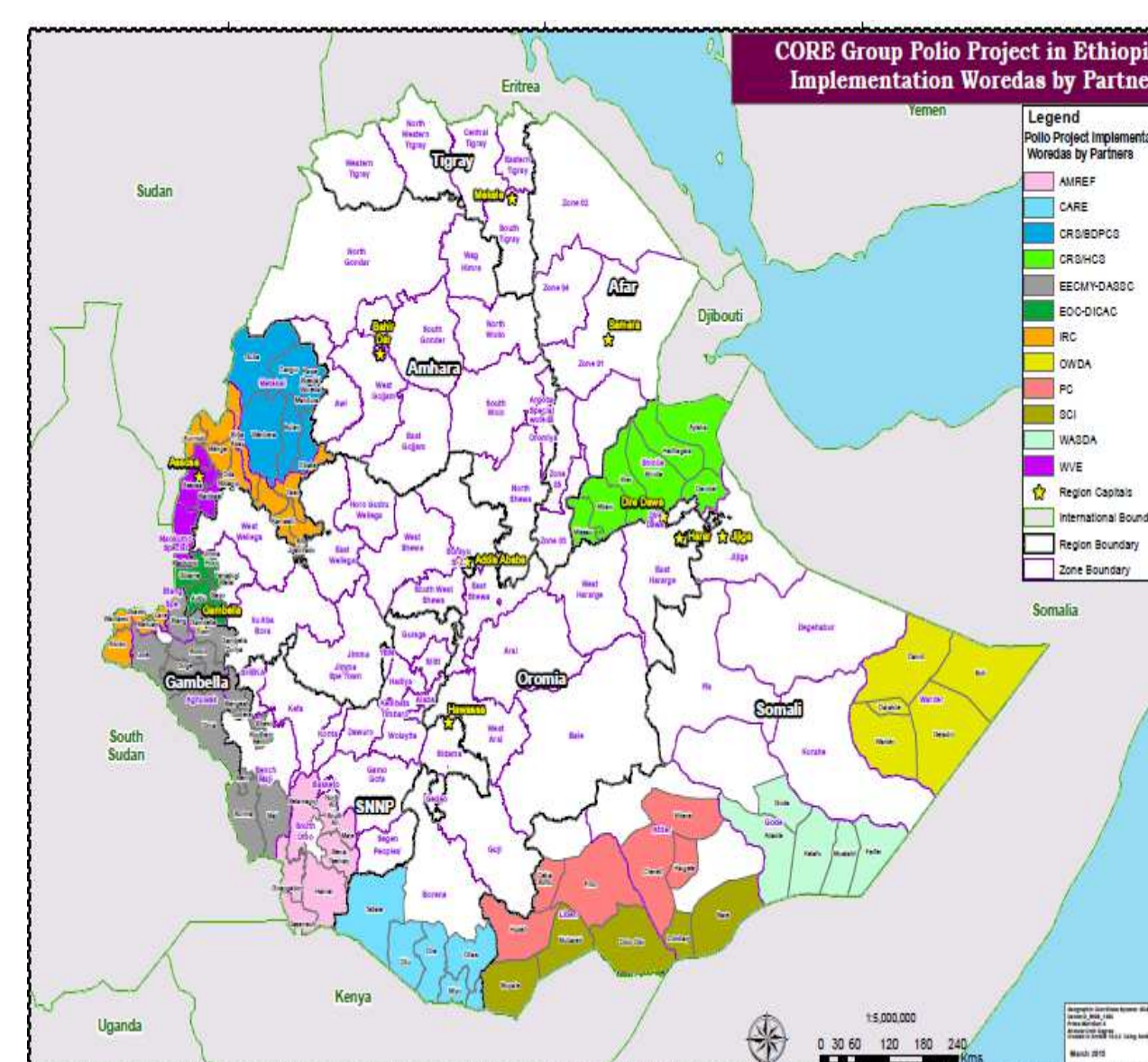


Evaluate child vaccination timing and interval between doses in hard to reach, pastoral and semi-pastoralist areas in Ethiopia: Evidence from CORE Group Polio Project implementation areas

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BACKGROUND:

- Immunization is one of the most powerful and cost-effective public health interventions to prevent debilitating illness and disability and saves two to three millions of lives every year,
- Most vaccines in the immunization schedule require two or more doses to trigger adequate immune response; appropriate timing, keeping interval between vaccine doses and completion of all vaccine doses are important to attain optimal protection,
- Funded by USAID, the CORE Group Polio Project (CGPP) is being implemented in underserved, hard to reach, pastoralist & semi-pastoralist communities along the international border of Ethiopia,
- One of its priorities is to improve routine immunization coverage and quality in its operational areas.



