

## QUALITY ASSESSMENT AND IMPACT OF PARENT LITERACY ON NATIONAL IMMUNIZATION DAYS CAMPAIGN IN DISTRICT JAMSHORO SINDH-PAKISTAN

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### ABSTRACT

*This study was designed to assess quality of National Immunization Days (NIDs) for Oral Polio Vaccination campaign by specific indicators like age, sex day wise attendance of children, their parents literacy level and distance from house to reach the camp. The arrangements for social mobilization and publicity material were also inspected. The study is descriptive and cross sectional carried on 187 under five children who were brought at fixed oral polio vaccination centre opened in EPI centre in OPD department of Liaquat University Hospital Jamshoro branch. Study was conducted from 7<sup>th</sup> August to 11<sup>th</sup> August 2007 during NIDs round of five days. Data was analyzed on SPSS version 14. Children who were brought to OPV Centre were included in study. Children who were given drops by mobile teams at homes were excluded. The five day NIDS campaign data showed that 187 children of under five years were registered and vaccinated with oral polio drops, the mean number of children per day was 37.4 with Standard Deviation  $\pm 30.4$  and Median was 33 children. 51.8% children were male and 49.2% were female. 9.1% in the age of 1 to 29 days and 25.1% in age between one month to 11 months. Majority of parents who brought children were illiterate and came from distance more than 5km. Quality of physical arrangements, like publicity material, social mobilization, site and furniture as well cold chain and vaccine supply was satisfactory. Study concluded that it was high quality NIDs campaign in Jamshoro District of Sindh and pointed that in 2008 Pakistan may be polio free country.*

**Keywords:** *Poliomyelitis, NIDs, Eradication.*

### INTRODUCTION

Polio is originally Greek word which means grey myelitis refers to spinal cord inflammation hence diseases is called poliomyelitis. It is observed that 90% polio cases are without any symptom. In fewer than 1% cases it enters motor neuron of central nervous system and causes acute flaccid paralysis. Spinal polio is most common form, another type is bulbar paralysis of muscles innervated by cranial nerves<sup>1-4</sup> Polio was first recognized in 1840 by Jacob Heine and virus was identified in 1908 by Karl Landsteir.<sup>5,6</sup> The era of vaccine was started when Jones Salk developed vaccine in 1952 followed by oral vaccine developed by Albert Sabin after a gap of decade in 1962. The joint efforts of WHO, UNICEF and Rotary International could succeed in global eradication of Polio. Hence global efforts had been launched from 1988 these efforts have reduced annual diagnosed cases from 35000 cases in 1988 to 1310 cases in 2007 showing 99% reduction.<sup>7</sup>

Expanded Programme on Immunization (EPI) in Pakistan was started in 1974, polio drops were given through its routine services but eradication of polio was added in this programme 1994 with a

target to eradicate it by 2005 as the goal given by World Health Organization.<sup>8</sup>

Hopefully polio will be eradicated like small pox, this will be another success story after 28 years gap (after 1986) and world will see that polio will be wiped out from this planet. More than 60 rounds of nationwide level of administering oral polio vaccine (OPV) to under five children have been undertaken in the Pakistan but polio eradication target is not achieved till 2007. Hence there is growing perception among officials of WHO and UNICEF that this failure is because of the poor campaign methodology and non-cooperation of successive governments. Poliomyelitis viruses are of three types: In the year 2002 only seven countries had polio cases among them. Indian sub-continent reported 89% cases and 10% were reported from West Africa and 1% from other countries. The Europe became free in 1998 and last case occurred in Turkey in November 1998.<sup>9</sup> Polio eradication had been officially started in Pakistan since 1993. There is increasing emphasis for good quality campaign of National Immunization Days (NIDs) to eradicate polio in Pakistan.

**Rationale:** We have selected oral polio vaccination centre in OPD of Liaquat University Hospital Jamshoro which is administered and staffed by district health department Jamshoro as fixed EPI centre hence can be taken as representative of NIDs centres in Sindh. Keeping closeness and co-operation of staff and district health officers this centre was selected for study purpose.

**OBJECTIVES**

- 1) To assess quality of NIDs Oral Polio Vaccination campaign by specific indicators
- 2) To measure sequence of first, second, middle and last days in terms of utilization i.e bringing children to vaccination point.
- 3) To record literacy level of parents and home distance from parents under 5 children brought to fixed centre.
- 4) To collect data on coverage of children in different age groups.
- 5) To conduct and record physical inspection and make inventory of social mobilization materials and site arrangements.
- 6) To analyze data and suggest improvement for high quality campaign in future.

**MATERIAL & METHODS**

*Study Design:*

The study is descriptive and cross sectional on 187 children. They were brought at fixed oral polio vaccination centre opened in EPI centre in OPD department of Liaquat University Hospital Jamshoro.

**Duration:**

Study was conducted in 2007 and data of NIDS round of five days campaign from 7<sup>th</sup> August to 11 August was collected on especially designed protocol/observation form concerning information about parents' education and distance from oral

polio centre and home as well actual age of children. An inventory of physical inspection to note publicity material display for social mobilisation, site and other arrangements like vaccine supply and cold chain etc.

