



**KNOWLEDGE OF DISEASE SURVEILLANCE AND NOTIFICATION AMONG HEALTH
 INFORMATION MANAGEMENT PROFESSIONALS IN PRIMARY HEALTH CARE
 CENTERS IN KWARA STATE, NIGERIA**

ADEBAYO C. O.¹ And SALIHU I.O.²

School of Health Information Management,
 University of Ilorin Teaching Hospital, Ilorin
adebayooloruntoba21@gmail.com

and

Department of Health Information Management,
 Kwara State University,
toyeenibraheem@gmail.com
 ORCID iD: 0009-0003-8991-3585

Abstract

Disease surveillance and notification constitute the operational backbone of public health outbreak prevention and control. Health Information Management Professionals (HIMPs) serve as the designated reporting officers at Primary Health Care (PHC) centres under the Integrated Disease Surveillance and Response (IDSR) framework in Nigeria, yet systematic assessments of their DSN knowledge base remain scarce in Kwara State. Objectives: This study assessed the level of knowledge of disease surveillance and the level of knowledge of disease notification among HIMPs in three selected Local Government Areas (LGAs) of Kwara State. Methods: A descriptive cross-sectional survey was conducted using complete enumeration of all 43 HIMPs in Ekiti (n = 14), Irepodun (n = 13), and Oke Ero (n = 16) LGAs. A validated, pre-tested, self-administered questionnaire comprising Likert-scale items was used. Data were analysed using SPSS Version 25 with descriptive statistics; the criterion mean was 2.50. Results: HIMPs demonstrated a high level of knowledge of disease surveillance (grand mean = 2.80), with strong familiarity with surveillance as a continuous scrutiny process ($\bar{x}$ = 2.93), systematic data collection and collation ($\bar{x}$ = 2.73), and disease occurrence data interpretation ($\bar{x}$ = 2.73). A high level of knowledge of disease notification was also established (grand mean = 2.83), with respondents demonstrating clear understanding of the skilled manpower requirement for timely information dissemination ($\bar{x}$ = 2.83), the need for prompt public health action ($\bar{x}$ = 2.83), and the role of notification in disseminating surveillance intelligence ($\bar{x}$ =

2.83). *Conclusion: HIMPs in the three selected LGAs of Kwara State possess a high level of knowledge of both disease surveillance and disease notification, providing a positive operational foundation for effective IDSR implementation. Continuous professional development is recommended to sustain and deepen this knowledge base.*

Keywords: *disease surveillance; disease notification; knowledge assessment; health information management; primary health care; IDSR; Kwara State; Nigeria.*

1. Introduction

The increasing frequency, geographic spread, and public health consequences of infectious disease outbreaks globally have reinforced the indispensability of functional, responsive disease surveillance and notification (DSN) systems, particularly in developing-country settings where health infrastructure remains fragile (World Health Organization [WHO], 2025; Elias and Christopher, 2024). Disease surveillance is defined as the continuous, systematic collection, collation, analysis, and interpretation of health data, followed by dissemination of the resulting information to those who need it for public health action (Heymann, 2014; Last, 2021; Bonita, Beaglhole and Kjellström, 2016). Disease notification refers specifically to the official and timely reporting of confirmed or suspected cases of designated notifiable diseases to designated public health authorities using standardised reporting tools and procedures (Abdulraheem, Monehin, Akanbi, Onajole and Bamgbala, 2014). Together, these activities constitute the operational infrastructure through which outbreaks are detected early, investigated promptly, and contained before they escalate into large-scale epidemics with substantial morbidity and mortality consequences.

Nigeria formalised its national DSN system in 1988 following the devastating yellow fever epidemic of 1986 to 1987 (Federal Ministry of Health [FMoH], 2019). By 1998, Nigeria adopted the Integrated Disease Surveillance and Response (IDSR) strategy following a resolution of the 48th WHO Regional Committee for Africa, and commenced implementation

in June 2000 (Franco, Setzer and Banke, 2016). Under this framework, Health Information Management Professionals at PHC facilities serve as the first-line disease reporting officers, responsible for detecting notifiable diseases using IDSR case definitions, completing IDSR 001A immediate case-based notification forms, and transmitting notifications to the LGA Disease Surveillance and Notification Officer (DSNO) for onward processing (FMoH, 2019). The knowledge that HIMPs possess of DSN procedures is therefore a critical determinant of the quality, timeliness, and completeness of disease reports generated at the entry level of the national surveillance system.

