ESTIMATES OF SAMPLING ERRORS

Appendix **D**

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the third National Family Health Survey 2005-06 (NFHS-3) to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in NFHS-3 is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

A sampling error is usually measured in terms of the *standard error* for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the NFHS-3 sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for NFHS-3 is programmed in SAS. This procedure uses the Taylor linearization method for variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as total fertility rate and child mortality rates.

The Taylor linearization method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y, and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance:

$$SE^2(r) = var(r) = \frac{1-f}{x^2} \sum_{h=1}^{H} \left[\frac{m_h}{m_h - 1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

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in which

$$z_{hi} = y_{hi} - rx_{hi} \text{, and } z_h = y_h - rx_h$$

where h represents the stratum which varies from 1 to H,
        m_h is the total number of clusters selected in the hth stratum,
        y_{hi} is the sum of the weighted values of variable y in the ith cluster in the hth stratum,
        x_{hi} is the sum of the weighted number of cases in the ith cluster in the hth stratum, and
        f is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulae. Each replication considers *all but one* clusters in the calculation of the estimates. Pseudo-independent replications are thus created. In the NFHS-3 sample, there were 3850 non-empty clusters. Hence, 3850 replications were created. The variance of a rate r is calculated as follows:

$$SE^2(r) = var(r) = \frac{1}{k(k-1)} \sum_{i=1}^{k} (r_i - r)^2$$

in which

$$r_i = kr - (k-1)r_{(i)}$$

where r is the estimate computed from the full sample of 3850 clusters,
        $r_{(i)}$ is the estimate computed from the reduced sample of 3849 clusters (i^{th} cluster excluded), and
        k is the total number of clusters.

In addition to the standard error, the design effect (DEFT) for each estimate is also computed, which is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. Relative standard error (SE/R) and confidence limits (R±2SE) for each estimate are also computed.

Sampling errors for NFHS-3 are calculated for selected variables considered to be of primary interest for woman's survey and for man's surveys, respectively. The results are presented in this appendix for the country as a whole, and for the urban and rural areas. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table D.1. Table D.2 presents the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits (R±2SE), for each variable. The DEFT is

considered undefined when the standard error for a simple random sample is zero (when the estimate is close to 0 or 1). In the case of the total fertility rate, the number of unweighted cases is not relevant, as there is no known unweighted value for woman-years of exposure to childbearing.

