APPENDIX A: SAMPLE IMPLEMENTATION

Table A.1: Sample implementation

Percent distribution of households and eligible women by results of the household and individual interviews, and household, eligible women and overall response rates, according to urban-rural residence and region, Nauru 2007

	Region															
Result	**Yaren**	**Boe**	**Aiwo**	**Buad**	**Denigomodu**	**Nibok**	**Uaboe**	**Baitasi**	**Ewa**	**Anetan**	**Anabar**	**Ijuw**	**Anibare**	**Meneng**	**Location**	**Total**
Selected households																
Completed (C)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	90.5	100.0	100.0	100.0	93.8	100.0	84.0	97.3
Household present but no competent respondent at home (HP)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.8
Household absent (HA)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	6.3	0.0	4.0	1.0
Dwelling vacant/address not a dwelling (DV)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.5
Dwelling destroy (DD)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.3
Other (O)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of sampled households	26	27	40	27	22	21	19	22	21	23	22	18	16	46	50	400
Household response rate (HRR)[1]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	93.3	99.2
Eligible women																
Completed (EWC)	97.5	96.5	94.1	95.7	100.0	97.3	93.9	100.0	100.0	100.0	94.7	93.5	94.4	89.7	78.9	94.4
Not at home (EWNH)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.2
Refused (EWR)	2.5	3.5	3.9	4.3	0.0	2.7	6.1	0.0	0.0	0.0	5.3	6.5	0.0	9.0	19.3	4.9
Incapacitated (EWI)	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	1.3	1.8	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	40	57	51	46	37	37	33	42	30	42	38	31	36	78	57	655
Eligible women response rate (EWRR) [2]	97.5	96.5	94.1	95.7	100.0	97.3	93.9	100.0	100.0	100.0	94.7	93.5	94.4	89.7	78.9	94.4
Overall response rate (ORR) [3]	97.5	96.5	94.1	95.7	100.0	97.3	93.9	100.0	100.0	100.0	94.7	93.5	94.4	89.7	73.7	93.6

[1] Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{100 * C}{C + HP + P + R + DNF}$$

[2] Using the number of eligible women falling into specific response categories, the eligible woman response rate (EWRR) is calculated as:

$$\frac{100 * EWC}{EWC + EWNH + EWP + EWR + EWPC + EWI + EWO}$$

[3] The overall response rate (ORR) is calculated as: ORR = HRR * EWRR/100

Table A.1M: Sample implementation

Percent distribution of households and eligible men by results of the household and individual interviews, and household, eligible men and overall response rates, according to urban-rural residence and region, Nauru 2007

	Region															
Result	**Yaren**	**Boe**	**Aiwo**	**Buad**	**Denigomodu**	**Nibok**	**Uaboe**	**Baitasi**	**Ewa**	**Anetan**	**Anabar**	**Ijuw**	**Anibare**	**Meneng**	**Location**	**Total**
Selected households																
Completed (C)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	90.9	100.0	100.0	100.0	87.5	100.0	96.0	98.5
Household present but no competent respondent at home (HP)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.5
Household absent (HA)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	0.5
Other (O)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of sampled households	13	13	20	14	11	11	9	11	11	12	11	9	8	23	25	201
Household response rate (HRR) [1]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	96.0	99.5
Eligible men																
Completed (EMC)	95.8	94.3	82.1	94.3	100.0	100.0	93.8	93.1	94.1	100.0	84.0	91.3	73.7	84.2	80.0	90.3
Not at home (EMNH)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	0.0	2.9	0.8
Refused (EMR)	0.0	5.7	17.9	5.7	0.0	0.0	6.3	3.4	0.0	0.0	16.0	4.3	15.8	15.8	17.1	7.9
Partly completed (EMPC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Incapacitated (EMI)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.5
Other (EMO)	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	24	35	28	35	22	17	16	29	17	29	25	23	19	38	35	392
Eligible men response rate (EMRR) [2]	95.8	94.3	82.1	94.3	100.0	100.0	93.8	93.1	94.1	100.0	84.0	91.3	73.7	84.2	80.0	90.3
Overall response rate (ORR) [3]	95.8	94.3	82.1	94.3	100.0	100.0	93.8	93.1	94.1	100.0	84.0	91.3	73.7	84.2	76.8	89.9

[1] Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{100 * C}{C + HP + P + R + DNF}$$

[2] Using the number of eligible women falling into specific response categories, the eligible woman response rate (EWRR) is calculated as:

$$\frac{100 * EWC}{EWC + EWNH + EWP + EWR + EWPC + EWI + EWO}$$

[3] The overall response rate (ORR) is calculated as:

ORR = HRR * EWRR/100

APPENDIX B: ESTIMATES OF SAMPLING ERRORS

ESTIMATES OF SAMPLING ERRORS

The main objective of a demographic household survey (DHS) is to provide estimates of a number of basic demographic and health variables. This is done through interviews with a scientifically selected probability sample that is chosen from a well-defined population. In this case, women of reproductive age (15–49). Estimates from a sample survey are affected by two types of errors: 1) non-sampling errors and 2) sampling errors. Non-sampling 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 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 2007 Nauru Demographic and Health Survey (NDHS) to minimise this type of error, non-sampling 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 the 2007 NDHS 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.

