J. Pub. Health &Tox. Res., 3(1): 162-168 (2026)
DOI: https://doi.org/10.71637/jphtr.vol3no1.47

EXTENT OF IMPLEMENTATION OF THE NATIONAL TECHNICAL GUIDELINES FOR INTEGRATED DISEASE SURVEILLANCE AND RESPONSE (IDSR) IN RIVERS STATE, NIGERIA.

Hanson Monday Pepple*, Daprim Samuel Ogaji, Charles Tobin-West
Department of Preventive and Community Medicine, School of Public Health, University of Port Harcourt, Nigeria[1]

***Corresponding author's email**: pepplehanson@gmail.com; +2348079241494*

Article History
Received:16 Nov 2025
Accepted:20 Dec 2025
Published:24 Jan 2026

Abstract

The World Health Organization (WHO) developed the Integrated Disease Surveillance and Response (IDSR) strategy that Nigeria has adopted since 2001 to enhance the preparedness for public health emergencies. This study examined the extent of implementation of the IDSR in Rivers State. A convergent mixed-method research design was employed. Structured questionnaires were used to collect the quantitative data from a cluster sample of 384 health workers from all 23 Local Government Areas in the state. Data were summarized and analyzed with descriptive and inferential statistics. Qualitative data was collected through in-depth interview of Disease Surveillance and Notification Officer, Health Records Officer and the surveillance focal persons. Thematic analysis was used and triangulation was applied. Quantitative data showed that there was a moderate to high level of adherence to IDSR protocols: familiarity with guidelines (mean = 3.82), the use of standardised reporting instruments (mean = 4.09), and adherence to outbreak response protocol (mean = 4.00). At the individual level compliance was high: reporting on time (mean = 4.18) and accuracy (mean = 4.59). Nevertheless, frequency of training (mean = 3.23), reception of feedback (mean = 3.36) and availability of resources (mean = 3.32) were inadequate These trends were supported by qualitative data which indicated that IDSR 002/ 003 forms were frequently used, learning was peer-to-peer instead of formal training, and highlighted logistic barriers. IDSR is weakly implemented in Rivers State. Lack of training, inconsistent feedback, and inadequate logistical support should be enhanced for equity in surveillance and responsiveness.

Keywords: *Disease surveillance, Feedback, Implementation, Nigeria, Training.*

How to cite this paper: Pepple et al. (2026). Extent of Implementation of the National Technical Guidelines for Integrated Disease Surveillance and Response (IDSR) in Rivers State, Nigeria. Journal of Public Health and Toxicological Research, 3(1): 162-168.

Introduction

Surveillance of diseases is a pillar of health practice, which allows health systems to identify, monitor, and adequately respond to epidemics and health threats. The outbreaks of cholera, meningitis, measles, and Ebola have put the need for a strong surveillance system into the limelight. In 1998, the Regional Office of Africa of the World Health Organization (WHO AFRO) introduced Integrated Disease Surveillance and Response (IDSR) strategy to handle these challenges by integrating the fragmented vertical surveillance programmes into a complete strategy aimed at enhancing detection, reporting, and response (WHO, 2010).

Nigeria officially adopted the IDSR strategy in 2001 and it was included in the national technical guidelines in 2013 and 2019 with reference to International Health Regulations (NCDC, 2019). Such guidelines present standard case definitions, reporting mechanisms and procedures of investigating an outbreak, which will be applied at the health facility to national level. The objective is to establish an efficient system in which the upward data flow is used to aggregate data and the downward data is used to give actionable feedback to make decisions (Adokiya et al., 2015). Nevertheless, the level of IDSR implementation in Nigeria is still uneven due to systemic barriers (Bello et al., 2021).

Before IDSR, the surveillance systems in Africa were marked by vertical and donor-funded programs that were too narrow as they targeted particular diseases like polio, tuberculosis and HIV/AIDS. Such systems tended to work in isolation, resulting in redundancy, wastefulness and poor use of limited resources (Onwujekwe et al., 2019). IDSR has been developed to address these flaws through prioritization of diseases and conditions in surveillance, simplification of data processes, and connexon of surveillance to immediate public health action (Ngwa et al., 2021).

