Proposal

Performance-Based Human Resources Management for an Effective and Efficient Health System, Focusing on HIV/AIDS and Tuberculosis Prevention and Control: Protocol for an Implementation Study

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Abstract

Background: Despite strong public sector interest in streamlining health systems and boosting operational efficiency, Vietnam lacks feasible tools or technical manuals to guide the implementation of data-driven, performance-based human resource management (HRM) practices. The customized performance-based (CPB) method is an adaptable framework that quantifies workload and evaluates staff performance to inform human resource decisions. Building on its pilot in Vietnam's HIV sector, the Leveraging Human Resource Management for Vietnam's Health System (LHRM-S) project adapts and institutionalizes the CPB method across diverse health sectors, fostering an enabling environment for sustainable and nationwide scale-up.

Objective: This study protocol outlines the implementation research design and evaluation framework for assessing the adoption, feasibility, and sustainability of scaling up the CPB method across Vietnam's public health facilities.

Methods: Guided by the implementation research logic model (IRLM), intervention strategies were refined with the Ministry of Health (MOH), provincial Centers for Disease Control (CDC), and technical experts. Following a stakeholder-driven preimplementation phase to adapt the CPB method beyond the HIV sector and tailor local implementation plans, the implementation phase uses intensive training and facilitation to empower staff and leadership in using CPB computerized tools and data-driven insights to transform site-level HRM practices. To ensure sustainability and nationwide scale-up, the project focuses on two integrated pillars: (1) establishing a robust technical environment through meticulous documentation of the implementation process, including digital tools, strategies, and outcomes, to guide existing facilities and new adopters and (2) strategically strengthening the policy environment by organizing national workshops to disseminate results and advocating for the issuance of official administrative guidelines and formal mandates. Outcome evaluation monitors adoption, implementation, and maintenance, while the effectiveness of the CPB method in HRM is assessed using the most significant change technique.

Results: The project was funded in May 2024. Following official project approval in March 2025, two national kick-off workshops were conducted, the CPB method was adapted for HRM beyond the HIV field, and 62 provincial trainers and 460 site staff were trained by September 2026. As part of a multiphase evaluation design, data collection began in September 2025 and is projected to conclude at the end of the sustaining phase in March 2028. As of November 2026, early-stage data analysis is underway, with full iterative evaluation continuing until expected publication in December 2028.

Conclusions: This study protocol establishes a structured framework to adapt, implement, and evaluate the CPB method for HRM within the broader public health care sector in Vietnam, while fostering a supportive environment for national expansion. This initiative is expected to enhance the effectiveness and efficiency of the national response to HIV, tuberculosis, and other health threats, serving as a scalable model for both domestic expansion and regional replication.

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Introduction

Background

The HIV epidemic in Vietnam remains complex and dynamic. HIV prevalence in Vietnam is estimated at 270,000 in 2024, with approximately 6100 new infections and 4200 AIDS-related deaths [1]. Vietnam's HIV epidemic is concentrated among 3 key populations and their sexual partners, with the estimated prevalences among people who inject drugs, men who have sex with men, and female sex workers of 29.3%, 7.5%, and 8.5%, respectively [2]. Sexual transmission has been the dominant mode of HIV transmission in recent years, with recent Vietnam Ministry of Health (MOH) data showing that 80% of new infections are due to sexual transmission [3]. Intersectional stigmas play a large role in preventing key populations from entering the HIV cascade and for Vietnam to meet its goal of reaching HIV epidemic control by 2030.

Tuberculosis (TB) also continues to be a significant cause of morbidity and mortality in Vietnam. Vietnam has a relatively high incidence rate of TB, remaining among the 30 high-TB-burden countries globally and facing an ongoing risk of outbreaks in the community, with 106,392 newly diagnosed and reported cases in 2024, representing a 1.8% increase compared with 2023 [4]. The prevalence rate is approximately 182 cases per 100,000 population in 2024. The disease affects people of all age groups, with the most vulnerable populations including the elderly, people living with HIV, and those living in crowded and impoverished settings. Only 60% of new TB cases are successfully detected each year, and the situation has been further exacerbated by the service disruptions related to the COVID-19 pandemic [5].

In alignment with the political commitments and statements from the United Nations General Assembly High-Level Meetings [6], Vietnam set the goal of ending AIDS and TB by 2030. While Vietnam has made significant strides in combating HIV and TB in the past decade, successfully achieving the Sustainable Development Goals related to these diseases requires enormous efforts to address several critical challenges across all 6 health system building blocks, with the most critical need being the strengthening of human resources.

First, completion of merging preventive and communicable disease programs, including HIV and TB, into provincial Centers for Disease Control (CDC) at the provincial level during 2015 to 2020 [7] and more recently merging the Vietnam Administration for HIV/AIDS Control (VAAC) in early 2025 [8], which was previously a stand-alone entity of the MOH, into General Department of Preventive Medicine (GDPM) has significantly impacted disease management and staffing. This restructuring has led to extensive staff turnover and rotation within MOH and provincial CDCs, resulting in a loss of specialized HIV and TB expertise as personnel are shifted to other disease programs.

Second, beyond these shifts, an even more profound transformation is placing immense pressure on the health workforce: the massive administrative consolidation of provinces from 63 to 34, the elimination of the district level of government, and the restructuring of commune health centers (CHCs) in 2025 [9]. Within this context, achieving the ambitious dual goals of an AIDS- and TB-free generation by 2030 requires accelerating innovative and effective human resource management (HRM) to ensure an adequate and qualified health workforce, as well as maximizing efficiency in deploying this workforce.

Third, public health systems suffer from inadequate health information systems and a lack of proficiency in applying data for strategic health management [10]. The most recent resolution of the politburo on breakthrough solutions to strengthen the protection, care, and improvement of the people's health (resolution number 72-NQ/TW) highlights mechanisms to mobilize resources for health and mandates a leaner, more efficient health care system [11]. Thus, establishing a data-driven mechanism is increasingly critical to provide evidence to optimize health human resource allocation and management in Vietnam.

However, in Vietnam, as well as in other low- and middle-income countries, optimizing the allocation and management of health human resources remains a persistent challenge for achieving universal health coverage [12]. To support objective, data-driven workforce planning, various analytical tools have been developed [13]. Among these, the workload indicators of staffing need (WISN) method, introduced by the World Health Organization (WHO) to calculate staffing requirements based on service workload and activity standards, is one of the few open-source tools applicable at both facility and national levels [13]. WISN has been widely adopted across diverse health systems, particularly low- and middle-income countries [14-16]. Although it remains a relevant and valuable baseline tool, recent global evidence emphasizes the necessity of tailoring WISN to specific local contexts and complementing it with integrated

frameworks to offer a comprehensive outlook for policy dialogue and strategic human resource planning [13,17]. Since WISN focuses on workload, it does not account for staff performance.