Sampling errors are the errors that result from taking a sample of the covered population through a particular sample design. Non-sampling errors are systematic errors that would be present even if the entire population was covered (e.g. response errors, coding and data entry errors).

For the entire covered population and for large subgroups, the DHS sample is generally sufficiently large to provide reliable estimates. For such populations, the sampling error is small and less important than the non-sampling error. However, for small subgroups, sampling errors become very important in providing an objective measure of reliability of the data.

Variables for reporting sampling error

Sampling errors will be displayed for total, urban and rural and each sample domain only. No other panels should be included in the sampling error table. The choice of variables for which sampling error computations will be done depends on the priority given to specific variables. However, it is recommended that sampling errors be calculated for at least the following variables.

Table B.1: List of selected variables for sampling errors, [country and year]

Variable	Estimate	Base Population
Urban	Proportion	All women
Literate	Proportion	All women
No education	Proportion	All women and all men
Secondary education	Proportion	All women and all men
Net attendance ratio	Ratio	Children aged 7–12 years (modify age according to country)
Never married	Proportion	All women and all men
Currently married	Proportion	All women and all men
Married before age 20	Proportion	Women aged 20–49 and men aged 20–54
Had sexual intercourse before age 18	Proportion	All women and all men
Currently pregnant	Proportion	All women
Children ever born	Mean	All women and all men
Children surviving	Mean	All women
Children ever born to women aged 40–49	Mean	Women aged 40–49
Total fertility rate (3 years)	Rate	All women
Know any contraceptive method	Proportion	Currently married women and currently married men
Ever used any contraceptive method	Proportion	Currently married women
Currently using any contraceptive method	Proportion	Currently married women
Currently using pill	Proportion	Currently married women
Currently using IUD	Proportion	Currently married women
Currently using female sterilization	Proportion	Currently married women
Currently using periodic abstinence	Proportion	Currently married women
Used public sector source	Proportion	Current users of modern methods
Want no more children	Proportion	Currently married women and currently married men
Want to delay birth at least 2 years	Proportion	Currently married women and currently married men
Ideal family size	Mean	All women and all men
Perinatal mortality (0–4 years)	Ratio	Number of pregnancies of 7+ months
Neonatal mortality (0–4 years)	Rate	Children exposed to the risk of mortality
Post-neonatal mortality (0–4 years)	Rate	Children exposed to the risk of mortality
Infant mortality (0–4 years)	Rate	Children exposed to the risk of mortality
Infant mortality (5–9 years)	Rate	Children exposed to the risk of mortality
Infant mortality (10–14 years)	Rate	Children exposed to the risk of mortality
Child mortality (0–4 years)	Rate	Children exposed to the risk of mortality
Under-five mortality (0–4 years)	Rate	Children exposed to the risk of mortality
Mothers received tetanus injection for last birth	Proportion	Women with at least one live birth in five years before survey
Mothers received medical assistance at delivery	Proportion	Births occurring 1–59 months before interview
Having diarrhea in two weeks before survey	Proportion	Children aged 0–59 months
Treated with oral rehydration salts (ORS)	Proportion	Children with diarrhea in two weeks before interview
Taken to a health provider	Proportion	Children with diarrhea in two weeks before interview
Vaccination card seen	Proportion	Children aged 12–23 months
Received BCG	Proportion	Children aged 12–23 months
Received DPT (3 doses)	Proportion	Children aged 12–23 months
Received Polio (3 doses)	Proportion	Children aged 12–23 months
Received measles	Proportion	Children aged 12–23 months
Height-for-age (-2SD)	Proportion	Children aged 0–59 months
Weight-for-height (-2SD)	Proportion	Children aged 0–59 months
Weight-for-age (-2SD)	Proportion	Children aged 0–59 months
Anaemic	Proportion	Children aged 6–59 months
Anaemic	Proportion	All women
BMI <18.5	Proportion	All women
Had 2+ sexual partners in past 12 months	Proportion	All women and all men
Had higher-risk intercourse (with a non-marital, non-cohabitating partner) in past 12 months	Proportion	All women and all men who had sexual intercourse in past 12 months
Condom use at last higher-risk intercourse	Proportion	All women and all men who had higher-risk intercourse in past 12 months
Condom use at last higher-risk intercourse (youth)	Proportion	All women and all men aged 15–24 who had higher-risk intercourse in past 12 months
Abstinence among youth (never had intercourse)	Proportion	Women aged 15–24 and men aged 15–24
Sexually active in past 12 months among never-married youth	Proportion	Women aged 15–24 and men aged 15–24
Paid for sexual intercourse in past 12 months	Proportion	All men
Had an injection in past 12 months	Proportion	All women and all men
Had HIV test and received results in past 12 months	Proportion	All women and all men
Accepting attitudes towards people with HIV	Proportion	All women and all men who have heard of HIV/AIDS
HIV prevalence (15–49)	Proportion	All women and all men who were tested for HIV
HIV prevalence (15–54) {15–59]	Proportion	All men aged 15–54 who were tested for HIV

Notes:

[1]. Unless otherwise noted, all women are for women aged 15–49 and all men are for men aged15–49.

