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“Whose Child is not Immunized” Trends in Prevalence and Predictors in Child Health Care. Evidence from DHDSS.

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Outline

- **Background**
- **Method**
- **Results**
- **Conclusion and recommendation**



Background

- One of the many responsibilities in fighting against poverty is child immunization which improves the health of children since healthy children become healthy adults who could create better lives for themselves, communities and countries (UNICEF, 2009).
- The importance of child vaccination and its contribution to their survival cannot be overemphasized. According to Roth et al., (2005), vaccines such as BCG have been found to be one of the makers of better survival among children.
- Vaccination coverage is also a useful indicator of health service utilization among children (INDEPTH Network publication , 2005) and it is one of the simplest and the most effective approaches to protect the health of our children (Centres for Disease Control and Prevention report, 1999 as cited in Kim et al., 2006).



Background-contd.

- It is estimated that 1 in every 6 infants is not immunized against tuberculosis, 1 in every 4 children is not immunized against measles and only half of the world's infants are fully immunized against hepatitis B (UNICEF/WHO report, 2006).
- Since the launch of the Expanded Programme on Immunization in 1974, millions of children had been saved through immunization (UNICEF, 2005).
- In SSA, immunization coverage of measles is substantially behind and had to improve by an annual rate of increase of 4.1 percentage points in order to reach 90 percent coverage by 2010 compared to 3.2 percentage points of South Asia (UNICEF, 2005).



Significance of the Study

- Child immunization especially the proportion of one (1) year old immunized against measles has been one of the indicators being used to track any country's achievement of the Millennium Development Goals (MDGs) by the year 2015 especially the Goal 4 aside under-five and infant mortality rates (GDHS, 2008).
- In Ghana, although trends in vaccination coverage had rose over the past twenty years (47% in 1988 to 79% in 2008) among children age 12-23 months (GDHS, 2008); but there still exist variations across the various strata of the society relative to demographic and socio-economic factors and the access and availability of health care.



Main Objective

To assess trends in coverage rates in order to establish whether any significant improvement had been made; and identify the possible predictive factors.

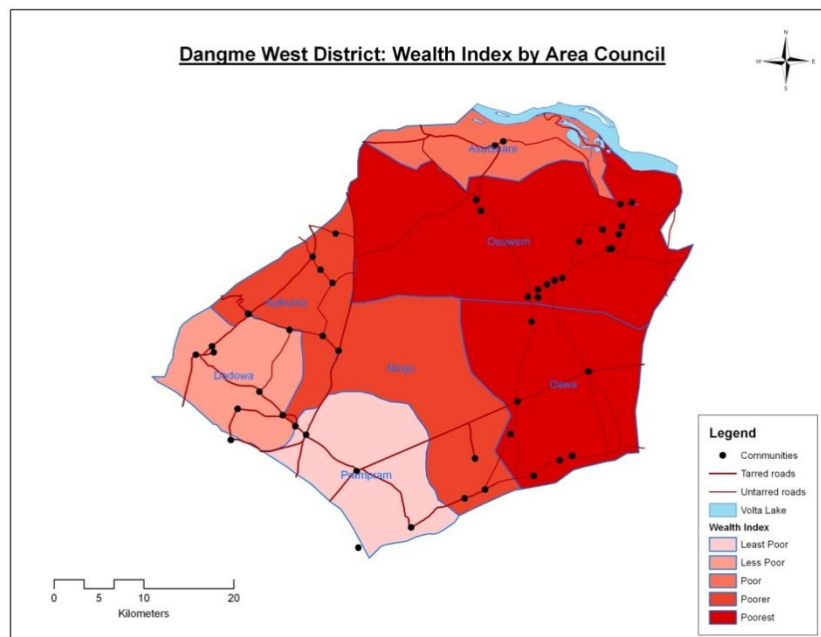
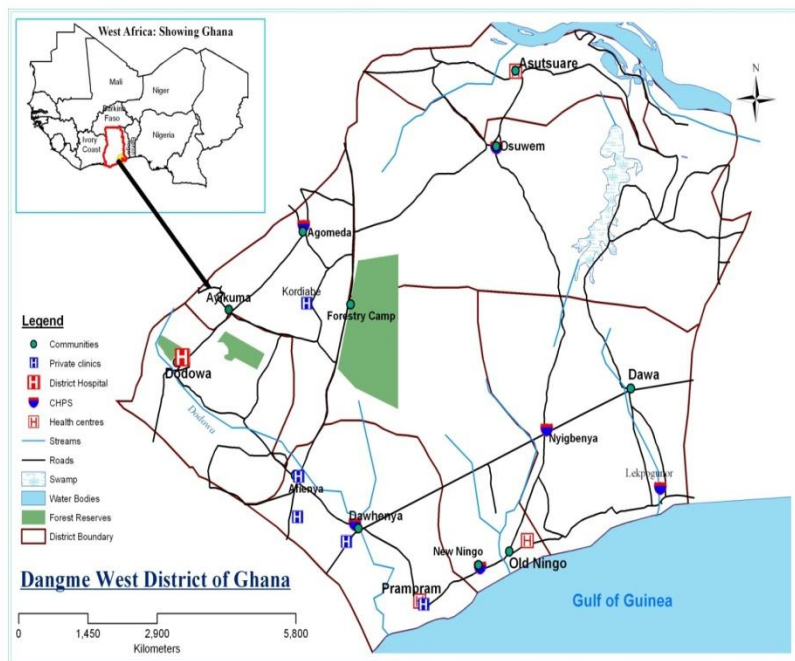