Performance-based management is a systematic approach to improving performance through an ongoing process of establishing strategic performance objectives; measuring performance; collecting, analyzing, reviewing, and reporting performance data; and using these data to drive improvement [18]. A large body of literature demonstrates the role of performance-based management among public entities [19-21], as well as in the health care sector [22,23]. Although performance-based HRM is a recognized norm in Vietnam's public organizations, there is a notable lack of effective and practical tools for its implementation. Therefore, bridging workload metrics derived from WISN with performance indicators becomes essential to create a comprehensive tool for strategic health workforce management.

Descriptions of the Development of the Customized Performance-Based Method in HRM in Vietnam

To address the persistent challenges in HRM within the fields of HIV, TB, and other public health threats, the Hanoi University of Public Health (HUPH), in collaboration with strategic partners such as the GDPM (MOH) and various provincial CDCs, is implementing the project "Leveraging Human Resource Management for HIV/AIDS Prevention and Control" (LHRM) from 2019 to 2023. During this foundation phase, the customized performance-based (CPB) method was developed and piloted specifically within the HIV sector to inform human resource decisions.

The LHRM project represents a pioneering effort to develop and disseminate a standardized methodology for performance-based HRM in the field of HIV. The CPB method was designed following a systematic review of existing frameworks and tools (see Table S1 in Multimedia Appendix 1 for a summary of reviewed methods/tools) and a comprehensive local needs assessment involving 7 provincial CDCs and 50 departments within the public HIV service system. The team, with input from a 10-member expert panel of human resource experts, developed the CPB method based on five criteria: (1) ease of implementation; (2) customizability to fit provincial HIV/AIDS prevention and control needs; (3) complete government reporting and compliance capabilities; (4) scalability to accommodate future health system growth; and (5) no gender-related barriers and strict alignment with national policies regarding gender-specific characteristics and equity. The CPB method was subsequently applied across 50 departments, involving 361 staff members, from February to June 2023.

An evaluation using a mixed methods approach (ie, consisting of a quantitative survey of 108 CDC staff and 117 personnel from other health facilities within the public HIV system, alongside qualitative interviews with 30 key informants) indicated that participants perceived the CPB tools as highly accurate, adaptable, acceptable, and relevant to the local context. Furthermore, an independent endline evaluation conducted in July 2023 concluded that the CPB method is beneficial for streamlining tasks and enabling HRs to work more efficiently toward organizational goals. The evaluation recommended that the CPB method be expanded to other health areas, including TB and community-led health systems.

The CPB method is not merely a "plug-and-play" application for immediate HRM results but rather a methodology that allows an organization to learn, apply, and transform its routine activities into evidence-based HRM practices. The intervention package consists of 2 core elements: the CPB toolkit (comprising computerized tools and technical manuals) and the formal guideline, "How to Implement the CPB Method in HRM." This guideline documents lessons learned and provides a step-by-step framework for implementers to integrate the method within their respective institutions.

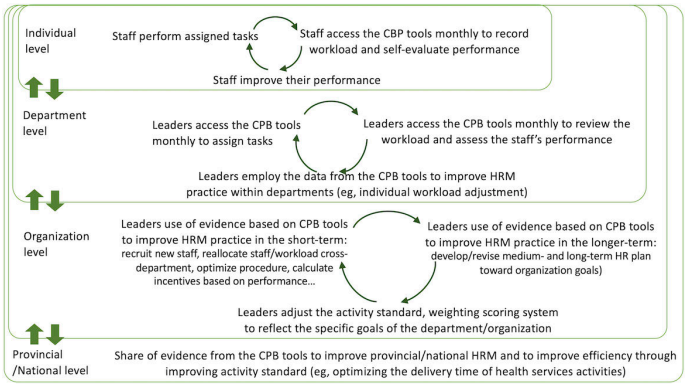
This method allows department leaders to quantify workload over 3 main task categories (ie, health services, support tasks, and additional tasks). By estimating the staff requirements based on quantified workload, leaders can address the question "How many staff do we need?" Beyond the workload aspect, the method enables department leaders to evaluate staff performance using additional indicators: output volume (eg, cases consulted), customer feedback (eg, satisfaction rating), timeliness (eg, turnaround time), and technical adherence (eg, audit score based on standard operating procedures). To ensure evaluations are equitable and strategically aligned, the CPB method uses a weighted scoring system, such as assigning weights to the above performance indicators. This allows managers to prioritize high-value criteria, such as technical adherence, over health service tasks. By adjusting these weights, organizational leaders can direct their organization's focus toward specific goals.

In the short term, the evidence generated by applying the CPB method provides department leaders with transparent diagnostics of departmental operations. For instance, the workload data informs the decision to rebalance individual tasks, ensuring no staff member is unfairly burdened. At the organizational level, the evidence provides the basis for leaders to optimize HR allocation: justify recruitment needs, reallocate personnel to high-pressure departments, and streamline workflows by identifying and removing redundant steps in the protocol. Furthermore, these metrics serve as an objective basis for calculating performance-based incentives, ensuring that rewards are directly tied to documented quality and productivity.

In the long term, higher-level authorities can leverage the cumulative evidence from CPB tools for strategic HR planning. Furthermore, by conducting benchmarking exercises at the provincial and national levels, leaders can compare performance indicators across different groups. This approach allows them to minimize disparities by identifying underperforming units, standardizing technical protocols based on established reference standards, and ensuring that

resources are distributed efficiently across the entire health care system. Figure 1 illustrates the application of the CPB method in HRM across the individual, department, organizational, and provincial/national levels.

Figure 1. Summary of core intervention strategy: applying the customized performance-based (CPB) method in human resource management (HRM).



Overview of Project Aims and Setting

Considering the above context and building upon the lessons learned and the success of the initial LHRM phase, HUPH and its partners are currently executing the follow-up project, "Leveraging Human Resources Management for Vietnam's Health System" (LHRM-S), under L'Initiative's "Strengthening Health Systems at all levels" call. In the current phase, LHRM-S primarily focuses on scaling the CPB method beyond HIV-specific programs to encompass the broader public health system (eg, CDCs, CHCs, and TB hospitals) as well as civil society organizations involved in the HIV/AIDS response (including community-based organizations and social enterprises). Given that the public health system remains the primary focus of the project's scale-up, this paper focuses specifically on the component of LHRM-S targeting the public health system, describing its objectives, methodology, and preliminary implementation experience.

