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3 **“DISEASE PATTERNS IDENTIFIED THROUGH COMMUNITY HEALTH**
4 **OUTREACH PROGRAMMES AND THEIR IMPLICATIONS FOR HEALTH**
5 **FINANCING IN ABUJA, NIGERIA”**
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8 **ABSTRACT:**

9 Community-based health outreach programmes can improve access to preventive healthcare and
10 facilitate early identification of communicable and non-communicable diseases, particularly
11 among populations with barriers to routine healthcare services. This study assessed disease
12 patterns identified through community health outreach programmes and examined their
13 implications for health financing in selected Police Health Maintenance Organization (Police
14 HMO) service locations in Abuja, Nigeria. A descriptive cross-sectional approach was adopted
15 for medical outreach programmes conducted between April and June 2026 at Garki Police
16 Headquarters, MD Abubakar Police Barracks, Dei-Dei, and Police Barracks, Kuje. Participants
17 voluntarily attending the outreach were screened for malaria, elevated random blood glucose,
18 hepatitis B surface antigen (HBsAg), and HIV, alongside clinical consultation and health
19 education. A total of 984 participants were screened, comprising 204 (20.7%) from Garki, 374
20 (38.0%) from Dei-Dei, and 406 (41.3%) from Kuje. Malaria was detected in 181 participants
21 (18.39%), elevated random blood glucose was identified in 234 (23.78%), HBsAg was reactive
22 in 18 (1.83%), and HIV was reactive in 3 (0.30%). The findings indicate a substantial need for
23 sustained investment in preventive screening, early diagnosis, referral, health education, malaria
24 control, hepatitis B vaccination, and follow-up care. Although health financing was not directly
25 measured, the observed screening burden highlights the importance of prioritising adequate and
26 sustainable financing for community-based preventive healthcare and early disease detection.
27 Strengthening outreach financing through Police HMO and other relevant health-sector
28 mechanisms could support timely access to essential healthcare services and reduce the potential
29 burden associated with delayed diagnosis.
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34 **1.0 INTRODUCTION**

35 Access to quality healthcare remains an important determinant of population health and well-
36 being. Despite considerable progress in healthcare delivery, many individuals continue to
37 experience barriers to accessing preventive healthcare services, leading to delayed diagnosis and
38 treatment of both communicable and non-communicable diseases. Community -based medical

outreach programmes provide an effective approach to bridging essential healthcare services directly to the population (WHO, 2024).

Medical outreach programmes facilitate early diagnosis of diseases, promote health education, encourage healthy lifestyles, and improve access to healthcare services among vulnerable populations. In Nigeria, communicable disease such as malaria, Hepatitis B virus (HBV) infection, and Human immunodeficiency Virus (HIV) infection remain major public health concerns. Malaria remains one of the leading public health problems in Nigeria, accounting for a substantial proportion of outpatient consultations and hospital admission (NCDC, 2024). Similarly, non-communicable diseases including hypertension and diabetes mellitus, continue to increase because of changing lifestyles, urbanization, poor dietary habits and inadequate routine health screening (WHO, 2024; IDF, 2025).

2.0 MATERIALS AND METHODS

2.1 Study Design

The study adopted a descriptive cross-sectional design to assess disease patterns identified during community-based medical outreach programmes conducted between April and June 2026. The cross-sectional approach was appropriate because information on participants' screening outcomes was obtained during the outreach activities at defined locations and over a specified study period. The study focused on selected communicable and non-communicable health conditions, namely malaria, elevated random blood glucose, hepatitis B surface antigen (HBsAg), and HIV. In addition to laboratory screening, participants received physical examination, medical consultation, health education and referral where further clinical evaluation was considered necessary.

2.2 Study Area

The study was conducted at three Police Health Maintenance Organization (Police HMO) service locations within the Federal Capital Territory (FCT), Abuja, Nigeria. The selected locations were Garki Police Headquarters, MD Abubakar Police Barracks, Dei-Dei, and Police Barracks, Kuje. The sites represented different community settings within Abuja, with Garki Police Headquarters described in the original study records as an urban setting, while Dei-Dei and Kuje were identified as rural settlements. The selection of these locations provided an opportunity to

document screening outcomes among police personnel, their families, retirees and members of surrounding communities participating in the outreach activities.

