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Disease Surveillance and Notification, Knowledge and Practice among Private and Public Primary Health Care Workers in Enugu State, Nigeria: A Comparative Study

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Authors' contributions

This work was carried out in collaboration between both authors. Author ECA conceptualized the study, designed the study, did literature searches and statistical analysis with inputs from co- author CNO. Author CNO in addition wrote the protocol. Author ECA wrote the initial draft of the manuscript. Both authors read and approved the final manuscript.

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ABSTRACT

Aims: The study was to compare knowledge, practice of Disease Surveillance and notification as well as ascertain factors that influence it among Health care workers in public and private health centres in Enugu state, Nigeria.
Study Design: Comparative cross sectional study.
Place and Duration of Study: Selected public and private health facilities in Enugu state, Nigeria, between January and March 2013.
Methodology: Health Care workers in selected public and private health facilities in southeast Nigeria eligible for voluntary participation were selected and studied. The participants were interviewed using a pretested, interviewer administered, semi-structured questionnaire. Data was analyzed using Statistical Packages for Social Sciences (SPSS) version 18 and level of significance was at $p \leq 0.05$.

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Results: It was based on 160 HCWs (80 each from public and private). The mean age of HCWs was 41.21±8.54 and 38.68±14.64 for public and private respectively. Females > Males in both groups. Some of the factors associated with type of facility included; correct definition of IDSR (AOR= 2.6, 95% CI: 1.4–5.1), correct knowledge of diseases reported (AOR= 4.1, 95% CI 2.1-8.0), correct place to report to (AOR= 3.7, 95% CI 1.9–7.2), correct form for monthly reporting (AOR= 7.0, 95% CI 3.5–14.0), ever reported occurrence of disease (AOR= 8.5, 95% CI 4.0–18.2), reporting in correct place (AOR= 11.5, 95% CI 1.8–73.6), current availability of forms at facility (AOR= 4.9, 95% CI 2.5–9.5), supervision or data collection visits (AOR= 8.8, 95% CI 4.3–18.1) and regularity of the visits (AOR= 6.4, 95% CI 2.3–17.6).
Conclusion: Disease Surveillance and Notification needs to be improved on especially in areas of manpower training and regular supply of forms for efficient Health Management Information System and containment of most diseases ravaging the nation.

Keywords: Disease; surveillance; notification; knowledge; practice; public; private; Nigeria.

1. INTRODUCTION

The emergence of new infectious diseases and the resurgence of diseases previously controlled by vaccination and treatment are creating unprecedented public health challenges. Recent disease outbreaks of Ebola viral hemorrhagic fever, Sudden Acute Respiratory Syndrome (SARS), multidrug-resistant tuberculosis, West Nile viral encephalitis, intentional anthrax, and H5N1 viral infections in humans have heightened concerns about global health security and global economic stability [1-5].

In response to these concerns, government and global health leaders worked together to revise the International Health Regulations in May 2005. This provides both the legal framework and the requirements for all countries to be able to detect and contain infections disease outbreak. As of June 2007, all countries are required to develop and maintain surveillance, reporting, verifications, and response mechanisms at local, intermediate, and national levels. Any country with knowledge of a disease outbreak of international concern must report it to the World Health Organization (WHO) within 24 hours, regardless of where the emergency is located [6,7].

In Nigeria, the Federal Ministry of Health recognizes the need for the implementation of an IDSR system, where personnel, materials and other resources could be used more effectively and efficiently [8]. Unfortunately this vision has not been translated at the implementation level at both state and Local Government Area levels. It has been observed that little or no training is received by health care workers in both public and private sectors and where there are training, officials of the State Ministry of Health rarely contact private health care providers and this leads to cumulative effect of ineffective planning, implementation and monitoring of the programme [9].