The overall goal of LHRM-S is to improve the effectiveness and efficiency of the public health management system's response to HIV and TB epidemics and other public health threats by enhancing evidence-based HRM. To achieve this goal, we aim to disseminate the CPB method, which was developed and piloted in the HIV system during the initial LHRM phase, to other health areas (ie, TB and other diseases) to improve the effectiveness and efficiency of their HRM (aim 1) and to create an enabling policy and technical environment to spread the application of the CPB method in HRM not only in the project settings but also in other provinces across Vietnam (aim 2). See Textbox 1 for a summary of the LHRM-S project.

Textbox 1. Summary of the LHRM-S (Leveraging Human Resources Management for Vietnam's Health System) project.

Aims

- Aim 1: to enhance effective evidence-based human resource management (HRM) by applying the customized performance-based (CPB) method to Centers for Disease Control (CDCs) and HIV and tuberculosis (TB) prevention and control systems in 7 provinces in Vietnam.
  - To adapt the CPB method to apply in HRM outside the field of HIV
  - To implement the adapted CPB method in new departments within the project sites
- Aim 2: to create an enabling policy and technical environment to spread and scale up the application of the CPB method in HRM.
  - To advocate for the issuance of an official document of application of the CPB method in HRM
  - To encourage stakeholders outside the project sites to apply the CPB method in HRM

Setting

- Public health system in 7 provinces, including Hanoi, Son La, Thai Nguyen, Hue, Lam Dong, Khanh Hoa, and An Giang
- Departments within 7 provincial CDCs
- Departments within 6 provincial TB hospitals located in the above 7 provinces (except for Lam Dong, the province has no TB hospital)
- 14 CHCs located in the 7 provinces

Regarding the study setting, the 7 provinces from the initial LHRM phase will continue into the LHRM-S phase. These provinces were selected based on their diverse ecological characteristics and their representation of the national HIV epidemic. Within these 7 provinces, all 7 CDCs and all TB hospitals will participate. At the grassroots level, 14 CHCs across the 7 provinces will be included, with each province selecting 2 CHCs to ensure geographic diversity. It is worth noting that, compared to the initial LHRM phase, the scale of each setting in LHRM-S has increased following

the administrative consolidation of provinces and communes. Consequently, the number of staff participating in this phase has nearly doubled compared to the initial LHRM phase.

Methods

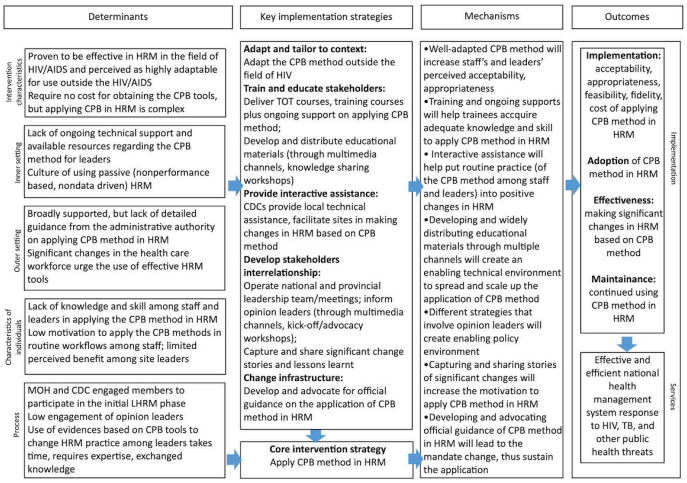
Grounded in the implementation science framework, this study uses an observational implementation design using formative evaluation [24,25]. Rather than evaluating competing implementation strategies in a trial format, it focuses on observing real-world operational contexts, identifying multilevel barriers, and assessing the preliminary feasibility and adoption of scaling the CPB method across diverse public health settings. To ensure rigorous and transparent reporting of this implementation science protocol, the study design and reporting procedures adhere to the STaRI (Standards for Reporting Implementation Studies) checklist [26] (see Checklist 1 for the self-completed checklist).

Development of the Implementation Research Logic Model

A logic model was created following the structure and guiding principles of the implementation research logic model (IRLM) [27]. Using the Consolidated Framework for Implementation Research (CFIR) [28], implementation determinants were identified based on the team's prior experience during the initial LHRM phase, the internal mixed methods endline evaluation described above, and external endline evaluation reports. These identified determinants strongly align with current literature in the field [29]. The RE-AIM (reach, effectiveness, adoption, implementation, and maintenance) framework [30] was used to select relevant metrics for evaluating the implementation process. As this study centers on a health system intervention, the evaluation focuses exclusively on implementation outcomes rather than clinical or client-level results.

Based on the identified determinants and expected outcomes, all possible strategies were determined by reviewing the Expert Recommendations for Implementing Change (ERIC) [31]. The strategies are grouped based on the ERIC thematic clusters [32]. The team finalized the intervention strategies by synthesizing lessons learned from the initial LHRM phase with comprehensive stakeholder consultations. This process included input from representatives of the 7 participating CDCs during the official enrollment, as well as strategic feedback from the GDPM and the Department of Personnel and Organization (DOP) under the MOH. Furthermore, the strategies were refined through technical consultations with representatives from the National TB Program, the Health Strategy and Policy Institute (HSPI), and 2 independent experts. The final strategies and mechanisms are presented in Figure 2.

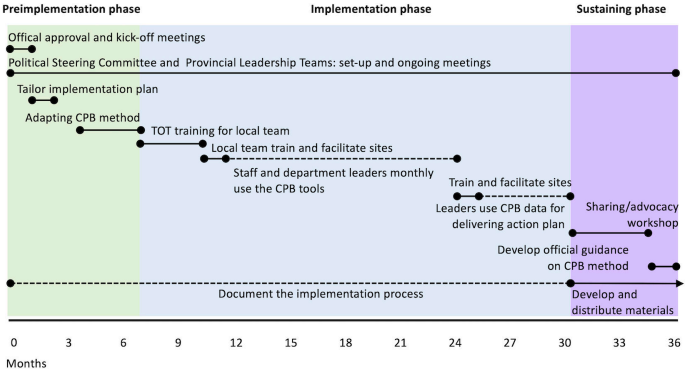
Figure 2. Implementation research logic model (IRLM). CDC: Center for Disease Control; CPB: customized performance-based; HRM: human resource management; MOH: Ministry of Health; TB: tuberculosis; TOT: training of trainers.



Implementation Strategies

The core intervention strategy will be implemented in three phases: (1) the preimplementation phase, (2) the implementation phase, and (3) the sustaining phase. Figure 3 outlines the implementation plan and timeline, while key implementation strategies for each phase are described below. More detailed descriptions of activities can be found in Table S2 in Multimedia Appendix 1.

