MEASLES, A DIMINISHING THREAT TO CHILD DEVLOPMENT IN NORTHERN REGION OF GHANA

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ABSTRACT

AIM: This research is aimed at assessing the level of threat measles infection has on child development in northern region of Ghana and its impact on child health in recent times.

METHODS AND SAMPLING: A sample size of 20 health professionals, comprising 15 Public Health Nurses and 5 Family Physicians were used. A convenient and purposive sampling method was used to gather data through interviews and from primary information sources. Data was analysed using Microsoft excel and word processing.

RESULTS/FINDINGS: The results show that the threat of measles infection in northern region is significantly reduced, recording three confirmed cases in 2011. The diminishing trend was acclaimed to be attributable to high level of cooperation from parents' willingness to send their children out for vaccination and improved living standards of many Ghanaians, among others. These reasons notwithstanding, measles infection is still fluctuating from year to year.

CONCLUSION: Though the disease is fast diminishing, it still has a potential to escalate given that it shot from zero confirmed cases from 2010 to three confirmed cases in 2011.

KEYWORDS

Measles, Child Development, Diminishing, Threat, Northern Region

INTRODUCTION

Measles is ubiquitous, highly infectious disease affecting nearly every person in a given population by adolescence in the absence of immunization program. Measles is transmitted primarily from person-to-person. Measles can lead to widespread infection. This occurs in overcrowded families with infected member, early contact with the virus in high dosages through large respiratory droplets (Waterston, in Paget, 2003).In developed countries, complications occur in 10-15% of cases while in developing countries ;up to 75% of cases may have one or more complications. The major causes of high case fatality are pneumonia and diarrhea. Measles can lead to lifelong disabilities including blindness, brain damage and deafness. High complications and fatality rates are associated with malnutrition, including vitamin A deficiency, poor sanitation and poor management of complications (WHO, 2009)

According to the World Health Organization (WHO, 2009), measles is a leading cause of vaccine-preventable childhood mortality. Worldwide, the fatality rate has been significantly reduced by a vaccination campaign led by partners in the Measles Initiative notably, the American Red Cross, the United Nations Foundation, UNICEF and the World Health Organization (WHO). Globally, measles fell 60% from an estimated 873,000 deaths in 1999 to 345,000 in 2005. Estimates for 2008 indicate deaths fell further to 164,000 globally, with 77% of the remaining measles deaths in 2008 occurring within the South-East Asian region(WHO, 2009).

Ghana developed a five-year rolling plan of accelerated control of measles in accordance withthe WHO/AFRO EPI 5-year strategic plan (2001-2005), with a focus on reducing measlesmortality to near zero. As at the third quarter of this year Ghana has recorded up to 246 confirmed cases of measles, forming an incidence rate of 1.81/100 0000 of target population.In 2011, Ghana as a country recorded 344 confirmed measles casesbut dropped to 234 out of 646 suspected cases in 2012 (WHO, in Mohammed, 2013), indicating a significant drop of 46.75% within a period of one year.

WHO (2010) during its 63rd World Health Assembly placed a premium on a global target of 95% reduction in measles mortality by 2015 from the level seen in 2000 and towards eventual eradication after then. However, no specific global target date for eradication has yet been agreed upon.

The sole objective of this work is:

To assess whether or not measles infection as a vaccine preventable cause of child mortality still remains a threat tochild development in the northern region of Ghana

MATERIALS AND METHODS

STUDY DESIGN AND SAMPLING TECHNIQUE

This was a cross sectional survey aimed at proving that the quantum of threat measles in infection in northern of Ghana has been on a diminishing trend from 2005 to 2011. The study covers twenty districts of the northern regional health directorate. However, not all districts have public health physicians manning them. Out of the total of ten districts known to have district health directors who are public health physicians, five were purposively selected for convenience to take part in this study with their corresponding public health nurses. Therefore the sampling method adopted in this direction was a convenient and purposive sampling. The composition of the sample was 5 public health physicians and 15 public health nurses who were interviewed about the measles infection, its prevention and effects on child development in the northern region of Ghana. The data on measles infection was sourced from the annual reports of Ghana Health service (GHS) and World Health Organization (WHO) in the northern region of Ghana.

DATA COLLECTION

The data for the study was gathered by means of structured face to face interviews of public health physicians and nurses, reviews of annual reports of GHS and partners, notably WHO.

