Original Article

ASSESSMENT OF KNOWLEDGE AND MATERIALS AVAILABILITY IN THE IMPLEMENTATION OF INTEGRATED DISEASES SURVEILLANCE AND RESPONSES IN PUBLIC FACILITIES IN SOUTH-SOUTH NIGERIA.

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ABSTRACT

BACKGROUND: A country's disease control is usually a reflection of the practice of the Integrated Disease Surveillance and Response (IDSR) strategy by those responsible in making diagnosis and handling of health records as well as the availability of IDSR materials. The specific objectives of this study are to provide information on the level of knowledge of HCWs on IDSR, availability of materials, and their utilization.
METHODOLOGY: A descriptive study conducted among 310 HCWs in public facilities across the three levels of healthcare delivery selected from 22 public health facilities in Edo State, South-South Nigeria. The facilities' IDSR materials were also examined to ascertain availability and utilization.
RESULTS: The respondents' knowledge of IDSR was fair [203(65.5%)]. The availability of critical IDSR materials in the secondary facility was abysmally poor; however, the utilization was fair across the three levels of care. There were statistically significant associations between the age ($p<0.001$), sex($p<0.001$), job type($p<0.001$), level of care($p<0.001$), and duration practice($p=0.002$) of respondents with knowledge of IDSR.
CONCLUSION: The study showed that the level of knowledge of IDSR among HCWs in public facilities was barely above average, and there is a paucity of material needed for effective IDSR implementation, especially at the secondary facilities.
KEYWORDS: Knowledge, Materials Availability, IDSR, Public Facilities, South-South, Nigeria.

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INTRODUCTION

Disease surveillance is useful to identify outbreaks and epidemics, thereby facilitate effective action and control, to monitor the implementation and effectiveness of a specific control programme, and assist in health resource allocation. Therefore, routine, timely and proper reporting of diseases and health events are essential in planning, implementation, and evaluation of public health preventive and control programmes. Knowledge of the disease reporting system is fundamental to the operations of disease prevention and control. Ensuring that the process works is quite crucial in low resource countries like Nigeria, where communicable diseases have remained a significant challenge. Assessing the entire process ranging from knowledge to practice among health care providers would help to identify the various gaps in the implementation of the Integrated Disease Surveillance and Response (IDSR) strategy.

Langmuir defined disease surveillance as "the continued watchfulness over the distribution and trends of incidence through the systematic collection, consolidation, and evaluation of morbidity and mortality reports and other relevant data together with timely and regular dissemination to those who need to know."It is also referred to as a watchful, vigilant approach to information gathering that serves to improve or maintain the health of the population. Disease reporting through the IDSR system is usually classified as passive and generally voluntary at most levels except the community health workers level; hence, the weakness of the strategy globally. Although active surveillance provides complete and reliable information about a disease and may be needed in special surveillance situations, it is often short term and usually requires more trained and well-supervised personnel with adequate logistics as well as funding than passive surveillance.

The concept of a disease surveillance system was introduced in 1988, as Disease Surveillance and Notification (DSN) System. This followed a major

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outbreak of yellow fever in Nigeria in 1986/1987, affecting ten out of the then nineteen States of the Federation which claimed so many lives in some part of the country. The strategy was however not implemented in Nigeria until mid-2000 when the Government of the Federation deemed it wise to start implementation.Though, disease surveillance came as one of the numerous responses to a major outbreaks, communicable diseases are however not limited to Nigeria alone. The scourge has remained a problem in the developing countries; In India, the communicable disease is regarded as the "old elephant. Continuous outbreaks of diseases may not be far from the fact that developing countries have been fighting this scourge without the desired success, whereas the burden arising from it had continued to magnify. In most developing countries, communicable diseases are the most common cause of death, illness, and disability. According to the World Health Organization, some of the significant causes of death in Nigeria are malaria, diarrhoeal diseases, measles, pneumonia, cerebrospinal meningitis, tuberculosis, cholera, and pertussis.