[2]. In countries where only currently married women are asked about current pregnancy, the base population for the proportion currently pregnant should be currently married women instead of all women. Sampling errors by urban and rural domains are shown for the period 0–9 years before the survey for the neonatal, postneonatal, infant, and child mortality rates.

In the 2007 NDHS Report of the survey results, sampling errors for selected variables have been presented in a tabular format. The sampling error tables should include:

..... Variable name

R: Value of the estimate;

SE: Sampling error of the estimate;

N: Unweighted number of cases on which the estimate is based;

WN: Weighted number of cases;

DEFT: Design effect value that compensates for the loss of precision that results from using cluster rather than simple random sampling;

SE/R: Relative standard error (i.e. ratio of the sampling error to the value estimate);

R-2SE: Lower limit of the 95% confidence interval;

R+2SE: Upper limit of the 95% confidence interval (never >1.000 for a proportion).

Sampling error is usually measured in terms of the standard error for a particular statistic (e.g. mean, percentage), 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% of all possible samples of identical size and design.

If the sample of respondents had been selected by simple random sampling, it would have been possible to use straightforward formulas for calculating sampling errors. However, the 2007 NDHS sample was the result of a multistage stratified design and, consequently, it is necessary to use more complex formulae. The computer software used to calculate sampling errors for the 2007 NDHS is the integrated sample survey analysis (ISSA) sampling error module. This module uses the Taylor linearisation method of 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 fertility and mortality rates.

The Taylor linearisation 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.

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

in which

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

where h represents the stratum that varies from 1 to H,

m_h is the total number of clusters selected in the h^{th} stratum,

y_{hi} is the sum of the weighted values of variable y in the i^{th} cluster in the h^{th} stratum,

x_{hi} is the sum of the weighted number of cases in the i^{th} cluster in the h^{th} 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 cluster in the calculation of the estimates. Pseudo-independent replications are thus created. In the 2007 NDHS, there were 15 non-empty clusters. Hence, 15 replications were created. The variance of a rate r is calculated as follows.

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

in which

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

where r is the estimate computed from the full sample of 15 clusters,

$r_{(i)}$ is the estimate computed from the reduced sample of 14 clusters (i^{th} cluster excluded), and

k is the total number of clusters.

In addition to the standard error, the ISSA software program computes the design effect (DEFT) for each estimate, 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. ISSA also computes the relative error and confidence limits for the estimates.

Sampling errors for the 2007 NDHS are calculated for selected variables considered to be of primary interest for the women's and men's surveys. The results are presented in this appendix for the country as a whole. For each variable, the type of statistic (mean, proportion or rate) and the base population are given in Table B.1. Tables B.2 to B.4 present the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the DEFT, the relative standard error (SE/R), and the 95% confidence limits (R±2SE) for each variable. The DEFT is considered undefined when the standard error considering 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.

The confidence interval (example, as calculated for *children ever born to women aged 40–49*) can be interpreted as follows: the overall average from the national sample is 4.398 and its standard error is 0.302. Therefore, to obtain the 95% confidence limits, one adds and subtracts twice the standard error to the sample estimate (i.e. 4.398±2×0.302). There is a high probability (95%) that the *true* average number of children ever born to all women aged 40–49 is between 3.795 and 5.001.

Sampling errors are analysed for the national women's sample and for two separate groups of estimates: 1) means and proportions and 2) complex demographic rates. The SE/R for the means and proportions range between 8.0% and 17.7%; the highest relative standard errors are for estimates of very low values (e.g. *currently using Female sterilisation*). In general, the relative standard error for most estimates for the country as a whole is small, except for estimates of very small proportions. However, for mortality rates, the average relative standard error for the five-year period mortality rates is generally higher than those

related to the 10 year estimates. There are differentials in the relative standard error for the estimates of sub-populations. For example, for the variable *want no more children*, the relative standard errors as a percent of the estimated mean for the all women would be different to that of women with different educational and wealth quintile backgrounds.