Specific Objectives

- examine the immunization prevalence and drop-out rates of specific vaccines.
- determine the trends in differentials and predictors of child health care.



The Dodowa HDSS, Dangme West District:- The Study Area



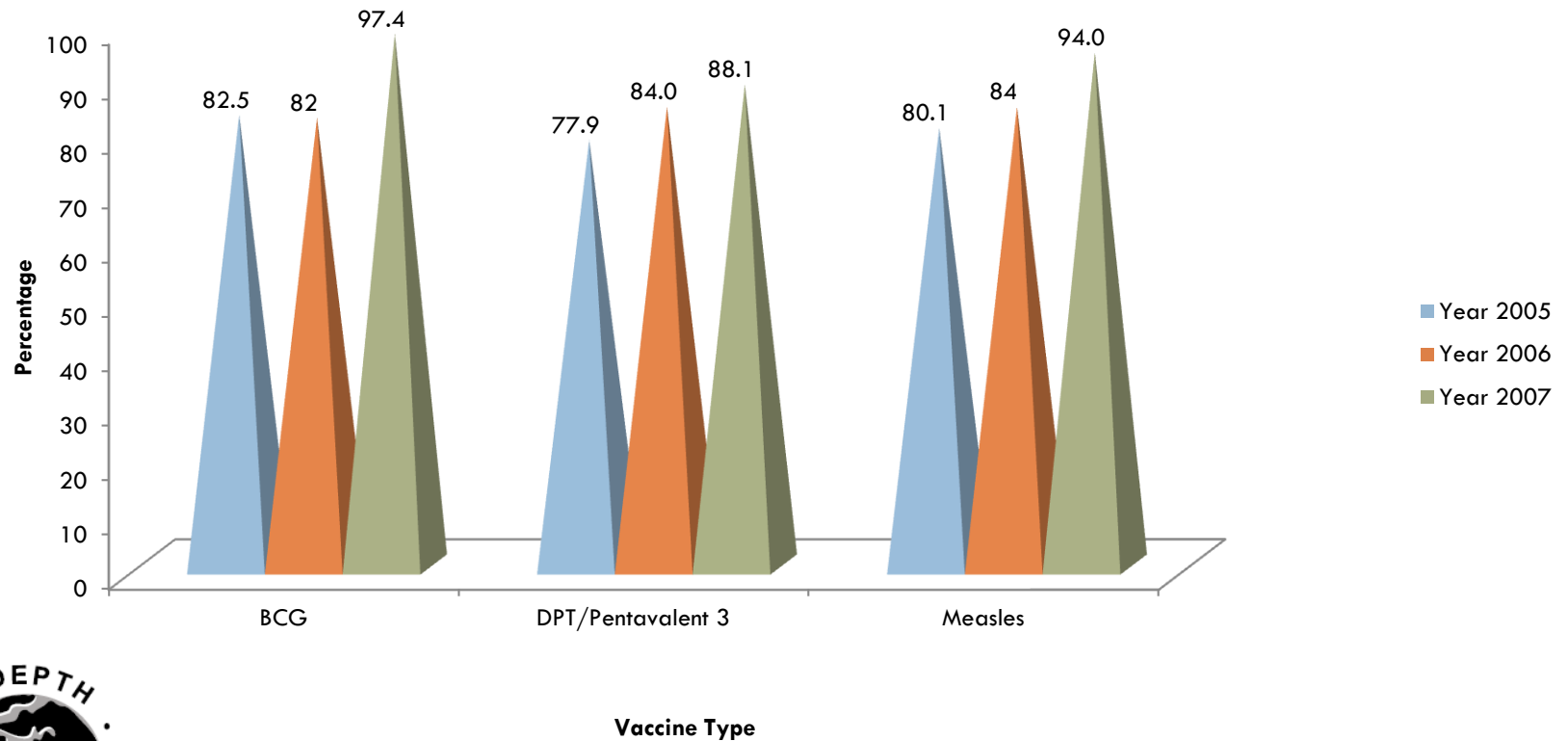
The study area-contd.