According to the World Health Organization, IDSR as a strategy of reporting diseases has been found to be a beneficial one if diligently implemented, and this has necessitated the recommendation of the strategy to other regions of WHO following its adoption.The first step in this IDSR strategy is the collation and reporting of data at either the community level or the health facility level. The collation and reporting to the next level of authority continue till the national level and finally to the WHO country designate. Feedback also flows in a likewise manner. In some cases, as the need arises, feedback responses are instituted along the channel of flow before it gets to higher authorities to complement or supplement the responses at the lower levels. Apart from the diseases that must be reported to WHO, each member country has the right to select their diseases/events they report.

In Nigeria, the 2009 edition of the Integrated Disease Surveillance and Response (IDSR) lists forty priority notifiable diseases in three separate categories. These include six diseases targeted for elimination and eradication, twelve epidemic-prone diseases, and twenty-two diseases of public health importance.IDSR in the WHO African region now goes beyond the scope of communicable diseases as it was during the first time when this strategy came into existence. IDSR is "a combination of active and passive systems that use a single infrastructure to gather information about multiple diseases or behaviour of interest using similar structures, personnel and processes." Non-communicable diseases are now also accorded priority in IDSR. In Nigeria, three categories of forms (IDSR 001a-c, 002, and 003) are required to be filled for appropriate notification. Such concerns as completeness in filling the required forms and timeliness of reporting, onward transmission, and feedback process make for appropriate disease surveillance and response.
The Federal Ministry of Health further defined the various criteria for its priority disease for IDSR. The diseases selected were based on one of these are as follows:
Major causes of high morbidity and mortality in the country (for example, malaria, pneumonia, diarrhoeal diseases, tuberculosis, and Human Immune Deficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS), Severe Acute Respiratory Infection (SARI))
Have epidemic potential (for example, Cerebrospinal Meningitis (CSM), measles, Viral Haemorrhagic Fever (VHF) and cholera)
Surveillance required internationally (for example, plague, yellow fever, cholera, SARS, human influenza caused by new serotype)
Have available effective control and prevention interventions for addressing public health problem they pose (for example, onchocerciasis, schistosomiasis, trypanosomiasis)
Can easily be identified using simple case definitions (for example, dracunculiasis)
Have intervention programs supported by WHO for prevention and control, eradication or elimination of the disease (for example, Guinea worm, poliomyelitis, Leprosy)

The revised edition (2009) of the list of Nigerian IDSR priority diseases and events is the epidemic-prone diseases include cholera, cerebrospinal meningitis, measles, viral haemorrhagic fevers (Lassa fever), yellow fever, diarrhoea with blood and avian influenza. Also included are the diseases of International Health Regulation (IHR), namely SARS, smallpox, dengue fever, anthrax, and severe acute respiratory illness (SARI). The diseases targeted for elimination and eradication are neonatal tetanus, tuberculosis, lymphatic filariasis, guinea worm, leprosy, and poliomyelitis. Diseases of public health importance under the IDSR strategy are diarrhoea in children less than five years of age, pneumonia in children less than five years of age, HIV/AIDS, malaria, onchocerciasis, sexually transmitted infections (STIs), trypanosomiasis, Buruli ulcer, asthma, diabetes mellitus, epilepsy, high blood pressure, sickle cell disease, malnutrition, plague, trachoma, typhoid, hepatitis B, pertussis, human rabies, schistosomiasis, and Noma.

The latest revision of the IDSR took place in 2009, listed 40 notifiable diseases from the earlier 22 diseases of 2006 revision, and took effect from July 2010. The epidemic-prone diseases include cholera, cerebrospinal meningitis, measles, viral haemorrhagic fevers (Lassa fever), yellow fever, diarrhoea with blood, and avian influenza. Also included are the diseases of the International Health Regulation (IHR), namely SARS, smallpox, dengue fever, anthrax and severe acute respiratory illness (SARI).

There is, however, a scarcity of research work on this subject matter worldwide, as also acknowledged in other studies, and the situation has not significantly changed. In a study carried out in Yobe State, Nigeria, 2003, in which 144 health workers were examined on the reporting of Notifiable diseases, only 38.2% of the respondents were aware of national disease surveillance and notification system.
Despite measures put in place by the IDSR for disease control, some gaps are still apparent in disease surveillance and notification in Nigeria such as vertical surveillance activities by some disease programmes, incomplete and untimely reporting, inadequate availability of reporting

forms, poor training of health workers on the IDSR, high prevalence of communicable diseases, inadequate laboratory facilities and inadequate funding amongst others. There is a need for training and retraining of the health workforce on disease surveillance, and notification. Emerging and re-emerging diseases call for increased surveillance. Diseases such as avian influenza, Lassa fever (and other viral haemorrhagic fever) require early detection and prompt response from health workers with even raised community awareness.

