Policy Brief

Ensuring the Sustainability of Health Information System Changes in Ethiopia

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Executive Summary

Despite significant advancements in Ethiopia's Health Information System (HIS), particularly through initiatives like the Capacity Building and Mentorship Program (CBMP), sustaining these improvements remains a critical challenge. Growing financial constraints compel both the government and development partners to prioritize sustainable outcomes, demanding that HIS investments deliver lasting, measurable improvements rather than short-term fixes.

While existing policies have enhanced HIS transformation, they lack robust institutional mechanisms to ensure sustainability beyond project lifecycles. Evidence suggests that without a structured approach to monitor and reinforce sustainability, progress is vulnerable to reversal due to gaps in local ownership, capacity retention, and accountability. Our findings reveal moderate overall sustainability of HIS changes, with foundational areas posing significant challenges. Specifically, infrastructure and the stability of partnerships and funding emerged as critical weaknesses hindering long-term sustainability. Furthermore, the sustained effectiveness of HIS is hampered by a lack of consistent leadership engagement and robust support mechanisms.

To secure recent gains in Ethiopia's HIS, this policy brief recommends a comprehensive, evidence-based strategy. Key recommendations include: integrating sustainability tracking metrics into implementation, prioritizing essential HIS supplies, institutionalizing dedicated financing, and strengthening leadership engagement and partnerships. Emphasis is placed on fostering local ownership through targeted training, motivation, and robust accountability systems to ensure long-term impact."

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Introduction

Sustainability is defined as "the degree to which an innovation continues to be used after initial efforts to secure adoption are completed" (1) or "when new ways of working become the norm" (2). Strong Health Information Systems (HIS) are fundamental building blocks of health systems globally and nationally (3, 4), essential for individual patient care, evidence-based policy formulation, program management, quality improvement, disease surveillance, and strategic use of information. While significant progress has been achieved in implementing evidence-based HIS improvements, maintaining these changes over time remains a substantial challenge. Factors such as heavy reliance on donors, lack of local ownership by staff, inadequate training and retention of staff, limited financial resources, and technical expertise consistently impede sustainability (5-7). The lack of sustainability of these HIS changes ultimately compromises the overall health system's effectiveness. Thus, effective and efficient sustainability of improvements/changes in healthcare information program components at sufficient intensity for desirable program goals and outcomes is becoming an increasingly important need for health policy makers, researchers, evaluators, funders, and community partners.

The Ethiopian Ministry of Health (MOH) has given due emphasis and priority to strengthening the national health information system since the introduction of the Health Sector Development Plan. Considering this, the MOH implemented a Public-Public Partnership (PPP) collaborative work known as the Capacity Building and Mentorship Program (CBMP) in six Ethiopian Public Universities for the implementation of health information transformation, following the priority agendas of the Health Sector Transformation Plan (HSTP). Through this unique collaborative work, noticeable change has been documented. However, the sustainability of these changes has been a challenge (8, 9). Therefore, this policy brief aims to address ensuring of sustainability of HIS evidence-based interventions that have shown noticeable changes.

Methods and materials

We conducted quantitative analysis across four woredas (districts) located in Sidama regional state and the former Southern Nations, Nationalities, and Peoples' Region (SNNPR) of Ethiopia, where the Capacity Building and Mentorship Program (CBMP) is implemented. These four woredas were purposively selected from six CBMP-supported districts based on their strong performance in health information system (HIS) indicator improvement and demonstrated criteria aligned with the study's focus on sustainability. Data was collected between August 01, 2021, and September 30, 2021. Within these districts, data were collected from 29 public health institutions—including 4 Woreda Health Offices (WoHOs), 21 health centers, and 4 hospitals—as well as from 233 Performance Management Team (PMT) members, ensuring broad and feasible coverage for the study. We employed a framework of sustainability measures adapted from different litterateurs (6-9), organized around 7 domains to examine the level of sustainability of the observed changes in HIS. The domains are:

- Staff related
- Organizational
- Leadership
- Infrastructure
- Partnership and funding stability
- Effectiveness of the system in monitoring the change
- Benefit, credibility, and adaptability of the change

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Results

Figure 1 illustrates the quantitative scores for each of the seven sustainability measure domains, around which the data were collected. The overall domain average for HIS change sustainability was 2.75, out of a maximum score of 4 assigned for each domain. This indicates a moderate level of sustainability with significant areas for improvement.
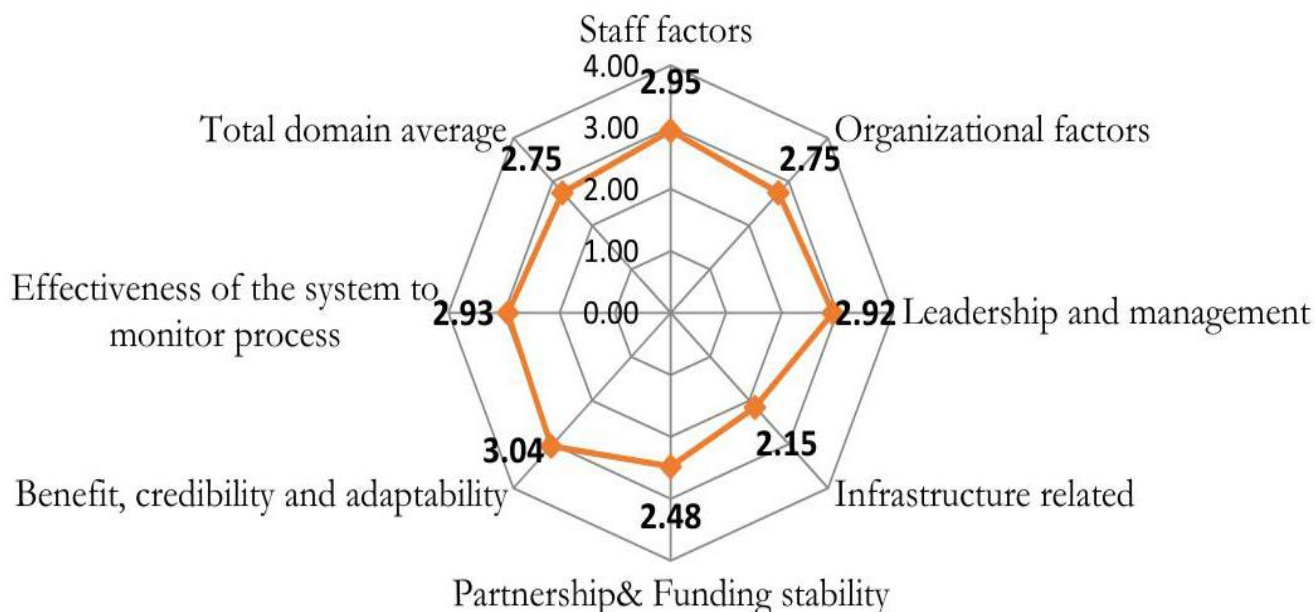