Table D.1 List of variables for sampling errors, India, 2005-06

Variable	Estimate	Base population
Sex ratio (females per 1,000 males)	Ratio	De facto household population, all ages
No education	Proportion	De facto household population age 6+
Tuberculosis prevalence	Rate	100,000 usual household residents
Using adequately iodized salt	Proportion	Households
Urban residence	Proportion	Women/men age 15-49
No education	Proportion	Women/men age 15-49
Completed 12 or more years of education	Proportion	Women/men age 15-49
Never married, including married *gauna* not performed	Proportion	Women/men age 15-49
Currently married	Proportion	Women/men age 15-49
Married before age 18	Proportion	Women age 20-49
Married before age 21	Proportion	Men age 25-49
Children ever born	Mean	Women age 15-49
Children surviving	Mean	Women age 15-49
Ever used any contraceptive method	Proportion	Currently married women age 15-49
Currently using any method	Proportion	Currently married women age 15-49
Currently using a modern method	Proportion	Currently married women age 15-49
Currently using a traditional method	Proportion	Currently married women age 15-49
Currently using female sterilization	Proportion	Currently married women age 15-49
Currently using pill	Proportion	Currently married women age 15-49
Currently using IUD	Proportion	Currently married women age 15-49
Currently using condom	Proportion	Currently married women age 15-49
Using public medical sector source of contraception	Proportion	Women age 15-49 currently using modern methods of contraception
Want no more children	Proportion	Currently married women/men age 15-49
Want to delay next birth at least 2 years	Proportion	Currently married women/men age 15-49
Ideal number of children	Mean	Women/men age 15-49
Mother received ANC from health personnel	Proportion	Women with at least one birth in last five years (last birth)
Took iron or folic acid (IFA) for 90 days or more	Proportion	Women with at least one birth in last five years (last birth)
Births delivered by a skilled provider	Proportion	Births in last 5 years
Institutional delivery	Proportion	Births in last 5 years
Postpartum check for mother within 2 days of birth	Proportion	Women with at least one birth in last five years (last birth)
Treated with ORS packets	Proportion	Children under age 5 years with diarrhoea in last 2 weeks
Children with diarrhoea taken to a health provider	Proportion	Children under age 5 years with diarrhoea in last 2 weeks
Child's vaccination card seen by interviewer	Proportion	Children age 12-23 months
Child received BCG vaccination	Proportion	Children age 12-23 months
Child received DPT vaccination (3 doses)	Proportion	Children age 12-23 months
Child received polio vaccination (3 doses)	Proportion	Children age 12-23 months
Child received measles vaccination	Proportion	Children age 12-23 months
Child fully vaccinated	Proportion	Children age 12-23 months
Given vitamin A supplement in last 6 months	Proportion	Children age 6-59 months
Ever experienced physical or sexual violence	Proportion	Women age 15-49
Weight-for-height, wasting (below -2SD)	Proportion	Children under age 5 years who were measured
Height-for-age, stunting (below -2SD)	Proportion	Children under age 5 years who were measured
Weight-for-age, underweight (below -2SD)	Proportion	Children under age 5 years who were measured
Body mass index (BMI) < 18.5	Proportion	Women/men age 15-49 who were measured
Body mass index (BMI) ≥ 25.0	Proportion	Women/men age 15-49 who were measured
Have heard of AIDS	Proportion	Women/men age 15-49
Comprehensive knowledge about HIV/AIDS	Proportion	Women/men age 15-49
Total and age-specific fertility rates (last 3 years)	Rate	Women
Mortality rates	Rate	Births in last 5 years
Women/men with any anaemia	Proportion	Women/men age 15-49
Children with any anaemia	Proportion	Children age 6-59 months
HIV prevalence	Percentage	Women/men/total age 15-24, women/men/total age 15-49