In Nigeria, many resources have been committed to the working of IDSR in the area of training, retraining of health workers, and other support staff in HMIS. Despite all these, the study on the knowledge of IDSR is not a reflection of what has been put into this vital strategy. This study will help to identify the knowledge gap in health workers and the reporting of diseases using the IDSR strategy. This, in turn, would help in policy development, training, and retraining of health workers in the area of disease surveillance and notification as well as handling of outbreaks.

The issue of incomplete or untimely, reporting of notifiable diseases, as well as inadequate responses, are often as a result of poor planning and implementation of IDSR strategy, and it is to the detriment of an appropriate response. This study will provide information on the level of knowledge of health workers in Edo Central senatorial district of Edo State on disease surveillance, notification, and the IDSR.

MATERIALS AND METHODS

The descriptive study using a mixed-method was conducted in Edo Central Senatorial District, which is one of three senatorial districts (the others are Edo North and Edo south Senatorial districts) in Edo State, South-South geopolitical zone of Nigeria among 310 health care workers across the three levels of health care delivery selected from 22 public health facilities. The observational checklist was used to check for the availability and utilization of IDSR materials in the selected 22 health care facilities in the senatorial district. A pre-tested semi-structured questionnaire was used for data collection, and informed consent was obtained from all participants. The questionnaire was prepared for all the participants in English Language and explained in simple terms to the respondents for easy understanding. The pre-tested questionnaire covered socio-demographic characteristics, duration of practice, and matters about knowledge of IDSR.

Data was collected using a self-administered questionnaire, which was given to participants after obtaining written informed consent through a consent form. The observational checklist was also used to gather data on the facilities with the assistance of the facility head or the officer-in-charge of IDSR after obtaining informed consent through a consent form. The level of knowledge of disease surveillance and response by the respondents was determined from a total of 20 items which were scored in the questionnaire. Each appropriate response was allocated a score of 1 and 0 for an inappropriate response. The first ten questions were centred on levels of IDSR reportage, the final destination of the message, knowledge of surveillance unit their facility and listing IDSR diseases in their respective categories while on the other part, respondents were required to tick or match the ten listed diseases with their appropriate IDSR categorization namely epidemic-prone diseases, diseases targeted for elimination and eradication, and diseases of public health importance. The minimum obtainable score was 0, and the maximum obtainable score was 20. The scores were converted to percentage and scores of less than 40% were categorized as poor knowledge, scores between 40% and 69% were categorized as fair knowledge, and a scores between 70% and 100% categorized as good knowledge.

The responses from the questionnaire and findings from the observational checklist were collected, entered, and analysed with Statistical Package for Scientific Solution (SPSS) version 20.0 software. The level of knowledge of IDSR by respondents was scored by allocating a score of 1 for a correct response and 0 for an incorrect response. Ethical approval was obtained from an Institutional Research and Ethics Committee.

RESULTS

Socio-Demographic

The table shows that majority (63.5%) of the respondents had practised for less than ten years, while 25.2% and 11.3% practised for 10-20 years and >20 years respectively. One hundred and forty-five respondents (46.8%)were nurses while 76(24.5%), 60(119.4%) and 29(9.4%) were doctors, ward assistants, and medical record staffs respectively. Mass media and the internet (71.6%) were the primary source of information for respondents. However, school and scientific seminars were equally available as information sources with 27.1% each. Other sources of information were journals/scientific publications (18.4%), newspaper and postgraduate training (13.5% each), and peers (12.6%).