Despite the established importance of knowledge as a predictor of DSN practice, studies examining the DSN knowledge of HIMPs specifically as opposed to clinicians or general health workers — remain limited in the Nigerian literature, and virtually absent in the Kwara State context. Available evidence from other states reveals a persistent gap between DSN awareness and correct reporting practice, with knowledge deficits in specific dimensions of surveillance and notification identified as significant contributing factors (Chime, Ogugua, Obionu, Ezenwosu et al., 2021; Dairo, Bamidele and Adebimpe, 2020). The present study was designed to establish a rigorous empirical baseline on the DSN knowledge levels of HIMPs in three selected LGAs of Kwara State, providing the evidence needed to guide targeted capacity-building interventions for this critical cadre of health information workers.

2. Statement of the Problem

The persistent under-reporting of notifiable diseases in Nigeria despite significant investments in IDSR training and implementation raises important questions about the depth and operational specificity of DSN knowledge among PHC-level reporting officers. While high rates of general DSN awareness have been documented across several Nigerian states, specific knowledge deficits in areas such as identification of notifiable diseases, completion of IDSR

reporting forms, understanding of reporting timelines, and familiarity with designated reporting channels continue to constrain effective notification practice (Chime et al., 2021; McClean, Silk, Buehler and Berkelman, 2020; Abdulrahim, Alasasfeh, Khader and Iblan, 2022). In Kwara State, the level of DSN knowledge among HIMPs in PHC facilities has not been formally assessed, creating a significant gap in the evidence base required for policy-relevant capacity-building planning. This study was motivated by the need to fill this gap by providing the first systematic assessment of DSN knowledge levels among HIMPs in the state's PHC system.

3. Objectives of the Study

The specific objectives of this study were:

1. To determine the level of knowledge of disease surveillance among Health Information Management Professionals in Primary Health Care centres in three selected Local Government Areas of Kwara State, Nigeria.
2. To assess the level of knowledge of disease notification among Health Information Management Professionals in Primary Health Care centres in three selected Local Government Areas of Kwara State, Nigeria.

4. Review of Related Literature

4.1 Theoretical Framework: Public Health Surveillance Theory

This study is grounded in the Public Health Surveillance Theory developed by Dzirasah and Dzirasah (2024), which provides a six-phase systematic model for understanding the etiology, transmission, amplification, detection, containment, and policy response dimensions of infectious disease outbreaks. Within this framework, the fourth phase initial facility-level case investigation and public health alert depends critically on the knowledge of disease

surveillance case definitions and notification procedures held by health workers at the first contact level of the health system. The theory posits that where facility-level health workers lack adequate DSN knowledge, the detection-to-response chain is disrupted, enabling infectious disease to spread beyond the point at which early intervention would have been feasible. The present study operationalises this theoretical proposition by investigating the extent to which HIMPs in Kwara State PHC facilities possess the knowledge necessary to fulfil their fourth-phase detection and notification role within the IDSR system.

4.2 Disease Surveillance and Notification in Nigeria: Conceptual Overview

The IDSR system in Nigeria mandates the notification of 40 communicable and non-communicable diseases and public health events, categorised into three groups: epidemic-prone diseases requiring immediate notification, diseases targeted for eradication and elimination, and other diseases of public health importance requiring routine monthly reporting (FMOH, 2019; Kasolo, ROUNGOU and PERRY, 2015). Knowledge of DSN, within the context of the IDSR framework, encompasses several dimensions: understanding of disease surveillance as a continuous and systematic process of data collection, collation, analysis, interpretation, and dissemination; familiarity with the specific notifiable diseases and their IDSR case definitions; knowledge of the designated notification channels, reporting forms, and reporting timelines; understanding of the roles and responsibilities of the various levels of the IDSR network; and awareness of the public health significance of timely notification for outbreak prevention (FMOH, 2019; Last, 2021; Heymann, 2014). Deficiencies in any of these knowledge dimensions can significantly compromise the quality of disease reporting and undermine the early warning function of the surveillance system.

