to improve clinical service quality and systems, improving data quality, using data for quality improvement, measuring health systems strengthening, targeting neonatal mortality, and building research capacity.<sup>20-26</sup> The AHI phase 2, which focused on adapting and evaluating models to replicate effective UHC strategies from phase 1, began in 2017 when the Doris Duke Charitable Foundation granted additional funding to the teams from Ghana and Mozambique and granted new funding to a partnership in Ethiopia. The grants were also designed to strengthen the absorptive capacities of health systems to use evidence and learn about and sustain conditions that are conducive to improving primary health care performance and scaling up.

## ■ HELPING PRIMARY HEALTH CARE SYSTEMS BRIDGE THE KNOW-DO GAP

**The lessons in this supplement make clear that helping health systems to acquire and foster the spread of skills to practice EIR can help fill the know-do gap.**

This third supplement highlights experiences using EIR to strengthen primary health care systems. For example, authors from Ghana demonstrate how embedding research at different stages of the policy making process guided the initial design of the national Community-based Health Planning and Services program and, subsequently, how EIR-informed strategy that district implementation teams have used to accelerate the program's scale-up.<sup>27</sup> Altogether, these lessons make clear

that helping health systems to acquire and foster the spread of skills to practice EIR can help fill the know-do gap.

The articles describe the key learnings that emerged by the penultimate year of the AHI phase 2 in Ethiopia, Ghana, and Mozambique. As in the previously published supplements, the articles showcase cross-project learning that arose from collaborative working groups, which comprised AHI-partnership representatives from Ethiopia, Ghana, and Mozambique. The supplement also includes collaborative working group articles on 3 themes across the 3 countries: supportive supervision and mentoring, data use for decision making, and EIR.<sup>28-30</sup> A distinguishing feature of phase 2 was the role of the Alliance for Health Policy and Systems Research (AHPSR) as an AHI partner and source of technical support to partnerships on the use of EIR. Accordingly, the supplement includes original articles on the AHPSR work in the 3 countries. From the AHPSR, Tangcharoensathien et al. also contribute a comparative piece that reflects upon the status of health policy and systems research capacity in Ethiopia and Ghana.<sup>31</sup>

The Ethiopia Data Use Partnership shares valuable learnings from their efforts to increase the quality and use of routine health data. Belay et al. present findings from preproject and midline data use assessments, which point to early-stage successes and challenges in strengthening routine health information systems at the point of care and the district level.<sup>32</sup> Tilahun et al.'s qualitative exploration of strategies and barriers to improving the quality and use of routine data in the same settings contextualize those findings. Together, the articles yield a rich picture of the factors that underpinned early program achievements and how evidence informs strategy to improve data-use practices during the later stages of the program.<sup>33</sup> Worku et al. explored whether there were preproject associations between the strength of routine health information systems and maternal health care seeking.<sup>34</sup> The findings suggest patterns and frame hypotheses that Ethiopia Data Use Partnership researchers will explore at later stages of their program.

From Ghana, Awoonor-Williams et al. narrate twin histories of research utilization to inform UHC policy, comparing Ghana's experience scaling up the national Community-based Health Planning and Services program and the National Health Insurance Scheme.<sup>27</sup> Bawah et al. explore the barriers and facilitators to evidence use in policy decision making in Ghana.<sup>35</sup> Both articles provide insight on how to use the EIR approach to improve the country's UHC policy coverage and effectiveness.

From Mozambique, learnings emerged on improving management, its association with resiliency, and ongoing challenges of research use to drive needed policy. Pope et al. explore whether facility-level management capacities are associated with facilities' readiness to provide family planning services.<sup>36</sup> The findings underscore the relevance of targeting leadership structures at the facility and district level with management capacity strengthening. Inguane et al. report on lessons from embedding qualitative research in the early-stage implementation of a district-level audit and feedback strategy.<sup>8</sup> Fernandes et al. performed an analysis of routine health data from 4 districts in Central Mozambique, reflecting the periods before and after Cyclone Idai in 2019.<sup>37</sup> The analysis demonstrates a rapid rebound of service utilization levels in the cyclone's aftermath, which suggests that the AHI's investment in strengthening district management systems had a positive effect on health systems resiliency after a devastating shock. From the AHPSR, Cambe et al. illustrate the challenging context of supporting research utilization in policy contexts.<sup>38</sup>

