

From Awareness to Action: Exploring Advocacy, Sponsorship, and Vaccine Uptake for Hepatitis B Among Sierra Leone's Health Workforce

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Abstract

Background: Hepatitis B virus (HBV) is a major occupational hazard for healthcare workers (HCWs), particularly in low- and middle-income countries like Sierra Leone, where institutional weaknesses, vaccine hesitancy, and poor public health infrastructure undermine prevention efforts. Despite high awareness of HBV risks, vaccine uptake among HCWs remains suboptimal, with little known about the role of advocacy and sponsorship in improving coverage.

Objective: This study aimed to explore how institutional advocacy and vaccine sponsorship mechanisms influence HBV vaccine uptake among healthcare workers in Sierra Leone, and to identify barriers and opportunities for strengthening HBV prevention within healthcare settings.

Methods: A mixed-methods, cross-sectional design was used, involving 432 HCWs from public, private, NGO, and faith-based institutions across urban and rural regions. Quantitative data were collected via structured digital questionnaires administered through Kobo Collect, while qualitative insights were gathered through 12 in-depth interviews with senior HCWs and facility administrators. Statistical analysis was conducted using SPSS v26 ($p < 0.05$), and qualitative data were analyzed thematically.

Results: While 96.1% of participants acknowledged HBV as an occupational risk, only 64.2% had received at least one vaccine dose, and just 42.3% completed the full three-dose series. Alarming, only 1.6% were aware of sponsorship programs, and 9.7% knew of any advocacy mechanisms. Exposure to structured advocacy significantly increased vaccine initiation ($p < 0.01$), and employer-sponsored vaccinations were strongly associated with completion ($p < 0.001$). Uptake was higher in government and NGO-supported institutions and among clinical cadres aged 30–39. Major barriers included cost, misinformation, institutional inertia, and inadequate support for non-clinical staff.

Conclusion: The study reveals that despite widespread risk awareness, HBV prevention among HCWs in Sierra Leone is hindered by weak advocacy, lack of sponsorship, and systemic inequities. Strengthening institutional commitment, scaling up financial support, and targeting underrepresented cadres with culturally appropriate education are critical to improving vaccine uptake and reducing occupational HBV transmission.

Keywords: Hepatitis B, vaccine uptake, healthcare workers, advocacy, sponsorship, occupational health, Sierra Leone.

Background

Hepatitis B virus (HBV) infection is a serious global public health challenge and a well-recognized occupational hazard for healthcare workers (HCWs), particularly in low- and middle-income countries. With over 250 million people chronically infected worldwide, HBV is responsible for significant liver-related morbidity and mortality (WHO, 2016). In sub-Saharan Africa, where HBV prevalence remains

high and healthcare infrastructure is often fragile, HCWs face disproportionate risk due to routine exposure to blood and bodily fluids. Despite global recommendations for mandatory vaccination of HCWs and the availability of an effective vaccine since 1982, uptake among HCWs in Sierra Leone is alarmingly low. This is especially troubling given the high risk of exposure through blood and bodily fluids in clinical settings. With a fragile healthcare system burdened by limited infrastructure, understaffing, and inadequate occupational health policies, Sierra Leone's HCWs continue to face an elevated threat of HBV infection. The country's recent struggles with the Ebola outbreak and the COVID-19 pandemic further exposed systemic vulnerabilities, reinforcing the urgent need for robust preventive strategies for frontline workers.

Recent literature emphasizes the global burden of HBV, particularly in sub-Saharan Africa, where sero-prevalence rates are high, and occupational exposure among HCWs remains poorly addressed. Studies by Thiyagarajan et al. (2019) and Bangura et al. (2021) reveal that in Sierra Leone, large proportions of healthcare providers remain unvaccinated despite significant awareness of the disease. Factors such as lack of institutional support, absence of national vaccination policies for HCWs, and financial barriers continue to hinder access to the vaccine. While some research has explored the prevalence and screening of HBV among HCWs, there is limited focus on the role of advocacy efforts, vaccine sponsorship, and policy-level drivers in improving vaccine uptake. The literature points to a glaring disconnect between awareness of HBV risks and the corresponding uptake of protective measures among healthcare workers.