- Initial census was in 2005 and in 2006, actual round updates began.
- As part of the updates, information on the vaccination status of children under-two years are obtained annually.
 - BCG -Measles -Polio (0,1,2,3) -Yellow fever
 - DPT/Pentavalent (1,2,3)
- Other updates such as households' socio-economic status are collected annually.
- Other health related demographic information are also collected every time an event such as birth is observed.
 - place of birth -birth order



The Study Area-contd.

Trends in EPI Coverage in Dangme West district, 2005-2007



The Study Population

- Year 2005 – 2,671; 12-23 months (604- (81.8% had health card and 63.6 were fully immunized).
- Year 2006 – 2,977; 12-23 months (603: 81.8% had health card and was seen and 70% were fully immunized).
- Year 2007 – 2826; 12-23 months (1,703: 78.4% had health card seen and 66.7% were fully immunized).



Method I

- The study population for analysis consisted of 1,648 children age 12-23 months born between 2005 and 2007 whose vaccination status information were obtained from a health card.
- Child health care was measured using all the basic vaccines- BCG, DPT/Pentavalent (1,2,3), Measles and Polio vaccine (excluding Polio given at birth) adopted by the Government of Ghana from the WHO & UNICEF guidelines for vaccinating children (GSS et al., 2009).



Method II

- Simple descriptive analysis was used to study the trends in coverage and drop-out rates from 2005 to 2007.
- Bivariate analysis was employed to ascertain the trends in the differentials in child health care.
- Multivariate logistic regression analysis was also used to investigate the trends in the predictors of child health care.