Fig. 1. Overall average score of Sustainability of HIS change domains, Hawassa, 2021.

Notably, the domain with the least sustainability score was infrastructure (2.30). This domain encompasses critical elements such as the availability of separate HMIS rooms, essential materials and equipment (like computers, printers, and shelves for medical record units), internet connection, HealthNet, and Local Area Network (LAN). The consistent supply of standard registries, tally sheets, paper, and inks, all crucial for sustaining interventions made for the changes, was also a major concern within this domain.

Following infrastructure, partnership, and funding stability was the domain with the second least sustainability score, 2.48. The major items analyzed under this domain included having strong collaborative activities with other concerned governmental and non-governmental organizations, and crucially, the ability to secure multiple sources of non-donor financing, particularly from within the healthcare facility, with an HIS-specific line item.

Next to the partnership and funding stability domain were organizational factors, with an average score of 2.75. The major areas analyzed and found under this domain included the organization's culture of resistance to HIS change, having a strong communication system in place to sustain the change, whether policies, procedures, and guidelines are appropriate and available for sustaining the improvement, and whether the healthcare facility has demonstrated successful sustainability improvements before and has a "can do" culture.

Following the organizational factors, the leadership and management domain was

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identified with a score of 2.92. Specific areas related to this domain include whether WoHO, Health Centre, and Hospital leaders and HMIS focal persons are highly involved and visible in their support of the change process; whether the observed change has leadership support from outside the institution; whether leaders use their influence to communicate the effect of the HIS change and to break down any barriers; whether leaders take responsibility for efforts to sustain the change process; and finally, whether leaders regularly share information on the observed change with and actively seek advice from staff to ensure the change is participatory.

The domain concerning the effectiveness of the system's experience to monitor the interventions for change using a standard checklist to sustain the change follows the leadership and management domain with a score of 2.93. In this domain, major areas identified were whether there is strong experience in using a standard IR checklist regularly to keep the change on track; if there is a system in place to act on progresses of the monitoring system results and communicate to stakeholders; and whether the facility provides strong evidence to stakeholders and the entire public about the change and its sustainability regularly.

Staff factors domain score 2.95 follows the effectiveness of the system's ability to monitor the progress of change. Staff factors are the broadest areas covered in this analysis and include whether staff are adequately trained to sustain the improved process and are encouraged and able to express their ideas regularly throughout the change process, with their input taken into account. Also observed in this domain were whether staff feel empowered as part of the change process, believe the improvements will be sustained, demonstrate appropriate commitment, confidence, motivation, and competence to maintain the HIS change directly, and feel ownership/personal responsibility to sustain the observed changes.

Lastly, the Benefit, Credibility, and Adaptability of the change was scored relatively better than the rest of the domains, 3.04, though there remains room for action. This domain includes whether the observed change in HIS makes the job easier; if the observed HIS change is efficient (reduced cost without compromising effect); if benefits of the HIS change on data quality and information use are immediately obvious; if benefits of the HIS change are supported by evidence and believed by stakeholders; and if the change process can be adapted to other Health Centers/WoHos and hospitals.

Conclusion and Recommendations

In conclusion, this study underscores the critical importance of integrating sustainability considerations as a core component of HIS interventions, moving beyond mere program implementation. The findings identify infrastructure and partnership, and funding stability as priority areas where managers, planners, and program coordinators must intervene to secure the long-term viability of HIS changes. While staff recognition of benefits is high, the foundational elements for sustained operation require urgent attention. Addressing these specific domains is paramount for Ethiopia to realize and maintain the full benefits of its HIS advancements.

Policy recommendations:

- Integrate ongoing monitoring and evaluation of HIS sustainability into implementation frameworks.
- Ensure provision of essential HIS infrastructure (e.g., equipment, supplies, internet) through coordinated action by RHBs and WoHOs.
- Strengthen and expand partnerships among RHBs, MOH, and other stakeholders to support HIS initiatives.

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- Establish a dedicated budget line for HIS within institutional financial plans to secure long-term funding.
- Tackle organizational resistance through targeted awareness campaigns and change management training.
- Prioritize active leadership involvement in driving and supporting HIS reforms.
- Promote staff engagement and ownership by offering need-based training and motivational strategies, such as incentives.

Ethical considerations

This study was performed following relevant guidelines and regulations and approved by the Institutional Review Board (IRB) of Hawassa University, College of Medicine and Health Sciences, Hawassa.

Conflicts of interest

The authors declared that no conflicts of interest exist.

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