4.3 Empirical Review of DSN Knowledge among Health Workers

Empirical evidence on DSN knowledge across Nigeria reveals considerable variability across settings and professional cadres. Chime et al. (2021) reported an overall knowledge rate of 71% among health workers in PHC facilities in Enugu State, noting that while conceptual knowledge of the IDSR system was generally adequate, specific knowledge of reporting procedures particularly the correct use of IDSR forms and designated reporting channels was considerably weaker. Aniwada and Obionu (2024) similarly found that while general awareness of disease notification requirements was high (82%), only 57.3% of health workers in Enugu State PHC facilities notified diseases correctly through the designated DSNO channels, suggesting a discrepancy between declarative knowledge and procedural knowledge. Abdulrahim et al. (2022) found comparable patterns in Jordan, where physicians demonstrated awareness of general notification requirements but showed significant knowledge gaps regarding specific reporting procedures and designated authorities. Dairo et al. (2020) identified poor awareness of the surveillance network for notifiable diseases, uncertainty about which diseases are notifiable, and confusion about reporting channels as specific knowledge deficits contributing to under-reporting in Southwestern Nigeria. These findings collectively indicate that DSN knowledge assessments must probe specific procedural and operational knowledge dimensions not merely general awareness to generate actionable capacity-building evidence.

5. Methodology

5.1 Research Design and Setting

A descriptive cross-sectional quantitative survey design was adopted. The study was conducted in the PHC facilities of three purposively selected LGAs in Kwara State: Ekiti LGA (22 health facilities, 14 HIMPs), Irepodun LGA (65 health facilities, 13 HIMPs), and Oke Ero LGA (26 health facilities, 16 HIMPs). These three LGAs were selected based on geographic

accessibility, institutional cooperation, and their representativeness of LGAs across different levels of health facility density in the state.

5.2 Study Population and Sampling

The study population comprised all 43 qualified HIMPs currently employed in the PHC facilities of the three selected LGAs. A complete enumeration (census) approach was adopted because the target population was sufficiently small to permit inclusion of all eligible participants without sampling, thereby eliminating sampling error and maximising representativeness (Polit and Beck, 2017). This approach is well-established in studies targeting small, specialised professional populations in health research contexts.

5.3 Data Collection Instrument and Procedure

A structured, pre-tested, self-administered questionnaire was used. The instrument comprised six sections, of which Sections B and C are reported in this article. Section B assessed knowledge of disease surveillance using three items, and Section C assessed knowledge of disease notification using three items. All items were rated on a four-point Likert scale: Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2), Strongly Disagree (SD = 1). Face and content validity were established through review by two senior academics in health information management and one research methodology specialist. A pilot study was conducted at Oyun LGA (n = 13), an LGA excluded from the main study but comparable in institutional characteristics, to assess item clarity and estimate internal consistency. All 43 questionnaires administered were retrieved, yielding a 100% response rate.

5.4 Data Analysis

Data were analysed using IBM SPSS Statistics Version 25. Frequency counts, percentages, means, and standard deviations were computed for all items. A criterion mean of 2.50 corresponding to the mathematical midpoint of the four-point Likert scale was adopted as

the interpretive threshold. Mean scores at or above 2.50 were interpreted as indicating positive knowledge (agreement that the respondent possessed the stated knowledge), while scores below 2.50 indicated knowledge deficiency. This criterion is consistent with established practice in Likert-scale instrument interpretation in Nigerian health research (Dairo et al., 2020; Chime et al., 2021).

6. Results

6.1 Sociodemographic Profile of Respondents

All 43 HIMPs participated (100% response rate). The majority were male (72.1%; n = 31), with females constituting 27.9% (n = 12). Most respondents held an HND or Bachelor's degree qualification (58.1%; n = 25), while 41.9% (n = 18) held an ND or technical certificate. By work experience, 55.8% (n = 24) had more than five years of experience in health information management, while 44.2% (n = 19) had one to five years. By LGA, 37.2% (n = 16) were from Oke Ero, 32.5% (n = 14) from Ekiti, and 30.3% (n = 13) from Irepodun.

6.2 Objective 1: Level of Knowledge of Disease Surveillance (Table 1)

S/N	Disease Surveillance Knowledge Item	SA (n, %)	A (n, %)	D (n, %)	SD (n, %)	Mean	SD	Decision
1	Disease surveillance is a continuous scrutiny of disease occurrence enabling prompt intervention	25 (58.1)	13 (30.2)	4 (9.3)	1 (2.3)	2.93	0.74	Positive
2	Disease surveillance involves systematic collection,	20 (46.5)	21 (48.8)	1 (2.3)	1 (2.3)	2.73	0.45	Positive

	collation, and analysis of health data							
3	Disease surveillance involves interpretation of data on disease occurrence	18 (41.9)	20 (46.5)	4 (9.3)	2 (4.7)	2.73	0.45	Positive
	Grand Mean					2.80	0.55	

Table 1: Level of Knowledge of Disease Surveillance among HIMPs (N = 43). Decision criterion: mean $\geq$ 2.50 = Positive. Source: Researchers' field survey, 2026.