Limitation

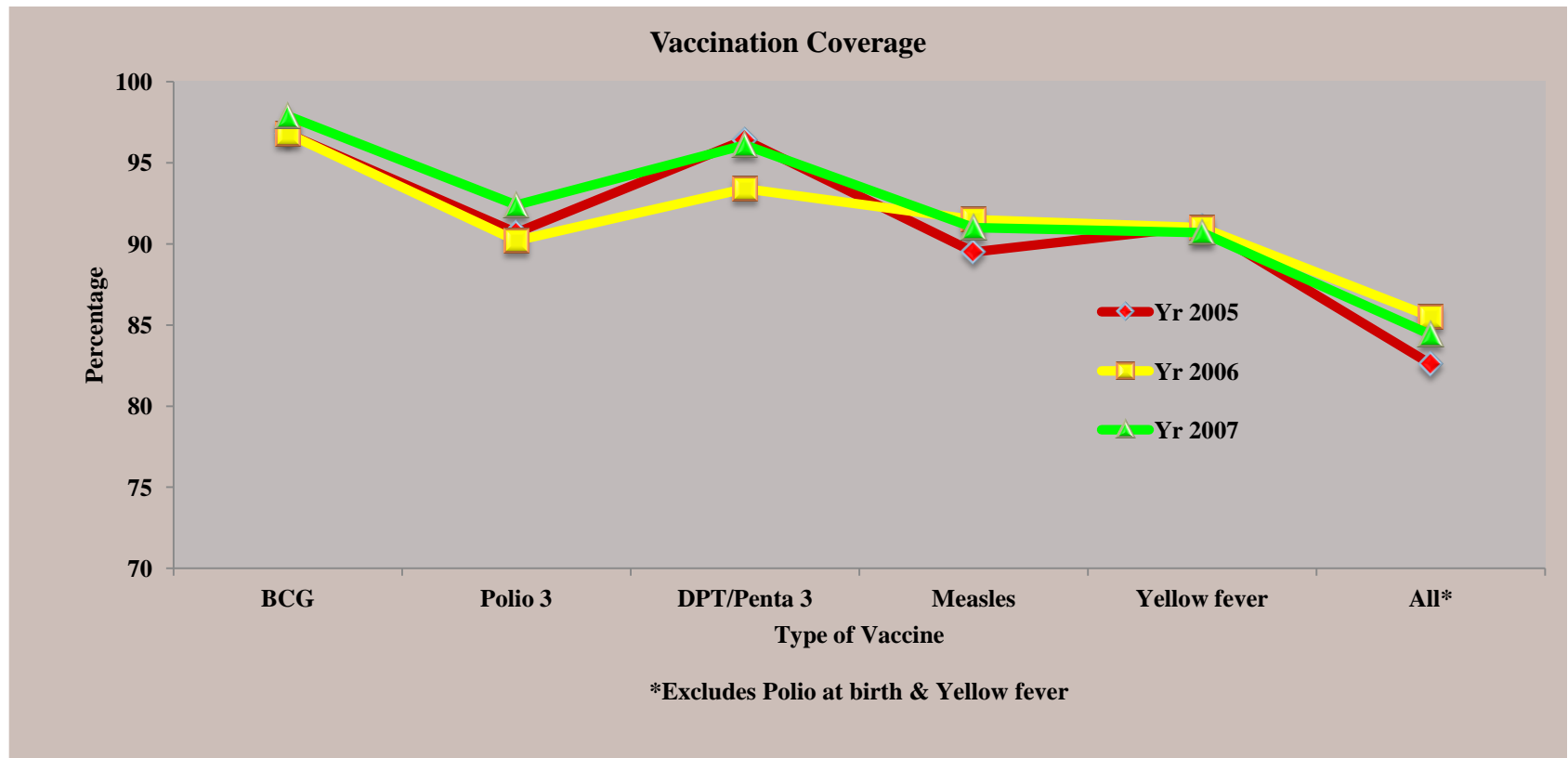
- Patterns in child immunization was not looked at.
- Restriction of analysis to children whose health card were seen, and with accurate date for which a type of vaccine was received/given relative to date of birth.
- Age group considered was 12-23 months.
- Exclusion of migrant children.