TABLE 1: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Variables	Frequency (n=310)	Percentage (%)
Age group (years)		
20-29	75	(24.2)
30-39	110	(35.5)
40-49	112	(36.1)
50-59	13	(4.2)
	36.3±8.95	
Designation		
doctor	76	(24.5)
nurse	145	(46.8)
medical record staff	29	(9.4)
ward assistants	60	(19.4)
Level of care		
primary	70	(22.6)
secondary	29	(9.4)
tertiary	211	(68.1)
Duration of practice (years)		
<10 years	197	(63.5)
10-20 years	78	(25.2)
>20 years	35	(11.3)
Mean ± SD	9.60 ± 7.20	
Source of information*		
School	84	(27.1)
Peers	39	(12.6)
Scientific seminars	84	(27.1)
Journals/scientific publications	57	(18.4)
Postgraduate training	42	(13.5)

*Multiple responses applicable.

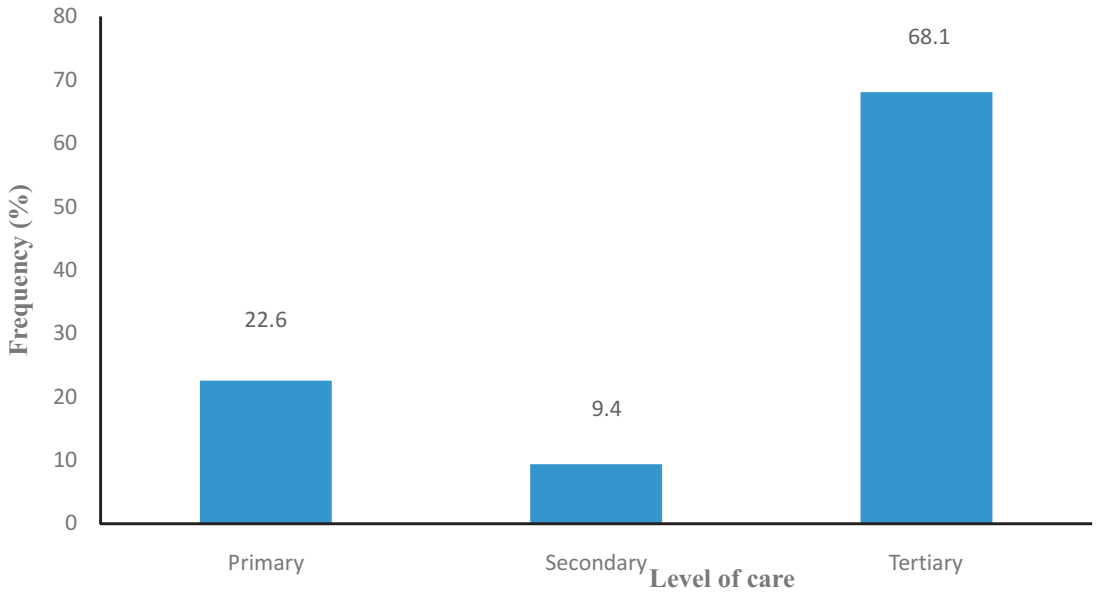

FIG 1: DISTRIBUTION OF RESPONDENTS ACROSS LEVELS OF HEALTH CARE

Most (68.1%) of the respondents offer a tertiary level of care, and the least number of respondents (9.4%) were from the secondary level of health care delivery.

TABLE 3: RESPONDENTS' KNOWLEDGE OF INTEGRATED DISEASE SURVEILLANCE AND RESPONSE STRATEGY

Statements	Frequency	Percentage (%)
All three tiers of government are necessary for effective disease surveillance and response		
• Yes	203	(65.5)
• No	30	(9.7)
• I do not know	77	(24.8)
The agency or tiers of government that should receive surveillance and notification information first from this hospital		
• The local government health department	185	(59.7)
• The state ministry of health	28	(9.0)
• Federal ministry of health	65	(21.0)
• World health organization	32	(10.3)

The majority [203(65.5%)] of the respondents know that the three tiers of government were necessary for effective disease surveillance and response and just about three-fifth (59.7%) of them know that the local government level should be the body to receive first, data from their respective hospitals of practice.