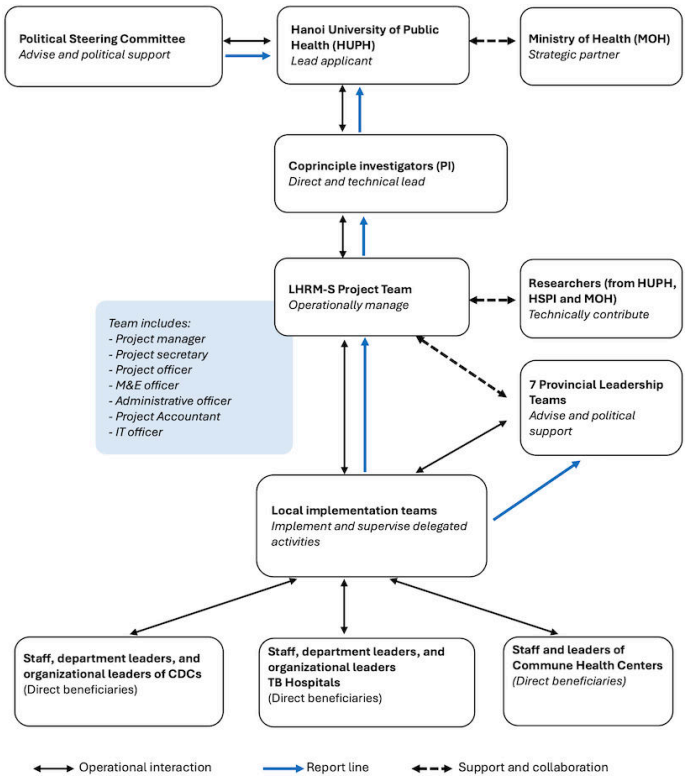
Figure 3. Implementation plan and timeline. CPB: customized performance-based; TOT: training of trainers.



Preimplementation Phase

The preimplementation phase focuses on preparing sites for intervention activities. It begins with obtaining official implementation approval from national-level and provincial-level authorities across the 7 project provinces. Subsequently, through in-person national and provincial kick-off meetings, LHRM-S team members outline the project's objectives, roles, and key activities while highlighting the benefits of applying the CPB method in HRM. Furthermore, the National Political Steering Committee (PSC) and Provincial Leadership Teams (PLTs), originally established during the initial LHRM project, are restructured. The PSC consists of 7 to 9 MOH leaders and high-ranking level managers who can influence decision-making (ie, leaders from DOP and the Department of Science and Technology–MOH), members from HSPI, HUPH, and national gender experts. The PSC will play an important role in providing advice on project design and implementation. The PSC will advocate and influence policymakers at the central and provincial levels. Each PLT consists of 5 to 6 high-ranking leaders and managers from the Department of Health (DOH), the CDC, and lung/TB hospitals. A detailed description of these teams is presented in Table S3 in Multimedia Appendix 1, and the management structure is illustrated in Figure 4. These teams play a vital role in providing ongoing guidance and monitoring project fidelity. In the implementation phase, the PSC will convene twice a year, and the PLTs will convene every 3 months to oversee progress and ensure alignment with established goals. This strategy focuses on strengthening stakeholder relationships to foster an enabling policy environment for sustaining and scaling the application of the CPB method in HRM.

Figure 4. Project management structure. CDC: Center for Disease Control; HSPI: Health Strategy and Policy Institute; LHRM-S: Leveraging Human Resource Management for Vietnam's Health System; M&E: monitoring and evaluation; TB: tuberculosis.



Another key preimplementation activity is to adapt the CPB method for application in HRM outside the field of HIV/AIDS. Following the kick-off meetings across the 7 project provinces, we conduct additional in-person meetings with the PLTs and local team members (ie, senior staff from provincial CDCs and key persons from health facilities who participated in the prior LHRM project) (1) to discuss the functions and features (eg, job positions and descriptions, categories of tasks, tool interfaces, and operational mechanisms) of the CPB computerized tools and technical manuals that need to be updated to reflect current HR management policies and revised for broader health care system use, including other departments in CDCs and TB service provision departments; (2) to assess barriers and facilitators to adopting the CPB method in HRM in the current context; and (3) to develop flexible, tailored implementation plans for each site. Based on these inputs, lessons learned from the project's first phase, and further expert consultations, the CPB computerized tools and technical manuals will be revised and updated to be ready for implementation within CDCs and provincial lung hospitals. This "adapt and tailor to context" strategy is expected to increase the perceived acceptability and appropriateness of the adapted CPB method in HRM, as well as increase the adoption of the CPB method across project sites.

Implementation Phase

During the implementation phase, training and facilitation at project sites are the 2 key implementation strategies. In the early implementation stage, training of trainers (TOT) workshops will be conducted to educate local team members on how to apply the CPB method and to build their capacity to effectively deliver training and subsequent facilitation to participating departments. Following the TOT workshops across the seven provinces, local team members, with support from the LHRM-S core team, will deliver training courses for all staff and department-level leaders at 7 CDCs, 6 provincial TB hospitals, and 14 CHCs.

Immediately following the training courses, all project sites will adopt and integrate the CPB computerized tools into their routine HRM practices. This process begins with tool registration and the assignment of user roles, including staff, department-level leaders, organizational-level leaders, and provincial/national-level leaders. Subsequently, staff will use the CPB computerized tools monthly to record their workload and self-assess their performance, while department-level leaders will use the tools monthly to review staff workload and performance over a 12-month period. Throughout this 12-month period, local team members will provide facilitation to all project sites, supporting them in resolving any technical or operational issues that arise. Furthermore, the LHRM-S core team will review the data generated by the CPB computerized tools to identify anomalies and outliers. This process will incorporate benchmarking exercises to provide strategic feedback to local teams and project sites on a quarterly basis.

Following the initial training and this 12-month period, another 7 workshops will be conducted for department-level, organizational-level, and provincial-level leaders at the CDCs, provincial TB hospitals, and CHCs. These workshops will focus on how to use data generated by the CPB computerized tools to improve HRM practices in both the short and long term. This posttraining facilitation will be led by the project teams and 2 local HR experts, consisting of reviewing current HR strategies, identifying social and cultural factors affecting HRM practices in health care delivery, finding solutions, and generating data-driven action plans. This specific facilitation process will occur over a 6-month period, covering both the advanced training courses and the integrated facilitation activities.