This study addresses a critical gap in the literature by shifting the focus from individual awareness to systemic enablers and barriers, including the availability of advocacy mechanisms, vaccine sponsorship programs, and institutional responsibility for protecting HCWs. It investigates how factors such as institutional advocacy, peer influence, government or NGO-sponsored immunization efforts, and workplace vaccination policies affect actual vaccine uptake in four major hospitals in Sierra Leone. Furthermore, it explores healthcare workers' perceptions of risk, their understanding of vaccine benefits, and the challenges they face in accessing vaccination services.

This research aims to assess the key factors influencing hepatitis B vaccination uptake among healthcare workers in Sierra Leone, with a focus on institutional advocacy, vaccine sponsorship, and system readiness. It explores how these structural enablers shape access to and completion of the vaccination process. The study seeks to provide evidence-based recommendations for policymakers and health institutions to strengthen HBV prevention. Ultimately, it highlights the importance of protecting healthcare workers as a critical step toward enhancing the resilience of the national public health system.

Methodology

This study, titled from Awareness to Action: Exploring Advocacy, Sponsorship, and Vaccine Uptake for Hepatitis B Among Sierra Leone's Health Workforce, employed a mixed-methods, descriptive cross-sectional design to examine the influence of institutional advocacy and vaccine sponsorship on hepatitis B virus (HBV) vaccine uptake among healthcare workers (HCWs). The research aimed to uncover the extent to which these enabling factors drive immunization behavior, particularly in resource-limited settings, and to generate actionable evidence for strengthening occupational health interventions in Sierra Leone.

To achieve a comprehensive understanding, the study utilized both quantitative and qualitative data collection approaches. Quantitative data were gathered using a structured digital questionnaire administered via the Kobo Collect (ODK) platform. The questionnaire included a combination of closed- and open-ended questions focusing on demographic characteristics, awareness levels, institutional support mechanisms, and vaccine uptake behavior. Key variables included age, sex, cadre, education level, facility type, length of employment, and prior HBV screening and vaccination status. The instrument also captured information on the presence of workplace advocacy campaigns, availability of vaccine sponsorship, and the respondent's perceptions of risk and vaccine effectiveness.

A central component of the survey explored whether HCWs had access to advocacy-driven education initiatives or institutional policies promoting HBV vaccination. Respondents were asked to indicate whether their workplace had organized sensitization sessions, reminders, vaccine outreach, or provided subsidized or free vaccine doses. In parallel, data on barriers to vaccine completion—such as funding constraints, misinformation, or lack of management support—were collected to inform the analysis of system-level gaps. These data helped establish correlations between advocacy exposure, sponsorship access, and vaccine behavior.

To complement the survey findings, qualitative data were obtained through in-depth interviews (IDIs) with 12 purposively selected senior healthcare professionals and facility managers. These interviews delved into contextual factors influencing advocacy implementation, sponsorship models, managerial attitudes, and facility-level strategies for staff immunization. The qualitative responses added depth to the numerical trends observed and illuminated institutional realities that shape HCW experiences. The study sample consisted of 432 HCWs from public, private, NGO, and faith-based institutions across urban and rural regions. Quantitative data were analyzed using SPSS version 26, with descriptive and inferential statistics applied ($p < 0.05$), while qualitative data were manually analyzed using thematic coding. Ethical approval was obtained from Njala University and the Sierra Leone Ethics and Scientific Review Committee, with all participants providing informed consent.

Results

The study from Awareness to Action: Exploring Advocacy, Sponsorship, and Vaccine Uptake for Hepatitis B Among Sierra Leone’s Health Workforce revealed substantial gaps in knowledge, access, and institutional commitment to hepatitis B virus (HBV) prevention among healthcare workers (HCWs). Of the 432 participants surveyed, 96.1% recognized HBV as an occupational hazard, and 64.2% had received at least one dose of the HBV vaccine. However, only 42.3% completed the full three-dose series, reflecting significant dropout rates and incomplete protection.