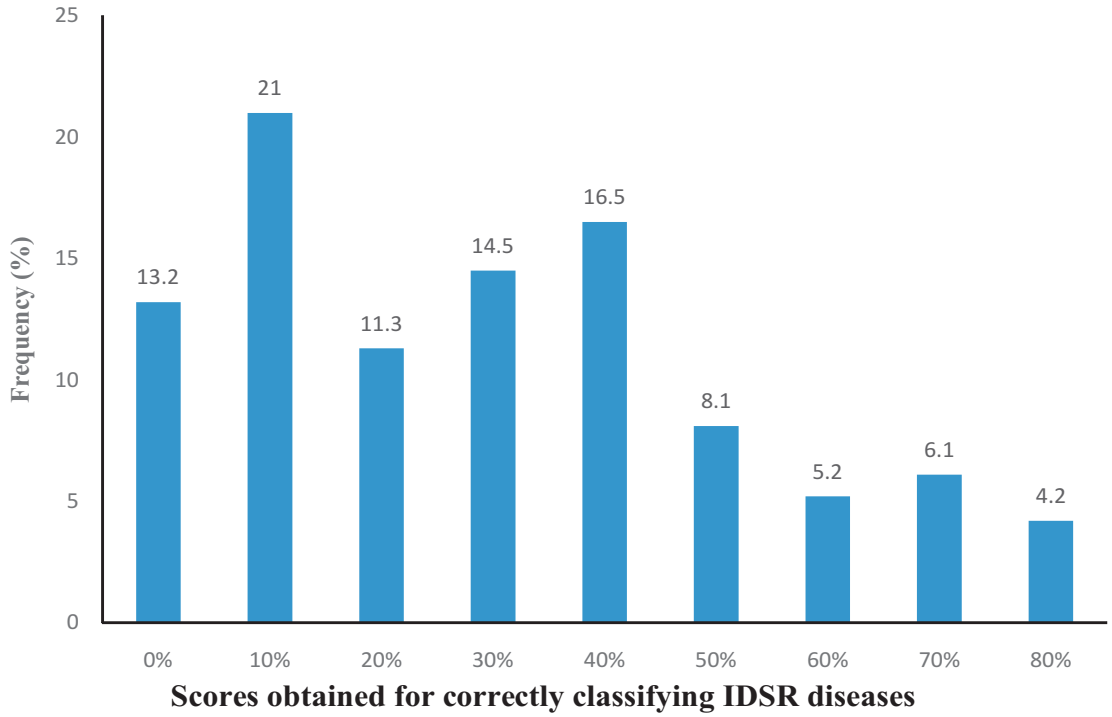

FIGURE 2: SCORES ATTAINED FOR CATEGORIZING NOTIFIABLE DISEASES IN THE APPROPRIATE CATEGORY

The frequency of respondents who had a score of 50% and above was 23.6%, and the highest score obtained was 80%, which was scored by 13(4.2%) of the total respondents in the study.

TABLE 4: GRADING OF KNOWLEDGE OF RESPONDENTS FOR INTEGRATED DISEASE SURVEILLANCE AND RESPONSE

Knowledge grade	Frequency	Percentage (%)
Good	41	(13.2)
Fair	76	(24.5)
Poor	193	(62.3)

About sixty-two percent of respondents had poor knowledge of integrated disease surveillance and response, fair and good had 24.5% and 13.2% respectively in descending order of frequency.

TABLE 5: ASSOCIATION BETWEEN KNOWLEDGE AND SOCIO-DEMOGRAPHIC CHARACTERISTICS

Variables	Good		Fair		Poor			
	n	(%)	n	(%)	n	(%)	χ^2	p-value
Age group								
20-29	2	(4.9)	28	(36.8)	45	(23.3)	34.100	<0.001*
30-39	17	(41.5)	35	(46.1)	58	(30.1)		
40-49	22	(53.7)	10	(13.2)	80	(41.5)		
Designation								
Doctor	20	(48.8)	29	(38.2)	27	(14.0)	63.557	<0.001*
Nurse	16	(39.0)	42	(55.3)	87	(45.1)		
Medical record staff	5	(12.2)	5	(6.6)	19	(9.8)		
Ward assistants	0	(0.0)	0	(0.0)	60	(31.1)		
Level of care								
Primary	1	(2.4)	18	(23.7)	51	(26.4)	21.610	<0.001*
Secondary	6	(14.6)	0	(0.0)	23	(11.9)		
Tertiary	34	(82.9)	58	(76.3)	119	(61.7)		
Duration of practice								
<10	26	(63.4)	62	(81.6)	109	(56.5)	16.938	0.002*
10-20	8	(19.5)	11	(14.5)	59	(30.6)		
>20	7	(17.1)	3	(3.9)	25	(13.0)		

***Significant @ p≤ 0 05**

There was a statistically significant association between the age, sex, designation (job type), level of care, and duration practice of respondents and respondents' knowledge of IDSR with a p -value of <0.0001, <0.0001, <0.0001, <0.0001 and 0.002 respectively.

