

WOMEN'S HEALTH RESEARCH AND DEVELOPMENT WORKFORCE IN SUB- SAHARAN AFRICA: LITERATURE REVIEW

UNIVERSITY OF WASHINGTON STRATEGIC ANALYSIS,
RESEARCH & TRAINING (START) CENTER

REPORT TO THE GATES FOUNDATION

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STRATEGIC ANALYSIS,
RESEARCH & TRAINING CENTER

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EXECUTIVE SUMMARY

The Women's Health Research & Development (R&D) workforce in sub-Saharan Africa (SSA) is critical to addressing health challenges such as menstrual health, gynecological and reproductive health, non-HIV sexually transmitted infections (STIs), and contraceptive research. To better understand and support this workforce, the Women's Health Innovations (WHI) team at the Gates Foundation tasked the University of Washington's Strategic Analysis, Research & Training (START) Center with assessing the landscape of the Women's Health R&D workforce in SSA, focusing on key factors like funding, mentorship, research capacity, and infrastructure. The project aimed to identify barriers hindering the growth and sustainability of this workforce, including limited financial resources, lack of long-term mentorship programs, inadequate institutional support, and disparities in access to research tools and training opportunities. The report reveals significant challenges, such as limited research capacity, insufficient mentorship, and a stark disparity in funding, with less than 0.01% of National Institutes of Health (NIH) funding allocated to these areas in SSA.¹ Additionally, many SSA researchers rely heavily on external donors, whose priorities may not always align with local health needs, restricting their ability to address region-specific issues effectively.^{2,3,4} This report emphasizes the need for increased, sustainable funding, enhanced mentorship, and stronger institutional support to help SSA's Women's Health R&D workforce address regional challenges and contribute to global progress.

KEY FACILITATORS AND BARRIERS TO EDUCATION AND CAREER DEVELOPMENT

FACILITATORS	BARRIERS
Aligned Local Funding Increased financial support from global health organizations and donors specifically targeting under-researched areas in SSA such as contraceptives, non-HIV STIs, and menstrual health, aligning with local needs.	Financial Constraints Insufficient and misaligned funding, with less than 0.01% of NIH funding allocated to women's health R&D in SSA. ¹ Local researchers often rely on external donors whose priorities don't align with local needs.
Improved Institutional Capacity Investment in strengthening research infrastructure and providing institutional support for professional development, research tools, and data management to enhance long-term research capacity.	Lack of Institutional Support Many SSA institutions lack the infrastructure and resources to support researchers, with limited access to equipment, administrative support, and career development opportunities.
Enhanced Intra-Regional Collaboration Fostering collaboration to promote leadership opportunities for local researchers and reduce dependence on HIC institutions, while building regional networks and knowledge-sharing platforms.	Collaboration and Power Imbalances SSA researchers often play secondary roles in partnerships with HIC institutions, limiting leadership opportunities and undermining local autonomy in research.
Expanded Mentorship Programs Formalized mentorship programs offering long-term support, skill-building in research methodologies, and career development for SSA researchers, with financial incentives and recognition for mentors.	Limited Mentorship and Training Insufficient access to long-term mentorship and training in essential research skills such as grant writing, data analysis, and manuscript preparation. Short-term workshops do not offer sustainable growth.
Culturally Sensitive Research Approaches Engaging local communities and stakeholders in designing and conducting research, addressing cultural stigmas, and advocating for women's health issues to be prioritized in national health agendas.	Sociocultural Stigmas Cultural barriers around sensitive topics such as contraception, abortion, and sexual health limit the scope of research and public acceptance of key women's health interventions.

INTRODUCTION

The Women's Health Research & Development (R&D) Workforce in sub-Saharan Africa (SSA) is critical to addressing a wide range of health issues with disproportionate implications for women throughout the region. For the purposes of this research, "women's health" specifically refers to areas including menstrual health, non-HIV sexually transmitted infections (STIs), contraceptive technologies, and reproductive and gynecological health. These focus areas are crucial in addressing the health needs of women in SSA. However, despite the significant need for research in these areas, the women's health R&D workforce in SSA faces numerous challenges, including insufficient research capacity, inadequate funding, and a lack of long-term mentorship and institutional support. These barriers not only limit the ability of local researchers to engage in high-impact, sustainable research but also restrict the development of region-specific health solutions that address the unique needs of SSA's population.