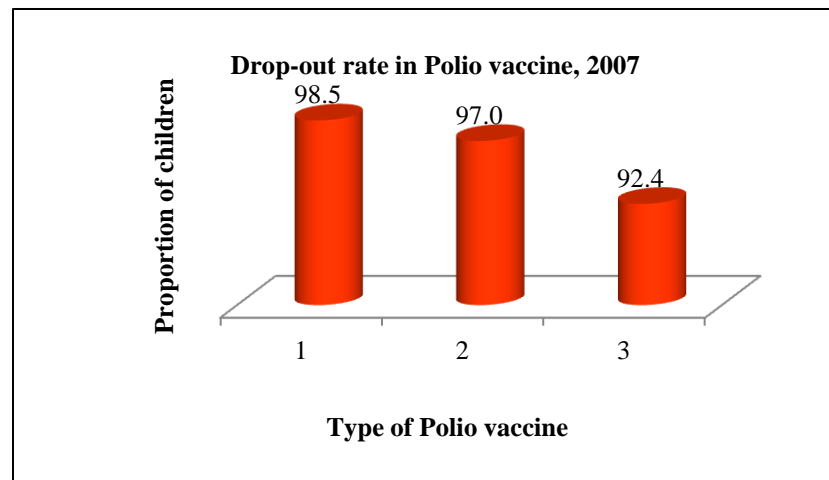
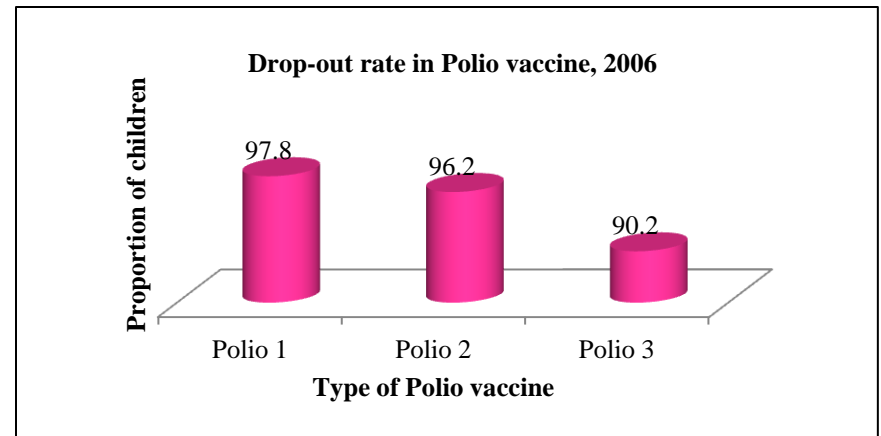
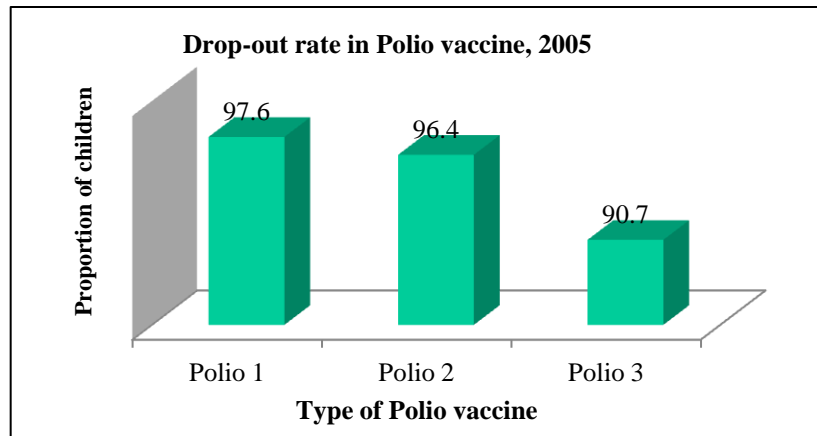
Results



Prevalence of Child Health Care

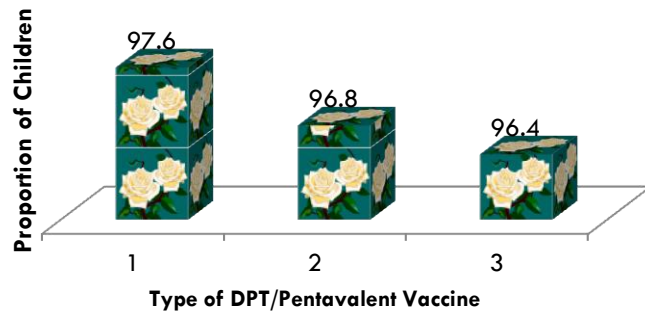


Trends in Vaccine Drop-out rate

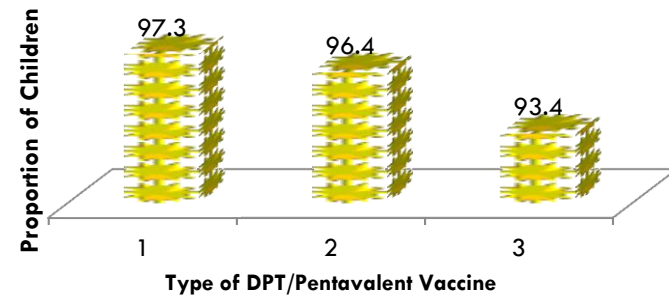


Trends in Vaccine Drop-out rate-contd.