In Nigeria, the unbalanced nature of IDSR implementation between the states is reported in an increasing body of research. Onwujekwe et al. (2019) reported that frequent supervision and feedback by the district officers in Enugu were directly related to the quality of data and timeliness of reporting. Onwujekwe et al. (2019) added that in Plateau State that those facilities, which had dedicated surveillance officers and regular training, were much better in detecting outbreaks than the facilities where IDSR was considered an extra-curricular task. In the same vein, Oladele and Adeyemi (2020) found that fuel allowances, mobile airtime, and access to transport were the most important enablers of effective surveillance in Oyo State. Other researchers in Nigeria have identified endemic issues: insufficiency in training coverage (Ameh et al., 2016), and delays in funds disbursement (Bello et al., 2021).

Rivers State has a high population density and is a good case to examine how much IDSR has been integrated in the daily functioning of the health system. Its wide geographical landscape, consisting of urban centres, rural hinterlands, and riverine settlements, makes it a micro-world of the challenges of the health system in Nigeria. This study examined the extent of implementation of the IDSR in Rivers State.

Research Methodology

Design and Study Area: The convergent mixed-method design was employed in this study. The use of mixed-methods design is the preferred choice in public health research because it enables triangulation and improves the validity of the results (Onwujekwe et al., 2019). This study was done in Rivers state, Nigeria, which is one of the most populous and industrialized states in the Niger Delta region. The state comprises 23 Local Government Areas (LGAs). The high population, industrialization, and complicated geography makes it susceptible to outbreaks of various infectious diseases, including cholera, Lassa fever, and measles.

Population and Sampling: The population included health workers who were directly engaged in disease surveillance, reporting and response efforts in primary health Centre's in Rivers State. Records of the Rivers State Primary Health Care Management Board show that it had an estimated 2,719 of such workers in 2023. The minimum sample required was calculated as 336 respondents using Cochran formula (1977) of correction of a finite population. Cluster sampling method was used to obtain representativeness.

Data Collection: The structured self-administered questionnaire, based on the WHO-AFRO IDSR assessment tool (WHO, 2010; NCDC, 2019), was used to collect quantitative data. The questionnaire had the following sections: Familiarity with IDSR guidelines and protocols; Utilization of standardized reporting materials (IDSR 001-003); Frequencies and timeliness of reporting; Training and supervision received; Availability of resources to surveillance and

response to outbreak. The 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) was used to measure responses.

Qualitative data were collected through key informant interviews (KIIs) with Disease Surveillance and Notification Officers (DSNOs), Health Information Officers (HIOs) and Surveillance Focal Persons in the selected LGAs. Themes addressed in an interview guide included awareness and knowledge of NTG-IDSR, effectiveness of implementation, challenges in reporting and how to improve it. All interviews took between 45-60 minutes, were recorded with consent and transcribed verbatim.

Data Analysis: The SPSS version 25 was used to analyse the quantitative data. Implementation indicators were summarized using descriptive statistics (means, standard deviations and proportions). The chi-square inferential statistics were used to compare the implementation levels in senatorial districts. Thematic analysis was used to analyse qualitative data according to the six step Braun and Clarke (2006) analysis framework: familiarisation, coding, generating themes, reviewing themes, defining themes and reporting. NVivo 12 was used to organise and code data.

Ethical Considerations: The Rivers State Health Research Ethics Committee gave ethical approval. The Rivers State Primary Health Care Management Board gave permission. Informed consent was given by all participants. Anonymity was ensured by using unidentified transcripts and restricting the access to data.

Results

The findings of this study were structured around five domains: facility implementation, individual-level implementation, training, resource availability, and feedback.

Facility-level Implementation: Table 1 presents the facility-level implementation and demonstrated strong implementation of IDSR protocols.

