Republic of the
Marshall Islands
ICHNS
Integrated Child Health and Nutrition Survey
2017

Monitoring the situation of
CHILDREN and WOMEN

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for every child

Republic of the

Marshall Islands

ICHNS

Integrated Child Health and Nutrition Survey

The Republic of the Marshall Islands Integrated Child Health and Nutrition Survey was carried out in 2017 by the RMI Ministry of Health and Human Services (MoHHS) in collaboration with the RMI Economic, Policy Planning and Statistics Office (EPPSO). Technical and financial support was provided by the United Nations Children's Fund (UNICEF).

The Republic of the Marshall Islands (RMI) Integrated Child Health and Nutrition Survey 2017 (ICHNS 2017) is based on the international standardized Multiple Indicator Survey (MICS) household survey programme developed and supported by UNICEF. MICS surveys measure key indicators that allow countries to generate data for use in policies and programmes, and to monitor progress towards the Millennium Development Goals (MDGs) and other internationally agreed upon commitments for children and women.

As part of the global effort to further develop national capacities to generate and analyse high quality and disaggregated data, the RMI ICHNS 2017 allows for global comparison to MICS and DHS surveys implemented by other countries in the region. The ICHNS 2017 is primarily intended for use in RMI to develop national frameworks to monitor progress towards the SDGs and establish baselines, strategic planning and investments based on the robust data collected.

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PREFACE

The Government of the Republic of the Marshall Islands (RMI) and the United Nations Children's Fund (UNICEF) are pleased to launch the Republic of the Marshall Islands Integrated Child Health and Nutrition Survey 2017 (RMI ICHNS 2017) Report.

The RMI ICHNS 2017 Report presents a snapshot of the health and nutrition status of children and the key underlying determinants. The primary objective of the survey is to provide updated information on child and maternal nutrition status for informed decision-making by planners, policymakers and programme implementers. Moreover, the findings will assist in monitoring the progress towards achieving the Sustainable Development Goals for children.

Children of the Republic of the Marshall Islands are the country's future. All children should have the same opportunity to not only survive, but to also thrive. Survey findings indicate that a significant number of children in RMI are at a disadvantage due to poor nutrition status. Poor nutrition in childhood can increase the risk for poor school performance, reduced earnings and economic productivity, poor pregnancy outcomes, and future adult overweight and obesity as well as associated non-communicable diseases.

Reducing malnutrition in children and their mothers can bring substantial benefits to the country through decreasing mortality, increasing intellectual capacity and productivity, ultimately contributing to the country's economic development and the nation's well-being. Hence the importance of the first 1000 days which is a window of opportunity - from pregnancy to the child's second birthday. This must not be overlooked. We urge the concerned ministries to make extensive use of the survey findings to develop and implement appropriate policies and programmes for a child's right to survival and good health and nutrition.

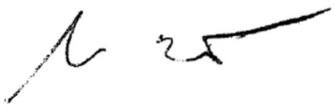
The RMI ICHNS 2017 was undertaken by the Ministry of Health and Human Services (MoHHS) in collaboration with the Economic Policy, Planning and Statistics Office (EPPSO). We would like to thank the MoHHS and EPPSO for their guidance throughout the process of carrying out the survey, including planning, implementation and dissemination of the RMI ICHNS 2017 Report. Finally, we are grateful for the role played by the Steering Committee and the Technical Working Group in the successful implementation of the ICHNS2017.

This survey would not have been possible without the technical and financial assistance from UNICEF and the Governments of New Zealand, Canada and Italy.