This report was commissioned by the Women's Health Innovations (WHI) team at the Gates Foundation, which tasked the University of Washington's Strategic Analysis, Research & Training (START) Center with conducting a comprehensive assessment of the Women's Health R&D workforce in SSA. The aim of this research was to examine factors influencing research capacity in women's health spaces in SSA, such as funding opportunities, mentorship programs, access to professional networks, and institutional support. Additionally, the study sought to highlight the disparities in National Institutes of Health (NIH) funding for women's health research in SSA, particularly in comparison to other global health topics. Through a thorough literature review and analysis of key programs and funding mechanisms, this report provides an overview of the current state of the women's health R&D workforce in SSA, identifying both the barriers that prevent growth and the opportunities that may help build a more effective and sustainable research environment. The findings indicate the importance of increasing investment in women's health research, enhancing mentorship structures, and fostering professional networks that can support the development of a robust R&D workforce capable of addressing region-specific women's health challenges in SSA.

KEY TAKEAWAYS

- ✓ **Eliminate the Need for Mandatory Partnerships with HIC Researchers:** Collaborations with researchers from high-income countries (HICs) often don't align with the priorities of LMIC researchers and fail to provide equitable recognition.
- ✓ **Ensure Dedicated Funding for Women's Health R&D:** The lack of targeted and sustained funding for women's health research in LMICs is a significant barrier, limiting innovation and progress.
- ✓ **Enhance Research Skills Training:** There is a need for comprehensive training programs that strengthen essential research skills, such as data analysis, methodological rigor, and scientific writing, to improve the quality and outcomes of research.
- ✓ **Expand Access to Mentorship and Opportunities:** Mentorship is crucial for developing the next generation of researchers, but current programs lack adequate recognition, financial compensation, and professional incentives for mentors.
- ✓ **Conduct Key Informant Interviews (KIs):** KIs are necessary to bridge knowledge gaps and gain a deeper understanding of the funding sources, educational programs, and research networks available to LMIC researchers.

METHODS

A comprehensive literature search was conducted using PubMed and Embase with the following search string: (mentorship[tw] OR "capacity building"[tw] OR "career development"[tw] OR "workforce development"[tw] OR "health research capacity"[tw] OR "research investment"[tw] OR professional development[tw] OR "staff training"[tw] OR "human resources for health"[tw] OR "health workforce"[tw]) AND (LMIC[tw] OR low income countries[tw] OR middle income countries[tw] OR "developing countries"[MeSH Terms] OR Developing Countries[tw]) AND ("women's health"[tw] OR "reproductive health"[tw] OR contraception[tw] OR STIs[tw] OR "sexually transmitted diseases"[MeSH Terms] OR gynecology[tw] OR "gynecology"[MeSH Terms] OR "contraception"[MeSH Terms]) AND research[tw].

The search string was developed with assistance from University of Washington librarian Leah DeSantis. The searches were executed on July 10th, 2024, yielding a total of 87 results in PubMed and 105 in Embase. Title and abstract screening identified 152 results as irrelevant or duplicative, leaving 40 articles for full-text review. Full-text screening excluded 25 additional articles, resulting in 15 articles deemed relevant for inclusion. Forward searching of references from these articles identified an additional 14 relevant articles. Thus, a total of 29 published articles were included in the final extraction for this literature review.

In conjunction to the published literature search, a grey literature search was conducted through the combination of search terms representing three key search concepts: (1) women's health, (2) research strengthening or capacity building, and (3) sub-Saharan Africa. These terms were combined with related topics such as 'reproductive health,' 'sexually transmitted infections,' 'contraceptives,' 'gynecological health,' and 'menstrual health.' The platforms searched included Academic Search Complete, Business Source Complete, Global Think Tanks, Think Tank Search, Open Think Tank Directory, ProQuest Dissertations & Theses Global, and Godort. Simple Google searches with the outlined terms were also conducted, and were stopped if 30 consecutive results did not yield relevant material. The grey literature search yielded an additional 6 articles included in the final extraction for this literature review.