DATA ANALYSIS

The data collected was processed and entered into Microsoft excel and Word for statistical analysis. The analysed results were presented on tables and graphs as indicated below.

RESULTS

Table 1 below shows the results of the data collected on the annual surveillance of measles cases from 2005 to 2011.The figures on the table indicate that it was only in Chereponi that three measles cases were confirmed in 2011 in the whole of the region. It also shows that out of six suspected cases in the Tamale metropolis zero case was confirmed as indicated below (Table 1)

Table 2 and figure 1 below illustrate the pattern of discrepancies between suspected and confirmed cases from 2005 to 2011. Based on the above indicators, it can be deduced that suspected cases were relatively high across the years with corresponding confirmed cases much lower than the suspected cases. However, in the years 2008 and 2009 the confirmed cases were high as compared to the other years. The year 2009 recorded the highest of 38 confirmed cases than previous years. In 2007 and2010, 29 and 41 were recorded as suspected cases. None of the

suspected cases in 2007 and 2010 was confirmed.2011 recorded the list (20) in terms of cases suspected. Out of this, 3 of them were confirmed (Table 2)

Table 3 and figure 2 below illustrates a deep concern from all the respondents that despite the diminishing trends of the disease, it is still far from being eradicated and should be given the necessary serious attention. It equally shows that measles infection is no longer a serious threat but is still common among the people of the northern region (Table 3 and figure 2)

Table 4 and figure 3 below indicate that 100% of family physicians and over 90% public health nurses attribute the diminishing trend of measles threat in northern region to increased vaccination coverage, while 40% or less of both physicians and public health nurses think that improved living standards have contributed significantly to the fall in measles infection in the northern region of Ghana.

One important observation from figure 3 is the high level of cooperation from parents (between 60-80%) of both categories of respondents admitted that parents sent their children out for vaccination. This might have accounted for the significant increase in the vaccination coverage during the period in the region.

Despite the seemingly positive consensus on the downward trend of measles infection attributive to various factors, as high as 18-20% of total respondents intimated that possibly measles could have been a forgotten disease in the region had it not been the supply and use of low potent vaccines as indicated on the figure below (Table 4 and figure 3)Discussion

Cases were confirmed using IgM ELISA assays detection process to isolate anti measles IgM antibody in the patient's blood. From the analysis of the data, suspected cases are high with very few corresponding confirmed cases except in some few years when a good number were confirmed.

It is inferred therefore that there might be a new condition similar to or mimicking measles. It could also be that there were no effective or enough diagnostic equipments to isolate the measles virus. This therefore calls for further research.

As evidenced on table 2 above, in the years 2008, confirmed cases shot up significantly from zero to 22 and in 2009 it rose from 28 to 38 while suspected cases in 2008 stood at 79, in 2009, it fell to 71. Since Ghana developed a five-year rolling plan of accelerated control of measles in accordance with the WHO/AFRO EPI 5-year strategic plan (2001-2005), the focus has been to reduce measles mortality to near zero.

Despite this initiative, the incidence of measles in the northern region of Ghana continues to experience diminishing but fluctuating trends. In 2009, confirmed cases shot up from 22 (27.8%

suspected cases) in 2008 to 38 (53.7% of suspected cases). However, in 2007 and 2010, there was no single confirmed case registered. This confirms the high coverage of target population vaccinated against the measles infection. High patronage of immunization days as illustrated on table 2 above, effective and efficient health education have contributed greatly to the dramatic decrease in confirmed cases.

However, as amply evidenced on figure 3 above, between 18 and 20 percent of respondents concurred that use of inactive vaccines might have accounted for the emergence of the few confirmed measles cases in 2011. One important deduction could be that the laboratories used were not well resourced to detect and confirm the measles cases. This also calls for further investigation.

CONCLUSIONS

The distribution of the suspected and confirmed cases shows great fluctuations in the incidence of measles infection despite the preventive measures put in place by the GHS to eradicate the disease. The findings however demonstrate that measles infection is fast diminishing its threat to child development in the northern region of Ghana. This notwithstanding, measles transmission is still possible and can affect unvaccinated children if not fully eradicated.

Despite the downward trend of measles infection, 2011 recorded 20 suspected cases with 3 of them confirmed. This development shows that in order to completely eradicate measles in the country, there is need for a shared responsibility. By this, everyone including health personnel must embark on health education on the effects of measles on child development and the benefits of measles vaccination to all people in Ghana, particularly at the rural areas. In addition, the cold chain system in transporting the vaccines should be improved upon to ensure that potent vaccines are continually inoculated into the children.

