

Measles Trend In The Federal Capital Territory Nigeria, 2012-2015

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Received: 29 December 2017; **Accepted:** 01 February 2018**Citation:** Ifeyinwa Nancy A, Ijarotimi Ibi Dolapo, Temitope O. Measles Trend In The Federal Capital Territory Nigeria, 2012-2015. *Microbiol Infect Dis.* 2018; 2(1): 1-4.**ABSTRACT****Introduction:** Measles is one of the diseases marked for elimination and high vaccination coverage rates with measles vaccine have resulted in significant decline in its incidence in many countries. This study describes measles surveillance data for the Federal Capital Territory (FCT) for years 2012-2015.**Method:** This was a secondary analysis of the FCT IDSR measles surveillance data from 2012- 2015. The IDSR paper forms were filled monthly by DSNOs and entered into Ms Excel. We imported the data into Epiinfo 7 which we used to analyse it. We calculated proportions and tested associations using chi-square at $p=0.05$.**Results:** Five hundred and sixty-six suspected measles cases were reported during the period. The age range was 3-576 months. There were 203 (35.5%) males, 147 (26.0%) females and the rest unknown. Abuja Municipal Area Council (AMAC) had 166 (29.3%), the highest number of cases while Kwali Local Government Area had 35 (6.2%), the least. The highest number of cases 266 (47%) was in 2013 and least 85 (15%) in 2014. Of all cases, 133 (23.5%) were confirmed IgM positive for measles, 132 (23.3%) were negative while 288 (50.4%) had no confirmatory results. IgM test for Rubella was positive in 19 (3.4%) and negative in 67 (11.8%). Of the 133 confirmed measles cases 90 (24.9%) had no measles immunization, 40 (24.5%) had one dose immunization and three (7.9%) had 2 doses. Children <59 months have higher uptake of measles immunization than more than 59 months, with higher uptake in males than females.**Conclusion:** Measles immunisation was protective against measles and more efforts should be made to ensure that all children get at least a dose of the vaccine.**Keywords**

Measles, Rubella, Immunisation, IDSR, IgM.

Introduction

Measles remains a leading Vaccine Preventable cause of child mortality worldwide, particularly in the sub-Saharan Africa where almost half of the estimated 454,000 measles deaths in 2004 occurred [1].

It is a highly contagious viral illness that has fortunately, been fairly well controlled through measles vaccination plans. Before routine use of measles vaccine, there were about 500,000 cases of measles in USA. It also led to about 48,000 people being hospitalized and another 1,000 people being left with chronic disability from measles

encephalitis [2]. Case fatality rates in Africa generally range from 3-5 % and can be as high as 30% during severe outbreaks. Measles is endemic in Nigeria. It has seasonal variations with increasing incidence during dry season (November-May) [3].

Because of the success of global measles control programs the World Health Organization (WHO), along with its partner agencies is once again considering the possibility of setting a date for measles eradication [4].

Measles is transmitted via respiratory secretions or aerosols. It multiplies in respiratory tract, humans are the only reservoir. High vaccination coverage rates and the administration of a serum dose of measles vaccine have resulted in significant decline in the

incidence of measles in many countries [5].

Measles vaccine is a vaccine that is very effective at preventing measles. After one dose 85% of children nine months of age and 95% over twelve months of age are immune. The vaccine is available both by itself and in combination with other vaccines. This includes with the rubella vaccines and mumps vaccine to make it MMR.

The high mortality and morbidity of measles in Nigeria and Africa is the crux of the matter for the study. Objectives of the study is to characterise measles, to assess effectiveness of the vaccine and to make Public health recommendations.

Methodology

Federal Capital Territory is the capital of Nigeria located in West Africa. It is made up of six (6) area councils Abaji, Abuja Municipal, Bwari, Gwagwalada, Kuje & Kwali. Mainly cosmopolitan and it is located in the North Central Geo-political zone. The territory is located just north of the confluence of the Niger River and Benue River. It is bordered by the states of Niger to the West and North, Kaduna to the northeast, Nasarawa to the east and south, and Kogi to the southwest.

The Federal Capital Territory has a landmass of approximately 7,315 km², and it is situated within the Savannah region with moderate climatic conditions. There is seasonal variation of measles, incidence is high during dry seasons (November-May).