The World Health Organization has been providing capacity building of surveillance officers at the district (local government) and state level. Training has positively impacted on disease notification as reported in an interventional study conducted in Northern Nigeria in which percentage completeness of reporting of notifiable disease increased form 2.3-52.0% and percentage of timely reports increased from 0.0–42.9% post training [10].

These diseases for notification are categorized as: epidemic-prone (eg Cholera, Measles), targets for eradication/elimination (eg. Poliomyelitis, Dracunculiasis), and other diseases of public health importance (eg. Malaria, Tuberculosis, HIV/AIDs). The prevalence of communicable diseases is varied though there are three most rated disease among them referred as the “big three” including Malaria, Tuberculosis and HIV/AIDS. These are the three most recognized diseases as they have high mortality rates and most international efforts to control infectious disease focus on these diseases [11].

Malaria is the second leading cause of death from infectious diseases in Africa, after HIV/AIDS. There are an estimated 100 million malaria cases, accounting for 60% of outpatient visits and 30% of hospitalizations among children under five years with over 300,000 deaths per year in Nigeria [12]. About 3.4 per cent of Nigerians are currently living with HIV/AIDS with 3.2 per cent in urban and 3.6 per cent in the rural areas and 2.9 per cent among young people

aged 15-19 years [13]. Nigeria ranks 10th among the 22 high-burden TB countries in the world. There were an estimated 320,000 prevalent cases of TB in 2010, equivalent to 199/100,000 cases [14].

As at 2009, Enugu state was running the Essential Data Set (EDS) platform for her Health management information system (HMIS). This dealt with data that were of interest only to the state alone, so no data were sent to the federal level. To bridge the gap created by the EDS system, the Partnership for Transformation of Health Systems (PATHS) introduced the revised version of NHMIS in the state and trained all Monitoring & Evaluation officers in all the Local Government Areas (LGAs). This informed the choice of the state for the study.

Despite all these on ground, coupled with established system, surveillance of disease breaks is down in Nigeria leading to avoidable morbidity and mortality. While various reasons and factors are proffered to be responsible, studies have not yet documented the extant reasons that may be responsible for the breakdown in surveillance activities. This study attempts to assess and compare the surveillance system in terms of the adequacy of DNS for timely collection of data and its associated factors among public and private primary health care workers of Enugu State, Nigeria.

2. METHODOLOGY

2.1 Setting

The study was carried out in selected Primary Health Care Centres in Enugu state. Enugu state is located in the southeast geopolitical zone of Nigeria. There are seventeen LGAs in the state with a total population of 4,881,500 people within a total area of 7,618 sq. km [15]. The people are of Igbo ethnicity and are predominantly Christians. With the introduction of district health system in the state, the state is divided into seven health districts for purpose of healthcare delivery. Each health district is made up of at least two to three LGAs and has a range of public health facilities including a district hospital and primary health centres.

2.2 Study Design

This was a comparative Cross sectional study using interviewer administered questionnaire.

2.3 Sampling Technique

A multistage sampling technique was used. Four out of seventeen LGAs in the state were selected, Health facilities distribution in selected LGAs were: Enugu East 93 private and 23 public, Enugu South 65 private and 14 public, Nkanu West 19 private and 18 public, Udi 21 private and 31 public health facilities each for public and private were selected from the LGAs [16]. The health workers were selected by choosing the Officer In Charge (OIC) of data/reporting and randomly selecting another health worker in each facility both for public and private. When not feasible, the questionnaire is administered to available health workers.

2.4 Sample Size

The minimum sample size for the study was determined using the formula for comparing two proportions in a population less than ten thousand [17].

$$n = \frac{(Z\alpha+Z_\beta)^2 \times (P_1 (100-P_1) + P_2 (100-P_2))}{(P_1-P_2)^2}$$

The proportion of health workers that had the knowledge and are practicing IDSR reporting were 11.4% (average of 11.9% and 10.8%) [18,19] and 38.2% [20] for public and private respectively. Sample size calculated including projected response failure rate of 10% gave a sample size of 41 HCWs per group. We studied 80 participants per group.