Batches of vaccines and the manufacturers should be duly noted so that expired vaccines are called back or changed to ensure that potency is not compromised. Records keeping should be properly adhered to since some information could be lost if proper documentations are not done.

ACKNOWLEDGEMENTS

I acknowledge the commitment and dedication of my former level 400 nursing students within Tamale for assisting me gather the data for this study. The regional Directorate of the Ghana Health Service, Northern region, Tamale and WHO regional office in Tamale, for providing material resources for this research.I am especially indebted to all health workers who

participated in the interview schedules to make this work a success. Above all I am grateful to God for His blessings.

CONFLICT OF INTEREST

I declare there is no any competing financial interest in relation to the work described. It is purely an academic work and a contribution to the body of knowledge.

TABLES

Table-1: Annual surveillance of measles cases from 2005-2011

MEASLES SURVEILLANCE IN NORTHERN REGION														
	2005		2006		2007		2008		2009		201O		2011	
	SUS	CON	SUS	CON	SUS	CON	SUS	CON	SUS	CON	SUS	CON	SUS	CON
Bole	0	0	1	0	5	0	1	0	1	5	9	0	0	0
Bunkpurugu Yunyo	0	0	1	0	0	0	7	0	7	0	1	0	0	0
Central Gonja	3	2	4	4	5	0	1	0	2	1	5	0	0	0
Chereponi	0	0	0	0	0	0	0	0	1	0	0	0	3	3
East Gonja	1	1	3	0	3	0	5	2	6	6	0	0	0	0
East Mamprusi	2	0	0	0	3	0	1	0	1	0	2	0	0	0
Gushegu	1	1	4	1	1	0	0	0	3	1	1	0	0	0
Karaga	4	2	0	0	0	0	5	0	0	0	0	0	0	0

Kpandai	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Nanumba North	1	0	0	0	0	0	0	0	2	0	4	0	0	0
Nanumba south	4	2	1	0	0	0	0	0	1	0	0	0	5	0
Saboba	5	0	0	0	0	0	0	0	0	0	0	0	0	0
SaveluguNanton	1	0	1	0	1	0	1	0	1	0	2	0	1	0
Sawla-Tuna-Kalba	0	0	5	0	1	0	1	0	0	0	0	0	0	0
Tamale	11	5	9	5	2	0	26	4	6	6	1	0	6	0
TolonKumbungu	3	2	2	0	0	0	8	5	4	3	0	0	0	0
West Gonja	2	0	2	1	2	0	10	6	22	11	11	0	0	0
West Mamprusi	0	0	7	4	3	0	8	4	4	4	3	0	0	0
Yendi	2	1	5	0	1	0	4	1	0	0	2	0	3	0
ZabzuguTatale	0	0	4	1	2	0	1	0	1	0	0	0	2	0
Northern Region	40	16	49	16	29	0	79	22	71	38	41	0	20	3

GHS Annual reports, northern regional health directorate, 2011

Table-2: The distribution of suspected and confirmed measles cases from 2005-2011

Year	Suspected cases	Confirmed cases	% of confirmed cases
2005	40	16	40
2006	49	16	32.7
2007	29	0	0
2008	79	22	27.8
2009	71	38	53.5
2010	41	0	0
2011	20	3	15

Table-3: Respondents' views on whether or not measles infection is a threat to child development in northern region of Ghana

Type of responses	**Respondents**	
	Public Health Nurses	**Family Physicians**
Measles infection is no longer common in the region	13	4
Measles infection is common in the region	1	1
Measles infection is still a threat to child development	6	1
Measles infection is no longer a serious threat	9	4
Measles infection must be given serious attention	14	5
Measles has been eradicated in northern region	0	0

Source: Author's construct, 2013

Table-4: Respondents' reasons given on whether or not measles infection is a threat to child development in northern region of Ghana

Reasons given	Respondents	
	Public health Nurses	Family Physicians
Higher number of target population (0-14 yrs) receive vaccinations	14	5
High potent vaccines	10	3
Low potent vaccines	2	1
High level of cooperation from parents	12	3
Quality health care provision	8	3
Improved living standards of Ghanaians	5	2
Others	5	3