The supplement concludes with perspective pieces issued by thought leaders in EIR and primary health care strengthening. In their commentary, Ghaffar et al. of the AHPSR situate the findings reported in the collection of articles in the historical context in which implementation research and embedded science converged and evolved together over time.<sup>39</sup> Binagwaho et al. from the University of Global Health Equity discuss the role of implementation research in establishing resilient health systems, drawing upon the authors' experiences in Rwanda and examples from other countries.<sup>40</sup>

## CONCLUSION

The publication of this supplement marks a milestone in the history of the AHI and the application of implementation research in global public health. The learnings compiled in the 3 AHI collections reflect the evolution of a discipline that was relatively new to the primary health care landscape in sub-Saharan Africa when the AHI began but is now increasingly recognized as integral to health systems development. The results described in this supplement will be valuable to policy makers, researchers, and implementation teams that desire to maximize the impact of EBI through EIR and establish a culture of learning and improving in health systems. Disseminating this knowledge and supporting efforts to translate it into practice are urgently needed to hasten countries' achievement of universal access to quality and people-centered primary health care.

**Acknowledgments:** The authors wish to recognize the Ministries of Health of Ethiopia, Ghana, and Mozambique, as well as implementation teams from the local health systems in which the African Health Initiative (AHI) partnerships worked, for their leadership and commitment to the work that is described in this supplement. Their support was essential to the achievements of the AHI during both its phases and for this we extend our gratitude.

**Funding:** The Doris Duke Charitable Foundation.

**Competing interests:** None declared.

## REFERENCES

1. Sheikh K, Hargreaves J, Khan M, Mounier-Jack S. Implementation research in LMICs—evolution through innovation. *Health Policy Plan.* 2020;35(Suppl 2):ii1–ii3. [CrossRef](#). [Medline](#)
2. Theobald S, Brandes N, Gyapong M, et al. Implementation research: new imperatives and opportunities in global health. *Lancet.* 2018;392(10160):2214–2228. [CrossRef](#). [Medline](#)
3. Jackson D, Shahabuddin ASM, Sharkey AB, et al. Closing the know-gap for child health: UNICEF's experiences from embedding implementation research in child health and nutrition programming. *Implement Sci Commun.* 2021;2(1):112. [CrossRef](#). [Medline](#)
4. Ridde V. Need for more and better implementation science in global health. *BMJ Glob Health.* 2016;1(2):e000115. [CrossRef](#). [Medline](#)
5. Awoonor-Williams JK, Appiah-Denkyira E. Bridging the intervention-implementation gap in primary health care delivery: the critical role of integrated implementation research. *BMC Health Serv Res.* 2017;17(Suppl 3):772. [CrossRef](#). [Medline](#)
6. Leeman J, Birken SA, Powell BJ, Rohweder C, Shea CM. Beyond "implementation strategies": classifying the full range of strategies used in implementation science and practice. *Implement Sci.* 2017;12(1):125. [CrossRef](#). [Medline](#)
7. Wensing M, Grol R. Knowledge translation in health: how implementation science could contribute more. *BMC Med.* 2019;17(1):88. [CrossRef](#). [Medline](#)
8. Inguane C, Soi C, Gimbel S, et al. Applying the Consolidated Framework for Implementation Research to identify implementation determinants for the Integrated District Evidence-to-Action Program Mozambique. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2100714. [CrossRef](#)
9. Varallyay NI, Langlois E v, Tran N, Elias V, Reveiz L. Health system decision-makers at the helm of implementation research: development of a framework to evaluate the processes and effectiveness of embedded approaches. *Health Res Policy Syst.* 2020;18(1). [CrossRef](#). [Medline](#)
10. Ghaffar A, Langlois E v, Rasanathan K, Peterson S, Adedokun L, Tran NT. Strengthening health systems through embedded research. *Bull World Health Organ.* 2017;95(2). [CrossRef](#). [Medline](#)
11. Gilson L. Implementing health system change: what are the lessons from the African Health Initiative? *BMC Health Serv Res.* 2013;13(Suppl 2):S14. [CrossRef](#). [Medline](#)
12. Mutale W, Chintu N, Amoroso C, et al. Improving health information systems for decision making across five sub-Saharan African countries: Implementation strategies from the African Health Initiative. *BMC Health Serv Res.* 2013;13(Suppl 2):S9. [CrossRef](#). [Medline](#)
13. Hirschhorn LR, Baynes C, Sherr K, et al. Approaches to ensuring and improving quality in the context of health system strengthening: a cross-site analysis of the five African Health Initiative Partnership programs. *BMC Health Serv Res.* 2013;13(Suppl 2):S8. [CrossRef](#). [Medline](#)
14. Sherr K, Requejo JH, Basinga P. Implementation research to catalyze advances in health systems strengthening in sub-Saharan Africa: the African Health Initiative. *BMC Health Serv Res.* 2013;13(Suppl 2):S1. [CrossRef](#). [Medline](#)