A line list of measles cases from 2012-2015 was collected from Integrated Disease Surveillance Response of the Federal Capital Territory, F.C.T Abuja. The IDSR paper forms were filled monthly by Disease Surveillance Notification Officers and entered into Ms Excel. Data was collected in soft copy, imported into Epiinfo 7 and analysed.

A suspected measles case was defined as a person presenting with fever, rash and one or more of cough, coryza or conjunctivitis. A laboratory confirmed IgM positive.

Ethical Considerations

A written consent letter and permission was obtained from Integrated Disease Surveillance Response of the Federal Capital Territory, F.C.T Abuja.

Variable	Frequency N = 566	Percentage
Age (in months) 0-9	78	13.8
10- 59	333	58.8
More than 59	155	27.4
Mean ±SD	45.45 ± 46.16	
Range	3 - 576	
Sex	Male	203 35.9
	Female	147 26.0
	Missing Data	216 38.1

Local Government Area	Abaji	73	12.9
	Amac	166	29.3
	Bwari	123	21.7
	Gwagwalada	103	18.2
	Kuje	66	11.7
	Kwali	35	6.2
Number of valid doses	None	361	63.8
	1	163	28.8
	2	38	6.7
	3	4	0.7
In/Out Patient	Admitted	33	5.8
	Outpatient	451	79.7
	Missing	82	14.5

Table 1: Demographics of the suspected measles subjects.

Age range (10-59months) had highest immunization uptake 333 (58.8%), while ages more than 59 months had 155 (27.4%).

The age range was 3-576 months, male are 203 (35.9%), females are 147 (26.0 %), while 216 (38.1%) data are missing.

AMAC 166 (29.3%) has the highest number of measles cases, Bwari 123 (21.7%), Gwagwalada 103 (18.2%), Abaji 73 (12.9%), Kuje 66 (11.7%), Kwali 35 (6.2%).

361 (63.8%) had no immunization, 163 (28.8%) had a dose of the measles vaccination, 38 (6.7%) had 2 doses of vaccination and 4 (0.7%) had 3 doses.

33 (5.8%) were admitted while 451 (79.7%) were seen as out patients.

Variable	Measles				
	Positive n = 133	Negative n = 132	Indeterminate n = 9	Pending n = 4	Not done n = 288
Number of valid doses					
None	90 (24.9)	60 (16.6)	7 (1.9)	3 (0.8)	201 (55.7)
1	40 (24.5)	56 (34.4)	2 (1.2)	1 (0.6)	64 (39.3)
2	3 (7.9)	14 (36.8)	0 (0.0)	0 (0.0)	21 (55.3)
3	0 (0.0)	2 (50.0)	0 (0.0)	0 (0.0)	2 (50.0)
$\chi^2 = 32.503$ p = 0.001					
Rubella					
	Positive n = 19	Negative n = 67	Indeterminate n = 2	Pending n = 51	Not done n = 427
Number of valid doses					
None	4 (1.1)	40 (11.1)	2 (0.6)	22 (6.1)	293 (81.2)
1	12 (7.4)	23 (14.1)	0 (0.0)	21 (12.9)	107 (65.6)
2	2 (5.3)	3 (7.9)	0 (0.0)	8 (21.1)	25 (65.8)
3	1 (25.0)	1 (25.0)	0 (0.0)	0 (0.0)	2 (50.0)
$\chi^2 = 39.377$ p < 0.001					

Table 2: Relationship between number of valid doses taken by the suspected subjects and their test results.

The higher the number of doses of measles immunization taken the less positive cases, same is applicable to Rubella.

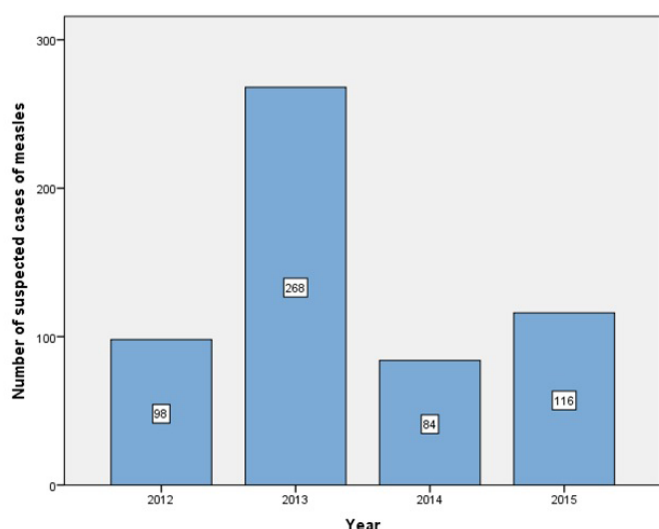


Figure 1: A bar chart showing the number of suspected cases of measles per year.