Table B.2: Sampling errors for total women in Nauru

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
Urban residence	0	0	618	618	-NaN	-NaN	0	0
No education	0.002	0.002	618	618	1.084	1.003	0	0.006
Secondary education or higher	0.979	0.007	618	618	1.182	0.007	0.966	0.993
Never married	0.301	0.02	618	618	1.074	0.066	0.261	0.341
Currently married/in union	0.624	0.022	618	618	1.116	0.035	0.581	0.668
Had sexual intercourse before age 18	0.55	0.016	500	501	0.697	0.028	0.519	0.581
Children ever born	2.244	0.109	618	618	1.052	0.049	2.025	2.463
Children ever born to women aged 40-49	4.398	0.302	123	128	1.067	0.069	3.795	5.001
Knows any contraceptive method	0.956	0.012	385	386	1.115	0.012	0.932	0.979
Knowing any modern method	0.919	0.018	618	618	1.677	0.02	0.883	0.956
Currently using any contraceptive method	0.356	0.033	385	386	1.357	0.093	0.29	0.422
Currently using a modern method	0.251	0.036	385	386	1.625	0.143	0.179	0.323
Currently using pill	0.006	0.004	385	386	1.093	0.691	0	0.015
Currently using condom	0.028	0.008	385	386	0.934	0.282	0.012	0.044
Current using injectables	0.014	0.005	618	618	1.088	0.363	0.004	0.025
Currently using female sterilisation	0.133	0.022	385	386	1.291	0.169	0.088	0.177
Currently using rhythm method	0.047	0.016	385	386	1.491	0.341	0.015	0.08
Want no more children	0.354	0.023	385	386	0.962	0.066	0.307	0.401
Want to delay birth at least two years	0.15	0.021	385	386	1.138	0.138	0.109	0.192
Ideal family size	4.093	0.143	564	566	0.894	0.035	3.808	4.379
Mothers received tetanus injection for last birth	0.185	0.038	209	205	1.415	0.208	0.108	0.261
Mothers received medical assistance at delivery	0.974	0.013	334	322	1.263	0.013	0.948	1
Had diarrhoea in two weeks before survey	0.209	0.026	322	310	1.048	0.124	0.157	0.26
Treated with oral rehydration salts (ORS)	0.233	0.06	68	65	1.074	0.256	0.114	0.353
Taken to a health provider	0.343	0.071	68	65	1.078	0.206	0.201	0.484
Vaccination card seen	0.955	0.03	63	63	1.163	0.032	0.895	1.016
Received BCG	0.984	0.016	63	63	0.981	0.016	0.952	1.015
Received DPT (3 doses)	0.89	0.048	63	63	1.2	0.053	0.795	0.985
Received polio (3 doses)	0.91	0.039	63	63	1.083	0.043	0.831	0.988
Received measles	0.954	0.031	63	63	1.178	0.033	0.892	1.017
Fully immunised	0.855	0.055	63	63	1.236	0.065	0.744	0.965
Has heard of HIV	0.731	0.039	618	618	2.176	0.053	0.653	0.809
Accepting attitudes to people with HIV	0.093	0.019	445	452	1.401	0.208	0.054	0.132

Table B.3: Sampling of errors for total men in Nauru

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
Urban residence	0	0	354	354	-Nan	-Nan	0	0
No education	0.002	0.002	354	354	0.848	1.025	0	0.006
Secondary education or higher	0.93	0.022	354	354	1.591	0.023	0.887	0.973
Never married	0.343	0.022	354	354	0.876	0.064	0.299	0.388
Currently married/in union	0.611	0.016	354	354	0.598	0.025	0.58	0.643
Sex before age 18	0.685	0.028	293	294	1.045	0.042	0.628	0.741
Knows any contraceptive method	0.987	0.013	216	216	1.625	0.013	0.961	1.012
Knowing any modern contraceptive method	0.983	0.013	216	216	1.465	0.013	0.957	1.009
Ever used condom	0.592	0.049	216	216	1.469	0.083	0.494	0.691
Want no more children	0.321	0.027	216	216	0.851	0.084	0.267	0.376
Want to delay birth at least two years	0.136	0.035	216	216	1.515	0.261	0.065	0.206
Ideal family size	3.069	0.243	273	272	1.475	0.079	2.582	3.556
Accept attitudes towards people with HIV	0.064	0.017	260	259	1.094	0.261	0.03	0.097

Table B.4: Sampling error for 5 years of mortality rates, Nauru

Variable	R	SE	N	WN	DEFT	CV	R-2SE	R+2SE
Neonatal mortality (last 0-4 years)	26.845	7.973	334	323	0.899	0.297	10.899	42.791
Post-neonatal mortality (last 0-4 years)	11.082	6.673	337	327	1.126	0.602	0.000	24.428
Infant mortality (last 0-4 years)	37.927	9.629	334	323	0.862	0.254	18.669	57.186
Child mortality (last 0-4 years)	0.000	0.000	325	316			0.000	0.000
Under-five mortality (last 0-4 years)	37.927	9.629	334	323	0.862	0.254	18.669	57.186