2.5 Study Participants

All cadre of health care workers; Doctors, nurses, midwives, laboratory technicians and scientist, Community Health Officers (CHO) and Community health extension workers (CHEWS) of primary health facilities who met the inclusion criteria and gave consent were studied.

2.6 Study Instrument

Pre-tested, semi-structured, interviewer administered questionnaire developed by researcher was used. Information obtained included; socio-demographic of participants, their knowledge of DSN, practice of DSN and factors influencing practice of DSN.

2.7 Data Analysis

Data was analyzed using Statistical Packages for Social Sciences (SPSS) version 18. Frequency

and contingency tables was drawn to show the distribution of data. Chi square was used to test for associations between type of facility with socio-demographics, knowledge, practice and factors influencing IDSR. Binary logistic regression was done to determine predictors of IDSR. The level of statistical significance was at p value less or equal to 0.05.

2.8 Ethical Consideration

Ethical clearance was sought from the research and ethical committee of University of Nigeria Teaching Hospital, Enugu. Clearance was also sought from the LGAs Health Authority. Furthermore, written informed consent was obtained from the participants. The nature of the study, its relevance and the level of their participation were well explained to them. They were also assured that all information as would be provided in the questionnaire will be treated confidentially and anonymously. Above all, participation in the study was voluntary and participants were assured that there would be no victimization of anyone who refused to participate or who decided to withdraw from the study after providing consent.

3. RESULTS

Table 1 shows the socio-demographic characteristics of respondents by type of facility. The workers show similar ages in the two groups. (χ^2 = 5.342, p = 0.430). Their mean age was 41.21±8.54 and 38.68±14.64 for public and private respectively. Majority of the HCWs in public facilities were females: 78 (97.5%) while in private facilities it was roughly similar between the sexes male: female 46.3%: 53.8%. (χ^2 = 2.384, p = 0.123). Most of them were Community Health Extension Workers (CHEW)/Community Health Officers (CHO) for public (80.0%) while Midwives/Nurses for private (48.8%). Doctors were not involved in data in public while 13(16.3%) were involved in private (χ^2 = 6.486; p = 0.371). Years of practice showed that over 60% of workers in both groups have worked for less than 20 years (χ^2 = 6.146; p = 0.712).

Table 2 shows the knowledge of Disease Surveillance and Notification. It shows that 67.5% of public and 57.5% of private have heard of IDSR, 50.0% of public and 27.5% private knew correct definition of IDSR; 57.5% of public and 25.0% of private have correct knowledge of diseases reported, 60.0% of public and 28.8% of private mentioned correctly where to report diseases, and 70.0% of public and 25.0% of private identified forms for monthly reporting. There were no significant association between ever heard about IDSR (p = 0.191). There were significant association between definition of IDSR (p =0.003), knowledge of diseases reported (p <0.001), where to report to (p <0.001), form for immediate reporting (p <0.001), weekly (p= 0.011) and monthly reporting (p <0.001). Those that knew definition of IDSR were about 2.6 times (95% CI 1.365–5.090), correct knowledge of diseases reported about 4.1 times (95% CI 2.071-7.954), correct place to report to about 3.7 times (95% CI 1.923–7.186), correct form for immediate reporting about 3.2 times (95% CI 1566–6.549), correct form for weekly about 2.6 times (95% CI 1.236–5.577) and monthly reporting about 7.0 times (95% CI 3.489 –14.043) to be working in public facility than private facility