TABLE 6: AVAILABILITY OF TOOLS FOR INTEGRATED DISEASE SURVEILLANCE AND RESPONSE.

No	Yes		Total					
			Observed		Not observed			
Statements	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**
Does this facility have case detection register for recording cases	0	(0.0)	8	(36.4)	14	(63.6)	22	(100)
Does the facility have a copy of the following:								
• National technical guidelines on IDSR	9	(40.9)	9	(40.9)	4	(18.2)	22	(100)
• Standard case definition booklet	5	(22.7)	13	(59.1)	4	(18.2)	22	(100)
Does this facility have a definition of priority diseases?								
• Cholera	0	(0.0)	22	(100.0)	0	(0.0)	22	(100)
• Bacillary dysentery	9	(40.9)	9	(40.9)	4	(18.2)	22	(100)
• Measles	0	(0.0)	22	(100.0)	0	(0.0)	22	(100)
• Yellow fever	0	(0.0)	22	(100.0)	0	(0.0)	22	(100)
• Meningitis	13	(59.1)	9	(40.9)	0	(0.0)	22	(100)
• Viral haemorrhagic fevers	1	(4.6)	14	(63.6)	7	(31.8)	22	(100)
• Guinea worm	0	(0.0)	22	(100.0)	0	(0.0)	22	(100)
• Poliomyelitis	0	(0.0)	22	(100.0)	0	(0.0)	22	(100)
• NNT	13	(59.1)	5	(22.7)	4	(18.2)	22	(100)
• Leprosy	20	(90.9)	0	(9.1)	0	(0.0)	22	(100)
• Malaria	22	(100.0)	0	(0.0)	0	(0.0)	22	(100)
• HIV/AIDS	10	(45.5)	12	(54.5)	0	(0.0)	22	(100)
• STI	13	(59.1)	4	(18.2)	5	(22.7)	22	(100)

All the facilities surveyed had a case detection register for reporting cases. However, only 8(36.4%) of them were observed. Only 9(40.9%) of the facilities surveyed ha d national technical guidelines for IDSR . T he same proportion admitted not to have the tool.

TABLE 7: PRESENCE OF SURVEILLANCE FORMS IN THE HEALTH FACILITY

	Yes		No		Total	
Statements	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**
Has the facility lacked appropriate surveillance forms at any time during the last six months?						
• Line list form	19	(86.4)	3	(13.6)	22	(100)
• AFP case investigation form	21	(95.5)	1	(4.5)	22	(100)
• NNT case investigation form	20	(90.9)	2	(9.1)	22	(100)
• Guinea worm reporting form	19	(86.4)	3	(13.6)	22	(100)
• Weekly surveillance form	17	(77.3)	5	(22.7)	22	(100)
• Monthly surveillance form	17	(77.3)	5	(22.7)	22	(100)

Weekly and monthly surveillance forms were reported to have been lacking in about 5(22.7%) of the health facilities surveyed. Only 1(4.5%) of the facilities were foun d not to have acute flaccid paralysis (AFP) case investigation forms six months preceding the survey.
Line list and guinea worm reporting forms were also absent in 3(13.6%) of the facilities studied.
Neonatal tetanus (NNT) case investigation form was not found in 2(9.1%) of the facilities surveyed.

TABLE 8: DOCUMENTATION FOR IDSR.

Statements	Yes n	Yes (%)	No n	No (%)	Total n	Total (%)
Case detection register correctly filled within the last thirty days		13(59.1)		9(40.9)		22(100)
Completely filled and sent at least three weekly reports in the last one month		17(77.3)		5(22.7)		22(100)
• If yes, duplicate	17	(100.0)	0	(0.0)	17	(100)
Completely filled and sent at least two monthly reports in the last three months	17	(77.3)	5	(22.7)	22	(100)
• If yes, duplicate asked for	17	(100.0)	0	(0.0)	17	(100)

The case detection register was correctly filled by 13(59.1%) of all the facilities surveyed. About 17(77.3%) completely filled and sent at least three weekly reports in the last one month before the survey and at least two monthly reports in the last thre e months before the survey. From the critical informant interview, the majority [20(90.9%)] had their present monthly report ready.