Table D.2 Sampling errors, India, 2005-06

Variable/residence	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)			R-2SE	R+2SE
Sex ratio (females per 1,000 males, all ages)								
Urban	939	5.331	116,901	82,562	1.732	0.006	928	949
Rural	1,030	4.220	140,198	175,144	1.416	0.004	1,021	1,038
Total	1,000	3.357	257,099	257,707	1.554	0.003	994	1,007
No education (household female population age 6+ years)								
Urban	0.253	0.006	98,040	69,184	3.790	0.024	0.241	0.265
Rural	0.486	0.004	124,562	156,130	2.465	0.008	0.479	0.494
Total	0.415	0.003	222,602	225,314	2.862	0.008	0.408	0.421
No education (household male population age 6+ years)								
Urban	0.125	0.004	104,202	73,341	3.381	0.034	0.116	0.133
Rural	0.265	0.004	120,273	148,779	2.477	0.014	0.258	0.273
Total	0.219	0.003	224,475	222,120	2.769	0.013	0.213	0.225
Tuberculosis prevalence (per 100,000 usual household residents)								
Urban	319	20.364	229,391	162,133	1.626	0.064	278	359
Rural	502	20.329	286,860	359,894	1.494	0.041	461	542
Total	445	15.377	516,251	522,027	1.605	0.035	414	475
Using adequately iodized salt (households)								
Urban	0.715	0.009	49,370	34,950	4.659	0.013	0.696	0.734
Rural	0.412	0.006	58,081	72,504	3.020	0.015	0.400	0.424
Total	0.511	0.005	107,451	107,455	3.466	0.010	0.500	0.521
Urban residence (women age 15-49)								
Total	0.328	0.006	124,385	124,385	4.314	0.018	0.317	0.340
Urban residence (men age 15-49)								
Total	0.366	0.006	69,834	69,751	3.438	0.017	0.353	0.378
No education (women age 15-49)								
Urban	0.220	0.007	56,961	40,817	3.949	0.031	0.206	0.233
Rural	0.497	0.005	67,424	83,568	2.689	0.010	0.487	0.507
Total	0.406	0.004	124,385	124,385	3.091	0.011	0.397	0.415
No education (men age 15-49)								
Urban	0.095	0.004	35,930	25,504	2.647	0.043	0.086	0.103
Rural	0.230	0.005	33,904	44,247	2.110	0.021	0.220	0.239
Total	0.180	0.003	69,834	69,751	2.378	0.019	0.173	0.187
Completed 12 or more years of education (women age 15-49)								
Urban	0.244	0.007	56,961	40,817	3.802	0.028	0.230	0.258
Rural	0.059	0.002	67,424	83,568	2.007	0.031	0.055	0.063
Total	0.120	0.003	124,385	124,385	2.846	0.022	0.114	0.125
Completed 12 or more years of education (men age 15-49)								
Urban	0.305	0.008	35,930	25,504	3.109	0.025	0.290	0.320
Rural	0.135	0.003	33,904	44,247	1.803	0.025	0.128	0.142
Total	0.197	0.004	69,834	69,751	2.357	0.018	0.190	0.204
Never married, including married *gauna* not performed (women age 15-49)								
Urban	0.253	0.003	56,961	40,817	1.699	0.012	0.247	0.259
Rural	0.181	0.002	67,424	83,568	1.471	0.012	0.177	0.185
Total	0.205	0.002	124,385	124,385	1.587	0.009	0.201	0.208
Never married, including married *gauna* not performed (men age 15-49)								
Urban	0.425	0.004	35,930	25,504	1.723	0.011	0.416	0.434
Rural	0.327	0.004	33,904	44,247	1.435	0.011	0.320	0.334
Total	0.363	0.003	69,834	69,751	1.580	0.008	0.357	0.369
Currently married (women age 15-49)								
Urban	0.701	0.003	56,961	40,817	1.665	0.005	0.694	0.707
Rural	0.772	0.002	67,424	83,568	1.420	0.003	0.767	0.776
Total	0.748	0.002	124,385	124,385	1.551	0.003	0.745	0.752
Currently married (men age 15-49)								
Urban	0.566	0.005	35,930	25,504	1.722	0.008	0.557	0.575
Rural	0.657	0.004	33,904	44,247	1.427	0.006	0.650	0.664
Total	0.624	0.003	69,834	69,751	1.574	0.005	0.618	0.629