Table 3 shows practice of Disease Surveillance and Notification. Sixty eight (85.0%) public and 32(40.0%) private HCWs report diseases in their facility while 44(55.0%) public and 6(7.5%) private has dedicated HCWs for the reporting. Forty eight (60.0%) public and 12(15.0%) private respondents has ever reported occurrence of disease. Thirty eight (79.2%) public and 4(33.3%) private HCWs of those that has ever reported, report regularly. Seven (14.6%) and 4(33.3%) received feedback for public and private respectively. There were significant association between facilities involved in reporting (p < 0.001), facilities that have ever reported occurrence of disease (p <0.001), appropriate authority to report to (p = 0.012), means of sending it to the authority (p = 0.016), and regularity of sending forms to the authority (p = 0.002). There were no significant association between type of facility and ever received feedback (p = 0.133) as well as person responsible for reporting (p = 0.328). Public facilities were about 8.5 times (95% CI 3.978–18.164) more likely to be reporting and about 8.5 times (95% CI 3.978–18.164) more likely to have reported diseases than private facilities. They are about 11.5 times (95% CI 1.797–73.579) more likely to have reported in correct place than private facilities. Public facilities were about 4.9 times (95% CI 1.257–18.774) to have used correct means of reporting and about 7.6 times (95% CI 1.236–5.577) more regular in reporting diseases than private facilities.

Table 1. Socio-demographic characteristics of respondents by type of facility

Socio-demographic characteristics	Public N =80 (n %)	Private N =80 (n %)	test statistic x^2	p value
Age(years)				
21-30	6(7.5)	31(38.8)		
31-40	27(33.8)	17(21.3)	5.342	0.430
41-50	36(45.0)	16(20.0)		
>50	11(13.8)	16(20.0)		
Mean ± SD	41.21±8.54	38.68±14.64		
Sex				
Male	2(2.5)	37(46.3)	2.384	0.123
Female	78(97.5)	43(53.8)		
Position				
Doctor	0(0.0)	13(16.3)		
Nurse	64(80.0)	39(48.8)	6.486	0.371
CHO/CHEW	10(12.5)	6(7.5)		
Record officer/CLERK	6(7.5)	22(27.5)		
Years of practice				
1-10	22(27.5)	50(62.5)		
11-20	31(38.8)	7(8.8)		
21-30	16(20.0)	14(17.5)	6.146	0.712
>30	11(13.8)	9(11.3)		

Table 2. Knowledge of disease surveillance and notification

Variable	Public N =80	Private N =80	p value	OR	OR (95%CI)	
	n(%)	n(%)			Lower	Upper
Ever heard about IDSR						
Yes	54(67.5)	46(57.5)	0.191	1.725	0.899	3.310
No	26(32.5)	34(42.5)				
Definition of IDSR						
Correct	40(50.0)	22(27.5)	0.003	2.636	1.365	5.090
Incorrect	40(50.0)	58(72.5)				
Knowledge of Diseases reported/notified						
Correct	46(57.5)	20(25.0)	0.000	4.059	2.071	7.954
Incorrect	34(22.5)	60(75.0)				
Where to report to						
Correct	48(60.0)	23(28.8)	0.000	3.717	1.923	7.186
Incorrect	32(40.0))	57(51.2)				
For immediate/case based						
Correct	34(22.5)	15(18.8)	0.001	3.203	1.566	6.549
Incorrect	46(57.5)	65(61.2)				
For routine weekly reporting						
Correct	27(33.8)	13(16.3)	0.011	2.626	1.236	5.577
Incorrect	53(46.2)	67(63.7)				
For routine monthly reporting						
Correct	56(70.0)	20(25.0)	0.000	7.000	3.489	14.043
Incorrect	24(30.0)	60(75.0)				

Table 4 shows factors responsible for practice Disease Surveillance and Notification. Very few health workers 12(15.0%) and 7(8.8%) in public and private centres respectively have attended training/course in IDSR. The training/course took place over five years ago. Fifty four (67.5%) public and 9(11.3%) has regular supply of IDSR forms. Fifty four (67.5%) and twenty four (30.0%)