President of the

Republic of the Marshall Islands

Her Excellency **Hilda C. Heine,**
Ed. D Republic of the Marshall Islands



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Representative

Sheldon Yett

Summary Table of Findings[1]

Key survey indicators with correlation to Multiple Indicator Cluster Surveys (MICS) and Sustainable Development Goal (SDG) indicators, ICHNS, 2017

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Republic of the Marshall Islands ICHNS at a Glance

Survey implementation			
Sample frame	RMI National Census 2011 Updated for 2017 projections	**Questionnaires**	Households with children under 5 Caregivers (age 15-49) Children under 5
Interviewer training	February, March 2017	**Fieldwork**	April, May, June 2017

Survey sample

Households with children under 5		Children under 5	
- Sampled	600	- Eligible	881
- Occupied	581	- Mothers/caregivers interviewed	881
- Interviewed	581		
- Response rate (Percent)	100.0	- Response rate (Percent)	100.0
Caregivers with children under 5			
- Eligible for interviews	704		
- Interviewed	698		
- Response rate (Percent)	99.1		

Survey population for households with children under 5

Average household size	9.02	**Percentage of population living in**	
Education of household head		- Urban areas	80.4
- None	5.8	- Rural areas	19.6
- Primary	20.1	**Wealth index quintile**	
- Secondary	48.5	- Poorest	20.1
- Higher	25.6	- Second	20.1
Ethnicity		- Middle	20.0
- Marshallese	98.5	- Fourth	20.2
- Other	1.5	- Richest	19.6
Religion		**Household food security** [1]	
- Assembly of God	16.0	- Food secure	59.8
- Protestant	51.4	- Mildly food insecure	7.1
- Catholic	7.6	- Moderately food insecure	13.4
- Other	25.0	- Severely food insecure	19.7

Housing characteristics		Household personal assets	
Percentage of households with		**Percentage of households that own**	
- Electricity (SDG 7.1.1)	72.2	- A television	48.4
- Finished floor	90.1	- A refrigerator	39.6
- Finished roofing	95.5	- Agricultural land	9.0
- Finished walls	48.4	- Farm animals/livestock	26.2
Mean number of persons per room used for sleeping	2.47	**Percentage of households that have**	
		- Mobile phone	62.0
		- Car or truck	18.2
		- Internet connection	21.5

Nutrition

Nutrition status children under 5 years [2]				
MICS Indicator		Indicator	Description	Value
2.1a 2.1b		Underweight prevalence (a) Moderate and severe (b) Severe	Percentage of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median weight for age of the WHO standard	11.7 2.7
2.2a 2.2b	**SDG 2.2.1**	Stunting prevalence (a) Moderate and severe (b) Severe	Percentage of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median height for age of the WHO standard	35.3 10.2
2.3a 2.3b	**SDG 2.2.2**	Wasting prevalence (a) Moderate and severe (b) Severe	Percentage of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median weight for height of the WHO standard	3.6 1.1
2.4	**SDG 2.2.2**	Overweight prevalence	Percentage of children under age 5 who are above two standard deviations of the median weight for height of the WHO standard	3.8

Breastfeeding and infant feeding

MICS Indicator	Indicator	Description	Value
2.5	Children ever breastfed	Percentage of women with a live birth in the last 2 years who breastfed their last live-born child at any time	87.4
2.6	Early initiation of breastfeeding	Percentage of women with a live birth in the last 2 years who put their last newborn to the breast within one hour of birth	60.8
2.7	Exclusive breastfeeding under 6 months	Percentage of infants under 6 months of age who are exclusively breastfed[3]	42.3
2.8	Predominant breastfeeding under 6 months	Percentage of infants under 6 months of age who received breast milk as the predominant source of nourishment [4] during the previous day	50.9
2.9	Continued breastfeeding at 1 year	Percentage of children age 12-15 months who received breast milk during the previous day	40.5
2.10	Continued breastfeeding at 2 years	Percentage of children age 20-23 months who received breast milk during the previous day	34.2
2.12	Age-appropriate breastfeeding	Percentage of children age 0-23 months appropriately fed [5] during the previous day	39.8
2.13	Introduction of solid, semi-solid or soft foods	Percentage of infants age 6-8 months who received solid, semi-solid or soft foods during the previous day	64.2
2.14	Milk feeding frequency for non-breastfed children	Percentage of non-breastfed children age 6-23 months who received at least 2 milk feedings during the previous day	39.4
2.15	Minimum meal frequency	Percentage of children age 6-23 months who received solid, semi-solid and soft foods (plus milk feeds for non-breastfed children) the minimum number of times or more [6] during the previous day	60.8
2.16	Minimum dietary diversity	Percentage of children age 6–23 months who received foods from 4 or more food groups vii during the previous day [7]	42.5