2.3 Study Population

The study population comprised police officers, members of their families, retirees and residents of communities surrounding the three Police HMO service locations who voluntarily participated in the medical outreach programmes. A total of 984 participants were screened during the study period. The number of participants screened at each location was 204 at Garki Police Headquarters, 374 at MD Abubakar Police Barracks, Dei-Dei, and 406 at Police Barracks, Kuje.

2.4 Participant Recruitment and Sampling

Participants were recruited from individuals who voluntarily presented themselves for the community medical outreach services at the three selected locations during the study period. The available study records indicate that all participants who voluntarily attended and underwent the relevant screening procedures were included in the outreach dataset, resulting in a total of 984 screened participants. Therefore, the study should be described as involving a voluntary/consecutive outreach sample rather than a probability-based population sample, unless the original field records establish a different sampling procedure.

2.5 Data Collection Procedures

Participants were registered before screening, after which relevant demographic and clinical information was obtained. Standard clinical procedures were followed during sample collection and screening. The information collected included the number of participants screened, malaria test results, blood glucose screening results, hepatitis B screening results, HIV screening results, medical diagnoses and referral outcomes. Data were subsequently compiled from the official outreach summary reports for Garki Police Headquarters, MD Abubakar Police Barracks (Dei-Dei), and Police Barracks, Kuje.

The clinical and laboratory investigations performed during the outreach included blood pressure measurement using a digital sphygmomanometer, random blood glucose measurement using a calibrated glucometer, malaria screening using a rapid diagnostic test (RDT), HBsAg screening using a rapid immunochromatographic test, and HIV screening using the approved national rapid testing algorithm.

2.6 Laboratory Screening Procedures

2.6.1 Malaria Screening

Capillary blood samples obtained through finger prick were tested using a malaria rapid diagnostic test kit. Testing and interpretation were conducted in accordance with the manufacturer's instructions and the applicable standard operating procedures. Results were interpreted within the recommended reading period for the test kit.

2.6.2 Random Blood Glucose Screening

Random blood glucose was measured using a portable glucometer and disposable test strips. Participants whose screening results were considered elevated were counselled and referred for further clinical evaluation. Because random blood glucose screening does not, by itself, establish a definitive diagnosis of diabetes mellitus, the findings are reported in this study as elevated random blood glucose rather than confirmed diabetes.

2.6.3 Hepatitis B Screening

Whole blood samples were screened for hepatitis B surface antigen (HBsAg) using a rapid immunochromatographic assay. Reactive results were referred for confirmatory testing and appropriate clinical evaluation. The laboratory procedures were performed in accordance with the manufacturer's instructions and applicable standard operating procedures.

2.6.4 HIV Screening

Whole blood samples were screened using approved HIV rapid diagnostic test kits in accordance with the Nigerian National HIV Testing Services Algorithm. Participants with reactive screening results received post-test counselling and were referred for confirmatory testing and appropriate clinical management.

2.7 Quality Assurance

Quality assurance procedures were implemented during sample collection, testing and recording of screening outcomes. Laboratory investigations were performed according to manufacturers' instructions and standard operating procedures. The study records indicate that a calibrated glucometer was used for random blood glucose testing and that standard clinical procedures were followed during sample collection.

2.9 Data Management and Statistical Analysis

Data obtained from the outreach summary records were compiled and analysed using descriptive statistics. Frequencies and percentages were calculated to describe participant attendance and screening outcomes at each outreach location. Screening proportions were calculated by dividing the number of participants with a particular screening outcome by the total number of participants screened and multiplying by 100. Location-specific screening proportions were similarly calculated using the number screened at each location as the denominator.

2.10 Ethical Considerations

The outreach involved voluntary participation and included medical and laboratory screening, counselling and referral services. The available manuscript, however, does not provide sufficient information to establish the formal ethical approval process, informed-consent procedure or institutional review details. These details should therefore be obtained from the organisation that conducted the outreach before publication and inserted into the manuscript.

3.0 Results and Discussion

The data were analyzed using descriptive statistics. Frequencies and percentages were calculated to summarize participant attendance and laboratory screening results across the three outreach locations. Comparative analysis was conducted to identify similarities and differences in disease patterns.