TABLE 9: ASSOCIATION BETWEEN AVAILABILITY OF IDSR IEC MATERIALS IN THE PUBLIC HEALTH FACILITIES AND LEVELS OF HEALTH CARE DELIVERY.

Variables	Levels of health care delivery: PHC n	PHC (%)	Secondary n	Secondary (%)	Tertiary n	Tertiary (%)	Fischer's exact test	p-value
No	0	(0.0)	0	(0.0)	0	(0.0)	0.771	1.000
Observed	7	(38.9)	1	(33.3)	0	(0.0)		
Not observed	11	(61.1)	2	(66.7)	1	(100)		
***National technical guidelines on IDSR**								
No	7	(38.9)	1	(33.3)	1	(100)	2.685	1.000
Observed	8	(44.4)	1	(33.3)	0	(0.0)		
Not observed	3	(16.7)	1	(33.3)	0	(0.0)		
***Standard case definition booklet**								
No	4	(22.2)	0	(0.0)	1	(100)	4.141	0.532
Observed	11	(61.1)	2	(66.7)	0	(.0)		
Not observed	3	(16.7)	1	(33.3)	0	(0.0)		
Correctly filled register within the last 30 days								
No	2	(11.1)	0	(0.0)	0	(0.0)	4.355	0.398
Yes *Observed	6	(33.3)	0	(.0)	1	(100)		
*Not observed	10	(55.6)	3	(100)	0	(0.0)		

*Significant @ $p \leq 0.05$

There was no statistically significant association between the various levels of health care delivery and the availability of IEC materials for IDSR.

DISCUSSION

The ages of the health workers in public health facilities in Edo Central Senatorial District, who participated in this study were between 20 and 59years. This is not surprising as the working-age group for civil servants is about this age group. However, the mean age of 36.3(±8.95) years and age group with the highest frequency being 40-49years in this study was not surprising as there has not been any major employment of new health care workers in the state at the three levels of health care delivery in recent years before this study. This finding is different from what was reported in the study carried out in UBTH, where the largest age group was found to be 20-29 years (49.1%) and a mean age of 31.1±4.6 years.

The majority 241 (77.7%) of the respondents in this survey were females. This could be explained by the fact the nursing profession, which is usually dominated by the female gender, constituted a significant proportion of the HCWs studied in this survey as they manage the primary health facilities in the state. In the study area, nurses have largely replaced the CHEWs as heads of PHC facilities. In this study, a large number of the entire respondents were married 185(59.7%), this is closely related to the fact that the mean age group of the study population was 36.3±8.95 years as against the study carried out in Sagamu, Ogun State, Nigeria.

This study revealed divergent responses from the respondents in the different questions asked in the survey. Two hundred and three respondents accounting for about 65.5% agreed that the three tiers of government were necessary for the effective practice of disease surveillance and response strategy. About185(59.7%) respondents'

knew that the local government should ideally be the first to receive IDSR data from hospitals and other health facilities. Just about 65(21%) and 32(10.3%) indicated that the Federal Ministry of Health and the World Health Organization should be the first to receive disease surveillance and response data from the hospital. This response might not be surprising because some of the respondents in this study work in a tertiary hospital designated for the management and control of Lassa Fever and other viral haemorrhagic fevers and they easily work with the Federal Ministry of Health (FMoH) through the Nigerian Centre for Disease and Control (NCDC and the International partners. It would be important to reemphasize the need to follow the channel of information dissemination in IDSR. Even if the FMoH may be handy in this institution, especially during outbreaks, and as such gets information directly, it would be better if other levels of care are carried along through the LGAs and the state. Such practice would go a long way in getting everybody prepared and aware of the magnitude of the disease burden in their place of practice.