Table B. 5: Sampling error for 10 years of mortality rates, Nauru

Variable	R	SE	N	WN	DEFT	CV	R-2SE	R+2SE
Neonatal mortality (last 0-9 years)	26.825	7.800	646	647	1.109	0.291	11.226	42.425
Post-neonatal mortality (last 0-9 years)	12.296	4.152	646	648	1.025	0.338	3.992	20.601
Infant mortality (last 0-9 years)	39.122	9.412	647	648	1.110	0.241	20.297	57.947
Child mortality (last 0-9 years)	1.610	1.644	632	636	0.990	1.021	0.000	4.899
Under-five mortality (last 0-9 years)	40.669	9.528	648	649	1.101	0.234	21.612	59.726

APPENDIX C: DATA QUALITY TABLES

Table C.1: Household age distribution

Single-year age distribution of the de facto household population by sex (weighted), Nauru 2007

	Women		Men	
Age	Number	Percent	Number	Percent
0	36	3.1	35	3.0
1	23	1.9	28	2.4
2	38	3.3	27	2.4
3	38	3.3	34	2.9
4	30	2.5	24	2.0
5	28	2.3	34	2.9
6	34	2.9	27	2.3
7	27	2.3	32	2.8
8	23	1.9	31	2.7
9	34	2.8	26	2.2
10	25	2.1	31	2.6
11	28	2.3	30	2.6
12	21	1.8	30	2.5
13	37	3.2	40	3.4
14	33	2.8	28	2.4
15	15	1.3	17	1.4
16	22	1.8	31	2.7
17	27	2.3	22	1.9
18	27	2.3	25	2.2
19	27	2.3	24	2.1
20	25	2.1	19	1.7
21	32	2.7	26	2.3
22	34	2.9	19	1.6
23	32	2.7	25	2.1
24	25	2.1	23	2.0
25	16	1.3	24	2.1
26	21	1.8	21	1.8
27	24	2.0	21	1.8
28	19	1.6	21	1.8
29	16	1.3	19	1.6
30	16	1.3	16	1.4
31	23	2.0	19	1.6
32	19	1.6	17	1.5
33	13	1.1	20	1.7
34	16	1.4	14	1.2
35	11	1.0	15	1.2
36	13	1.1	21	1.8
37	7	0.6	14	1.2
38	14	1.1	11	0.9
39	16	1.3	13	1.1
40	20	1.7	17	1.4
41	8	0.7	13	1.1
42	9	0.8	9	0.8
43	13	1.1	14	1.2
44	7	0.6	14	1.2
45	13	1.1	11	1.0
46	17	1.5	9	0.8
47	8	0.7	12	1.0
48	20	1.7	6	0.5
49	10	0.8	8	0.7
50	12	1.0	14	1.2
51	6	0.5	5	0.4
52	12	1.0	9	0.8

Table C.1 (continued)

Age	Women		Men	
	Number	Percent	Number	Percent
53	8	0.6	11	1.0
54	9	0.8	9	0.8
55	4	0.3	6	0.5
56	7	0.6	3	0.3
57	5	0.4	7	0.6
58	3	0.3	7	0.6
59	2	0.1	5	0.4
60	2	0.1	3	0.2
61	3	0.3	2	0.1
62	0	0.0	2	0.2
63	1	0.1	0	0.0
64	1	0.1	0	0.0
65	0	0.0	1	0.1
66	1	0.1	2	0.2
67	1	0.1	1	0.1
69	2	0.1	1	0.1
70+	12	1.1	8	0.7
Don't know/missing	3	0.2	5	0.4
Total	1,181	100.0	1,168	100.0

Note: The *de facto* population includes all residents and nonresidents who stayed in the household the night before.

Table C.2.1: Age distribution of eligible and interviewed women

De facto household population of women aged 10–54, interviewed women aged 15–49, and the percentage of eligible women who were interviewed (weighted), by five-year age groups, Nauru 2007

Age group	Household population of women aged 10–54	Interviewed women aged 15–49		Percent of eligible women interviewed
		Number	Percent	
10–14	145	na	na	na
15–19	117	111	18.8	94.6
20–24	148	125	21.3	84.3
25–29	95	91	15.5	95.7
30–34	87	84	14.3	96.5
25–39	60	57	9.8	95.4
40–44	57	57	9.7	100.0
45–49	68	62	10.6	92.1
50–54	46	na	na	na
15–49	633	588	100.0	92.9

Note: The *de facto* population includes all residents and nonresidents who stayed in the household the night before the interview. Weights for both household population of women and interviewed women are household weights. Age is based on the household schedule.

na = not applicable

Table C.2.2: Age distribution of eligible and interviewed men

De facto household population of men aged 10–64, interviewed men aged 15–59, and percent of eligible men who were interviewed (weighted), Nauru 2007

Age group	Household population of men aged 10–64	Interviewed men aged 15–59		Percent of eligible men interviewed
		Number	Percent	
10–14	76	na	na	na
15–19	65	58	17.3	89.4
20–24	59	54	16.1	90.5
25–29	58	54	16.1	92.7
30–34	46	41	12.4	90.0
25–39	43	40	12.0	93.5
40–44	27	24	7.1	86.5
45–49	27	24	7.1	87.9
50–54	24	20	5.9	80.6
55–59	12	11	3.4	93.7
60–64	3	na	na	na
15–59	362	334	97.9	92.3