The findings in Table 1 demonstrate that all three disease surveillance knowledge items recorded mean scores above the criterion mean of 2.50, yielding a grand mean of 2.80 (SD = 0.55). This confirms that HIMPs in the three selected LGAs possessed a high level of knowledge of disease surveillance. Item 1 conceptual knowledge of disease surveillance as a continuous scrutiny process enabling prompt intervention recorded the highest mean ($\bar{x}$ = 2.93, SD = 0.74), with 58.1% (n = 25) strongly agreeing and 30.2% (n = 13) agreeing. This suggests strong familiarity with the foundational definition of disease surveillance. Items 2 and 3 knowledge of systematic data collection and collation ($\bar{x}$ = 2.73) and disease occurrence data interpretation ($\bar{x}$ = 2.73) respectively recorded equal but slightly lower means, indicating that respondents are also familiar with the procedural dimensions of the surveillance cycle, including the data management and analytical components.

6.3 Objective 2: Level of Knowledge of Disease Notification (Table 2)

S/N	Disease Notification Knowledge Item	SA (n,%)	A (n,%)	D (n,%)	SD (n,%)	Mean	SD	Decision
1	Disease notification requires skilled	19 (44.2)	18 (41.9)	5 (11.6)	2 (4.7)	2.83	0.38	Positive

	manpower to disseminate timely information							
2	Disease notification is about prompt public health action	22 (51.2)	15 (34.9)	5 (11.6)	1 (2.3)	2.83	0.38	Positive
3	Disease notification involves dissemination of information from disease surveillance	20 (46.5)	16 (37.2)	4 (9.3)	3 (7.0)	2.83	0.38	Positive
	Grand Mean					2.83	0.38	

Table 2: Level of Knowledge of Disease Notification among HIMPs (N = 43). Source: Researchers' field survey, 2026.

Table 2 shows that all three disease notification knowledge items recorded identical mean scores ($\bar{x} = 2.83$, $SD = 0.38$), yielding a grand mean of 2.83 above the criterion mean confirming a high level of knowledge of disease notification. The uniform means across items indicate consistent knowledge across the assessed notification dimensions. Specifically, 44.2% of respondents strongly agreed and 41.9% agreed that disease notification requires skilled manpower for timely information dissemination; 51.2% strongly agreed and 34.9% agreed that notification is primarily about prompt public health action; and 46.5% strongly agreed and 37.2% agreed that notification involves disseminating information obtained from the surveillance process. These findings indicate that HIMPs possess operationally specific knowledge of the manpower requirements, timeliness imperatives, and communicative functions of disease notification.

7. Discussion of Findings

The study established that HIMPs in the three selected LGAs of Kwara State demonstrated a high level of knowledge of both disease surveillance (grand mean = 2.80) and disease notification (grand mean = 2.83). These findings are broadly consistent with the body of DSN knowledge literature from comparable Nigerian settings. Chime et al. (2021) reported overall knowledge rates of 71% among health workers in PHC facilities in Enugu State, while Aniwada and Obionu (2024) documented high DSN awareness (82%) among health workers in the same state. The present study's findings of positive knowledge scores across all assessed dimensions align with these documented patterns. The consistency of mean scores across disease notification items (all at $\bar{x} = 2.83$) while reflecting uniform positive knowledge may also indicate a degree of response uniformity that warrants attention in methodological terms. Future studies should supplement self-assessment items with objective knowledge tests requiring respondents to correctly identify notifiable diseases, select the appropriate reporting form, and specify the correct reporting authority, to more rigorously differentiate genuine operational knowledge from socially desirable reporting.

The slight difference between knowledge of surveillance as a continuous process ($\bar{x} = 2.93$) and knowledge of data interpretation ($\bar{x} = 2.73$) is theoretically significant. Within the Public Health Surveillance Theory (Dzirasah and Dzirasah, 2024), the data interpretation function is positioned as the analytical bridge between raw surveillance data collection and actionable public health alerts. If HIMPs have stronger conceptual familiarity with surveillance as a process than with the interpretation component, their capacity to generate the analytical inputs needed for informed public health decision-making may be weaker than the overall knowledge mean suggests. This finding points to the need for targeted reinforcement of data analysis and interpretation skills in IDSR training programmes for HIMPs in Kwara State.