Respondents were asked to categorize a list of ten notifiable diseases into epidemic-prone, public health importance, and diseases targeted for elimination and eradication; only 23.6% of them had a score greater than 50%, and the highest score obtained was 80%. Being a medical doctor was associated with good knowledge of disease notification among the respondents in the study. This was closely followed by the nurses' group of health care workers. This association might not be unconnected with the duration and depth of training the health care worker underwent during their professional prerequisite training.

The association between duration of practice and knowledge was also found to be statistically significant. This study revealed that knowledge of disease surveillance was higher among those with shorter duration of practice. The majority of those with good knowledge (26/41, 63.4%) had only practised for less than ten years. This finding might be a pointer to the fact that there is a neglect of IDSR as an essential subject of discussion during continuous professional/medical development or education (CPD or CME) or the fact that those professionals who have attained higher duration of work experience seem to pay less attention to those teachings or lectures compared with their junior counterparts. The finding in this study was contrary to the findings in another study carried out in UBTH were all respondents with over 15years duration of medical practice werefound to have good knowledge of disease surveillance and notification.

There was also a statistically significant association between the level of health care delivery and respondents' knowledge of IDSR. Respondents at the tertiary level of care had more knowledge of IDSR than those in the secondary and primary level of care. This might be as a result of the quality and level of training needed as the basic requirement to work in the tertiary facility. Although the HCWs attend similar institutions, the tertiary facility tends to be more abreast with current trends in the practice of medicine than those in the lower levels of care. Also, the tertiary facility is involved in the training of different cadres of HCWs, especially for their clinical sessions. All the facilities had case detection register for recording cases though 14(63.6%) were not observed.. The standard case definition booklet was absent in 5(22.7%) of the facilities surveyed.About 4(18.2%) of the facilities claimed to have this booklet, though the researcher did not sight this document. Report on the availability of information communication education materials for case definition for some priority diseases wasrevealing. Forms for reporting cholera, measles, yellow fever, guinea worm, and poliomyelitis were available in all the facilities surveyed; however, there was no form for malaria and only two for leprosy in the facilities visited. This might be a subtle reflection of government reduction in the importance placed on some of these diseases. As for meningitis definition material, more than half 13(59.1%)the facilities surveyed do not have this document. This might not be unconnected to the fact that the study area is not in the meningitic belt of Nigeria. Although, it is essential to have these materials still handy and make reports of zero cases that not having them making prompt reporting impossible when outbreak ensues.

The availability of the appropriate surveillance forms was accessed in the various facilities surveyed. The none availability at one point or the other in the respective facilities during the six months before the survey was recorded in about one-fifth of the facilities for weekly and monthly surveillance forms. This was higher with the secondary facilities were the three facilities surveyed in the two local governments reportedthe absence of these forms in one or more occasions in the six months preceding the survey. This is similar to the findings in a survey carried out in Anambra State, on awareness and knowledge of disease surveillance and notification by health-care workers and the availability of facility records by Nnebue et al.where they reported that the availability of IDSR 002 and 003 were 96.3% and 100% respectively in the primary health care facilities surveyed.The findings across the three levels of care for IDSR 002 and 003 were significantly high and reported as 79.6% and 83.3% respectively. These findings can be adjudged to be inadequate using the target set by the WHO as reported in its update quarterly bulletin on progress and plan the core indicators for IDSR in the African region using the proportion of health facilities submitting weekly surveillance reports on time to the district level as (target 80%), the proportion of districts submitting weekly surveillance reports on time to the next higher level (target 80%) and the proportion of district monthly reports that are submitted timely (target 80%).[7] Meeting this proportion has a long way to go in the evaluation process of the performance of the strategy.

CONCLUSION

This study has shown that the level of knowledge of integrated disease surveillance and response among health care workers in public facilities in the study area was barely above average. It has also elicited the paucity of material needed for effective IDSR implementation, especially at the secondary level of care.

RECOMMENDATIONS

Copies of IDSR handbook and other IDSR information, education, and communication materials should be disseminated to all public health facilities in South-South Nigeria.

Integrated disease surveillance and response should be included in the various staff in-service training, retraining, and orientation programmes of healthcare workers, particularly demonstrating how IDSR can be used in the diagnosis and control of epidemics.

Regular seminars on IDSR should not only focus on health care workers at the primary health facilities. Attention should be given to secondary facilities.

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