The exclusion criteria ruled out literature from before 2014, from the Global North, and focused on health care delivery or health care capacity building. The 35 remaining identified literature were cataloged in an extraction spreadsheet, noting whether it was published or grey literature. The WHO's Human Resources for Health (HRH) Action Framework was adapted to guide the extraction and thematic analysis for this project.⁵ The analysis was structured around six key categories relevant to the women's health R&D workforce in sub-Saharan Africa: financial, sociocultural, educational, networking, leadership and policy, and collaborations. To conduct the thematic analysis, extractions from the literature were reviewed and organized using a Miro™ board, which provided a visual framework for identifying and synthesizing key barriers and opportunities. This method allowed for a comprehensive understanding of the complex factors impacting women's health research capacity in sub-Saharan Africa across the six thematic categories.

To supplement our research, NIH funding was assessed using the NIH RePORTER tool.¹ The focus was specifically on four key categories within women's health: menstrual health, gynecological and reproductive health, contraceptives, and non-HIV STIs. This analysis aimed to quantify the level of NIH investment in these critical areas and identify any disparities in funding for research in sub-Saharan Africa.

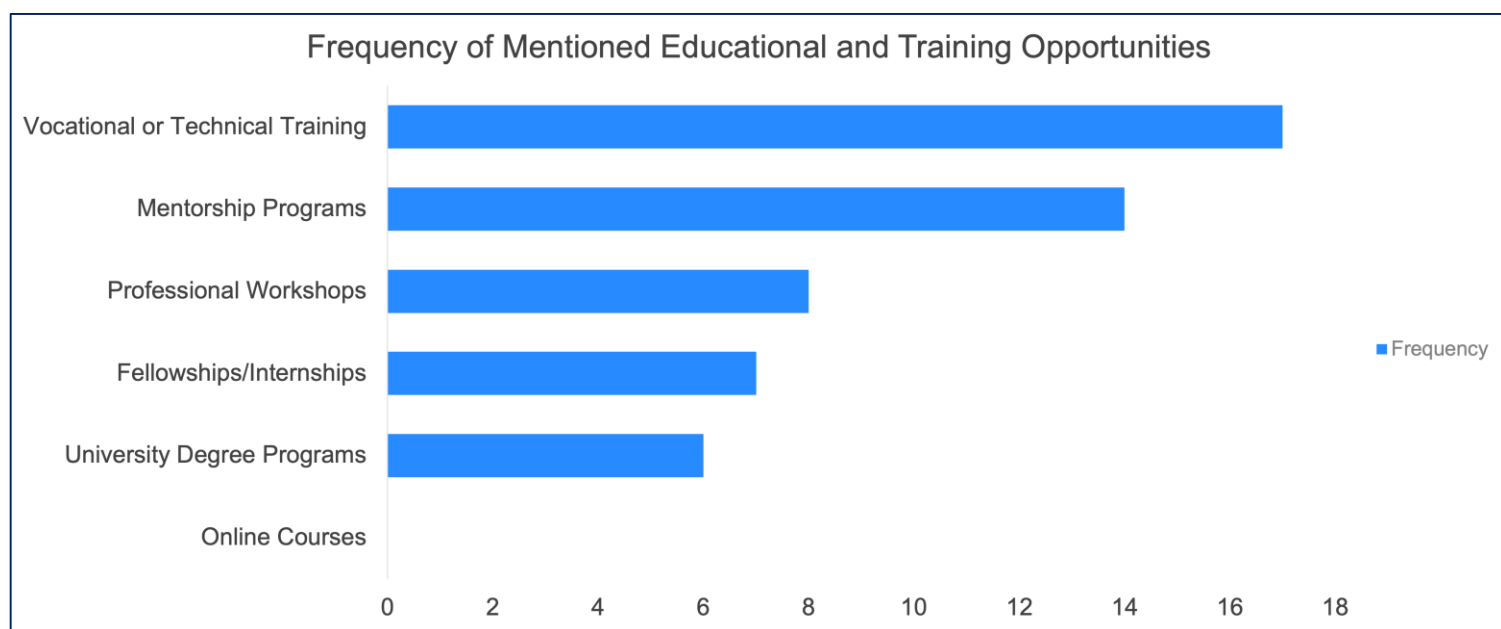


DATA EXTRACTION FINDINGS

The data extraction process for this project focused on identifying gaps and opportunities in the Women's Health R&D workforce, emphasizing increased research participation, funding, and capacity building among researchers in sub-Saharan Africa.