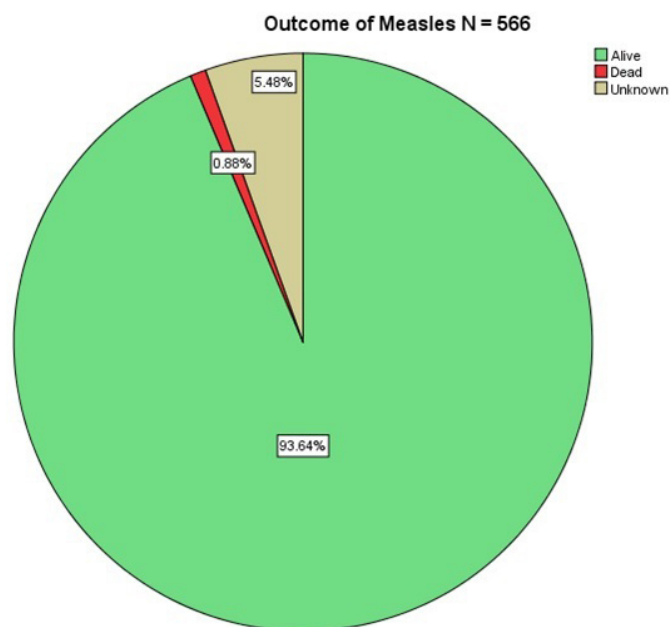


Figure 2: A pie chart showing the outcomes of measles in the years under review.

The pie chart showed the outcome of measles cases 93.64% are Alive, 0.88% were dead, the outcome of 5.48% were unknown.

Discussion

A total number of 566 (72.6%) people of suspected measles cases in F.C.T, Abuja.

The study showed that 10-59months (58.8%) were less than 59 months (5years), 155 (27.4%) more than 59 months (5 years), this is similar to a study on measles morbidity and mortality trend in Nigeria: A 10 year hospital retrospective study which showed that under 5 recorded for highest reported cases (76.3%) while patients

above 5years accounted for (23.3%) of cases. The similarity in the results may be attributed to low immunity among the under fives.

The study showed that Abuja Municipal (AMAC) had the highest number of cases (29.3%) which is urban, while Kwali Local Government which is rural had the least number (6.2%) which is in contrast to A 5 year study done in Abia on the impact of declining vaccination coverage on measles which showed about 80% of cases of those with febrile rash reside in the rural areas, while 75% of those laboratory confirmed reside in rural areas. The reason for the difference may be due to cosmopolitan nature of Abuja municipal Area, with high awareness and sensitization compared to Kwali Local Government Area [6-11].

The study showed that of the 566 children with diagnosis of measles 361 (63.8%) received no measles immunization, 163 (28.8%) received one valid dose of immunization, 38 (6.7%) received 2 valid doses of immunization and 4 (0.7%) received 3 valid doses immunizations. This is similar to work by M. Adeboye et al in Bida, Niger state which showed that 90 (82%) did not receive measles vaccination. This maybe attributed to parents refusal to immunize due to unknown reasons. In addition, a study done by JEA Saleh on Trends of measles in Nigeria showed that lowest cases is seen among the vaccinated children and highest among unvaccinated [8].

Conclusion

From the results above, ages 10- 59 months have higher uptake of measles immunizations than ages more than 59 months, with mean age of 45.45 months \pm 46.16 age ranges from 3-576months. There is higher male uptake than female uptake.

In F.C.T Abuja, Abuja Municipal has the highest uptake of immunization, while the least was Kwali L.G.A indicating more uptake in the urban than rural areas. Highest cases were recorded in 2013 (47.3%) and least were recorded in 2014 (14.8%). More cases are recorded on those with absence of immunization than those that have 3 or 2 immunizations. Few cases were admitted, while most of the cases were out patients cases.

The higher the doses of vaccination taken by patients, the less positive cases, while the absence of vaccination, the higher positive cases. Therefore we can conclude that vaccination has a protective role against measles and rubella infections and a better outcome. Hence vaccination is encouraged.

Recommendations

Surveillance to assess the burden of disease to guide vaccination policy remains critical for measles Eradication Plan. Sensitization and awareness about measles should be created.

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