15. Bryce J, Requejo JH, Moulton LH, Ram M, Black RE. Collaborative PHI and T-AHID. A common evaluation framework for the African Health Initiative. *BMC Health Serv Res.* 2013;13(Suppl 2):S10. [CrossRef](#). [Medline](#)
16. Awoonor-Williams JK, Phillips JF, Bawah AA. Catalyzing the scale-up of community-based primary healthcare in a rural impoverished region of northern Ghana. *Int J Health Plann Manage.* 2016;31(4):e273–e289. [CrossRef](#). [Medline](#)
17. Sherr K, Cuembelo F, Michel C, et al. Strengthening integrated primary health care in Sofala, Mozambique. *BMC Health Serv Res.* 2013;13(Suppl 2):S4. [CrossRef](#). [Medline](#)
18. Magge H, Nahimana E, Mugunga JC, et al. The All Babies Count initiative: impact of a health system improvement approach on neonatal care and outcomes in Rwanda. *Glob Health Sci Pract.* 2020;8(3):0. [CrossRef](#). [Medline](#)
19. Ramsey K, Hingora A, Kante M, et al. The Tanzania Connect Project: a cluster-randomized trial of the child survival impact of adding paid community health workers to an existing facility-focused health system. *BMC Health Serv Res.* 2013;13(S2):S6. [CrossRef](#). [Medline](#)
20. Magge H, Chilengi R, Jackson EF, et al. Tackling the hard problems: Implementation experience and lessons learned in newborn health from the African Health Initiative. *BMC Health Serv Res.* 2017;17(Suppl 3):829. [CrossRef](#). [Medline](#)
21. Sherr K, Fernandes Q, Kanté AM, et al. Measuring health systems strength and its impact: experiences from the African Health Initiative. *BMC Health Serv Res.* 2017;17(Suppl 3):827. [CrossRef](#). [Medline](#)
22. Gimbel S, Mwanza M, Nisingizwe MP, Michel C, Hirschhorn L. Improving data quality across 3 sub-Saharan African countries using the Consolidated Framework for Implementation Research (CFIR): results from the African Health Initiative. *BMC Health Serv Res.* 2017;17(Suppl 3):828. [CrossRef](#). [Medline](#)
23. Manzi A, Hirschhorn LR, Sherr K, Chirwa C, Baynes C, Awoonor-Williams JK. Mentorship and coaching to support strengthening health-care systems: lessons learned across the five Population Health Implementation and Training partnership projects in sub-Saharan Africa. *BMC Health Serv Res.* 2017;17(Suppl 3):831. [CrossRef](#). [Medline](#)
24. Rwabukwisi FC, Bawah AA, Gimbel S, et al. Health system strengthening: a qualitative evaluation of implementation experience and lessons learned across five African countries. *BMC Health Serv Res.* 2017;17(Suppl 3):826. [CrossRef](#). [Medline](#)
25. Wagenaar BH, Hirschhorn LR, Henley C, et al. Data-driven quality improvement in low-and middle-income country health systems: lessons from seven years of implementation experience across Mozambique, Rwanda, and Zambia. *BMC Health Serv Res.* 2017;17. [CrossRef](#). [Medline](#)
26. Hedt-Gauthier BL, Chilengi R, Jackson E, et al. Research capacity building integrated into PHIT projects: leveraging research and research funding to build national capacity. *BMC Health Serv Res.* 2017;17. [CrossRef](#). [Medline](#)
27. Awoonor-Williams JK, Apanga S, Bawah AA, et al. Using health systems and policy research to achieve universal health coverage in Ghana. *Glob Health Sci Pract.* 2022;10(4)(Suppl 1):e2100763. [CrossRef](#)
28. African Health Initiative Partnership Collaborative for Supportive Supervision and Mentoring. Improving primary care quality through supportive supervision and mentoring: lessons from the African Health Initiative in Ethiopia, Ghana, and Mozambique. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2100667. [CrossRef](#)