Breastfeeding and infant feeding

MICS Indicator	Indicator	Description	Value
2.17a 2.17b	Minimum acceptable diet	(a) Percentage of breastfed children age 6–23 months who had at least the minimum dietary diversity and the minimum meal frequency during the previous day (b) Percentage of non-breastfed children age 6–23 months who received at least 2 milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day (c) Total minimum acceptable diet for all children 6-23 months	26.0 33.0 29.6
2.18	Bottle feeding	Percentage of children age 0-23 months who were fed with a bottle during the previous day	29.7

Child feeding practices

Indicator	Description	Value
Consumption of nutrient rich foods	Percentage of children 6-59 months of age who consumed in the previous 24 hours:	
	(a) Iron rich foods	
	a. 6-11m	67.0
	b. 12-23m	79.7
	c. 24-59m	88.3
	(b) Dark green leafy vegetables	7.3
	a. 6-11m	16.8
	b. 12-23m	15.6
	c. 24-59m	29.3
	(c) Vitamin A rich fruits and vegetables	45.9
	a. 6-11m	50.6
	b. 12-23m	28.4
	c. 24-59m	6.7
	(d) Fortified baby cereal	5.7
	a. 6-11m	
	b. 12-23m	
	c. 24-59m	

Child feeding practices

Indicator	Description	Value
Consumption of low nutrient density foods	Percentage of children 6-59 months of age who consumed in the previous 24 hours:	
	(a) Fats and oils	
	a. 6-11m	13.3
	b. 12-23m	18.3
	c. 24-59m	29.9
	(b) Sweet foods	
	a. 6-11m	19.1
	b. 12-23m	32.6
	c. 24-59m	64.8
	(c) Sugar-sweetened beverages	
	a. 6-11m	19.1
	b. 12-23m	32.6
	c. 24-59m	56.5
	(d) Tea or coffee	
	a. 6-11m	8.5
	b. 12-23m	28.5
	c. 24-59m	36.1
	(e) Any low nutrient density food	
	a. 6-11m	34.9
	b. 12-23m	61.2
	c. 24-59m	82.8

Child birthweight

MICS Indicator	Indicator	Description	Value
2.20	Low-birthweight infants	Percentage of most recent live births in the last 2 years weighing below 2,500 grams at birth	11.6
---	High-birthweight infants	Percentage of most recent live births in the last 2 years weighing 4,000 grams or more at birth	4.8
2.21	Infants weighed at birth	Percentage of most recent live births in the last 2 years who were weighed at birth	89.9

9. WHO classification for non-pregnant adults 18 years of age and older and applies to caregivers 15-49 years of age with a child under 5 years of age

10. Short stature measured in caregivers 15-49 years of age with a child under 5 years of age as height < 145cm and borderline short stature as height <150 cm

11. Women minimum dietary diversity based on consumption of caregivers with a child under 5 years of any amount of food from at least 5 out of the 10 following food groups: 1) grains, white roots and tubers, and plantain, 2) pulses (beans, peas and lentils), 3) Nuts and seeds, 4) dairy, 5) meat, poultry and fish, 6) eggs, 7) dark green leafy vegetables, 8) other vitamin A rich fruits and vegetables, 9) other vegetables, 10) other fruits

Nutrition status mothers 15-49 years

Indicator	Description	Value
Underweight prevalence	Percentage of non-pregnant mothers with a BMI < 18.5 (kg/m^2) [8]	1.8
Overweight prevalence (a) Overweight (b) Obese	Percentage of non-pregnant mothers with a BMI [9] (a) BMI > 25 kg/m2 (overweight and obese) (b) BMI >30 kg/m2	 72.7 45.1
Short stature prevalence (a) Short stature (b) Borderline short stature	Percentage of mothers with a height [9] (a) Less than 145 cm (b) Less than 150 cm	 4.4 26.1