Table 1: Facility-Level Implementation Indicators

Item statement	Mean (S.E)	Q1	Q3	I-Q range
Healthcare workers are familiar with the national technical guidelines for IDSR	3.82 (0.149)	3	5	2
There are frequent training sessions on IDSR guidelines conducted for healthcare workers in you facility	3.23 (0.158)	1	5	4
Disease surveillance data are accurately and promptly reported by healthcare facilities according to IDSR	3.95 (0.143)	3	5	2
Standardized IDSR surveillance tools (e.g., forms, registers) are effectively utilized in the healthcare facility	4.09 (0.119)	4	5	1
Healthcare workers follow the IDSR guidelines for outbreak detection and response	4.00 (0.123)	3	5	2
On a regular basis, IDSR data are reviewed and analyzed for decision-making at the local health authority level	3.68 (0.151)	2	5	3
Healthcare facilities have the necessary resources (e.g., tools, personnel) to implement IDSR guidelines	3.32 (0.167)	1	5	4
Healthcare workers are regularly monitored and evaluated for their adherence to IDSR guidelines	3.73 (0.151)	2	5	3
Local health authorities provide feedback to healthcare facilities on IDSR performance	3.77 (0.158)	2	5	3

Mean > 3.00 is adequate on a 5 point scale, S.E = Standard error

The frontline health workers emphasized that reporting routines had become part of their weekly and monthly responsibilities:

"I fill the IDSR form every Monday. It is part of our weekly reporting." (Participant 2)

"There's the one that we call IDSR 003. We submit it monthly. On the 5th of every month, you send your report to the board at the state." (Participant 2)

Similarly, DSNOs confirmed systematic coordination of reporting cycles across facilities:

"Every Sunday… I call in all the HIOs in each of the facilities." (Participant 3)

These narratives reinforce the survey results, showing that procedural routines are well institutionalized.

Individual-level Implementation: Table 2 presents the individual-level implementation and demonstrated high compliance with reporting requirements.

Table 2: Individual-Level Implementation Indicators

Item statement	Mean (S.E)	Q1	Q3	I-Q range
I submit disease notification reports in a timely manner as per the guidelines.	4.18 (0.137)	4	5	1
I am aware of the list of diseases that require notification in my region.	4.32 (0.130)	4	5	1
I consistently report all notifiable diseases as required by the surveillance system.	4.23 (0.138)	4	5	1
I use the Integrated Disease Surveillance and Response (IDSR) forms correctly when reporting diseases.	4.32 (0.117)	4	5	1
I have access to the necessary resources (forms, guidelines, etc.) for disease notification.	3.91 (0.144)	3	5	2
I report notifiable diseases through the designated channels specified by the surveillance system.	4.50 (0.085)	4	5	1
I am confident in the accuracy of the information I report for disease notification.	4.59 (0.099)	5	5	0
I ensure that my disease notification reports are complete with all required information.	4.27 (0.120)	4	5	1
I receive timely feedback on the disease notification reports I submit.	3.36 (0.154)	1	5	4
I find the feedback provided on disease notification reports to be helpful for improving my reporting practices.	3.91 (0.155)	4	5	1
I participate in training sessions to improve my skills in disease notification and reporting.	3.88 (0.156)	3	5	2
I receive adequate support from my supervisors or colleagues for disease notification activities.	4.00 (0.144)	4	5	1
I am satisfied with the current system of disease notification in my region.	3.50 (0.155)	2	5	3

Mean > 3.00 is adequate on a 5 point scale, S.E = Standard error

The health workers consistently described themselves as committed to reporting despite various challenges:
"On Monday, I will visit the focal site… On Friday, every Friday, I'll be in the office for documentation." (Participant 3)

Training and Knowledge Transfer: One of the weaker areas identified was training (mean 3.23). Only a minority of respondents reported attending formal IDSR training in the last year. Qualitative responses revealed:
"I have not attended any training for IDSR. Everything I know, I learnt from my colleague who was trained last year." (Participant 1)
"The training was held once, and they picked only two people. We didn't go." (Participant 2)
Such reliance on informal knowledge transfer underscores fragile system resilience.