Note: The *de facto* population includes all residents and nonresidents who stayed in the household the night before the interview. Weights for both household population of women and interviewed women are household weights. Age is based on the household schedule.

na = not applicable

Table C.3: Completeness of reporting

Percentage of observations missing information for selected demographic and health questions (weighted), Nauru 2007

Subject	Percentage with missing information	Number of cases
Month Only (births in last 15 years)	0.10	920
Month and Year (births in last 15 years)	0.31	920
Age at Death (deceased children born in the last 15 years)	0.00	31
Age/date at first union[1] (ever married women)	0.83	432
Age/date at first union (ever married men)	2.73	232
Respondent's education (all women)	0.38	618
Respondent's education (all men)	0.56	354
Diarrhea in last two weeks (living children 0–59)	6.46	310
Height (living children 0–59 from Household Questionnaire)	5.90	315
Weight (living children 0–59 from Household Questionnaire)	6.02	315
Height or weight (living children 0–59 from Household Questionnaire)	6.42	315
Anemia (living children 6–59 months from Household Questionnaire)	9.86	283
Anemia (all women from the Household Questionnaire)	8.54	633
Anemia (all men from the Household Questionnaire)	100.00	375

[1] Both year and age missing.

Table C.4: Births by calendar years

Number of births, percentage with complete birth date, sex ratio at birth, and calendar year ratio by calendar year, according to living (L), dead (D), and total (T) children (weighted), Nauru 2007

	Number of births			Percentage with complete birth date[1]			Sex ratio at birth[2]			Calendar year ratio[3]		
Calendar year[1]	L	D	T	L	D	T	L	D	T	L	D	T
0	51	3	53	100.0	100.0	100.0	91.7	131.3	93.4	na	na	na
1	54	3	56	100.0	100.0	100.0	168.2	-	181.0	na	na	na
2	62	4	66	100.0	100.0	100.0	89.7	97.2	90.1	101.2	205.1	104.3
3	69	1	70	100.0	100.0	100.0	101.0	-	104.4	112.4	39.9	109.1
4	61	2	63	100.0	100.0	100.0	58.9	60.1	59.0	95.5	209.8	97.2
5	58	1	59	100.0	100.0	100.0	178.2	-	181.9	94.5	28.4	91.8
6	62	3	65	100.0	100.0	100.0	76.7	61.3	75.9	90.8	173.8	93.1
7	79	3	82	100.0	100.0	100.0	96.8	105.5	97.1	130.2	82.4	127.4
8	59	4	63	100.0	61.4	97.5	146.2	158.8	146.9	88.9	190.2	92.1
9	54	1	55	97.6	100.0	97.7	75.1	0.0	72.1	96.5	61.4	95.2
0–4	296	12	308	100.0	100.0	100.0	95.2	181.0	97.6	na	na	na
5–9	311	13	324	99.6	87.3	99.1	106.8	95.6	106.3	na	na	na
10–14	264	6	270	100.0	85.5	99.7	100.2	32.7	97.9	na	na	na
15–19	212	17	229	99.8	78.5	98.3	90.1	48.9	86.3	na	na	na
20+	235	22	256	97.5	87.0	96.6	84.9	132.6	88.2	na	na	na
All	1,317	70	1,387	99.4	87.1	98.8	96.0	92.5	95.8	na	na	na

NA = not applicable

[1] Both year and month of birth given.

[2] (Bm/Bf)x100, where Bm and Bf are the numbers of male and female births, respectively.

[3] [2Bx/(Bx-1+Bx+1)]x100, where Bx is the number of births in calendar year x.

Table C.5: Reporting of age at death in days

Distribution of reported deaths under one month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0–6 days, for five-year periods of birth preceding the survey (weighted), Nauru 2007

	Number of years preceding the survey				Total
Age at death (days)	0–4	5–9	10–14	15–19	0–19
<1	3	3	2	8	16
1	2	2	0	0	4
2	0	2	0	2	4
9	0	1	0	0	1
14	1	1	0	0	1
21	2	0	0	1	4
24	1	0	0	0	1
Total 0–30	9	9	2	12	31
Percent early neonatal[1]	53.2	79.1	100.0	89.0	77.1

[1] = 6 days / = 30 days

Table C.6: Reporting of age at death in months

Distribution of reported deaths under two years of age by age at death in months and the percentage of infant deaths reported to occur at age under one month, for five-year periods of birth preceding the survey, Nauru 2007

	Number of years preceding the survey				Total
Age at death (months)	0–4	5–9	10–14	15–19	0–19
<1[a]	9	9	2	12	31
1	0	1	0	0	1
3	1	2	0	0	2
4	1	0	0	0	1
5	2	0	0	0	2
6	0	1	0	0	1
8	0	0	0	2	2
9	0	0	0	1	1
11	0	0	1	0	1
24+	0	0	0	1	1
Total 0–11	12	13	3	14	42
Percent neonatal[1]	71.0	69.0	71.9	83.0	74.5

[a] Includes deaths under one month reported in days.