Dietary quality of caregivers 15-49 years

Indicator	Description	Value
Women's Minimum Dietary Diversity	Percentage of caregivers 15-49 years of age who consumed at least 5 out of 10 food groups [10] in the previous 24 hours	27.2
Consumption of nutrient rich foods	Percentage of caregivers 15-49 years of age who consumed in the previous 24 hours: (a) Iron rich foods (b) Dark green leafy vegetables (c) Vitamin A rich fruits and vegetables	 75.3 14.8 36.2
Consumption of low nutrient density foods	Percentage of caregivers 15-49 years of age who consumed in the previous 24 hours: (a) Fats and oils (b) Savoury and fried snacks (c) Sweet foods (d) Sugar-sweetened beverages (e) Any low nutrient density food	 23.6 25.7 46.8 41.0 63.5

Child Health

Receipt micronutrient supplementation and deworming

Indicator	Description	Value
Coverage of vitamin A supplementation	Percentage of children age 6-59 months who received vitamin A supplementation in the previous 6 months	54.4
Coverage of iron supplementation	Percentage of children age 0-59 months who received iron supplementation in the previous 7 days	11.3

Receipt micronutrient supplementation and deworming

Indicator	Description	Value
Coverage of deworming	Percentage of children age 12-59 months who received deworming in the previous 6 months	32.1

Care of the Child

MICS Indicator	Indicator	Description	Value
---	Children with diarrhoea	Percentage of children under age 5 with diarrhoea in the last 2 weeks	9.3
3.10	Care-seeking for diarrhoea	Percentage of children under age 5 with diarrhoea in the last 2 weeks for whom advice or treatment was sought from a health facility or provider	47.1
3.11	Diarrhoea treatment with oral rehydration salts (ORS) and zinc	Percentage of children under age 5 with diarrhoea in the last 2 weeks who received ORS and zinc	7.5
---	Children with ARI symptoms	Percentage of children under age 5 with ARI symptoms in the last 2 weeks	2.9
---	Children with fever	Percentage of children under age 5 with fever in the last 2 weeks	11.5

Solid fuel use

MICS Indicator	Indicator	Description	Value
3.15	Use of solid fuels for cooking	Percentage of household members in households that use solid fuels (coconut husks, wood) as the primary source of domestic energy to cook	12.5

Water and Sanitation

Water and sanitation

MICS Indicator	Indicator	Description	Value
4.1 **SDG 6.1.1**	Use of improved drinking water sources	Percentage of household members using improved sources of drinking water	100.0
4.2	Water treatment	Percentage of household members in households who use an appropriate treatment method	58.8
4.3	Use of improved sanitation	Percentage of household members using improved sanitation facilities which are not shared	86.3
4.4	Safe disposal of child's faeces	Percentage of children age 0-2 years whose last stools were disposed of safely	6.0

Water and sanitation

MICS Indicator	Indicator	Description	Value
4.5 SDG 6.2.1	Place for handwashing	Percentage of households with a specific place for hand washing where water and soap or other cleansing agent are present	91.7
4.6	Availability of soap or other cleansing agent	Percentage of households with soap or other cleansing agent	98.8

Reproductive Health

Maternal and newborn health

MICS Indicator	Indicator	Description	Value
5.5a 5.5b	Antenatal care coverage	Percentage of women age 15-49 years with a live birth in the last 2 years who were attended during their last pregnancy that led to a live birth (a) at least once by skilled health personnel (b) at least four times by any provider	 92.7 67.8
5.7 SDG 3.1.2	Skilled attendant at delivery	Percentage of women age 15-49 years with a live birth in the last 2 years who were attended by skilled health personnel during their most recent live birth	92.4
5.8	Institutional deliveries	Percentage of women age 15-49 years with a live birth in the last 2 years whose most recent live birth was delivered in a health facility	92.1
5.9	Caesarean section	Percentage of women age 15-49 years whose most recent live birth in the last 2 years was delivered by caesarean section	9.7
---	Iron folate supplementation coverage	Percentage of women age 15-49 years with a live birth in the last 2 years who received any iron folate tablets during their last pregnancy that led to a live birth	67.4
---	Adequate iron folate supplementation	Percentage of women age 15-49 years with a live birth in the last 2 years who consumed 90 or more iron folate tablets during their last pregnancy that led to a live birth	25.7
---	Deworming tablet coverage	Percentage of women age 15-49 years with a live birth in the last 2 years who received a deworming tablet during their last pregnancy that led to a live birth	13.1