Continued…

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)			R-2SE	R+2SE
Table D.2 Sampling errors, India, 2005-06—*Continued*								
Married before age 18 (women age 20-49)								
Urban	0.415	0.007	46,580	33,355	3.180	0.018	0.400	0.429
Rural	0.662	0.004	53,850	66,219	2.074	0.006	0.654	0.671
Total	0.579	0.004	100,430	99,574	2.465	0.007	0.572	0.587
Married before age 21 (men age 25-49)								
Urban	0.249	0.007	22,412	16,068	2.446	0.028	0.235	0.263
Rural	0.467	0.006	21,884	28,685	1.719	0.012	0.456	0.479
Total	0.389	0.005	44,296	44,754	2.023	0.012	0.380	0.398
Children ever born (women age 15-49)								
Urban	1.874	0.019	56,961	40,817	2.424	0.010	1.836	1.912
Rural	2.446	0.013	67,424	83,568	1.537	0.005	2.419	2.472
Total	2.258	0.011	124,385	124,385	1.815	0.005	2.236	2.280
Children surviving (women age 15-49)								
Urban	1.717	0.016	56,961	40,817	2.294	0.009	1.686	1.749
Rural	2.131	0.011	67,424	83,568	1.496	0.005	2.109	2.152
Total	1.995	0.009	124,385	124,385	1.749	0.005	1.977	2.013
Ever used any contraceptive method (currently married women age 15-49)								
Urban	0.743	0.005	38,382	28,604	2.292	0.007	0.732	0.753
Rural	0.624	0.004	49,543	64,485	2.030	0.007	0.615	0.633
Total	0.660	0.004	87,925	93,089	2.194	0.005	0.653	0.667
Currently using any method (currently married women age 15-49)								
Urban	0.640	0.005	38,382	28,604	2.080	0.008	0.629	0.650
Rural	0.530	0.004	49,543	64,485	1.890	0.008	0.521	0.538
Total	0.563	0.003	87,925	93,089	2.022	0.006	0.557	0.570
Currently using a modern method (currently married women age 15-49)								
Urban	0.558	0.006	38,382	28,604	2.191	0.010	0.547	0.569
Rural	0.453	0.004	49,543	64,485	1.865	0.009	0.445	0.461
Total	0.485	0.003	87,925	93,089	2.024	0.007	0.479	0.492
Currently using a traditional method (currently married women age 15-49)								
Urban	0.081	0.003	38,382	28,604	2.315	0.040	0.075	0.088
Rural	0.076	0.002	49,543	64,485	1.742	0.027	0.072	0.081
Total	0.078	0.002	87,925	93,089	1.934	0.022	0.074	0.081
Currently using female sterilization (currently married women age 15-49)								
Urban	0.378	0.006	38,382	28,604	2.623	0.017	0.365	0.391
Rural	0.371	0.004	49,543	64,485	1.942	0.011	0.363	0.379
Total	0.373	0.004	87,925	93,089	2.168	0.009	0.366	0.380
Currently using pill (currently married women age 15-49)								
Urban	0.038	0.002	38,382	28,604	2.036	0.052	0.034	0.042
Rural	0.028	0.001	49,543	64,485	1.629	0.043	0.025	0.030
Total	0.031	0.001	87,925	93,089	1.777	0.034	0.029	0.033
Currently using IUD (currently married women age 15-49)								
Urban	0.032	0.002	38,382	28,604	1.885	0.053	0.029	0.036
Rural	0.011	0.001	49,543	64,485	1.271	0.055	0.010	0.012
Total	0.017	0.001	87,925	93,089	1.522	0.039	0.016	0.019
Currently using condom (currently married women age 15-49)								
Urban	0.098	0.003	38,382	28,604	2.096	0.033	0.091	0.104
Rural	0.032	0.001	49,543	64,485	1.418	0.035	0.030	0.035
Total	0.052	0.001	87,925	93,089	1.715	0.025	0.050	0.055
Using public medical sector source of contraception (women age 15-49 currently using modern methods of contraception)								
Urban	0.568	0.009	21,781	16,685	2.613	0.015	0.550	0.585
Rural	0.782	0.005	23,434	30,556	1.853	0.006	0.772	0.792
Total	0.706	0.005	45,215	47,241	2.166	0.007	0.697	0.716
Want no more children (currently married women age 15-49)								
Urban	0.739	0.004	38,382	28,604	1.650	0.005	0.732	0.747
Rural	0.690	0.003	49,543	64,485	1.507	0.005	0.683	0.696
Total	0.705	0.002	87,925	93,089	1.607	0.004	0.700	0.710
Want no more children (currently married men age 15-49)								
Urban	0.713	0.005	19,405	14,434	1.648	0.008	0.702	0.723
Rural	0.703	0.004	21,169	29,068	1.398	0.006	0.694	0.712
Total	0.706	0.003	40,574	43,501	1.518	0.005	0.699	0.713