Resource Availability: Resource availability was another area of concern (mean 3.32), reflecting limitations in logistics, funding, and essential supplies. Interview participants revealed:
"They are giving me 10,000 Naira monthly… If I take bike to Nkoro now it's 1,500. To and from is 3,000. I go once a month instead of twice." (Participant 1)
"25,000 will be only for two facilities… before they release the money, it's on the 30th of June… It's not useful again." (Participant 2)

Geographical barriers further exacerbated these problems, particularly in riverine areas where mobility required boats or motorcycles:
"We have to cross over to Finima and Epelema. I have to take the boat to those areas." (Participant 1)
"Many of the places in Andoni are motorable… but some like Ataba are not. We need bikes." (Participant 2)

These accounts illustrate how logistical and financial challenges directly undermine routine implementation.

Feedback and Supervision: Table 3 presents the feedback and supervision mechanisms and demonstrated inconsistencies with feedback (mean 3.36)

Table 3: Feedback and supervision mechanisms

Variables	Yes, f (%)	No, f (%)
Feedback log		
Date feedback was provided stated	85 (77.3)	25 (22.7)
Content of feedback provided	80 (72.7)	30 (27.3)
Recipient of feedback communicated	70 (63.6)	40 (36.4)
Actions taken in response to feedback	85 (77.3)	25 (22.7)
Healthcare Worker Feedback Survey		

Timeliness of Feedback	70 (63.6)	40 (36.4)
Quality and Clarity	85 (77.3)	25 (22.7)
Interactive Mechanisms	75 (68.2)	35 (31.8)
Training and Capacity	75 (68.2)	35 (31.8)
Use of Technology	80 (72.7)	30 (27.3)
Customization	85 (77.3)	25 (22.7)
Supportive Resources	70 (63.6)	40 (36.4)
Monitoring and Evaluation	95 (86.4)	15 (13.6)
Recognition and Motivation	85 (77.3)	25 (22.7)
Collaboration and Coordination	80 (72.7)	30 (27.3)

% = percent, f = frequency

While meetings were reported as a source of feedback, qualitative data revealed inconsistencies in how this information was communicated.

"We send our report, but we don't hear back unless we go to the meeting." (Participant 2)

"There's feedback. We have a monthly… monthly meeting." (Participant 1)

This finding suggests that feedback exists but is not timely enough to reinforce a strong surveillance cycle.

Overall Extent of Implementation: When aggregated, the overall extent of IDSR implementation in Rivers State was strong but uneven. As summarized in Figure 1, facility and individual compliance indicators were consistently high, but training, resources, and feedback mechanisms remained weak.