Of the extracted studies, 58% were conducted in or focused on Africa, while 36% did not specify a particular region but concentrated on LMICs as a whole. In terms of research focus, 67% addressed gynecological health and reproductive biology, 36% covered general women's health, and 8% focused on non-HIV STIs. Additionally, 55% of the articles did not specify a target audience. Among those that did, 17% were directed at senior researchers or professors, 14% at clinical researchers, 6% at early- to mid-career researchers, and 8% at other audiences.

The extracted data highlights the frequency of educational and training opportunities mentioned in the literature related to workforce capacity building in women's health R&D. The most frequently referenced opportunities were vocational or technical training, followed by mentorship programs and professional workshops. Fellowships and internships, along with university degree programs, were also noted but with less frequency. Online courses were not mentioned in the identified literature. While specific opportunities were listed when available, many of these educational and training programs were referenced more broadly, indicating that detailed descriptions of such programs may be lacking in the existing literature. This suggests that workforce development in women's health R&D in SSA often includes a mix of formal and informal educational pathways.

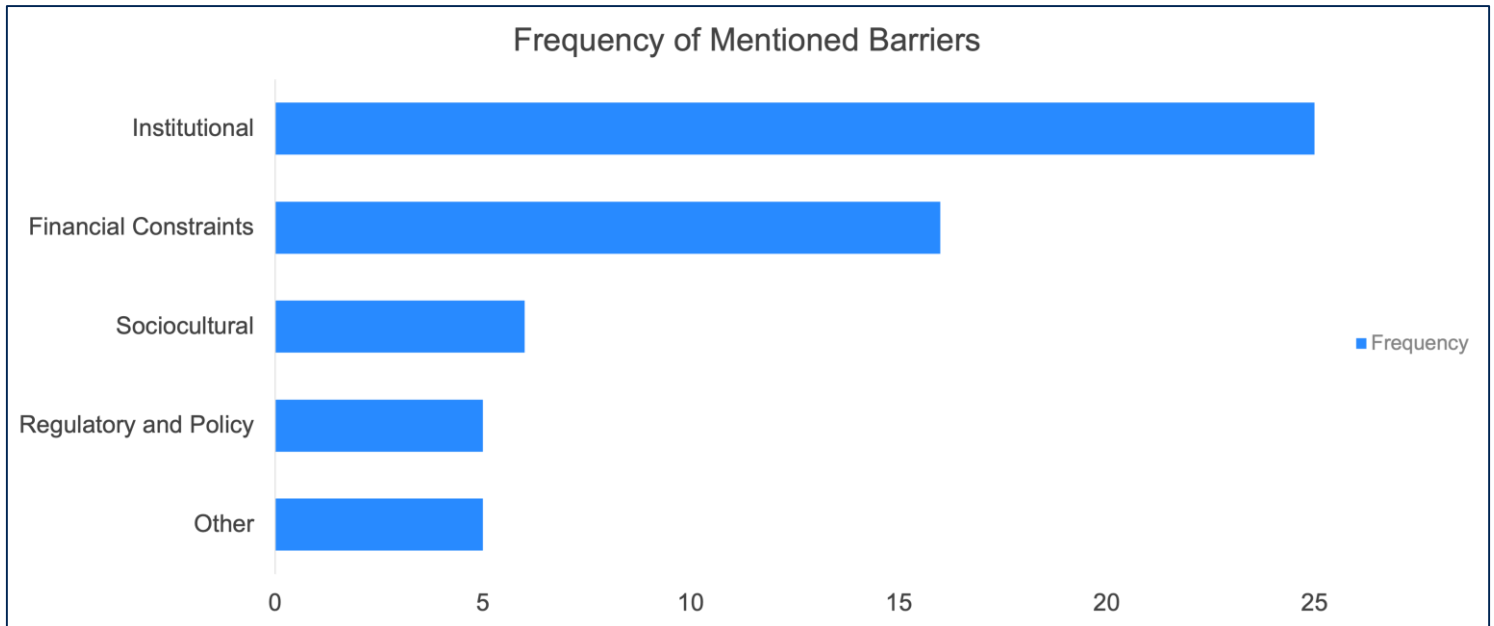


Graph 1: Frequency of mentioned educational and training opportunities in the identified literature.