Table 3. Practice of disease surveillance and notification

Variable	Public N =80	Private N =80	p value	OR	OR (95%CI)	
	n(%)	n(%)			Lower	Upper
Facilities involved in reporting						
Yes	68(85.0)	32(40.0)	0.000	8.500	3.978	18.164
No	12(15.0)	48(60.0)				
Person responsible for reporting*	**n=68**	**n =32**				
Doctors/Heads only	8(10)	8(10.0)				
Dedicated health worker	44(55.0)	6(7.5)	0.328	0.136	0.037	0.500
Any health worker	16(20.0)	18(22.5)		1.125	.343	3.695
Ever reported occurrence of disease						
Yes	48(60.0)	12(15.0)	0.000	8.500	3.978	18.164
No	32(40.0)	68(85.0)				
If yes, what authority do you report to*	**N=48**	**N=12**				
Correct	46(95.8)	8(66.7)	0.012	11.500	1.797	73.579
Incorrect	2(4.2)	4(33.3)				
Means of sending filled IDSR form	**N=48**	**N=12**				
Correct	34(70.8)	4(33.3)	0.016	4.857	1.257	18.774
Incorrect	14(29.2)	8(66.7)				
Regularity in reporting cases	**N=48**	**N=12**				
Yes	38(79.2)	4(33.3)	0.002	7.600	1.897	30.444
No	10(20.8)	8(66.7)				
Reasons for not reporting diseases**	**N =32**	**N =68**				
My facility not involved	10(31.3)	27(39.7)				
Forms not supplied to us	18(56.3)	29(42.6)	0.543	NA	NA	NA
No training/incentives	4(12.5)	12(17.6)				
Ever received feedback following reporting	**N=48**	**N=12**				
Yes	7(14.6)	4(33.3)	0.133	0.341	0.081	1.446
No	41(85.4)	8(66.7)				

**number that have reported occurrence of disease, **number that do not send report*

has IDSR forms in stock as at time of study. Factor responsible for regular reporting was supervision, public 34(89.5%) and private 2(50.0%). There were no significant association between type of facility and ever attending course or training on IDSR ($p = 0.222$) as well as last time they attended training (FT, $p = 0.965$). All those that attended course had it over 5 years ago in both facilities. There is significant association between regularity in supply of forms ($p = 0.020$), current availability of forms at facilities ($p < 0.001$), supervision or data collection visits ($p < 0.001$) and regularity of the visits ($p < 0.001$) with type of facility. Those that do not have regular supply of forms were over 15 times, current availability of forms at facilities about 4.9 times (95% CI 2.482–9.461), supervision or data collection visits about 8.8 times (95% CI 4.268–18.144) and regularity of the visits about 6.4 times (95% CI 2.315–17.557) to be working in public facility than private facility.

4. DISCUSSION

Most of the healthcare workers were Community Health Extension Workers (CHEW)/Community Health Officers (CHO) for public health workers while Midwives or Nurses for private. Doctors were not involved in data in public while very few were involved in private health care centres. This vast disparity in staff cadre between types of facility is expected given the very different tasks they assume. A Situation Assessment of Human Resources the Public Health Sector in Nigeria showed that CHOs/CHEWs are most frequently found in primary facilities [21]. Similarly study done among PHC workers in Igbo-Etiti, Enugu state found 68% of PHC workers to be CHEW/CHO [22].