Sustaining Phase

The sustaining phase focuses on 2 main strategies to ensure that existing project sites maintain their activities while also facilitating the expansion of the intervention. The first strategy aims to create an enabling technical environment through the dissemination of knowledge and shared experiences. This involves the comprehensive documentation of the entire implementation process, including digital tools, challenges faced, strategies used, and outcomes achieved, to serve as a guide for both existing facilities and potential new adopters. Communication and advocacy products, including policy briefs, brochures, videos, and news items, will be widely distributed through project websites, social media networks, and other relevant channels to raise awareness and reinforce support. A dedicated project website will be developed and maintained during project implementation and for at least 3 years after the project ends to provide existing sites with ongoing access to technical resources. Additionally, provincial sharing workshops will be conducted with the Provincial People's Committee, Health Department, Department of Home Affairs, CDC, lung/TB hospitals, and other related stakeholders to share results and "significant change" stories. Through the development and wide distribution of these materials, the project aims to motivate existing users to sustain their efforts and encourage additional adopters to expand the application of the CPB method.

The second strategy focuses on further strengthening the enabling policy environment to support both the long-term maintenance and scaling of the CPB method. National workshops will be organized to disseminate results to a wide audience, including national and provincial policymakers, health professionals, media, and community members. These workshops will use presentations, panel discussions, and interactive sessions to inform opinion leaders about the successes and usefulness of the CPB method in optimizing HRM. Alongside these dissemination efforts, the sustaining phase will be further facilitated by advocating for the issuance of official guidelines and formal documents from administrative authorities on the application of the CPB method in HRM. By advocating for these formal documents and informing key decision-makers, the project aims to establish a permanent administrative framework. This framework is intended to provide the formal mandate and stability necessary for existing project sites to maintain the CPB method as a standard practice while facilitating its continued expansion across the broader health care system.

Evaluation Plan

Mixed quantitative and qualitative data will be used to examine implementation success across 5 domains of the RE-AIM framework [30], that is, reach, effectiveness, adoption, implementation, and maintenance. The measures are summarized in Table 1 and described below. Additionally, the draft evaluation instruments are provided in Multimedia Appendix 2.

Table 1. Outcome measures.

RE-AIM[a] domains and key indicators	Sources	Method	Level
Aim 1			
Effectiveness			
Proportion of staff/leaders reported the CPB[b] method as an effective application in HRM[c]	Staff leaders	Survey	Individual
Proportion of departments making significant changes in HRM based on the CPB method	Project administrative data	—[d]	Organization
Effectiveness of applying CPB method in HRM using the most significant change (MSC) techniques [33]	Staff, leaders, and project team	Qualitative interviews	Organization
Adoption			
Number of departments that apply the CPB method in HRM	Project administrative data	—	Organization
Implementation			
Acceptability			
Acceptability of Intervention Measure (AIM) [34]	Staff leaders	Survey	Individual
Appropriateness			
Intervention Appropriateness Measure (IAM) [34]	Staff leaders	Survey	Individual
Feasibility			
Feasibility of Intervention Measure (FIM) [34]	Staff leaders	Survey	Individual
Fidelity			
The frequency staff/leaders using the CPB tools	CPB tool's records	—	Individual
Cost			
Identify cost incurred of adopting and maintaining the use of CPB method in HRM	Staff, leaders, and project team	Qualitative interviews	Organization
Maintenance			
Proportion of department intended to continue applying the CPB method	Leaders	Survey	Organization
Program Sustainability Assessment Tool (PSAT) short form [35]	Leaders	Survey	Organization
Proportion of department continue to use the CPB tools post project	CPB tool's records	—	Organization
Opinion on the sustainability of applying the CPB methods in HRM	Staff, leaders, and project team	Qualitative interviews	Organization
Aim 2			
Adoption			
Number of new departments intend to apply the CPB method in HRM	Dissemination workshop participants	Survey	Organization

RE-AIM[a] domains and key indicators	Sources	Method	Level
Number of new departments request for the CPB tools and manual	Project administrative data	—	Organization
Maintenance			
Number of official documents that guide the application of CPB method in HRM issued by the Department of Personnel Administration-MOH[e]	Notification on the approval and circulation	—	Organization

[a]RE-AIM: reach, effectiveness, adoption, implementation, and maintenance.
[b]CPB: customized performance-based.
[c]HRM: human resources management.
[d]Not applicable.
[e]MOH: Ministry of Health.

Effectiveness

We will use the most significant change (MSC) technique to capture the effectiveness of applying the CPB method in HRM across participating departments. Developed by Davies (1996), MSC is designed to monitor and evaluate complex participatory programs with diverse outcomes [33]. Unlike traditional methods that rely solely on predefined indicators, MSC focuses on stories of change experienced by participants as a direct result of the intervention. Data will be collected through individual interviews, semiannual implementation reports, and focus group discussions. The MSC process will involve purposive interviews at the project's conclusion, focusing on three core questions: (1) what positive or negative changes have you observed in yourself and your work since implementing the CPB method? (2) which of these changes do you consider to be the most significant? and (3) why is this change the most significant to you? All interviews will be transcribed for thematic analysis. Qualitative data from these transcripts and the semiannual reports will be synthesized to identify a preliminary list of significant changes. These findings will then be presented to 2 separate focus groups (comprising 10 staff members and 10 leaders selected using a convenience sampling method) to verify the stories and shortlist the most impactful changes. Separating the groups ensures we capture how these changes affect different organizational roles. Finally, both groups will convene for a joint discussion to reach a consensus on the final shortlist of significant changes and their underlying drivers.

Additionally, a survey will be conducted at the end of the project to assess the perceived effectiveness of the CPB method, surveying all eligible staff members at participating facilities without sampling. Using a 5-point Likert scale, participants will compare current HRM practices with the baseline across 5 key domains: job profiling, staff deployment, staff satisfaction, staff workload, and gender equity in staffing. These domains, derived from the endline evaluation of the prior LHRM project, will be refined before final distribution.

To measure effectiveness at the organizational level, we will evaluate the proportion of departments that have successfully integrated CPB-driven changes into their HRM practices. A "significant change" is defined as evidence of CPB methodology being formally reflected in a department's medium- or long-term human resource plans. Data will be gathered through a comprehensive departmental survey and cross-referenced with official human resource plans and other secondary sources.

Adoption

In the RE-AIM framework, adoption is defined at the organizational level as the absolute number, proportion, and representativeness of settings (such as departments or organizations) willing to initiate a program [36]. Using project administrative data, we will document the number of departments adopting the CPB method in their HRM practices across project sites. Furthermore, we will survey participants attending sharing and advocacy workshops to gauge their intent to adopt the method. Notably, the number of formal requests for the official use of CPB computerized tools will continue to be recorded beyond the project's lifespan, covering at least a 3-year postproject period. Finally, qualitative interviews will be conducted to gain deeper insights into the drivers and barriers influencing the adoption or nonadoption of the method.

