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Subject: India DHS 2015-16 Sample size at domain level for Full Immunization Coverage 12-23 mth

Posted by [drshyams](#) on Sat, 09 Apr 2016 07:00:06 GMT

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Hi,

I am Dr. Shyam from India working for polio surveillance and strengthening of routine immunization.

My question is related to sample size estimation for India DHS 2015-2016 especially for child health related indicators at domain (district) level.

The India DHS 2015-2016 (NFHS-4) for the first time provides district level estimates for many important health indicators. Primary respondent for this survey are women 15-49 years of age and the sample size at domain level (district) has been estimated in terms of number of women 15-49 years of age.

For example in State of Madhya Pradesh 62,803 women were interviewed but if we come to district level, in District of Bhind 1049 women were interviewed.

My question is - this much sample size is adequate if we are estimating the indicators for women health, but when we are estimating some infant or child indicator for example "full immunization coverage (FIC) in children aged 12-23 month" is that sample size calculated for women interview suffice?.

Based on the birth rate, only one out of ten women interviewed are likely to have a child in this age-group so the effective sample size for 12-23 month aged month children will only be around 100 for district Bhind. Is a sample size of 100 is adequate for a district to estimate the full immunization coverage (FIC) in children 12-23 month and if so will the confidence interval width will be within acceptable range?

As per my calculation for estimated Full immunization coverage (FIC) of 50% with a confidence coefficient of 95% and design effect of 1.5 if we are having sample size of 100 the confidence interval width is coming around 12% which is highly unacceptable.

The district fact sheet for District Bhind is attached.

Please guide.

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#### File Attachments

1) [Bhind\\_NFHS4.pdf](#), downloaded 665 times

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Subject: Re: India DHS 2015-16 Sample size at domain level for Full Immunization Coverage 12-23 mth

Posted by [Bridgette-DHS](#) on Tue, 26 Apr 2016 10:09:43 GMT

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Following is a response from Senior DHS Specialist, Fred Arnold:

The required sample size for NFHS-4 was calculated to allow reasonably reliable estimates of the percentage of children born in the last five years who received 3+ antenatal care visits. For any smaller groups, the relative standard error will be wider. The number of children age 12-23 months is one of the smallest groups in the survey, so the confidence intervals will naturally be relatively wide. I think that your assumptions of about 10% of women having a child that age and a design effect of 1.5 are reasonable. NFHS-4 suppresses any estimates based on fewer than 25 unweighted cases and puts parentheses around any estimates that are based on 25-49 unweighted cases so that the reader knows that the estimates are based on a small number of unweighted cases. For many districts, the vaccination coverage results will need to be interpreted with caution due the small denominators, but the estimates can still be used.

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