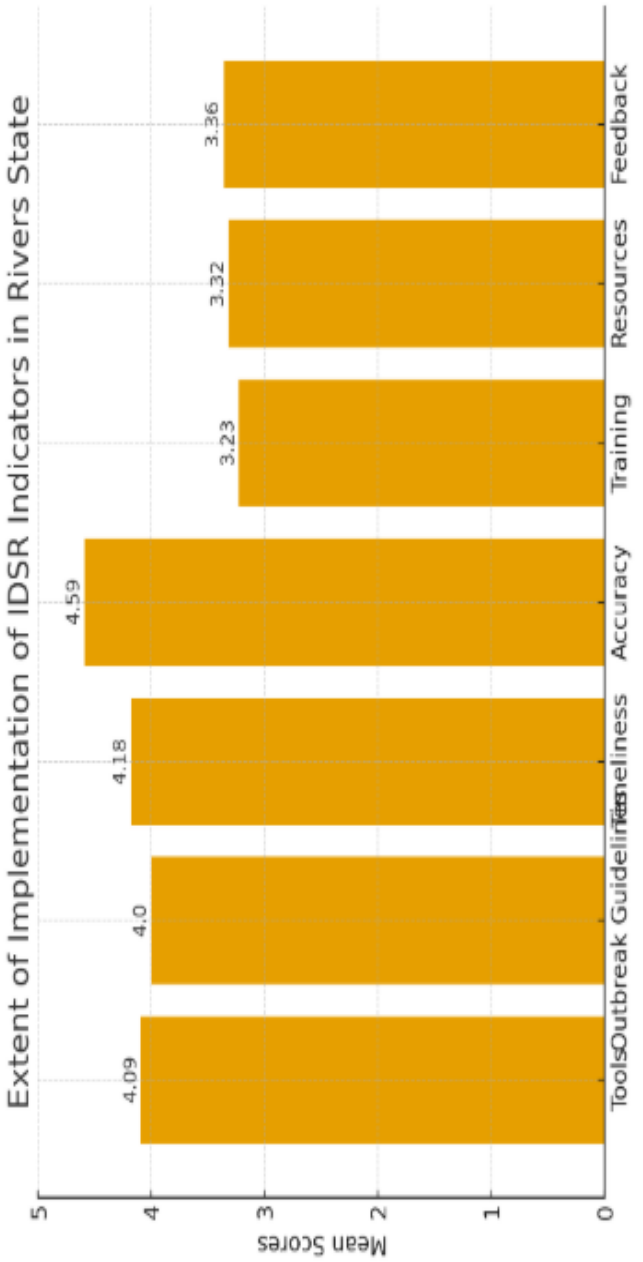

Figure 1: Extent of IDSR Implementation across Key Domains

Discussion

This study showed that there is a recurrent duality observed: high levels of procedural adoption (forms filled, reports forwarded, timeliness met) and systemic weaknesses (lack of training, poor feedback, poor logistics, and unfair reach). This trend is consistent with the multi-country findings that although countries and sub-national facilities have frequently met the formal standard of IDSR reporting indicators, the underlying functions that transform data into timely health action are weak (Fall et al., 2019; Kasola et al., 2021). The findings validate what has been previously reported by Kasola et al. (2021) through the lenses of Systems

Theory and the structure-process-outcome paradigm.

Procedural adoption in Rivers State--routine use of IDSR 002/003 forms, high self-reported data timeliness and confidence reflects the "reporting successes". In one of the examples, such as national and sub-national implementations, there are usually quantifiable improvements in reporting completeness and timeliness, as reported in the e-IDSR pilots and national summaries (NCDC, 2020; Kasolo et al., 2021). Research studies in Nigeria (Enugu, Oyo, and Plateau) state that facilities generally meet submission deadlines when they have standard tools and place persons in charge (Oladele and Adeyemi, 2020; Onwujekwe et al., 2019; Umeh & Ahaneku, 2018). The data in Rivers fit into this trend and the forms and reporting processes have been institutionalized.

The concordance stops when it comes to the structural underpinnings. Moderate scores on training frequency, resource sufficiency, and feedback (means 3.2 - 3.4) are consistent with the gaps highlighted throughout Sub-Saharan Africa (Fall et al., 2019). Frontline descriptions of informal peer-learning (learning through workmates instead of any structured lessons) are replicated in Rivers (as well as Ghana, Ethiopia, and other Nigerian states where formal training coverage was disorganized) (Adokiya and Awoonor-Williams, 2016; Alemu et al., 2017; Ameh et al., 2016).

The findings of the study about feedback and supervision are also in line with the Nigerian and Sub-Saharan Africa evidence that feedback is a determinant of the quality of surveillance. A high level of quality reporting and a quicker turnaround on investigating outbreaks were linked to frequent visits to the field by supervisors (Onwujekwe et al., 2019). On the contrary, when the feedback was based on monthly meetings or no feedback between cycles, health workers mentioned poor motivation and data fatigue (Adokiya et al., 2015). In Rivers, most respondents reported that they only get feedback during meetings, which restricted real time corrective action. In terms of systems, this highlights a failed feedback mechanism. The process (reporting) is present but the structure (supervisory systems, communication channels) does not work well enough to maintain any meaningful outcome (timely responses, confirmation of cases).

Another crosscutting theme is resource allocation and financial flows. Other research works in other Nigerian states emphasise that transport allowances, fuel, and airtime are feasible facilitators of surveillance (Oladele and Adeyemi, 2020). These limitations are echoed by the respondents. Low stipends and slow fund releases cause less frequent visits by supervisors and active searches of cases. This is in line with Onwujekwe et al. (2019), who attributed logistical support to better surveillance measures. The contribution that this present study makes to the literature is the detailed description of how minor periodic payments (for example: 10,000 - 25,000 Naira) are not enough to cover transport costs in riverine land. This quantifies an equity dilemma which must inform resource planning.