Implementation

The acceptability, appropriateness, and feasibility of applying the CPB tools in HRM among staff, department leaders, and organizational leaders will be measured using 3 validated 4-item scales: the Acceptability of Intervention Measure (AIM), the Intervention Appropriateness Measure (IAM), and the Feasibility of Intervention Measure (FIM) [34]. The survey questionnaire will be administered to all trainees across 7 provinces upon completion of their training courses. Fidelity will be assessed based on the frequency with which staff and leaders use the CPB computerized tools, with data being extracted directly from the system logs. Additionally, the cost of implementing the CPB method in HRM will be assessed using qualitative data. While the CPB computerized tools and technical manuals are provided at no cost, the evaluation will account for opportunity costs—specifically, the time invested by personnel in applying these tools.

Maintenance

To evaluate the maintenance component, we will conduct a survey at the project's conclusion to assess whether departments intend to continue applying the CPB computerized tools in their HRM practices. We will adapt the Program Sustainability Assessment Tool (PSAT) short form to capture leaders' perspectives on the sustainability of the CPB methodology [35]. PSAT scores will be compared across different sites and department types to identify variations in sustainability potential. Qualitative data will also be collected to investigate whether the settings can sustain the method over time without additional external resources or specialized leadership, while identifying the key barriers and facilitators for long-term maintenance. Furthermore, the number of departments that continue to use the CPB computerized tools will be recorded beyond the project's lifespan, covering at least a 3-year post-project period.

Finally, the formal approval and distribution of official guidelines for the CPB method, issued by the Department of Personnel Administration (MOH), will be documented. This institutional endorsement will serve as a proxy measure for the project's long-term sustainability and systemic integration.

Data Analysis Plan

Quantitative indicators will be systematically entered, cleaned, and managed using Microsoft Excel. Descriptive statistical analyses will be conducted to summarize operational and implementation outcomes. Categorical variables will be presented as frequencies and percentages, while continuous variables will be summarized using means, SDs, medians, and ranges (minimum and maximum values) to characterize baseline metrics and track changes across implementation phases.

All qualitative data, including semistructured interviews and focus group discussions, will be audio-recorded, transcribed verbatim, and verified for accuracy. Qualitative analysis will be conducted using the open-source QualCoder software (version 4.0; Colin Curtain) to facilitate structured data management and thematic coding. A hybrid analytic approach combining deductive coding (guided by consolidated implementation frameworks) and inductive coding (emerging organically from participant responses) will be applied [37]. To ensure analytic rigor and intercoder reliability, the coding process will be conducted independently by at least 2 researchers, with discrepancies resolved through iterative discussions with senior researchers.

Ethical Considerations

This project was approved by the Ethics Committee of HUPH, which is registered with the Office for Human Research Protections under IORG number IORG0003239 and maintains the Federalwide Assurance number FWA0009326. The project was formally approved under Approval Decision number 324/2025/YTCC-HD3, dated July 3, 2025. All participants will be provided with written informed consent prior to their participation. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Results

The project was funded in May 2024. The preimplementation phase is almost complete. We obtained official national-level implementation approval in March 2025. Following this, 2 in-person kick-off meetings were conducted to finalize the national PSC. Official approval from provincial-level authorities in 6 provinces, with the exception of Son La, has been obtained; these approvals were followed by provincial kickoff meetings, where tailored provincial project plans were finalized.

Furthermore, we adapted the CPB method for application in HRM outside the field of HIV/AIDS. We also delivered 6 TOT workshops to the 6 provincial implementation teams, training a total of 62 participants from CDCs, TB hospitals, and CHCs by June 2026. A total of 460 staff members within project sites were subsequently trained by these local teams by September 2026. Other activities in the implementation phase will be carried out until September 2027, while activities in the sustaining phase are expected to last until March 2028.

As part of a multiphase evaluation design, data collection began in September 2025 and is projected to continue through the end of the sustaining phase in March 2028. As of November 2026, data analysis of the early implementation stages is underway, with full evaluation analysis continuing iteratively through 2028. The final results of the study are expected to be published in December 2028.

Discussion

Anticipated Findings

Based on the underlying mechanisms and targeted intervention strategies, we anticipate key implementation, institutional, and policy-level outcomes. First, regarding implementation feasibility and tool adoption, we anticipate high levels of perceived acceptability, appropriateness, and feasibility among health facility leaders and staff through tailored tool adaptation, TOT workshops, and ongoing interactive support. This enabling technical environment is expected to facilitate routine adoption of the CPB method across participating public entities, including CDCs, TB hospitals, and CHCs.

Second, in terms of organizational effectiveness and broader scalability, the systematic application of the CPB method is anticipated to drive positive operational changes across core HRM domains. Specifically, we expect enhanced capacity among leadership and staff, clearer job profiling, optimized staff deployment, balanced workloads, and improved staff satisfaction. Furthermore, successful demonstration at initial implementation sites is anticipated to foster expansion, encouraging additional health facilities to adopt the CPB method.

Third, concerning institutional maintenance and policy sustainability, the empirical evidence generated is anticipated to foster long-term continuity and governance integration. Participating institutions are expected to demonstrate high readiness to maintain the CPB method in routine practice beyond the project lifecycle. At the governance level, these findings are anticipated to inform official administrative guidelines issued by the MOH to formally institutionalize the CPB method across the national health system. Ultimately, these outcomes are anticipated to contribute to optimizing human resource allocation and fostering a more efficient and sustainable health workforce not only within the HIV response but also across other priority public health issues and the broader health sector toward achieving universal health coverage.

Comparisons to Prior Work

While various health workforce planning tools exist, the WHO recommends that countries identify the most appropriate tool based on their specific contexts and requirements [13]. Among these, the WISN method is 1 of 4 open-source tools and represents the most widely applied approach across low- and middle-income countries [13]. Although WISN remains a relevant and valuable baseline tool, recent global evidence emphasizes the necessity of tailoring it to local contexts and complementing it with integrated frameworks for policy dialogue and strategic HR planning [13,17]. Furthermore, although performance-based HRM is a recognized norm in Vietnam's public organizations, practical tools for its implementation remain scarce. This study represents the first attempt in Vietnam to bridge workload metrics derived from WISN with performance indicators, creating a comprehensive tool to meet this demand.