Table 1: Awareness of Hepatitis Vaccination Sponsorships and Advocacy Mechanisms

| Awareness of Hepatitis Vaccination Sponsorships and Advocacy Mechanisms | | | | |
|---|-------|---|-----|-------|
| | | Are you aware of any advocacy mechanisms aimed at creating awareness? | | |
| | | Yes | No | Total |
| Are you aware of Hepatitis vaccination sponsorships programs? | Yes | 1 | 6 | 7 |
| | No | 41 | 384 | 425 |
| | Total | 42 | 384 | 432 |

Source: Author’s Research Data, 2024

Despite this high-risk awareness, only 7 respondents (1.6%) were aware of any HBV vaccine sponsorship programs, and just 42 (9.7%) were familiar with institutional advocacy mechanisms related to HBV prevention. Alarmingly, 384 HCWs (89%) reported knowing neither of these, indicating a pronounced disconnect between public health interventions and frontline staff awareness.

Advocacy efforts, when present, had a demonstrable effect on vaccine initiation. Approximately 37% of HCWs reported exposure to advocacy initiatives such as internal health talks and peer education. Those exposed to structured advocacy messages were nearly twice as likely to begin vaccination ($p < 0.01$), underscoring advocacy’s role in influencing behavior. However, these efforts were unevenly distributed. Private and faith-based health institutions reported notably weaker advocacy infrastructures, and HCWs in rural areas often relied on peer communication or social media in place of structured programs. Similarly, sponsorship proved pivotal in vaccine completion: only 29.5% of HCWs had employer-sponsored vaccinations, yet this group was three times more likely to complete the

vaccine series compared to those who self-funded ($p < 0.001$). Cost—ranging between 501–750 New Sierra Leonean Leones—was frequently cited as a barrier, particularly among HCWs in low-income districts and unsupported institutions.

Institutional factors significantly influenced uptake patterns. Government and NGO-supported hospitals showed better vaccine coverage due to formalized occupational health policies and coordinated outreach, while private and faith-based facilities lagged behind due to weaker structural support. Vaccination uptake also varied by age, cadre, and facility type: mid-career HCWs aged 30–39 had the highest completion rates, and clinical personnel—especially doctors and community health officers—were more likely to be fully vaccinated than non-clinical staff. In contrast, cleaners, administrative staff, and porters exhibited lower awareness and completion rates due to limited inclusion in institutional programs and a lack of tailored health education. Knowledge gaps persisted across all groups, with 27.8% of respondents expressing uncertainty about vaccine efficacy, and 76% of non-clinical HCWs unaware of the correct vaccination schedule. Among HBV-positive HCWs, only 6.3% believed the disease was preventable, suggesting weak risk communication even among infected individuals.

Table 2: Views on Mandatory Hepatitis B Vaccination and Restrictions for Infected Healthcare Workers

| Views on HBsAg Positive HCWs Restrictions and Mandatory Vaccination | | | | |
|--|-------|---|-----|-------|
| | | HCWS positive should not give healthcare services to patients | | |
| | | Yes | No | Total |
| Should hepatitis B vaccination be made compulsory for all healthcare workers | Yes | 12 | 0 | 12 |
| | No | 0 | 420 | 420 |
| | Total | 12 | 420 | 432 |

Source: Author’s Research Data, 2024

Respondents’ attitudes toward mandatory vaccination policies further revealed reluctance toward strict regulatory approaches. Only 12 of 432 HCWs supported mandatory HBV vaccination, and a similar number endorsed restricting HBsAg-positive HCWs from clinical duties. The overwhelming majority favored voluntary or existing precautionary measures, possibly reflecting trust in current infection control practices or low perceived urgency. Additional barriers identified in qualitative interviews included vaccine hesitancy driven by misinformation, cultural misconceptions, and institutional inertia. Financial limitations, poor logistics, and policy gaps further constrained vaccination rollout, especially in remote and underserved areas.

In summary, the study highlights the urgent need for a comprehensive and equity-driven HBV prevention strategy. Advocacy and sponsorship mechanisms remain critically underutilized, and institutional frameworks—particularly in private and faith-based settings—must be strengthened. Enhancing public health communication, subsidizing vaccine access, and extending educational outreach to non-clinical cadres are essential to close the immunization gap. Furthermore, adopting inclusive occupational health policies and promoting mandatory HBV vaccination—where feasible—could safeguard HCWs and reduce HBV transmission within healthcare facilities. Without such reforms, Sierra Leone’s healthcare workforce will remain vulnerable to preventable HBV infections, undermining broader public health goals.