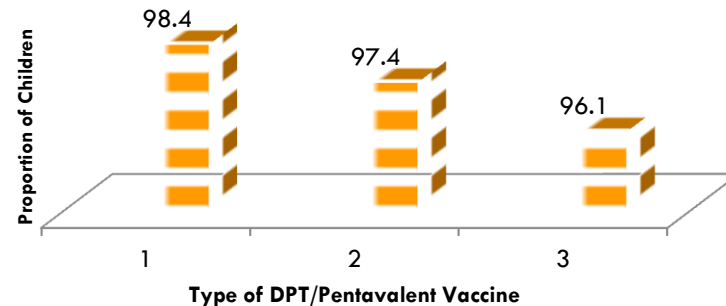
Drop-out rate in DPT/Pentavalent, 2005



Drop-out rate in DPT/Pentavalent, 2006



Drop-out rate in DPT/Pentavalent, 2007



Differentials in Child Health Care

Table 1: Trends in the predictors of child health care, 2005-2007: Percentage distribution of Children age 12-23 months who received all basic vaccines by background characteristics

Characteristics	Fully vaccinated*		
	2005	2006	2007
Sex of child			
Female	80.5	86.0	83.5
Male	84.9	85.1	85.4
Age of child			
12 months*	88.9	87.2	83.2
13-23 months	82.3	85.3	84.6
Place of delivery at birth			
Health facility	87.2	86.7	86.2
Home	78.5	84.1	82.3
Birth order			
First birth*	86.8	85.5	82.7
Non-first birth	81.8	85.5	85.0
Mother's age			
< 30	81.7	86.5	81.7
30+*	83.5	84.4	88.4
Mother's level of education			
No education*	79.3	82.9	87.1
Primary	80.4	85.7	82.8
Middle/JSS	86.9	87.3	83.5
Sec+*	86.7	91.7	84.0
Marital status			
Never married*	93.9	85.9	76.2
Currently married*	80.4	84.3	86.8
Formerly married	(100.0)	(100.0)	(80.0)
Undetermined	(81.8)	(94.1)	(100.0)



Differentials in Child Health Care-Contd.

Table 1: contd.			
	2005	2006	2007
Household's socioeconomic status			
Poorest	80.4	82.8	82.3
Poorer	82.2	82.3	84.2
Poor*	81.8	83.1	86.2
Less poor	77.8	91.7	84.8
Least poor*	91.5	87.1	84.1
Area of residence			
Ayikuma	81.2	86.1	83.6
Asutsuare	92.3	90.9	88.9
Dawa*	76.0	82.9	93.3
Dodowa*	74.2	87.0	88.1
Ningo	88.9	75.0	85.4
Osuwem*	77.8	79.1	83.1
Prampram*	88.5	88.3	77.7
All	82.6	85.5	84.4
Total**	81.8	85.1	84.2
Number of children	247	366	1,035
*Excludes Polio at birth & Yellow fever			
**All basic vaccinations & yellow fever vaccine			



Predictors of Child Health Care-Multivariate analysis

Table 2: Trends in predictors of Child Health Care among children age 12-23 months: Results of logistic regression analysis of the relationship between demographic and socioeconomic characteristics and the child's health care .

Parameter	2005		2006		2007	
	Adjusted Odds Ratio (95%CI)	P-value	Adjusted Odds Ratio (95%CI)	P-value	Adjusted Odds Ratio (95%CI)	P-value
Sex child						
Female (RC)	1.00		1.00		1.00	
Male	1.20(0.58-2.48)	0.62	0.88(0.47-1.65)	0.70	1.15(0.81-1.65)	0.43
Age of child						
12 months (RC)	1.00		1.00		1.00	
13-23 months	0.56(0.06-5.12)	0.61	0.88(0.34-2.28)	0.79	1.03(0.58-1.83)	0.91
Place of delivery						
Health facility (RC)	1.00		1.00		1.00	
Home*	0.78(0.33-1.85)	0.57	0.94(0.46-1.92)	0.85	0.63(0.43-0.95)	0.03
Birth order						
First birth (RC)	1.00		1.00		1.00	
Non-first birth	1.04(0.30-3.63)	0.95	1.21(0.51-2.89)	0.66	0.79(0.50-1.26)	0.32
Mother's age						
< 30 (RC)	1.00				1.00	
30+	1.49(0.69-3.20)	0.31	0.77(0.38-1.56)	0.46	1.33(0.87-2.04)	0.19
Mother's level of education						
No education (RC)	1.00		1.00		1.00	
Primary	0.69(0.28-1.68)	0.41	1.28(0.56-2.96)	0.55	0.86(0.53-1.42)	0.56
Middle/JSS	1.40(0.56-3.54)	0.47	1.28(0.57-2.89)	0.54	0.85(0.52-1.37)	0.68
Sec+	0.78(0.11-5.61)	0.81	1.85(0.35-9.72)	0.47	0.84(0.33-.214)	0.71