[1] Under one month / under one year.

Table C.7: Nutritional status of children

Percentage of children under age 5 years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Nauru 2007

Background characteristic	Height-for-age			Weight-for-height				Weight-for-age				Number of children
	Percentage below -3 SD	Percentage below -2 SD[1]	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage above +2 SD	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage above +2 SD	Mean Z-score (SD)	
Age in months												
<6	0.0	0.0	0.1)	0.0	0.0	10.1	0.7	0.0	0.0	4.8	0.6	20
6–8	11.0	21.1	1.0)	0.0	0.0	0.0	0.3	11.0	19.2	0.0	0.5)	15
9–11	0.0	23.9	0.7)	0.0	0.0	0.0	0.0)	0.0	5.9	0.0	0.6)	13
12–17	8.9	17.8	1.2)	0.0	2.8	6.5	0.1	2.8	11.7	1.7	0.7)	27
18–23	0.0	15.4	0.7)	0.0	6.0	9.3	0.2)	0.0	1.7	9.3	0.5)	23
24–35	1.5	25.4	1.1)	1.2	1.2	0.0	0.1)	1.2	7.3	1.9	0.8)	51
36–47	8.8	20.1	1.3)	0.0	0.0	0.0	0.0	0.0	9.2	0.0	0.8)	63
48–59	7.2	26.7	1.4)	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.8)	51
Sex												
Male	5.4	19.0	1.0)	0.5	2.2	2.6	0.0)	2.5	10.5	2.3	0.7)	122
Female	5.3	21.8	1.1)	0.0	0.0	2.0	0.2	0.0	4.9	1.2	0.6)	141
Birth interval in months[2]												
First birth	4.0	14.2	0.8)	1.0	3.3	0.0	0.2)	1.0	3.8	0.0	0.7)	60
<24	4.2	25.3	1.3)	0.0	0.0	3.6	0.1	0.0	10.3	2.1	0.7)	66
24–47	4.7	18.2	1.0)	0.0	0.0	3.2	0.1	2.1	7.6	3.9	0.6)	79
48+	9.1	19.0	1.1)	0.0	2.5	0.0	0.1	2.5	9.5	0.0	0.6)	30
Size at birth[3]												
Very small	15.6	38.0	1.8)	0.0	4.1	0.0	0.2)	4.1	17.0	0.0	1.3)	19
Small	3.5	30.1	1.6)	0.0	0.0	2.2	0.0)	0.0	13.1	2.2	1.0)	21
Average or larger	3.3	14.6	0.9)	0.3	1.1	2.5	0.1	1.3	4.9	2.3	0.5)	179
Missing	11.3	11.3	1.1)	0.0	0.0	0.0	0.4)	0.0	11.3	0.0	1.0)	3
Mother's interview status												
Interviewed	4.9	19.3	1.0)	0.3	1.2	2.1	0.0	1.3	7.6	1.9	0.6)	236
Not interviewed, and not in the household[4]	8.9	31.1	1.3)	0.0	0.0	3.7	0.2	0.0	6.1	0.0	0.7)	27

Table C.7 (continued)

Background characteristic	Height-for-age			Weight-for-height				Weight-for-age				Number of children
	Percentage below -3 SD	Percentage below -2 SD[1]	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage above +2 SD	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage above +2 SD	Mean Z-score (SD)	
Mother's nutritional status[5]												
Normal (BMI 18.5–24.9)	4.5	13.6	1.3)	0.0	0.0	1.5	0.1	0.0	7.0	1.5	0.7)	31
Overweight/obese (BMI >= 25)	4.5	19.7	1.0)	0.3	1.4	2.2	0.0	1.5	8.0	2.0	0.6)	199
Missing	19.8	32.3	1.9)	0.0	0.0	0.0	0.1)	0.0	0.0	0.0	1.3)	6
Region												
Yaren	0.0	21.4	1.0)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.6)	13
Boe	0.0	13.3	0.6)	0.0	0.0	6.7	0.3	0.0	0.0	0.0	0.1)	30
Aiwo	5.0	20.0	1.2)	0.0	0.0	5.0	0.2	0.0	5.0	0.0	0.6)	26
Buad	0.0	13.6	0.6)	0.0	0.0	0.0	0.1)	0.0	4.5	9.1	0.4)	21
Denigomodu	0.0	9.5	0.6)	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.2)	18
Nibok	0.0	6.7	0.9)	0.0	0.0	0.0	0.2)	0.0	6.7	0.0	0.8)	11
Uaboe	0.0	0.0	0.8)	9.1	9.1	0.0	0.1)	9.1	9.1	0.0	0.6)	7
Baitasi	5.0	15.0	0.9)	0.0	5.0	5.0	0.2)	5.0	10.0	5.0	0.7)	15
Ewa	7.7	23.1	1.3)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.7)	10
Anetan	0.0	14.3	1.0)	0.0	0.0	0.0	0.2)	0.0	0.0	0.0	0.8)	17
Anabar	7.1	25.0	1.5)	0.0	0.0	0.0	0.1)	0.0	10.7	0.0	1.1)	21
Ijuw	0.0	29.4	1.3)	0.0	0.0	5.9	0.0)	0.0	5.9	5.9	0.8)	8
Anibare	7.7	23.1	1.3)	0.0	0.0	0.0	0.1	0.0	15.4	0.0	0.7)	5
Meneng	9.1	13.6	0.9)	0.0	4.5	4.5	0.2	0.0	9.1	4.5	0.4)	30
Location	22.2	55.6	2.1)	0.0	0.0	0.0	0.0	5.6	27.8	0.0	1.3)	30
Mother's education[6]												
Less than secondary	0.0	0.0	0.8)	0.0	0.0	0.0	0.3)	0.0	0.0	0.0	0.8)	3
Secondary	5.2	20.1	1.1)	0.3	1.2	2.2	0.1	1.4	7.7	2.0	0.6)	223
More than secondary	0.0	9.3	0.8)	0.0	0.0	0.0	0.0	0.0	9.3	0.0	0.6)	8