Table 4. Factors responsible for practice Disease Surveillance and Notification

Variable	Public N =80	Private N =80	p value	OR	OR (95%CI)	
	n(%)	n(%)			Lower	Upper
Ever attended course /training on IDSR						
Yes	12(15.0)	7(8.8)	0.222	1.840	0.685	4.948
No	68(85.0)	73(91.3)				
If yes, when was last training						
>5years	12(15.0)	7(8.8)	0.96*	NA	NA	NA
Regularity in supply of IDSR forms						
Always	54(67.5)	9(11.3)				
Occasionally	1`2q18(10.0)	``p>"	0.020	18.750	6.471	54.329
Usually out of stock	18(22.5)	47(58.8)		15.333	6.287	37.397
Current availability of IDSR forms in your HF						
Yes	54(67.5)	24(30.0)	0.000	4.846	2.482	9.461
No	26(32.5)	56(70.0)				
Anybody from the LGA come to ask for data/supervision						
Yes	64(80.0)	25(31.3)	0.000	8.800	4.268	18.144
No	16(20.0)	55(68.8)				
If yes, how often*	N=64	N=25				
At most monthly	48(75.0)	8(32.0)	0.000	6.375	2.315	17.557
Others	16(25.0)	17(68.0)				
Factors responsible for regular reporting#	**N=38**	**N=4**				
Supervision	34(89.5)	2(50.0)	0.091*	NA	NA	NA
Motivation	4(10.5)	2(50.0)				
Factors responsible for non regular reporting ##	**N=10**	**N=8**				
Lack of forms	8(80.0)	3(37.5)	0.145*	NA	NA	NA
No motivation	2(20.0)	5(62.5)				

#number that has been reporting regularly ## number that do not report regularly
** Fisher's test*

Proportion of respondents that have ever heard of IDSR was impressive especially in public facilities. Knowledge of diseases reported, where to report to, form for monthly reporting was between 50 and 60 percent for public but less than 30 percent for private. These findings were not surprising as those in public facilities have higher chance of coming in contact with state Disease Surveillance and Notification as well as attending functions where Integrated Disease Surveillance and Response (IDSR) and its likes will be mentioned or talked about. A study on awareness and knowledge of disease surveillance and notification by health-care workers and availability of facility records in Anambra state showed that 9.8% of the health-care workers were aware of the DSN system [23]. Another study on Health Management Information System in Private Clinics in Ilorin, Nigeria about two-thirds (67.6%) were aware of the National Health Management Information System (NHMIS); though very low proportion (10.8%) was able to correctly mention the two types of Diseases Surveillance and Notification (DSN) forms. The study equally showed that awareness of how often the forms are to be sent to the next level was also low [19]. In similar study of knowledge of disease notification among doctors in government hospitals in Benin City Nigeria only 11.9% of surveyed doctors had a good knowledge of disease notification [18]. Likewise, study on the effect of training on the reporting of notifiable diseases among health workers in Yobe State, Northern Nigeria, only fifty-five (38.2%) of the respondents were aware of the national disease surveillance system [20].

For immediate/ case based reporting (IDSR 001), thirty four (22.5%) public and fifteen (18.8%) private; weekly (IDSR002) twenty seven (33.8%) public and thirteen (16.3%) private; and routine monthly (IDSR 003), fifty six (70.0%) public and twenty (25.0%) private had correct knowledge of form used in reporting. The findings contrasts from findings on awareness and knowledge of disease surveillance and notification by health-

care in Anambra state which showed that only 33.3, 31.1, and 33.7% of them knew the specific uses of forms IDSR 001, IDSR 002, and IDSR 003 respectively [23]. Most facility visited in the study has IDSR 003 for monthly reporting with others IDSR 001 and IDSR 002 not available. Some staff though have forms for monthly reporting but do not know that it is identified as IDSR 003. Checklist from previous study revealed that IDSR 001 and IDSR 002 forms were predominantly found in primary health-care facilities [24]. Likewise in that previous study fifty-eight (65.9%) and 7 (8.0%) of the facilities had up-to-date registers and DSN forms respectively [24].

Reporting of diseases has been carried out by forty eight (60.0%) of public health respondents and twelve (15.0%) private workers. Out of these workers that reported, a very high proportion reports appropriately by both public and private centres especially the public health workers. The most probable reason why public centre could afford using a dedicated worker is because their employment is more permanent, has more manpower and less pressure of work when compared to private. A study in Yobe state, had a similar finding where thirty nine (70.9%) reported to have ever reported, while 16 (29.1%) have never reported any of the notifiable conditions [24].