STUDY OBJECTIVE:

To evaluate timeliness of vaccines given, assess interval between vaccine doses identify associated maternal factors among children 12 to 23 months of age.

METHODS:

A cross-sectional descriptive study that employed a 30 by 10 modified WHO EPI cluster sampling survey was used. Considering pastoral and semi-pastoral areas, a total of 60 clusters with sample of 600 children age 12-23 months of age and mothers or caretakers were included from 51 Woredas/districts and 14 zones. Data was collected using Smart phones loaded with Open Data Kit (ODK) system and exported to STATA 12.0 for data description and analysis.

RESULTS:

- From the planned sample of 600 children 12-23 month of age, complete response was obtained from 577 (96.2%) respondents, 2 (0.3%) refused, and 5 (0.8%) excluded due to incomplete data and the remaining 16 (2.7%) were not at home during the survey period,
- Nearly fifty five percent (54.8%) were from pastoralist areas. About 51% of the respondents were Muslim and 68% were illiterate,
- More than one-fifth (21.9%) of children have received at least one vaccine dose earlier than the recommended minimum age. The proportion of children who had received early vaccine doses ranged from 32.9% measles vaccine before 9 months to 23.8% for first dose of Rota virus vaccine before 6 weeks,
- Nearly half (47.7%) of children received at least one subsequent dose earlier than 4 weeks interval. Early administration of the second doses of OPV (11.9%), Pentavalent (11.6%) and PCV (11.5%) were higher compared to the third doses of OPV (7.3%), Pentavalent (7.5%) and PCV (8.5%),
- Almost *sixty percent* (58.7%) of children received at least one timely invalid dose,

RESULTS ...

Table: timely invalid vaccination doses by mothers/caretakers characteristics and child sex in CGPP implementation areas, July 2015.

Caretakers/Child Characteristics	No.	At least one timely invalid dose		P-value	At least one early first dose		P-value	At least one early interval		P-Value
		No.	%		No.	%		No.	%	
Residence										
Semi-pastoralist	230	140	60.9	0.275	54	23.5	0.342	115	50	0.268
Pastoralist	145	80	55.2		28	19.3		64	44.1	
Educational Status										
At least primary level	149	88	59.1	0.900	33	22.1	0.915	75	50.3	0.413
No education	226	132	58.4		49	21.7		104	46	
Religion										
Islam	150	87	58	0.729	28	18.7	0.145	72	48	0.928
Any Christian	200	120	60		51	25.5		96	48	
Others	25	13	52		3	12		11	44	
Age group										
30+	110	60	54.5	0.296	23	20.9	0.773	48	43.6	0.306
< 30	265	160	60.4		59	22.3		131	49.4	
Occupation										
Housewife	238	144	60.5	0.341	61	25.6	0.020	111	46.6	0.576
Not housewife	137	76	55.5		21	15.3		68	49.6	
Sex of the child										
Male	176	106	60.2	0.564	38	21.6	0.903	86	48.9	0.680
Female	199	114	57.3		44	22.1		93	46.7	
Total	375	220	58.7		82	21.9		179	47.7	

CONCLUSION AND RECOMMENDATIONS:

- Children who received vaccination earlier than the recommended age (later for OPV 0) and before minimum interval of four weeks were found to be higher,
- Maternal characteristics (such as residence, religion, education, occupation, age and sex of child) have no significant association with vaccination timing and interval between doses,
 - Strong interpersonal communication between mothers and vaccinators should be in place to improve timely vaccine doses,
 - Health workers need to practice proper age screening for timely vaccine commencement and keeping interval between consecutive doses.