Continued…

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)			R-2SE	R+2SE

Table D.2 Sampling errors, India, 2005-06—*Continued*

Want to delay next birth at least 2 years (currently married women age 15-49)								
Urban	0.102	0.003	38,382	28,604	1.674	0.025	0.096	0.107
Rural	0.124	0.002	49,543	64,485	1.402	0.017	0.120	0.128
Total	0.117	0.002	87,925	93,089	1.519	0.014	0.114	0.121
Want to delay next birth at least 2 years (currently married men age 15-49)								
Urban	0.124	0.004	19,405	14,434	1.582	0.030	0.116	0.131
Rural	0.126	0.003	21,169	29,068	1.440	0.026	0.119	0.132
Total	0.125	0.003	40,574	43,501	1.534	0.020	0.120	0.130
Ideal number of children (women age 15-49)								
Urban	2.065	0.012	55,745	39,967	3.774	0.006	2.040	2.090
Rural	2.409	0.010	65,178	81,213	2.736	0.004	2.389	2.429
Total	2.295	0.008	120,923	121,181	3.085	0.003	2.279	2.311
Ideal number of children (men age 15-49)								
Urban	2.087	0.013	35,405	25,138	2.965	0.006	2.060	2.114
Rural	2.343	0.011	33,195	43,367	2.174	0.005	2.321	2.365
Total	2.249	0.009	68,600	68,505	2.477	0.004	2.232	2.266
Mother received ANC from health personnel (women with at least one birth in last five years, last birth)								
Urban	0.894	0.008	14,527	10,626	3.041	0.009	0.878	0.909
Rural	0.687	0.006	22,323	29,051	2.070	0.009	0.675	0.700
Total	0.743	0.005	36,850	39,677	2.331	0.007	0.732	0.753
Took iron or folic acid (IFA) for 90 days or more (women with at least one birth in last five years, last birth)								
Urban	0.348	0.009	14,527	10,626	2.375	0.027	0.329	0.367
Rural	0.188	0.004	22,323	29,051	1.601	0.022	0.180	0.197
Total	0.231	0.004	36,850	39,677	1.807	0.017	0.223	0.239
Births delivered by a skilled provider (births in the last five years)								
Urban	0.735	0.012	19,483	14,303	3.009	0.016	0.711	0.758
Rural	0.375	0.007	32,072	42,135	2.082	0.018	0.361	0.388
Total	0.466	0.006	51,555	56,438	2.354	0.013	0.454	0.478
Institutional delivery (births in the last five years)								
Urban	0.675	0.013	19,483	14,303	3.111	0.019	0.649	0.700
Rural	0.289	0.006	32,072	42,135	2.085	0.021	0.277	0.301
Total	0.387	0.006	51,555	56,438	2.371	0.015	0.375	0.399
Postpartum check for mother within 2 days of birth (last birth in last five years)								
Urban	0.610	0.011	14,527	10,626	2.735	0.018	0.588	0.633
Rural	0.286	0.006	22,323	29,051	1.841	0.019	0.275	0.297
Total	0.373	0.005	36,850	39,677	2.135	0.014	0.362	0.384
Treated with ORS packets (children under age 5 years with diarrhoea in last 2 weeks)								
Urban	0.326	0.018	1,691	1,215	1.500	0.056	0.290	0.363
Rural	0.238	0.011	2,749	3,540	1.274	0.045	0.216	0.259
Total	0.260	0.009	4,440	4,755	1.365	0.035	0.242	0.279
Children with diarrhoea taken to a health provider (children under age 5 years with diarrhoea in last 2 weeks)								
Urban	0.645	0.018	1,691	1,215	1.483	0.028	0.608	0.681
Rural	0.582	0.013	2,749	3,540	1.339	0.023	0.556	0.608
Total	0.598	0.011	4,440	4,755	1.426	0.018	0.577	0.620
Child's vaccination card seen by interviewer (children age 12-23 months)								
Urban	0.462	0.014	3,666	2,723	1.741	0.031	0.433	0.490
Rural	0.345	0.009	5,916	7,696	1.461	0.026	0.327	0.363
Total	0.375	0.008	9,582	10,419	1.572	0.020	0.360	0.391
Child received BCG vaccination (children age 12-23 months)								
Urban	0.869	0.010	3,666	2,723	1.801	0.012	0.848	0.889
Rural	0.751	0.009	5,916	7,696	1.622	0.012	0.732	0.769
Total	0.781	0.007	9,582	10,419	1.756	0.009	0.767	0.796
Child received DPT vaccination (3 doses) (children age 12-23 months)								
Urban	0.691	0.014	3,666	2,723	1.875	0.021	0.662	0.720
Rural	0.504	0.010	5,916	7,696	1.553	0.020	0.484	0.525
Total	0.553	0.009	9,582	10,419	1.700	0.015	0.536	0.570
Child received polio vaccination (3 doses) (children age 12-23 months)								
Urban	0.831	0.010	3,666	2,723	1.623	0.012	0.810	0.851
Rural	0.765	0.008	5,916	7,696	1.509	0.011	0.749	0.782
Total	0.782	0.007	9,582	10,419	1.613	0.009	0.769	0.796