29. African Health Initiative Partnership Collaborative for Data Use for Decision Making. Barriers and facilitators to data use for decision making: the experience of the African Health Initiative partnerships in Ethiopia, Ghana, and Mozambique. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2100666. [CrossRef](#)
30. African Health Initiative Partnership Collaborative for Embedded Implementation Research. Embedding research on implementation of primary health care systems strengthening: a commentary on collaborative experiences in Ethiopia, Ghana, and Mozambique. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2200061. [CrossRef](#)
31. Tangcharoensathien V, Sudhakar M, Birhanu Z, et al. Capacities for health policy and systems research in Ethiopia and Ghana: findings from a self-assessment. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2100715. [CrossRef](#)
32. Belay H, Mohammedsanni A, Gebeyehu A, et al. Lessons learned from the Capacity-Building and Mentorship Program to improve health information systems in 11 districts of Ethiopia. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2100690. [CrossRef](#)
33. Tilahun H, Abate B, Belay H, et al. Drivers and barriers to improved data quality and data-use practices: an interpretative qualitative study in Addis Ababa, Ethiopia. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2100689. [CrossRef](#)
34. Worku AG, Tilahun HA, Belay HT, et al. Maternal service coverage and its relationship to health information system performance: a linked facility and population-based survey in Ethiopia. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2100688. [CrossRef](#)
35. Bawah AA, Biney AAE, Kyei P. “You can’t look at an orange and draw a banana”: using research evidence to develop relevant health policy in Ghana. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2100693. [CrossRef](#)
36. Pope S, Augusto O, Fernandes Q, et al. Primary health care management effectiveness as a driver of family planning service readiness: a cross-sectional analysis in central Mozambique. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2100706. [CrossRef](#)
37. Fernandes Q, Augusto O, Chicumbe S, et al. Maternal and child health care service disruptions and recovery in Mozambique after Cyclone Idai: an uncontrolled interrupted time series analysis. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2100796. [CrossRef](#)
38. Cambe MI, Boão C, Dulá J, et al. The use of research for health systems policy development and implementation in Mozambique: a descriptive study. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2100694. [CrossRef](#)
39. Ghaffar A, Dal Zennaro L, Tran N. African Health Initiative’s role in advancing the use of embedded implementation research for health systems strengthening. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2200318. [CrossRef](#)
40. Binagwaho A, Hirwe D, Mathewos K. Health system resilience: withstanding shocks and maintaining progress. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2200076. [CrossRef](#)

**Received:** August 25, 2022; **Accepted:** August 25, 2022.

**Cite this article as:** Baynes C, Adedokun L, Awoonor-Williams JK, et al. Learning health systems to bridge the evidence-policy-practice gap in primary health care: lessons from the African Health Initiative. *Glob Health Sci Pract.* 2022;10(Suppl 1):e2200390. <https://doi.org/10.9745/GHSP-D-22-00390>

© Baynes et al. This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are properly cited. To view a copy of the license, visit <https://creativecommons.org/licenses/by/4.0/>. When linking to this article, please use the following permanent link: <https://doi.org/10.9745/GHSP-D-22-00390>