While other studies reporting the application of human resource planning tools, such as WISN, primarily focus on traditional cadres like doctors and nurses [17], evidence in Vietnam also favors workforce planning for curative care within a few selected hospitals rather than primary health care and preventive care [38]. Meanwhile, this study presents the first attempt to diversify the application of workforce planning methods across different health care cadres and various facility types, from CDCs to TB hospitals and CHCs, while achieving broader geographic coverage.

Furthermore, prior work has predominantly focused on using analytical tools to calculate existing workloads and staffing needs [39,40], evaluating barriers and facilitators to tool implementation [14], or assessing whether workforce recommendations were ultimately adopted to inform policy-making processes [15]. In contrast, this study demonstrates a unique approach grounded in implementation science. Leveraging global experience in health workforce policy, planning, and management using the planning tools (ie, WISN), we established a structured framework to adapt our methodology using a participatory approach and robust implementation strategies that facilitate adoption, maintenance, and an enabling environment for institutionalization. Our focus extends beyond the tool itself to encompass a comprehensive framework that empowers health care personnel, facility leaders, and policy makers to make strategic HRM decisions. The distinct lessons learned from this process will illustrate key implementation pathways to guide other low- and middle-income countries in translating strategic workforce models into routine practice.

Strengths and Limitations

This implementation project possesses several key strengths. First, the project is built upon established implementation science frameworks, using recognized conceptual models, including CFIR, IRLM, and the RE-AIM framework, to guide the implementation design and evaluation plan. Furthermore, the selection of implementation strategies was informed by the ERIC compilation, complemented by lessons learned from the application of the WISN method in other low- and middle-income countries.

Second, our intervention package, previously developed and piloted within the HIV sector, offers a foundation for HRM application across broader public health fields. This prior experience suggests that adapting the method for other health entities may be feasible and well accepted. Building on early operational lessons from previous LHRM activities, we can streamline and simplify the upcoming implementation. Additionally, the project benefits from an established network of partners across all levels of the health sector and beyond. Local implementation teams bring prior familiarity with CPB computerized tools and departmental engagement, providing a supportive technical groundwork intended to facilitate execution of the current project.

Third, while the restructuring of CHCs creates challenges in rearranging project activities, it simultaneously offers a unique opportunity for the LHRM-S project to adapt the CPB method for use in grassroots-level health facilities. During this transition, piloting the CPB method will cover a wide range of tasks, allowing for robust testing and adaptation of tools to ensure they accurately reflect the diverse operational realities and complex scenarios faced by CHCs across 34 newly restructured provinces in Vietnam. This situation enables comprehensive piloting and the finalization of the CPB method, ensuring it accurately reflects the current status of HRM at the grassroots level in the health care system.

Fourth, the project benefits from strong institutional alignment and close collaboration with national health policy-advisory bodies, which helps foster an enabling technical environment for the adoption of the CPB method in HRM. As a public institution under the MOH responsible for providing evidence-based policy advice, HSPI requested access to the validated CPB method to explore its application across CHCs beyond the initial project sites. This collaboration aims to generate empirical evidence that can inform potential revisions to Circular number 03/2023/TT-BYT, the framework governing job positions and staffing quotas in public health units. In response, the project team delivered a comprehensive training program and ongoing technical assistance for HSPI researchers, ensuring that policy-advisory technical teams are well-equipped as they work toward drafting the new national guidance for CHC workforce planning based on the CPB method.

Furthermore, recently updated policy documents guiding the implementation of the State Budget Law (such as Decree number 73/2026/NĐ-CP), as well as several provincial-level guidelines on staff performance evaluation, strongly promote output-driven and performance-based management mechanisms, such as the CPB method, to assess staff workload and performance. This serves as the foundation for upcoming pay-for-performance schemes being applied across the public health system and other public sectors. Unlike the previous global budget system, where leaders may have lacked the incentive to optimize management, this new regulatory environment provides a strong motivation to adopt data-driven HRM. Higher-level health facilities, including TB hospitals and CDCs, are experiencing a similar situation as financial autonomy policies are reinforced among preventive public health entities. This urges leaders of these entities to find and adopt evidence-based mechanisms to manage their workforce efficiently.

Despite these strengths, certain potential limitations and implementation challenges warrant consideration. First, this study is designed as a descriptive implementation research project rather than using a hybrid effectiveness-implementation design to compare different strategies. This design choice aligns with the primary goal of serving as a pioneering effort that introduces data-driven HRM practices within public health facilities, fosters institutional routines, optimizes operational efficiency, and cultivates an enabling environment for adoption. Achieving this ambition requires integrating a bundled set of evidence-based implementation strategies across all project provinces while managing the complexities of isolating discrete implementation activities in diverse real-world settings. Consequently, the evaluation focuses on implementation processes, adoption, and maintenance rather than traditional clinical health outcomes, which are less suitable for conventional pre- and post-test designs or controlled comparative evaluations. Furthermore, evaluating the adoption of the CPB method and the enabling environment for its institutionalization may be influenced by rapid structural and regulatory shifts across the health care system. To mitigate these design constraints and contextual confounders, the project uses a robust multisite, multimethod evaluation framework that leverages data triangulation across facilities, ensuring a rigorous assessment of process outcomes, acceptability, and feasibility despite the absence of a control group.

Second, several operational challenges emerged during the early implementation stages, primarily stemming from nationwide provincial consolidation, the elimination of district-level health entities, and the ongoing restructuring of CHCs. The nationwide provincial consolidation led to delays in obtaining formal implementation approvals from national authorities and Provincial People's Committees across the study sites. Crucially, these structural realignments introduced potential risks to local collaborative governance. Despite the strong provincial commitment and established partnerships successfully built during the LHRM project, administrative mergers have required renegotiating formal agreements, rebuilding institutional trust with newly appointed local leadership, and realigning key implementation workflows to accommodate the expanded operational scope of consolidated CDCs. To mitigate these administrative delays and governance risks, the project team has been engaging in continuous bilateral consultations with the MOH, provincial authorities, and CDCs to realign activity plans and sustain institutional ownership within the updated administrative structure.

Third, the elimination of district health centers (DHCs) required shifting the primary implementation focus directly to CHCs. Because operational experience gained from prior phases centered predominantly on higher administrative levels, applying the CPB method directly at the commune level necessitated further adaptation. To address this, the project team is tailoring CPB tools specifically for commune-level HRM contexts and piloting the refined approach prior to wider rollout. Furthermore, the organizational restructuring of CHCs varies significantly across provinces; regulatory transitions such as Circular number 43/2025/TT-BYT introduce evolving guidelines that may temporarily affect staff availability for training, complicate task categorization, and present challenges for leadership in finalizing performance evaluation frameworks. To mitigate these transitional barriers, the project team conducts targeted consultations to refine the CPB method, addresses emerging issues through regular review meetings with Provincial Leadership Teams, and facilitates routine cross-site exchanges of lessons learned throughout implementation.