Continued…

Table D.2 Sampling errors, India, 2005-06—*Continued*								
		Standard	Number of cases		Design	Relative	Confidence limits	
Variable/	Value	error	Unweighted	Weighted	effect	standard error		
residence	(R)	(SE)	(N)	(WN)	(DEFT)	(SE/R)	R-2SE	R+2SE
Child received measles vaccination (children age 12-23 months)								
Urban	0.718	0.013	3,666	2,723	1.767	0.018	0.691	0.744
Rural	0.542	0.010	5,916	7,696	1.549	0.018	0.522	0.562
Total	0.588	0.008	9,582	10,419	1.682	0.014	0.571	0.605
Child fully vaccinated (children age 12-23 months)								
Urban	0.576	0.015	3,666	2,723	1.789	0.025	0.547	0.605
Rural	0.386	0.009	5,916	7,696	1.470	0.024	0.367	0.404
Total	0.435	0.008	9,582	10,419	1.606	0.018	0.419	0.451
Given vitamin A supplement in last 6 months (children age 6-59 months)								
Urban	0.197	0.007	16,926	12,417	2.188	0.037	0.182	0.211
Rural	0.177	0.005	27,097	35,324	1.805	0.026	0.168	0.186
Total	0.182	0.004	44,023	47,742	1.960	0.021	0.175	0.190
Ever experienced physical or sexual violence (women age 15-49)								
Urban	0.294	0.007	37,877	27,371	2.792	0.022	0.281	0.307
Rural	0.383	0.005	45,826	56,332	2.187	0.013	0.373	0.392
Total	0.354	0.004	83,703	83,703	2.398	0.011	0.346	0.361
Weight-for-height, wasting (children under age 5 years who were measured and are below -2SD)								
Urban	0.169	0.005	15,694	11,337	1.762	0.032	0.159	0.180
Rural	0.207	0.004	26,846	35,318	1.414	0.017	0.200	0.214
Total	0.198	0.003	42,540	46,655	1.564	0.015	0.192	0.204
Height-for-age, stunting (children under age 5 years who were measured and are below -2SD)								
Urban	0.396	0.008	15,694	11,337	1.906	0.020	0.380	0.412
Rural	0.507	0.005	26,846	35,318	1.553	0.010	0.498	0.517
Total	0.480	0.004	42,540	46,655	1.698	0.009	0.472	0.489
Weight-for-age, underweight (children under age 5 years who were measured and are below -2SD)								
Urban	0.327	0.008	15,694	11,337	1.942	0.024	0.311	0.342
Rural	0.456	0.005	26,846	35,318	1.539	0.011	0.446	0.466
Total	0.425	0.004	42,540	46,655	1.701	0.010	0.416	0.433
Body mass index (BMI) < 18.5 (women age 15-49 who were measured)								
Urban	0.250	0.005	50,690	36,366	2.364	0.018	0.241	0.259
Rural	0.406	0.003	61,293	75,416	1.724	0.008	0.400	0.413
Total	0.356	0.003	111,983	111,781	1.972	0.008	0.350	0.361
Body mass index (BMI) < 18.5 (men age 15-49 who were measured)								
Urban	0.265	0.005	32,583	23,304	1.962	0.018	0.256	0.275
Rural	0.384	0.004	32,384	42,438	1.633	0.011	0.375	0.393
Total	0.342	0.003	64,967	65,742	1.818	0.010	0.335	0.349
Body mass index (BMI) >= 25.0 (women age 15-49 who were measured)								
Urban	0.235	0.005	50,690	36,366	2.520	0.020	0.225	0.244
Rural	0.074	0.002	61,293	75,416	1.646	0.024	0.071	0.078
Total	0.126	0.002	111,983	111,781	2.085	0.016	0.122	0.131
Body mass index (BMI) >= 25.0 (men age 15-49 who were measured)								
Urban	0.159	0.004	32,583	23,304	1.960	0.025	0.151	0.167
Rural	0.056	0.002	32,384	42,438	1.428	0.032	0.052	0.060
Total	0.093	0.002	64,967	65,742	1.678	0.020	0.089	0.096
Have heard of HIV/AIDS (women age 15-49)								
Urban	0.832	0.007	56,961	40,817	4.163	0.008	0.819	0.845
Rural	0.500	0.006	67,424	83,568	3.157	0.012	0.488	0.512
Total	0.609	0.005	124,385	124,385	3.565	0.008	0.599	0.619
Have heard of HIV/AIDS (men age 15-49)								
Urban	0.948	0.003	35,930	25,504	2.687	0.003	0.942	0.954
Rural	0.771	0.005	33,904	44,247	2.355	0.007	0.760	0.782
Total	0.836	0.004	69,834	69,751	2.656	0.004	0.828	0.843
Comprehensive knowledge about HIV/AIDS (women age 15-49)								
Urban	0.303	0.007	56,961	40,817	3.692	0.023	0.289	0.317
Rural	0.110	0.003	67,424	83,568	2.403	0.026	0.104	0.115
Total	0.173	0.003	124,385	124,385	2.940	0.018	0.167	0.179
Comprehensive knowledge about HIV/AIDS (men age 15-49)								
Urban	0.466	0.008	35,930	25,504	2.882	0.016	0.451	0.481
Rural	0.251	0.005	33,904	44,247	1.988	0.019	0.242	0.261
Total	0.330	0.004	69,834	69,751	2.383	0.013	0.321	0.338