Discussion

The findings from *Awareness to Action: Exploring Advocacy, Sponsorship, and Vaccine Uptake for Hepatitis B Among Sierra Leone's Health Workforce* provide a compelling portrait of the systemic and behavioral challenges confronting hepatitis B virus (HBV) prevention in a fragile health system. Despite a high level of occupational risk awareness (96.1%), the low rate of full vaccine completion (42.3%) reveals a disconnect between knowledge and action. This finding aligns with previous studies in sub-Saharan Africa, such as Adebayo et al. (2020) in Nigeria, which also reported high awareness but poor adherence to the complete vaccine regimen among healthcare workers (HCWs). The Sierra Leonean data reinforce this regional pattern, suggesting that awareness alone is insufficient without structural enablers like institutional advocacy and financial support.

Advocacy emerged as a critical but underutilized determinant of vaccine uptake. Only 37% of respondents had encountered any form of advocacy, and these individuals were nearly twice as likely to initiate vaccination. This mirrors findings by Kariuki et al. (2019), who emphasized that sustained advocacy campaigns—especially those integrated into health facility operations—significantly boost HBV vaccination rates. The limited reach of advocacy efforts in Sierra Leone, particularly in private and faith-based institutions, points to an absence of standardized communication strategies, a gap similarly identified by Essan et al. (2017) in Ghana. These findings collectively suggest that advocacy needs to be formalized, decentralized, and extended to non-traditional platforms like peer networks and digital media to bridge the communication divide, particularly in rural areas.

Sponsorship was another decisive factor influencing full vaccine completion. HCWs who received employer-sponsored vaccinations were three times more likely to complete all three doses than those who self-funded—a trend consistent with research by Teshome et al. (2017) in Ethiopia and Suleiman et al. (2018) in Sudan. The cost of vaccines, which ranged from 501–750 NSL in this study, was a major deterrent in low-income districts. The correlation between institutional sponsorship and completion rates underlines the value of external funding and policy-driven subsidies, especially in countries where healthcare workers often operate under resource-constrained conditions. Government and NGO-affiliated hospitals in Sierra Leone, where such sponsorships were more common, demonstrated higher vaccine coverage, reaffirming the importance of integrated occupational health strategies in public institutions.

Demographic and institutional disparities further complicated HBV prevention. Clinical staff and mid-career HCWs were more likely to be vaccinated, while non-clinical personnel—particularly porters, cleaners, and administrative staff—showed lower awareness and completion rates. These outcomes echo the findings of Ngoma et al. (2015) in Zambia, which attributed similar disparities to exclusion from professional training programs and weak institutional inclusion. The study also revealed widespread misinformation and skepticism regarding vaccine efficacy: 27.8% of HCWs expressed uncertainty, and only 6.3% of HBV-positive respondents believed in the disease's preventability. Such knowledge gaps suggest that health education in Sierra Leone is insufficiently targeted and often neglects the most vulnerable subgroups within the health workforce.

The minimal support for mandatory vaccination policies (only 2.8%) further complicates the policy landscape. While some studies, like Ha et al. (2018), have shown that mandatory vaccination policies can improve uptake in institutional settings, the current study indicates widespread resistance to such measures among Sierra Leonean HCWs. This could be attributed to cultural perceptions, mistrust in health

systems, or confidence in existing infection control practices. Nonetheless, voluntary approaches alone may not suffice in settings with high disease burden and limited public health infrastructure.

In conclusion, this study highlights a multifaceted problem requiring a coordinated and inclusive response. To improve HBV vaccine uptake among HCWs in Sierra Leone, public health authorities must scale up structured advocacy, institutionalize sponsorship programs, and ensure that educational interventions reach all cadres, including non-clinical staff. Lessons from other low- and middle-income countries suggest that these measures are both feasible and effective. Without such reforms, efforts to reduce HBV transmission and safeguard healthcare workers will remain fragmented and insufficient, undermining Sierra Leone's broader commitment to infectious disease prevention and health system strengthening.