Conclusion

This study results indicate that the system is structurally weak but procedurally sound. On one hand, health workers were found to be highly adherent to the IDSR protocols such as regular use of standardized reporting forms, on time submission of data, and trustworthiness of their reports. These practices demonstrate that the IDSR processes are institutionalized in facilities, and there is a culture of surveillance incorporated in daily work. Conversely, there are a number of systemic vulnerabilities, which jeopardise the sustainability and equality of the system. Training was scarce and disproportionate, and the staff were found to complain that they have not been formally trained on IDSR, but they had to gain knowledge through their fellow-workers. The availability of resources was poor and, in most cases, and there was a lack of consistent feedback. The health workers indicated that they would only get feedback during monthly meetings and not in real time.

Acknowledgements:

The authors thank the School of Public Health, University of Port Harcourt.

Conflict of interest:

The authors declare no conflict of interest.

Financial support:

The authors have no affiliation with any organization with a direct or indirect financial interest in the subject matter discussed in the manuscript.

References

Adokiya, M. N., & Awoonor-Williams, J. K. (2016). Barriers to timely reporting of notifiable diseases in the Upper East Region of Ghana: A qualitative study. *BMC Public Health, 16*(1), 746.

Adokiya, M. N., Awoonor-Williams, J. K., Beiersmann, C., & Müller, O. (2015). Evaluation of the integrated disease surveillance and response system for infectious diseases control in Northern Ghana. BMC Public Health, 15(1), 75.

Alemu, T., Gutema, H., Legesse, S., Nigussie, A., Yenew, B., & Kassa, W. (2017). Evaluation of the implementation of integrated disease surveillance and response system in selected health facilities in Addis Ababa, Ethiopia. Ethiopian Journal of Health Development, 31(2), 75–82.

Ameh, C. A., Sarki, A. M., Hassan, A., & Cresswell, K. (2016). Barriers and facilitators to reporting notifiable diseases in Nigeria: A qualitative study. BMC Public Health, 16(1), 124.

Bello, I. M., Usman, A. B., & Umar, A. (2021). Constraints to the effective implementation of IDSR in Nigeria: Lessons from COVID-19. Pan African Medical Journal, 38(348), 1–8.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101.

Cochran, W. G. (1977). Sampling techniques (3rd ed.). John Wiley & Sons.

Kasolo, F., Yoti, Z., Bakyaita, N., Gaturuku, P., Katz, R., Fischer, J. E., & Perry, H. N. (2021). IDSR: A decade of strengthening epidemic preparedness in African countries, 1998–2008. Health Policy and Planning, 35(2), 165–173.

Ngwa, M. C., Liang, S., Mbam, L. M., Mouhaman, A., Teboh, A., Fonjungo, P. N., & Amegashie, F. (2021). Implementation of integrated disease surveillance and response in Cameroon: Lessons and perspectives. Health Security, 19(2), 148–156.

Nigeria Centre for Disease Control (NCDC). (2019). National Technical Guidelines for Integrated Disease Surveillance and Response (3rd ed.). Abuja: NCDC.

Nigeria Centre for Disease Control (NCDC). (2020). e-IDSR pilot implementation report: Borno, Yobe, and Adamawa States. Abuja: NCDC.

Oladele, T. S., & Adeyemi, O. (2020). Disease surveillance in Oyo State: Challenges and prospects. African Journal of Health Economics, 9(1), 44–55.

Onwujekwe, O., Uguru, N., Russo, G., Etiaba, E., Mbachu, C., Mirzoev, T., & Gilson, L. (2019). Integration of surveillance data and service delivery in Plateau State, Nigeria: An IDSR evaluation. BMC Health Services Research, 19(1), 731.

Fall, I. S., Rajatonirina, S., Yahaya, A. A., Zabulon, Y., Nsubuga, P., Nanyunja, M., & Talisuna, A. O. (2019). Integrated Disease Surveillance and Response (IDSR) strategy: current status, challenges and perspectives for the future in Africa. BMJ Global Health, 4(4), e001427.

World Health Organization Regional Office for Africa. (2010). Technical guidelines for integrated disease surveillance and response in the African region (2nd ed.). Brazzaville: WHO-AFRO.