Continued…

Table D.2 Sampling errors, India, 2005-06—*Continued*								
Variable/ residence	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Total fertility rate (last 3 years)								
Urban	2.064	0.038	na	115,817	1.999	0.019	1.988	2.141
Rural	2.977	0.039	na	234,526	1.573	0.013	2.900	3.055
Total	2.679	0.031	na	350,344	1.754	0.011	2.617	2.740
(15-19) age specific fertility rate (last 3 years)								
Urban	0.057	0.003	na	23,000	1.832	0.044	0.052	0.061
Rural	0.105	0.002	na	51,462	1.426	0.021	0.101	0.110
Total	0.090	0.002	na	74,461	1.589	0.019	0.087	0.094
(20-24) age specific fertility rate (last 3 years)								
Urban	0.166	0.004	na	21,969	1.744	0.022	0.159	0.173
Rural	0.231	0.003	na	44,583	1.399	0.013	0.225	0.236
Total	0.209	0.002	na	66,552	1.550	0.011	0.205	0.214
(25-29) age specific fertility rate (last 3 years)								
Urban	0.123	0.003	na	19,511	1.579	0.025	0.117	0.130
Rural	0.146	0.003	na	39,498	1.313	0.017	0.141	0.152
Total	0.139	0.002	na	59,010	1.430	0.014	0.135	0.143
(30-34) age specific fertility rate (last 3 years)								
Urban	0.048	0.002	na	17,367	1.571	0.045	0.044	0.053
Rural	0.069	0.002	na	34,469	1.378	0.031	0.065	0.074
Total	0.062	0.002	na	51,836	1.484	0.026	0.059	0.066
(35-39) age specific fertility rate (last 3 years)								
Urban	0.013	0.001	na	15,467	1.600	0.096	0.011	0.016
Rural	0.031	0.002	na	29,493	1.299	0.048	0.028	0.034
Total	0.025	0.001	na	44,959	1.433	0.043	0.023	0.027
(40-44) age specific fertility rate (last 3 years)								
Urban	0.004	0.001	na	12,116	1.630	0.209	0.002	0.006
Rural	0.009	0.001	na	23,505	1.242	0.098	0.007	0.011
Total	0.007	0.001	na	35,621	1.381	0.089	0.006	0.009
(45-49) age specific fertility rate (last 3 years)								
Urban	0.001	0.000	na	6,387	1.342	0.479	0.000	0.002
Rural	0.004	0.001	na	11,517	1.239	0.207	0.002	0.006
Total	0.003	0.001	na	17,904	1.356	0.192	0.002	0.004
Neonatal mortality (0-4 years)								
Urban	28.5	1.794	19,680	14,435	1.480	0.063	24.9	32.1
Rural	42.5	1.369	32,322	42,443	1.185	0.032	39.8	45.3
Total	39.0	1.130	52,002	56,878	1.314	0.029	36.7	41.2
Post-neonatal mortality (0-4 years)								
Urban	13.0	1.217	19,788	14,530	1.515	0.093	10.6	15.5
Rural	19.7	0.996	32,357	42,454	1.285	0.051	17.7	21.7
Total	18.0	0.807	52,145	56,984	1.404	0.045	16.4	19.6
Infant mortality (0-4 years)								
Urban	41.5	2.175	19,705	14,452	1.467	0.052	37.2	45.9
Rural	62.2	1.721	32,369	42,516	1.241	0.028	58.8	65.7
Total	57.0	1.417	52,074	56,968	1.363	0.025	54.1	59.8
Child mortality (0-4 years)								
Urban	10.6	1.063	20,014	14,775	1.465	0.100	8.5	12.7
Rural	21.0	1.083	32,709	43,087	1.360	0.051	18.9	23.2
Total	18.4	0.860	52,723	57,862	1.482	0.047	16.6	20.1
Under-five mortality (0-4 years)								
Urban	51.7	2.532	19,791	14,519	1.519	0.049	46.6	56.8
Rural	82.0	1.999	32,642	42,897	1.270	0.024	78.0	86.0
Total	74.3	1.661	52,433	57,416	1.401	0.022	71.0	77.6
Women with any anaemia (women age 15-49 years)								
Urban	0.509	0.005	49,813	36,967	2.421	0.010	0.499	0.520
Rural	0.574	0.004	62,901	79,888	1.916	0.007	0.566	0.581
Total	0.553	0.003	112,714	116,855	2.107	0.006	0.547	0.559
Men with any anaemia (men age 15-49 years)								
Urban	0.177	0.005	30,018	22,773	2.179	0.026	0.168	0.186
Rural	0.277	0.005	30,369	41,963	1.828	0.016	0.268	0.286
Total	0.242	0.003	60,387	64,736	2.037	0.014	0.235	0.249