Distribution of Participants by Outreach Location

Table 4.1: Patient Attendance by Outreach Location

Outreach Location	Number of Participants
Garki Police Headquarter	204
MD Abubakar (Dei-Dei)	374
Police Barracks, Kuje	406
TOTAL	984

Field Survey, 2026

Table 4.1 shows that 984 participants attended the three medical outreach programmes. Police Barrack, Kuje recorded the highest attendance (406 participants ;41.3%), followed MD Abubakar Dei-Dei (374 participants; 38.0%). Garki Police Headquater recorded the lowest attendance (204; 20.7%). The higher attendance recorded in Kuje suggests greater community participation and utilization of the outreach services which could be attributed to free services, increased

health awareness and high-risk exposure to diseases due to rural settlement lifestyle which concur with Rifkin (2024), WHO, 2023, United Children's Fund (2024).

Similar Study Table

The high turnout observed across the three outreach locations agrees with reports by the World Health Organization, which recognize community-based outreach programmes as an effective approach for improving access to preventive healthcare services, particularly among underserved populations.

Hepatitis B Screening Results

Table 4.2 Distribution of Hepatitis B screening Results

Outreach location	Positive	Negative	Total score	Positivity (%)
Garki	2	202	204	0.98
Dei-dei	10	364	374	2.67
Kuje	6	400	406	1.48
Total	18	966	984	1.83

Field Survey, 2026

Table 4.2 shows that 18 participants tested positive for Hepatitis B infection, giving an overall positivity rate of 1.83%. Dei-Dei recorded the highest positivity rate (2.67%), followed by police barrack Kuje (1.48), while Garki Police Headquarter recorded the lowest positivity rate (0.98%).

This finding suggest that hepatitis B infection remains an important public health concern and highlights the need for continued screening, vaccination, health education in tandem with WHO (2024) Global hepatitis report. comparison with a similar study the observed Hepatitis B positivity rate is lower than the prevalence reported by Akabuike et al., (2024) in 'Evaluating hepatitis B screening, prevalence, vaccination coverage and linkage to care in Abuja, Nigeria.

HIV Screening Results

Table 4.3 Distribution of HIV Screening Results

Outreach	Positive	Negative	Total Score	Positivity
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Location				
Garki	1	203	204	0.49
Dei-Dei	1	373	374	0.27
Kuje	1	405	406	0.25
Total	3	981	984	0.30

Field Survey, 2026.

Three participants tested positive for HIV infection during the outreach programme, resulting in an overall positivity rate of 0.30%. Each outreach location recorded one HIV positive participant. However, Garki recorded the highest positivity rate (0.49%) which could be attributed to low turnout of patients for screening as reported by Joint United Nations on HIV/AIDS. (2024). Global Aids update 2024.

The overall low HIV positivity rate reflects a relatively low burden of HIV infection among the screened population which could be attributed to informed preventive measures, availability of drugs and recently produced HIV vaccines undergoing trials as reported by International Aids Vaccine Initiative, 2025. While emphasizing the importance of continued HIV counselling, testing and referral. Low HIV positive number observed in this outreach is consistent with the declining national HIV prevalence as reported by the Federal Ministry of Health 2022 and reflects the impact of sustained HIV prevention, awareness, and treatment programmes.

Malaria

4.4 Distribution of malaria Cases Across the Three Outreach Location

Outreach location	Malaria Cases	Total Screened	Prevalance (%)
Garki	38	204	18.63
Dei-Dei	62	374	16.58
Kuje	81	406	19.95
Total	181	984	18.39

Field Survey, 2026

This table indicates that the higher number of malaria cases recorded in Kuje may be related to improper environmental that favour mosquito breeding and ongoing transmission, inadequate residual indoor spraying (IRS) drug resistance in plasmodium parasites, improper use of insecticide treated nets (ITNs) as reported by Bako *et al*, 2026. The malaria prevalence observed

in this outreach is consistent with the World Malaria Report (2024), which identifies Nigeria as one of the countries with the highest malaria burden globally.