Predictors of Child Health Care-Multivariate analysis: Contd.

Table 2: contd.

Parameter	2005		2006		2007	
	Adjusted Odds Ratio (95%CI)	P-value	Adjusted Odds Ratio (95%CI)	P-value	Adjusted Odds Ratio (95%CI)	P-value
Marital status						
Never married (RC)	1.00		1.00		1.00	
Currently married*	0.19(0.04-1.01)	0.05	1.16(0.47-2.82)	0.75	2.03(1.31-2.16)	0.00
Formerly married	(NA)		(NA)		0.96(0.28-3.23)	0.95
Undefined	0.20(0.02-2.03)	0.17	3.17(0.33-30.78)	0.32	(NA)	
Household's socioeconomic status						
Poorest (RC)	1.00		1.00		1.00	
Poorer	1.19(0.38-3.73)	0.77	0.95(0.35-2.57)	0.92	1.08(0.59-1.97)	0.56
Poor	0.99(0.33-2.96)	0.99	0.80(0.30-2.16)	0.66	1.39(0.78-2.48)	0.26
Less poor	0.62(0.20-1.90)	0.40	1.74(0.53-5.77)	0.91	1.20(0.67-2.14)	0.53
Least poor	1.57(0.28-8.59)	0.60	1.22(0.39-3.84)	0.73	1.22(0.63-2.34)	0.55
Area of residence						
Asutsuare (RC)	1.00		1.00		1.00	
Ayikuma	2.83(0.46-17.17)	0.26	1.88(0.45-7.79)	0.38	1.78(0.79-4.01)	0.17
Dodowa*	0.59(0.47-2.47)	0.47	0.97(0.24-3.93)	0.97	2.65(1.01-6.95)	0.05
Dawa	0.61(0.16-2.39)	0.48	1.60(0.39-6.53)	0.66	1.80(0.89-3.66)	0.10
Ningo	2.22(0.44-11.22)	0.33	0.52(0.12-2.13)	0.36	1.12(0.50-2.53)	0.78
Osuwem	0.79(0.24-2.58)	0.69	0.88(0.23-3.35)	0.85	1.37(0.61-3.06)	0.44
Prampram	1.64(0.35-7.62)	0.64	1.25(0.36-4.28)	0.73	0.66(0.35-1.23)	0.19

RC: Reference Category



Conclusion

- Coverage rate was about 86% in 2006 which was a 3% increase compared to 2005 (83%) but declined to about 84% in 2007.
- Drop-out rate, respectively rose by eight (8) percent for Polio vaccine and four (4) percent for DPT/Pentavalent in 2006 compared to the year 2005 but declined in 2007.
- Place of delivery, area of residence and the stability of mothers' marital unions were found to contribute positively to child's completion of the recommended vaccines and there is therefore the need for further investigate to identify other predictive factors since these factors do not fully explain the prevalence, patterns and trends in child health care.



Recommendation

- Promotion of door-step health care services by programme planners and policy makers (eg: MOH through to its district level);
 - constraints in health delivery systems are removed;
 - competing health priorities are given a second look;
 - providing the needed human and financial resources to make it possible for public health programmes to reach out to the less endowed families, the minorities and to those residing in remote residence.

- Intensification of education on the importance of child immunization;
 - by ‘hammering’ on the completion of the recommended vaccines within the first year of life.

- Promoting male involvement in child immunization like in other health priority areas.



Acknowledgement

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