Source: Author's construct, 2013

FIGURES

Figure-1: Distribution of suspected and confirmed measles cases from 2005-2011

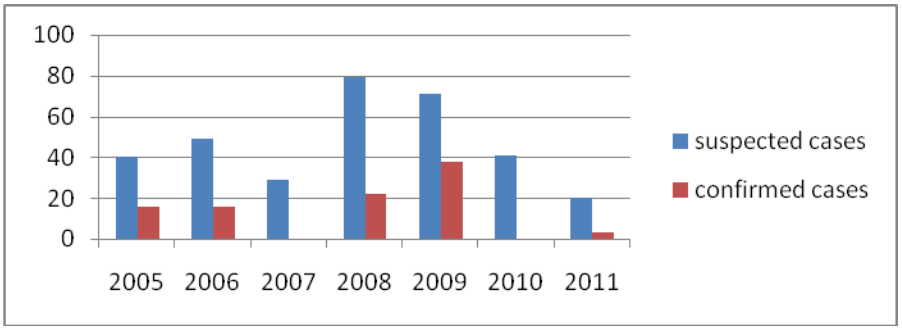


Figure-2: Respondents' views on whether or not measles infection is a threat to child development in northern region of Ghana

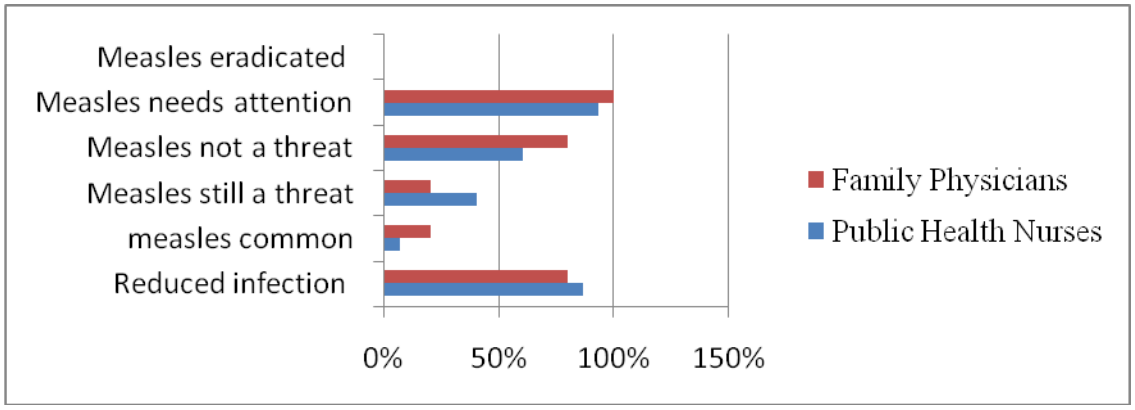
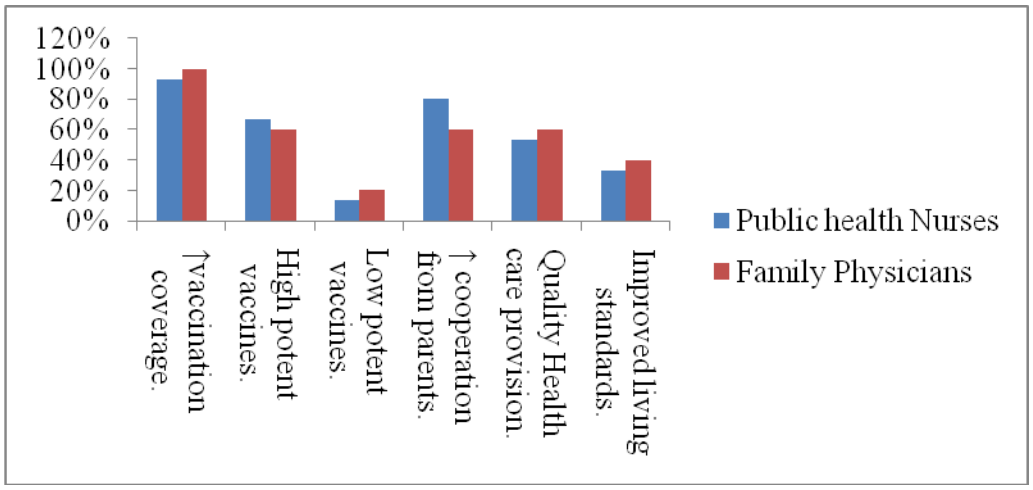


Figure-3: Respondents' reasons given on whether or not measles infection is a threat to child development in northern region of Ghana



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