Child Development

Child development

MICS Indicator	Indicator	Description	Value
6.1	Attendance to early childhood education	Percentage of children age 36-59 months who are attending an early childhood education programme	5.2
6.2	Support for learning	Percentage of children age 36-59 months with whom an adult has engaged in four or more activities to promote learning and school readiness in the last 3 days	72.3

Child development

MICS Indicator	Indicator	Description	Value
6.3	Father's support for learning	Percentage of children age 36-59 months whose biological father has engaged in four or more activities to promote learning and school readiness in the last 3 days	1.6
6.4	Mother's support for learning	Percentage of children age 36-59 months whose biological mother has engaged in four or more activities to promote learning and school readiness in the last 3 days	59.3
6.5	Availability of children's books	Percentage of children under age 5 who have three or more children's books	18.5
6.6	Availability of playthings	Percentage of children under age 5 who play with two or more types of playthings	70.9
6.7	Inadequate care	Percentage of children under age 5 left alone or in the care of another child younger than 10 years of age for more than one hour at least once in the last week	9.1
6.8 **SDG 4.2.1**	Early child development index	Percentage of children age 36-59 months who are developmentally on track in at least three of the following four domains: literacy-numeracy, physical, social-emotional, and learning	78.9

Child Protection

Birth registration

MICS Indicator	Indicator	Description	Value
8.1 **SDG 16.9.1**	Birth registration	Percentage of children under age 5 whose births are reported registered	83.8

Child discipline

MICS Indicator	Indicator	Description	Value
8.3 **SDG 16.2.1**	Violent discipline	Percentage of children age 1-4 years who experienced psychological aggression or physical punishment during the last one month	64.0

Children's living arrangements

MICS Indicator	Indicator	Description	Value
8.13	Children's living arrangements	Percentage of children under age 5 living with neither biological parent	8.0
8.14	Prevalence of children with one or both parents dead	Percentage of children under age 5 with one or both biological parents dead	6.4

Children's living arrangements

MICS Indicator	Indicator	Description	Value
8.15	Children with at least one parent living abroad	Percentage of children under age 5 with at least one biological parent living abroad	10.5

Literacy and Education

Literacy and education [1]

MICS Indicator		Indicator	Description	Value
7.1		Literacy rate among young caregivers	Percentage of caregivers age 15-24 years who are able to read a short simple statement about everyday life or who attended secondary or higher education	99.3
7.2	**SDG 4.2.2**	School readiness	Percentage of children in first grade of primary school who attended pre-school during the previous school year	92.8
7.3		Net intake rate in primary education	Percentage of children of school-entry age who enter the first grade of primary school	32.3
7.4		Primary school net attendance ratio (adjusted)	Percentage of children of primary school age currently attending primary or secondary school	79.6
7.5		Secondary school net attendance ratio (adjusted)	Percentage of children of secondary school age currently attending secondary school or higher	48.1
7.6		Children reaching last grade of primary	Percentage of children entering the first grade of primary school who eventually reach last grade	90.5
7.7		Primary completion rate	Number of children attending the last grade of primary school (excluding repeaters) divided by number of children of primary school completion age (age appropriate to final grade of primary school)	87.0
7.8		Transition rate to secondary school	Number of children attending the last grade of primary school during the previous school year who are in the first grade of secondary school during the current school year divided by number of children attending the last grade of primary school during the previous school year	91.3
7.9	**SDG 4.5.1**	Gender parity index (primary school)	Primary school net attendance ratio (adjusted) for girls divided by primary school net attendance ratio (adjusted) for boys	1.04

Literacy and education [12]				
MICS Indicator		**Indicator**	**Description**	**Value**
7.10	**SDG 4.5.1**	Gender parity index (secondary school)	Secondary school net attendance ratio (adjusted) for girls divided by secondary school net attendance ratio (adjusted) for boys	1.20

12. Education indicators, wherever applicable, are based on information on reported school attendance (at any time during the school year), as a proxy for enrolment and apply for children in households with a child under 5 years.