Table C.7 (continued)

Background characteristic	Height-for-age			Weight-for-height				Weight-for-age				Number of children
	Percentage below -3 SD	Percentage below -2 SD[1]	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage above +2 SD	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage above +2 SD	Mean Z-score (SD)	
Wealth quintile												
Lowest	19.4	39.8	1.8)	0.0	0.0	2.1	0.0	3.5	16.7	0.0	1.1)	48
Second	0.0	15.4	0.9)	1.1	3.7	0.0	0.0	1.1	1.9	0.0	0.5)	53
Middle	3.8	19.8	1.0)	0.0	1.4	2.4	0.1)	1.4	10.6	4.1	0.7)	56
Fourth	2.5	10.6	0.8)	0.0	0.0	0.0	0.1	0.0	7.0	2.1	0.4)	46
Highest	2.5	17.8	0.9)	0.0	0.0	5.9	0.2	0.0	2.5	2.1	0.4)	60
Total	5.4	20.5	1.1)	0.2	1.0	2.2	0.1	1.2	7.5	1.7	0.6)	263

Note: Table is based on children who slept in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the NCHS/CDC/WHO Child Growth Standards.

Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight.

[1] Includes children who are below -3 standard deviations (SD) from the International Reference Population median.

[2] Excludes children whose mothers were not interviewed.

[3] First-born twins (triplets, etc.) are counted as first births because they do not have a previous birth interval.

[4] Includes children whose mothers are deceased.

[5] Excludes children whose mothers were not weighed and measured. Mother's nutritional status in terms of BMI (body mass index) is presented in Table 11.10.

[6] For women who were not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.

APPENDIX D: PEOPLE INVOLVED IN THE 2007 NDHS

Name	Title
Ipia Gadabu	DHS Project Owner/Chairman
Maree Bacigalupo	DHS Project Owner/Chairwoman
Lyn Teleni	Project Manager
Ramrakha Detenamo	Statistics Project Coordinator
Lindsay Thoma	Data Management and Processing
Dr Sithu Win Tin	Director of Public Health
Isabella Dageago	Public Health, Baby Clinic
Febrina Buramen	Public Health
Rosella Radi	Pre-post natal care presenter
Estha Karl	Family planning presenter
Celestine Eoaeo	Maternal child health care present
Simron Botelanga	Public Health
Graeme Brown	SPC Manager - Statistics and Demography Programme (Former)
Gerald Haberkorn	SPC Manager - Statistics and Demography Programme (current)
Arthur Jorari	SPC Population and Development Specialist
Andreas Demmke	SPC Population Specialist (Demographic Analysis)
Leilua Taulealo	SPC Data Processing Officer
Kaobari Matikarai	SPC DHS Technical Officer
Elizabeth Go	Macro Consultant
Han Raggers	Macro Consultant
Kendrick Solodi	SPC Bio measurement trainer
Dr Justus Benzler	SPC Public Health
Kathryn Couchler	SPC Public Health
Karen Fukuoka	SPC Public Health
Lisa Adam	Supervisor
Cherrilyn Silk	Supervisor
Richene Kam	Field Editor
Bervena Adeang	Field Editor
Louisaida Detabane	Enumerator
Laurie Kanimea	Enumerator
Zinnia Grundler	Enumerator
Virginia Abraham	Enumerator
Nancy Demaunga	Enumerator
Rina Hartman	Bio measurements
Dozono Gobure	Male Enumerator
Besuila Tanaera	Bio measurements
Audrey Tannang	Enumerator
Siolita Ephram	Enumerator
Tina Waidabu	Enumerator
Eva Gadabu	Bio measurements
Giedo Garabwan	Enumerator
Shere-lei Apad	Bio measurements