Blood Glucose Screening

4.5 Distribution of Elevated Blood Glucose Cases Across the Three Outreach Location

Outreach Location	Elevated Glucose	Blood	Total Screened	Prevalence (%)
Garki	57		204	27.94
Dei-Dei	85		374	22.73
Kuje	92		406	22.66
Total	234		984	23.78

Field Survey, 2026

The relatively high proportion of participants with elevated blood glucose highlights the increasing burden of non-communicable diseases within police communities. These findings underscore the need for routine diabetes screening, lifestyle modification programmes, dietary counselling, and appropriate referral for confirmatory diagnosis and management.

In comparison with similar studies the findings agree with the International Diabetes Federation (2021), which reported a growing prevalence of diabetes in sub-Saharan Africa due to urbanization, unhealthy diets, physical inactivity, and obesity. Community screening programmes have consistently demonstrated that many individuals with elevated blood glucose are unaware of their condition until screened.

Implications of the Results on Health Financing in Abuja

The malaria screening results have important implications for health financing in Abuja. Of the 984 participants screened, 181 (18.39%) tested positive for malaria, with the highest screening proportion recorded in Kuje (19.95%), followed by Garki (18.63%) and Dei-Dei (16.58%). From a health-financing perspective, resources should therefore support integrated community interventions, including diagnostic commodities, appropriate medicines, health education, environmental control and preventive measures. Financing community-based malaria services can also reduce dependence on late facility-based treatment by supporting earlier detection and management.

The elevated random blood glucose results provide an even stronger indication for strengthening financing for non-communicable disease screening and primary healthcare services. The study identified elevated random blood glucose in 234 of the 984 participants (23.78%), with Garki recording the highest screening proportion at 27.94%, compared with 22.73% in Dei-Dei and 22.66% in Kuje. The financing implication is that diabetes and other metabolic conditions should receive greater attention within community and primary healthcare financing rather than being addressed mainly after complications have developed. Thus, the finding from this outreach supports greater allocation of financing to routine glucose screening, confirmatory diagnosis, essential medicines, health education and continuity of care.

The hepatitis B screening findings also have implications for the allocation of preventive and curative health resources in Abuja. Eighteen participants (1.83%) had reactive hepatitis B surface antigen screening results, with the highest screening proportion occurring at Dei-Dei (2.67%), followed by Kuje (1.48%) and Garki (0.98%). Although the observed proportion cannot be generalized as the prevalence of hepatitis B in the wider Abuja population, the identification of reactive cases through outreach demonstrates the value of making hepatitis B screening available outside conventional health facilities. However, health financing in Abuja should support an integrated hepatitis B package that links community screening with confirmatory diagnostics, vaccination, referral and follow-up care. Such financing would shift attention from financing isolated screening events toward financing a continuous prevention-to-care pathway.

The HIV screening results, although comparatively low, likewise have implications for sustainable health financing. Three participants tested reactive for HIV, representing 0.30% of the 984 participants screened, with one reactive result recorded at each of the three outreach locations. The small number of reactive results should not be interpreted as evidence that HIV is no longer a financing priority; rather, the finding demonstrates the continuing value of accessible testing as an entry point into prevention, confirmatory diagnosis, treatment and care. HIV programmes require sustained financing because testing is only the initial stage of a longer continuum involving confirmation, treatment initiation, adherence support, viral-load monitoring and prevention services. Therefore, the detection of HIV-reactive participants through community outreach supports continued financing for decentralised testing and referral services,

while also demonstrating the importance of integrating outreach activities with existing HIV treatment and prevention systems rather than treating outreach as an isolated intervention.

The distribution of attendance across the three locations further suggests that financing decisions should consider differences in community demand and service accessibility. Kuje accounted for the largest number of participants (406; 41.3%), followed by Dei-Dei (374; 38.0%) and Garki (204; 20.7%). However, attendance alone should not be interpreted as evidence of greater disease burden or healthcare need because participation may have been influenced by awareness, accessibility, timing of the outreach and other factors that were not measured in the study. For Abuja, this implies that financing mechanisms should support regular rather than purely ad hoc outreach, particularly where such programmes are linked to established referral facilities and health-insurance or prepayment arrangements.