8. Conclusion

HIMPs in the three selected LGAs of Kwara State possess a high level of knowledge of disease surveillance and notification, providing a positive knowledge foundation for effective IDSR reporting at the PHC level. Sustaining this knowledge base through structured, regular, and practically oriented professional development — with particular emphasis on data interpretation skills and IDSR form completion competency — is essential to translating this knowledge into consistently effective notification practice.

9. Recommendations

1. HIMPs should actively engage in continuous professional development programmes, including attendance at IDSR update workshops and in-service training sessions, to sustain and deepen their DSN knowledge, with particular attention to emerging IDSR guidelines and revisions to the notifiable diseases list.
2. The Kwara State Ministry of Health should ensure that IDSR training programmes for HIMPs incorporate practical competency components including simulated IDSR form completion exercises, case-based notification scenarios, and data analysis exercises to strengthen the operational application of DSN knowledge beyond declarative awareness.

References

- Abdulrahim, N., Alasasfeh, I., Khader, Y. S., & Iblan, I. (2022). Knowledge, awareness, and compliance of disease surveillance and notification among Jordanian physicians in residency programs. *Inquiry*, 56, 1–6. <https://doi.org/10.1177/0046958019897056>
- Abdulraheem, I. S., Monehin, O. J., Akanbi, A. A., Onajole, A. T., & Bamgbala, A. O. (2014). Disease notification among physicians in a Nigerian Tertiary Health Institution. *Nigerian Medical Practitioner*, 45, 111–115.
- AHIMA. (2025). What is health information management? American Health Information Management Association. <https://www.ahima.org>
- Aniwada, E., & Obionu, C. (2024). Disease surveillance and notification, knowledge, and practice among private and public primary health care workers in Enugu State, Nigeria: A comparative study. *British Journal of Medicine & Medical Research*, 13(3), 1–10.

- Bonita, R., Beaglhoe, T., & Kjellström, T. (2016). *Basic epidemiology* (2nd ed.). World Health Organization.
- Chime, O. H., Ogugua, I. J., Obionu, I. M., & Ezenwosu, I. L. (2021). Assessment of knowledge and practice of disease surveillance and notification among health workers in private hospitals in Enugu State, Nigeria. *Nigerian Journal of Medicine*, 30(6), 693–700.
- Dairo, M. D., Bamidele, J. O., & Adebimpe, W. O. (2020). Disease surveillance and reporting in two Southwestern States in Nigeria. *Journal of Public Health Epidemiology*, 2, 126–129.
- Dzirasah, K. D., & Dzirasah, K. (2024). Public health surveillance theory. ResearchGate. <https://www.researchgate.net/publication/385858490>
- Elias, C. A., & Christopher, N. O. (2024). Disease surveillance and notification, knowledge and practice among private and public primary health care workers in Enugu State, Nigeria. *British Journal of Medicine & Medical Research*, 13(3), 1–10.
- Federal Ministry of Health. (2019). *National technical guidelines for integrated disease surveillance and response* (2nd ed.). Federal Ministry of Health.
- Franco, L. M., Setzer, J., & Banke, K. (2016). Improving performance of IDSR at district and facility levels: Experiences in Tanzania and Ghana. Abt Associates.
- Heymann, D. L. (2014). *Control of communicable diseases manual* (18th ed.). American Public Health Association.
- Kasolo, F., ROUNGOU, J. B., & Perry, H. (2015). *Technical guidelines for integrated disease surveillance and response in the African region* (2nd ed.). WHO AFRO.
- Last, J. M. (2021). *A dictionary of epidemiology* (4th ed.). Oxford University Press.
- McClean, C. M., Silk, B. J., Buehler, J. M., & Berkelman, R. L. (2020). Disease reporting among Georgia physicians and laboratories. *Journal of Public Health Management and Practice*, 16, 535–543.
- Polit, D. F., & Beck, C. T. (2017). *Nursing research: Generating and assessing evidence for nursing practice* (10th ed.). Lippincott Williams & Wilkins.
- World Health Organization. (2025). Surveillance in emergencies. <https://www.who.int/westernpacific/emergencies/surveillance>