The data highlights several key barriers to education and career development in the Women's Health R&D workforce, categorized into five primary areas: financial constraints, institutional barriers, sociocultural factors, regulatory and policy challenges, and other unspecified barriers. Institutional barriers were the most frequently mentioned, encompassing inadequate support, infrastructure, and opportunities within educational and research institutions. Financial constraints, such as limited access to funding and resources, followed as second most mentioned challenge to educational and career development. Sociocultural factors, including cultural norms and gender biases, were less frequently mentioned but remain critical obstacles, particularly when regarding abortion and contraceptives. Regulatory and policy barriers, including restrictive policies and bureaucratic hurdles, were noted as being least obstructive to career advancement. The "other" category represents additional barriers that did not fall into the main categories.

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Graph 2: Frequency of mentioned barriers to education and career development in the identified literature.

THEMATIC ANALYSIS FINDINGS

The thematic analysis identified several key facilitators and barriers across different domains that affect the development of the Women's Health R&D workforce in LMICs, particularly in sub-Saharan Africa. These facilitators and barriers were categorized according to an adaptation of the WHO's HRH Action Framework. This framework informed a structured approach to grouping findings into six key areas: financial, educational, networking, collaborations, leadership and policy, and sociocultural factors.

Financial: Donor funding that aligns with local priorities was seen as a significant facilitator for building research capacity.^{2,3,4} Secure, dedicated funding was also a prominent identified facilitator, allowing for autonomy and fostering progress in women's health research without requiring partnerships with HICs.^{2,6,7,8} However, barriers such as misalignment of donor priorities, which often focus on diseases like TB, HIV, and Malaria, overshadow local women's health needs.^{2,3,4} Additionally, competitive grant processes, especially against researchers from HICs, and limited financial resources hinder access to necessary infrastructure and tools, disproportionately affecting less-researched areas in sub-Saharan Africa.^{4,8,9,10,11,12}

Educational: Mentorship and skill development programs were highlighted as vital for advancing the careers of women's health R&D researchers in LMICs.^{13,14,15} Workshops focused on women's health, research methodologies, and manuscript writing are crucial for skill building.^{8,11,16,17} However, challenges remain, as mentorship opportunities are often limited due to low financial compensation and inadequate recognition.^{12,14,18} Moreover, gaps in research-specific skills and weak institutional support further hinder researchers' ability to access effective training and development.^{7,16,18}

THEMATIC ANALYSIS FINDINGS

Networking: Affiliation with research institutions and participation in global studies provide critical opportunities for cross-border collaboration and networking. However, emerging institutions in SSA often struggle with visibility and access to international networks. Limited networking skills, power imbalances in partnerships, and language barriers further restrict researchers' ability to build meaningful connections and fully participate in the global research community.^{6,8,19,20,21}

Collaborations: Effective collaboration is essential for advancing research capacity. However, the reliance on external funding from international donors often leads to misaligned priorities, with local researchers having to conform to northern-led initiatives, limiting their ability to focus on local needs.^{2,3,4} Power imbalances between HIC and LMIC researchers, low intra-African collaboration, and the secondary role played by African researchers in many partnerships further limit progress.^{4,7,12,20,22} Strengthening institutional support is critical to fostering local engagement and research leadership.^{7,18,23,24}

Leadership and Policy: There is a lack of political commitment to recognize the contributions of local researchers, which discourages retention in the field.^{15,21,25} Furthermore, research findings are often underutilized by policymakers, media, and community groups, leading to low recognition and support for local research efforts.^{8,25} Addressing these issues is essential for sustaining the development of the women's health R&D workforce in SSA.

Sociocultural: Cultural norms and societal expectations, such as the stigma surrounding contraceptives and abortion, present significant barriers to conducting and promoting research in women's health.^{8,25,26} The low perceived value of sexual health research also reduces the prioritization and support for these areas in health agendas.⁸ Additionally, weak national research systems make it difficult to manage the full research cycle, from developing relevant questions to using research findings for policy and practice.^{6,19}

The thematic analysis highlights the diverse challenges and opportunities in building the Women's Health R&D workforce in SSA. Key facilitators such as aligned donor funding, mentorship programs, and networking opportunities provide crucial support, while barriers including financial constraints, misaligned priorities, sociocultural stigmas, and institutional weaknesses impede progress in the area.