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List of Abbreviations

ARI	Acute Respiratory Infection
BMI	Body Mass Index
EBF	Exclusive Breastfeeding
EPPSO	Economic Policy, Planning and Statistics Office
FAO	Food and Agriculture Organization
GPI	Gender Parity Index
HAZ	Height for Age Z-score
HFIAS	Household Food Insecurity Access Scale
ICHNS	Integrated Child Health and Nutrition Survey
IYCF	Infant and Young Child Feeding
LBW	Low Birth Weight
MAD	Minimum Acceptable Diet
MDD	Minimum Dietary Diversity
MFF	Minimum Feeding Frequency
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MICS6	Sixth global round of Multiple Indicator Clusters Surveys programme
MOHHS	Ministry of Health and Human Services
NAR	Net Attendance Rate
NSO	National Statistics Office
ORT	Oral Rehydration Treatment
PBF	Predominant Breastfeeding
PPM	Parts Per Million
PPS	Probability Proportionate to Size
PSU	Primary Sampling Unit
RMI	Republic of the Marshall Islands
SDGS	Sustainable Development Goals
SPSS	Statistical Package for Social Sciences
TWG	Technical Working Group
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	U.S. Agency for International Development
WASH	Water, Sanitation and Hygiene
WAZ	Weight for Age Z-score
WMDD	Women's Minimum Dietary Diversity
WFFC	World Fit for Children
WHZ	Weight for Height Z-score
WHO	World Health Organization

Acknowledgements

The Republic of the Marshall Islands Integrated Child Health and Nutrition Survey, 2017 (RMI ICHNS, 2017), was conducted from April to June 2017. The survey findings provide important information on the nutrition status of children in RMI and it is anticipated that they will provide invaluable information for stakeholders as they embark on programming for the health, nutrition and the well-being of mothers and children. The survey will be an important source of information to monitor the progress towards achieving the Sustainable Development Goals (SDGs) for children.

The Survey Steering Committee and Technical Working Group gave exemplary guidance and managed this complex survey. The invaluable contributions of the following institutions are acknowledged:

- Ministry of Health and Human Services
- Economic Policy, Planning and Statistics Office

The Republic of the Marshall Islands Integrated Child Health and Nutrition Survey, 2017 and the corresponding analysis in this report are the result of joint efforts by a number of individuals, institutions and organizations. The survey was conducted jointly by the Government of RMI and the United Nations Children's Fund (UNICEF) with technical expertise from UNICEF in the areas of survey methodology, data collection tools, training, fieldwork and data analysis.

The survey was made possible through the financial and technical support from the MoHHS, EPPSO, UNICEF, Government of New Zealand, Government of Canada and Government of Italy.

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Executive Summary

The RMI Integrated Child Health and Nutrition Survey (RMI ICHNS 2017) was conducted from April to June 2017 by the Ministry of Health and Human Services (MoHHS) and the Economic, Policy Planning and Statistics Office (EPPSO). Technical and financial support for the survey was mainly provided by the United Nationals Children's Fund (UNICEF) Pacific Country Office in Fiji. The RMI ICHNS 2017 provides valuable information and the latest evidence on the situation of children and their mothers in RMI, updating information from previous surveys. Throughout all stages of the RMI ICHNS 2017, strict data quality assurance and quality control measures were implemented to ensure high data quality and representative data from an equity perspective by indicating disparities by sex, area, education, household wealth and other characteristics. The RMI ICHNS 2017 is based on a sample of 581 households with children under 5 that were interviewed and provides a comprehensive picture of children and their caregivers at the national, urban and rural level in RMI.

Nutritional Status and Breastfeeding

Nearly 90 percent of children under 5 years of age in the survey were weighed at birth. Overall, 11.6 percent were reported to weigh less than 2,500 grams at birth and 4.8 percent were reported to weight 4,000 grams or higher at birth. Among children whose mothers had short stature the prevalence of low birth weight was 25.3 percent.

The prevalence of moderate or severe underweight among children under 5 in RMI is reported at 11.7 percent which is classified as a medium public health concern by the WHO. The prevalence of moderate or severe underweight was highest in children who were born low birth weight at 23.1 percent and in children whose mothers had short stature at 23.6 percent.