*Data Analysis:*

SPSS version 14 computer software programme was used for data analysis.

*Inclusion Criteria:*

Children who were brought to OPV Centre were included in study.

*Exclusion Criteria:*

Children who were given drops by mobile teams at homes were excluded.

**RESULTS**

1. The five day NIDS campaign data showed that 187 children of under five were registered and vaccinated with oral polio drops. The daywise break up of data reveals that 85 (45.4%) children came on day one, 33 (17.6%) came on day two, 22 (11.7%) came on day three, 42 (22.4) on day four and 5 (2.6%) on day five which was last days of campaign. The statistical analysis showed mean number of children per day 37.4 with standard deviation  $\pm$  30.4 and median was 33 children (Table 1).
2. The same table showed that 97 (51.8%) were male children and 90 (49.8%) were females.
3. Regarding age groups 18 (9.1%) were in age of 1 to 29 days 47 (25.1%) were in age of 1 to 11 months, 19 (10.1%) were in one-year of age, 30 (16.1%) in age of 2 years, 27 (14.4%) in age of 3 years, 23 (12.2%) in age of 4 years and 23 (12.2%) were in age of less than five years (Table 2).
4. The table also gives the parents literacy level, which showed that 119 (63.4%) parents were illiterate while 68 (36.6%) were literate.
5. Regarding the distance of home from NIDS Camp centre there were 91 (48.7%) children whose houses were at distance of less than 5 km while 96 (51.3%) children whose homes were at a distance of more than 5 km from which these children were carried on laps and shoulders by parents.
6. The table giving physical inspection inventory showed that banners, pamphlets, site, electricity, furni-

**Table 1:** Showing sex and day wise registration of children at five days NIDs campaign for oral polio drops vaccination (7-8-2007 to 11-8=2007).

Day of NIDS	Male Children	Female Children	Total %
One	44	41	85 45.5
Two	33	13	20 17.6
Three	12	10	22 11.7
Four	26	19	42 22.5
Five	05	00	05 2.7
<b>Total</b>	97 (51.8%)	90 (49.2%)	187 (100%)

Data Analysis, Mean SD 37.4 $\pm$  30.4, Median: 33

**Table 2:** Showing age of children, male to female sex and their parents literacy status as well distance of house from NIDS camp at fixed Centre N=187.

Age	Male No %	Female	Literate	Illiterate	Near < 5 KM	Away > 5 KM
1-30 Days	7	11	9	9	7	11
1-11 months	30	17	19	28	18	29
1 Year	7	12	4	15	16	3
2 Year	7	23	14	16	12	18
3 Year	14	13	12	15	16	11
4 Year	18	5	5	18	12	11
5 Year	14	9	5	18	10	13
<b>Total</b>	97 (51.2%)	90 (49.2%)	68 (36.4)	119 (63.6%)	91 (48.7%)	96 (51.3%)

**Table 3:** Showing Physical inspection /inventory of quality of NIDS activities and Site arrangements.

Indicator	Quality Score
Social mobilization	Satisfactory
Banner large size one	Satisfactory
Posters six	Satisfactory
Site access	Satisfactory
Furniture	Satisfactory
Electricity	Satisfactory
Staff cooperation	Satisfactory
Record keeping	Satisfactory
Vaccine and cold chain	Satisfactory

ture, record keeping and vaccine cold chain were of satisfactory quality and cooperation of vaccinator also scored satisfactory (Table 3).

## DISCUSSION

Poliomyelitis had been remained worldwide as epidemic from 1840 to 1950s. Since the development of polio vaccine, the incidence of the disease was greatly reduced. Outbreaks still occur in the developed world, usually in non-immunised groups, often following recent travel to a region where the disease is common. Thanks to a massive global eradication campaign over the past 20 years. By the end of 2005 polio existed only in four countries i.e., Nigeria, India, Pakistan, and Afghanistan.<sup>10</sup> The quality assessment of NIDS campaign in Pakistan is important as transmission is contained to single digit of 6 which was four digit in the start at 1993 i.e., there were 1803 confirmed cases in 1994. Hence over all quality of NIDS campaign remained satisfactory and same trend is confirmed by our small study. Among them 9.6% children were new born of less than one month and 25.1% children were less than a year, This

gives a fair picture that new borns and infants were getting polio drops as well children under five were also brought, for the drops quality of awareness was testified that out of 187, 63.4% children had illiterate parents whereas 36.6% had literate parents. It was therefore considered that social mobilisation and awareness were of high level. An other point showed good quality that 51.3% children came from more than 5Km distance, while 48.7% came from less than 5 km distance. The qualitative assessment of physical inventory related publicity material, social mobilisation, site, furniture, light cooperation and cold chain and supply scored satisfactory as in National surveillance Bulletin survey.<sup>11</sup>

It is **concluded** that in our quality assessment study on 187 under five children at Jamshoro Sindh, it was found to be high quality NIDS campaign. This grass root level polio campaign was a successful effort under EPI Program Sindh and District Health Department Jamshoro, which indicates that polio will perhaps be eradicated from Pakistan in current year of 2008.

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