Very minimal number of respondents both in public, seven (14.6%) and private, four (33.3%) had ever received feedback. This poor feedback is neither encouraging to the workers nor healthy to effective monitoring and control of diseases in the country. This implication is that this may contribute to poor attitude to disease notification or reporting. Other similar studies in other parts of the country had similar finding. Bawa and Umar in their study in Yobe state found that only 12 (21.8%) of the respondents have ever received feedback on the reports they forward to higher authorities [20]. Study on Notifiable disease surveillance and practicing physicians, of the 1,320 respondents, 59.3% claimed not to have received any feedback on infectious disease surveillance [25].

While majority of public facilities has regular supply of IDSR especially IDSR 003, the reverse happens in private as only very few has the forms. This equally reflected same on finding on the forms availability at time of study. Visits by DSNO for supervision and data collection is fairly regular (at least monthly) especially at public facilities. Reasons for not filling IDSR forms is forms not available 56.3% and 42.6% followed by their facilities not practicing disease notification 31.3% and 39.7% respectively for public and private health care workers. In a study in private clinics in Ilorin, Nigeria only 11 (29.7%) out of the 37 health facilities had ever been supplied NHMIS forms, only 6 (16.22%) had any NHMIS forms during the interview and only 4 (36.4%) had made returns within the previous 6 months of the study. Similarly, in a study in Yobe state, more than 92% of the health facilities lack the DSN 001 and 002 forms [25]. The findings from this study were in line with findings in other where visits to the peripheral facilities to receive reports are done weekly and regularly by disease surveillance officers [26]. However, in same study the inadequacy of reporting forms and stationeries as reported by 52.4% of the respondents was significantly associated with non-reporting of outbreaks ($p= 0.007$). This has also been reported in previous studies which reported lack of reporting forms as a reason for not reporting notifiable diseases [20,23].

Very few health workers in both public and private centres respectively have attended training/course in IDSR The ones that had training/course took place over five years ago. The finding is surprising as LGA DSNO has been trained, retrained and attend refreshers courses but this was not stepped down to workers at facility. Reports from study in Northern Nigeria, supports the finding as only a small percentage were found to have received training. However, finding from study in southwest part of the country Nigeria showed that 76.2% of DSN officers had relevant training in disease surveillance. The World Health Organization and other partner agencies have been providing technical assistance to the nation most especially in capacity building of surveillance officers at the district (local government) and state level but not at facility level though the training is supposed to be stepped down to facility by respective DSNO [26].

Factor identified to be responsible for regular reporting among public health workers was supervision and motivation however the main factor responsible for non-regular reporting was lack of forms for public and no motivation for private health workers. In public facilities, most workers report because they believe that their salaries and wages are tied to these reports. This means that if they fail to return report they may not be paid at end of month. Workers who do not

comply are threatened with ceasing his or salary. This is concurred by another study which revealed that penalties had been instituted in some local governments as reported by (45.2%) of respondents as a punitive measure to defaulting officers. This however was shown not to have significantly affected their reporting of outbreaks in the affected local government areas [24]. Respondents in this study suggested that to improve reporting Disease Surveillance and Notification there is need for training and retraining of workers, motivation especially incentives like money, regular provision of forms as well as DSNO reaching out to catchment facilities adequately.

5. CONCLUSION

Even though there was good knowledge on diseases requiring notification, practice of it still fell short of expectation as well as number that have reported diseases before, regularity in reporting, availability and knowledge of various IDSR forms with their uses, where or who to report these diseases to. Most of these health workers are not trained on disease notification nor adequately motivated for adequate and prompt disease reporting. This is observed in both facilities though more with private facilities. If Nigeria is to achieve their set targets for disease control, elimination and eradication, there is serious and urgent need to improve on Disease Surveillance and Notification as it is one of the pillars of Health Information Management System. Rapid notification of infectious diseases is essential for prompt public health action and for monitoring of disease trends at the local, state and national levels.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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