Continued…

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)			R-2SE	R+2SE
Children with any anaemia (children age 6-59 months)								
Urban	0.630	0.008	13,445	10,133	1.850	0.012	0.614	0.645
Rural	0.715	0.004	23,687	32,255	1.534	0.006	0.706	0.724
Total	0.695	0.004	37,132	42,388	1.665	0.006	0.687	0.702
HIV prevalence (women age 15-24)								
Urban	0.161	0.075	9,365	6,382	1.805	0.464	0.012	0.311
Rural	0.092	0.029	10,332	13,896	0.983	0.318	0.034	0.151
Total	0.114	0.031	19,697	20,278	1.289	0.272	0.052	0.176
HIV prevalence (men age 15-24)								
Urban	0.113	0.049	9,149	6,025	1.399	0.435	0.015	0.211
Rural	0.080	0.028	8,016	10,465	0.886	0.350	0.024	0.136
Total	0.092	0.025	17,165	16,490	1.091	0.275	0.041	0.142
HIV prevalence (men and women age 15-24)								
Urban	0.138	0.046	18,514	12,408	1.674	0.331	0.046	0.229
Rural	0.087	0.020	18,348	24,361	0.940	0.236	0.046	0.128
Total	0.104	0.021	36,862	36,768	1.223	0.197	0.063	0.145
HIV prevalence (women age 15-49)								
Urban	0.287	0.056	25,738	17,475	1.682	0.195	0.175	0.399
Rural	0.182	0.023	27,115	35,856	0.890	0.127	0.136	0.228
Total	0.216	0.024	52,853	53,332	1.189	0.111	0.168	0.265
HIV prevalence (men age 15-49)								
Urban	0.411	0.065	24,240	16,502	1.578	0.158	0.281	0.541
Rural	0.324	0.044	22,810	30,009	1.166	0.135	0.237	0.412
Total	0.355	0.037	47,050	46,512	1.331	0.103	0.282	0.428
HIV prevalence (men and women age 15-49)								
Urban	0.347	0.044	49,978	33,978	1.676	0.127	0.259	0.435
Rural	0.247	0.027	49,925	65,866	1.215	0.109	0.193	0.301
Total	0.281	0.023	99,903	99,843	1.391	0.083	0.234	0.328

Table D.2 Sampling errors, India, 2005-06—*Continued*