NIH FUNDING ANALYSIS

The National Institutes of Health (NIH) currently provides funding to 22 African researchers and institutions with active projects focused on women's health in SSA. Notably, over 3,500 projects are being funded with a focus on women's health in SSA but only these 22 projects are led by African researchers. Of these projects, eight involve partnerships with U.S. institutions or mentors. South Africa leads with the highest number of projects (5), followed by Uganda (4), and other countries, including Ghana, Kenya, Nigeria, Tanzania, Zambia, Zimbabwe, and Mali, each having 1–2 projects.¹

Despite the large population and pressing health needs in SSA, research in the areas of women's health—defined here as menstrual health, non-HIV STIs, contraceptive technologies, and reproductive and gynecological health—receives only 0.01% of the total NIH funding.¹ This significant funding gap highlights the need for more focused investments in SSA to address these critical health issues.

The NIH's Fogarty International Center funds nearly half of the SSA projects, accounting for 45.5% of the total, with \$1.48 million in funding. The Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) provides the most funding, contributing \$3.63 million to SSA projects, which represents 50% of the total SSA women's health funding.¹ Overall, the NIH's funding for women's health research in SSA remains limited, emphasizing the need for increased financial support to address the regional specific challenges in women's health.

GAPS AND LIMITATIONS

Despite the comprehensive approach of this research, gaps and limitations were identified throughout the review and data extraction process. These limitations highlight the areas where more data and a refined research scope are necessary to fully understand and strengthen the Women's Health R&D workforce in SSA. Key gaps and limitations include:

- **Limited Data on R&D Workforce Capacity Programs:** There is a lack of information regarding existing R&D workforce capacity building programs specifically focused on women's health in SSA, making it difficult to assess the effectiveness and reach of such programs.
- **Lack of Real-World Experiences:** The review did not capture extensive real-world experiences of women's health R&D researchers, which limits understanding of the day-to-day challenges and successes of workforce development efforts in SSA.
- **Leadership Roles and Opportunities:** There was insufficient data on leadership roles and opportunities available to women's health R&D researchers, making it challenging to assess how well researchers are being supported and advanced into leadership positions.
- **Specific Financial Support Information:** The identified literature lacked detailed information on the exact types of financial support required, such as funding needed for specific equipment, research tools, or infrastructure.
- **Educational Opportunities for Researchers:** Data on active educational opportunities, such as current training programs and degrees offered to women's health R&D researchers in SSA, was limited.
- **Difficulty Capturing Scope:** It was challenging to distinguish between literature that focused on "women's health R&D workforce capacity building" versus "capacity building in care delivery for women's health" or "capacity building for women researchers," leading to some conflation of the topics.
- **Uncaptured Data in Published and Grey Literature:** Many potential funding sources, educational programs, and professional networks are not published or publicized in traditional academic or grey literature, which means they were likely not captured in this review.

CONCLUSION

This report details both the significant challenges and opportunities in building a stronger women's health R&D workforce in SSA. While the field remains underfunded and under-resourced, particularly in the research areas of focus for this report, there is potential for growth through targeted interventions. Key barriers, including insufficient research capacity, inadequate funding, lack of mentorship, and limited leadership opportunities, have hindered the ability of local researchers to engage in high-impact research. Addressing these barriers will require coordinated efforts to increase funding, enhance mentorship and training programs, and strengthen professional networks that allow researchers to lead region-specific projects. Furthermore, fostering equitable collaboration between researchers in LMICs and HICs is essential to ensuring that partnerships are mutually beneficial and that local researchers are empowered to take leadership roles in research initiatives.

By aligning global health priorities with local needs and placing greater emphasis on region-specific health issues, the women's health R&D workforce in SSA can not only contribute to improving health outcomes in the region but also foster a more equitable global research landscape. Prioritizing local health issues and ensuring that research efforts are driven by the needs of the communities in SSA is critical to achieving lasting improvements in women's health and advancing innovation worldwide.

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