Conclusion

The study "*From Awareness to Action: Exploring Advocacy, Sponsorship, and Vaccine Uptake for Hepatitis B Among Sierra Leone's Health Workforce* underscores" the persistent gaps in knowledge, access, and institutional commitment to hepatitis B virus (HBV) prevention among healthcare workers (HCWs). While a majority of respondents recognized HBV as a serious occupational risk, a substantial portion remained either incompletely vaccinated or unaware of essential prevention resources such as advocacy programs and vaccine sponsorship opportunities. The findings reveal that structured advocacy efforts and financial sponsorships play a significant role in improving vaccine uptake and completion, yet these mechanisms are notably scarce—especially in private, faith-based, and rural healthcare settings. Knowledge deficits, weak institutional support, and financial barriers were recurring themes throughout the study, disproportionately affecting non-clinical staff and lower-income regions. Furthermore, the reluctance of HCWs to endorse mandatory vaccination or restrictions for infected personnel suggests a broader attitudinal challenge that may hinder the effectiveness of future policy interventions. Overall, the study highlights the need for a multidimensional, equity-oriented strategy to bridge the awareness-action gap and strengthen HBV prevention systems across all tiers of the health workforce in Sierra Leone.

Recommendations

To bridge the critical gaps in hepatitis B virus (HBV) prevention among healthcare workers (HCWs) in Sierra Leone, a strategic and multidimensional approach is required. The study findings clearly indicate that advocacy, sponsorship, and institutional commitment are pivotal to improving vaccine uptake and completion rates. Based on the evidence presented, the following recommendations are proposed to enhance HBV prevention efforts and safeguard the nation's healthcare workforce.

First, health authorities should institutionalize structured advocacy programs across all healthcare facilities. These programs should include routine workplace seminars, peer-led sensitizations, and targeted risk communication campaigns. Such interventions must be designed to reach both clinical and non-clinical staff, ensuring that all cadres—regardless of role or professional training—are adequately informed about HBV transmission risks, vaccine protocols, and available preventive services.

Second, it is essential to scale up employer-based sponsorship schemes. The Ministry of Health and Sanitation (MoHS), in collaboration with donor agencies and health partners, should facilitate the provision of free or heavily subsidized HBV vaccines across all healthcare settings. Priority should be given to private and faith-based institutions where financial barriers and lack of structured support have hindered vaccination efforts. By reducing the economic burden on HCWs, vaccine completion rates can be significantly improved.

Third, efforts must be made to tailor education and communication strategies for specific groups such as non-clinical staff and HCWs in rural areas. Educational materials should be accessible, culturally appropriate, and suited to different levels of literacy. These materials should clearly explain the vaccination schedule, the efficacy of the vaccine, and the risks associated with incomplete immunization. Community health champions and trained peer educators can play a vital role in extending these messages beyond formal training settings.

Fourth, it is imperative to adopt inclusive occupational health policies that guarantee equitable access to HBV screening, vaccination, and follow-up services for all healthcare workers. Policies should be formalized to ensure that cleaners, porters, and administrative staff—often overlooked in immunization efforts—are actively included in HBV prevention programs. This inclusiveness is vital to achieving universal protection within healthcare facilities.

Fifth, the government and its partners should strengthen supply chains and infrastructure for HBV vaccine delivery. This includes improving cold chain management, streamlining distribution networks, and ensuring that vaccines are consistently available in rural and remote health facilities. Addressing logistical challenges is crucial to overcoming geographic disparities in vaccine access and ensuring timely delivery of the complete vaccine series.

Sixth, policymakers are urged to promote evidence-based policy reform. While the study revealed reluctance among HCWs toward mandatory vaccination, a phased approach—possibly incorporating incentives—could gradually build support for broader immunization mandates. These efforts must be accompanied by open dialogue, education, and strengthened enforcement of occupational health protocols that prioritize the safety of both healthcare workers and patients.

Finally, it is critical to monitor and evaluate program implementation. Regular data collection, analysis, and reporting should be embedded into facility-based health programs to track vaccination trends, identify barriers, and inform responsive planning. Such mechanisms will provide the evidence base needed for resource allocation and continuous improvement of HBV prevention strategies.

By adopting and implementing these recommendations, Sierra Leone can significantly improve HBV vaccine uptake among healthcare workers, reduce transmission risks, and contribute to achieving the World Health Organization's goal of eliminating viral hepatitis as a public health threat by 2030. The health and safety of the nation's healthcare workforce depend on it.

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