Discussion

This report presents the findings of three medical outreach programmes conducted by Lesha Hospital Limited in collaboration with the Police Health Maintenance Organization (Police HMO) at Garki Police Headquarters, MD Abubakar Police Barracks (Dei-Dei), and Police Barracks, Kuje, Abuja. The outreach programmes were designed to improve access to preventive healthcare services through free medical consultation, disease screening, treatment, health education, and referral.

A total of 984 participants were screened across the three locations. Police Barracks, Kuje, recorded the highest attendance (406 participants; 41.3%), followed by MD Abubakar Police Barracks (Dei-Dei) (374 participants; 38.0%) and Garki Police Headquarters (204 participants; 20.7%). The high participation observed demonstrates the acceptance and value of community-based medical outreach programmes among police personnel and their families. Similar observations have been reported in community outreach programmes across Nigeria, where free healthcare services significantly increased healthcare utilization (Ameh et al., 2021).

Malaria was one of the most common conditions identified during the outreach, with an overall prevalence of 18.39%. Kuje recorded the highest malaria prevalence (19.95%), followed by Garki (18.63%) and Dei-Dei (16.58%). This finding is consistent with the World Malaria Report(2024), which continues to identify malaria as one of the leading causes of morbidity in

Nigeria. The persistent burden of malaria highlights the need for strengthened vector control measures, environmental sanitation, prompt diagnosis, and appropriate treatment.

Random blood glucose screening showed that 234 participants (23.78%) had elevated blood glucose levels suggestive of diabetes mellitus or impaired glucose regulation. Garki recorded the highest prevalence (27.94%). Although elevated blood glucose identified during outreach screening does not confirm a diagnosis of diabetes mellitus, these findings indicate that a substantial proportion of participants require further clinical evaluation. Similar observations have been reported by the International Diabetes Federation (2021), which noted an increasing burden of diabetes and undiagnosed hyperglycaemia in sub-Saharan Africa.

Hepatitis B screening identified 18 positive cases, corresponding to an overall positivity rate of 1.83%. The highest positivity rate was recorded in MD Abubakar Police Barracks (Dei-Dei) (2.67%). Although this prevalence is lower than that reported in several hospital-based Nigerian studies involving high-risk populations, it demonstrates that Hepatitis B virus infection remains present within the community and supports continued screening, vaccination, public awareness, and linkage to care.

HIV screening identified three positive participants, representing an overall positivity rate of 0.30%. One positive case was identified at each outreach location. While the positivity rate was low, routine HIV counselling and testing remain important because early diagnosis improves treatment outcomes and helps reduce transmission. The findings support Nigeria's strategy of expanding access to community-based HIV testing services.

The outreach programmes demonstrated the importance of community-based health interventions in improving access to preventive healthcare services, promoting early diagnosis of communicable and non-communicable diseases, providing timely treatment, and facilitating referral for specialized medical care. The collaboration between Lesha Hospital Limited and the Police HMO contributed to improved health awareness and strengthened healthcare delivery within the police communities.

CONCLUSION

The medical outreach programmes successfully provided comprehensive healthcare services to police personnel, their dependants, retirees, and surrounding communities across the three outreach locations. A total of 984 participants benefited from the programme.

The outreach facilitated the early identification of malaria, elevated blood glucose, Hepatitis B infection, and HIV infection, enabling timely treatment, counselling, and referral where necessary. The findings demonstrate that community medical outreaches remain an effective strategy for improving access to healthcare, promoting preventive medicine, and increasing health awareness.

Regular outreach programmes, coupled with health education, routine screening, and appropriate referral systems, are recommended to improve health outcomes within police communities.

RECOMMENDATIONS

Based on the findings of this report, the following recommendations are made:

1. Medical outreach programmes should be conducted regularly across Police Barracks and surrounding communities to promote early disease detection and improve access to healthcare services.
2. Health education on malaria prevention, healthy lifestyles, Hepatitis B prevention, HIV prevention, and diabetes risk reduction should be strengthened.
3. Hepatitis B vaccination should be promoted among eligible participants, particularly in communities where positive cases were identified.
4. Individuals with elevated blood glucose should be referred for confirmatory testing and appropriate clinical management.
5. Routine HIV counselling and testing services should continue to be integrated into future outreach programmes.
6. Environmental sanitation and other malaria control measures should be intensified to reduce mosquito breeding and transmission.

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