Future Directions

To advance the institutionalization and broader scalability of the CPB method, the project establishes a roadmap for future implementation and knowledge transfer. Nationally, by building a supportive technical and political ecosystem through extensive stakeholder engagement and advocating for official CPB guidelines from national authorities, the project aims to support the formal institutionalization and nationwide scale-up of data-driven HRM practices across Vietnam. Externally, by documenting implementation processes and generating open-access resources, this study also aims to serve as an adaptable model for neighboring countries with similar socioeconomic contexts seeking to optimize health workforce planning.

To support this vision, a comprehensive multichannel dissemination plan is embedded directly within the project logic model. A priority of this plan is facilitating active peer-to-peer learning and knowledge exchange across participating project provinces, while systematically sharing implementation experiences with nonproject provinces and other public health facilities nationwide. Furthermore, all implementation materials, technical toolkits, and documented lessons learned will be made publicly available as open-access resources. This enables broad adaptation by domestic health care entities, as well as active knowledge sharing with international stakeholders and partner organizations operating under the same funding umbrella. Dissemination resources will encompass step-by-step guidance manuals, validated computerized tools, user manuals, video-assisted teaching

materials, and web-based documentaries documenting field evidence.

To directly inform health system governance, policy-oriented dissemination will extend beyond national advocacy workshops to proactively engage regional and national decision-makers. The project team will continue working closely with national policy-advisory bodies such as the HSPI to inform future regulatory revisions and support the drafting of national guidance for health workforce planning based on the CPB method. Furthermore, the project team will directly disseminate policy briefs, fact sheets, and implementation findings to provincial DOHs alongside national authorities, facilitating local policy integration and regulatory alignment. Dissemination efforts will also leverage print, online, and social media platforms to broadcast implementation experiences and practical insights to a wider range of health system stakeholders.

Finally, long-term institutionalization will be driven by structured educational pathways and scientific publishing. An outline for a continuing medical education short course will be developed for academic and in-service training. Furthermore, joint scientific publications will be disseminated to the broader academic community, laying the groundwork for subsequent documentation of implementation results and contributing empirical implementation evidence to the global health literature.

Finally, long-term institutionalization and academic dissemination will be driven through structured educational pathways and scientific publishing. An outline for a continuing medical education and a postgraduate short course will be developed and integrated at HUPH, directly informing the professional practice of approximately 1000 postgraduate students and in-service health personnel trained annually, most of whom work across a diverse range of facilities within the health sector. Furthermore, scientific publications will be disseminated to the broader academic community, serving as a foundation for subsequent empirical documentation and guiding future implementation researchers in investigating the most effective implementation strategies for similar health governance initiatives.

The LHRM projects represent the first comprehensive effort to develop and disseminate CPB methods for HRM across a diverse array of public entities in the health care sector in Vietnam. This protocol establishes a structured framework to adapt, implement, and evaluate the CPB method across Vietnam's public health care sector while cultivating a favorable institutional and policy ecosystem for national scale-up. Furthermore, it provides a foundation for the subsequent empirical documentation of implementation processes and outcomes. Ultimately, this initiative is projected to optimize HR allocation and management within the national response to HIV, TB, and other public health threats, offering an adaptable blueprint for sustainable domestic expansion and broader regional adoption.

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Generative AI Use

The authors declare the use of generative AI (GenAI) in the research and writing process. According to the Generative AI Delegation Taxonomy (GAIDeT; 2026), the following task was delegated to GenAI tools under full human supervision: proofreading and editing. The GenAI tool used was Gemini 2.5 Flash (Google). Responsibility for the final manuscript lies entirely with the authors. GenAI tools are not listed as authors and do not bear responsibility for the final outcomes.

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Data Availability

All data are included in this published article and its Multimedia Appendix files. Upon completion of the project, all project materials (eg, data collection instruments, training materials, and field reports) developed during this study will be deposited in a public repository to facilitate future implementation and research. Raw datasets containing sensitive or identifiable health care worker information (such as department details) will remain restricted to protect participant confidentiality. However, deidentified aggregate data will be available from the corresponding author upon reasonable request once the study concludes.

Authors' Contributions

TTH, Thanh Huong Nguyen, and THCC conceptualized this project and secured funding. TTH, Thanh Huong Nguyen, and Thu Ha Nguyen significantly contributed to the study design and protocol development and drafted the manuscript. THCC and TMNH contributed to the study design and revised the manuscript. Thu Ha Nguyen coordinated institutional review board approval. All authors read and approved the final manuscript.

Conflicts of Interest

None declared.

Multimedia Appendix 1

Summary of literature relating the evidence-based human resource management tools; detailed implementation activities; and description of the Leveraging Human Resources Management for Vietnam's Health System project teams.
[DOCX File (Microsoft Word File), 91 KB-Multimedia Appendix 1]

Multimedia Appendix 2

Draft version of data collection instruments.
[DOCX File (Microsoft Word File), 68 KB-Multimedia Appendix 2]

Multimedia Appendix 3

Summary of funder feedback.
[DOCX File (Microsoft Word File), 20 KB-Multimedia Appendix 3]

Checklist 1

StaRI checklist.
[DOCX File (Microsoft Word File), 89 KB-Checklist 1]

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Abbreviations

AIM: Acceptability of Intervention Measure
CDC: Center for Disease Control
CFIR: Consolidated Framework for Implementation Research
CHC: commune health center
CPB: customized performance-based
DHC: district health center
DOH: Department of Health
DOP: Department of Organization and Personnel
ERIC: Expert Recommendations for Implementing Change
FIM: Feasibility of Intervention Measure
GDPM: General Department of Preventive Medicine
HR: human resource
HRM: human resource management
HSPI: Health Strategy and Policy Institute
HUPH: Hanoi University of Public Health
IAM: Intervention Appropriateness Measure
IRLM: implementation research logic model
LHRM: Leveraging Human Resource Management for HIV/AIDS Prevention and Control
LHRM-S: Leveraging Human Resources Management for Vietnam's Health System
MOH: Ministry of Health
MSC: most significant change
PLT: Provincial Leadership Team
PSAT: Program Sustainability Assessment Tool
PSC: Political Steering Committee
RE-AIM: reach, effectiveness, adoption, implementation, and maintenance
StaRI: Standards for Reporting Implementation Studies
TB: tuberculosis
TOT: training of trainer
VAAC: Vietnam Administration for HIV/AIDS Control
WHO: World Health Organization
WISN: workload indicator of staffing need

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