Over one in three children in RMI is moderately or severely stunted with stunting classified as a high public health concern by the WHO. The prevalence of stunting increased with child age with critically high levels of stunting in children 12-35 months of age with over 40 percent of children stunted. Children under 5 in the poorest households in RMI were more likely to be moderately or severely stunted than children from other wealth index quintiles although prevalence of stunting was 20 percent in even the wealthiest households.

Moderate or severe wasting among children under 5 in RMI was 3.6 percent which is classified as acceptable by the WHO. There was little variation in wasting by household wealth or age of the child, however wasting surpassed 10 percent in children whose mothers were short stature. Prevalence of overweight in children under 5 years was low at 3.8 percent in RMI. Urban children were more likely to be overweight compared to rural children, however prevalence was still low at 4.3 percent.

A high percentage (87.4 percent) of newborns in RMI were breastfed at some point after birth. However, only 60.8 percent started breastfeeding at the correct time (i.e., within one hour of birth). A total of 42.3 percent of infants aged 0-5 months are exclusively breastfed and 50.9 percent of infants 0-5 months are predominantly breastfed. Some 34.2 percent of children in RMI continue to receive breastfeeding at 2 years old. The timely introduction of solid, semi-solid or soft foods is poor in RMI with only 64.2 percent of children 6-8 months receiving these foods in the previous day. Among children 6-23 months of age, 42.5 percent of children received minimum dietary diversity and 60.8 percent of children received minimum meal frequency. Less than a third of children (29.6 percent) received a minimum acceptable diet adequate in both dietary quality and quantity.

Maternal Nutrition Status

Three out of four caregivers with a child under 5 in RMI are overweight with nearly one in two caregivers are obese. Percentage of overweight and obesity increased with caregiver age with nearly all women 40-49 years of age (93.3 percent) overweight or obese. There was no association between overweight and obesity and household wealth with caregivers in the poorest households as likely to be overweight as caregivers in the wealthiest households. Over one in four caregivers had borderline short stature with a height less than 150cm.

Dietary practices for caregivers with a child under 5 was poor in RMI with only 27.4 percent of women meeting minimum dietary diversity. Minimum dietary diversity was positively associated with household wealth, however only 43.4 percent of the wealthiest mothers consumed a diet which met minimum dietary diversity. While consumption of iron rich foods was good (75.3 percent) only 14.8 percent of caregivers consumed dark green leafy vegetables and 36.2 percent of caregivers consumed vitamin A rich fruits and vegetables. However, consumption of nutrient poor and high calorie foods such as cakes, cookies, sugar sweetened beverages and fried snacks was high with 63.5 percent of caregivers consuming at least one of these foods in the last 24 hours.

Child Health

In RMI, 9.3 percent of children under 5 had diarrhoea in the last 2 weeks with 47.1 percent of these children receiving medical care or advice from a health facility or provider. While care seeking for diarrhoea was nearly 50 percent, only 28.4 percent of children under 5 who had diarrhoea received ORS or any recommended homemade fluid and 7.5 percent received ORS and zinc. Percentage of children who had symptoms of ARI was 2.9 percent while 11.5 percent of children had an episode of fever in the previous 2 weeks to the survey.

All children 6-59 months of age should receive high dose vitamin A supplementation (VAS) twice yearly. In RMI, 54.4 percent of children 6-59 months received high dose VAS with higher coverage among female children compared to males. Coverage of deworming was lower than VAS in RMI with 32.1 percent of children 12-59 months of age receiving deworming in the previous 6 months. The highest coverage of both VAS and deworming in RMI was among the richest households. Only 11.3 percent of children received any form of iron supplementation in the previous 7 days with higher coverage in urban areas.

Water and Sanitation

The RMI ICHNS 2017 showed that in households with a child under 5, 100 percent of the population has access to improved sources of drinking water. The majority of households used rainwater collection (67.6 percent) for drinking water while 18.1 percent used bottled water. While all households used improved sources of drinking water, 58.8 percent of households used an additional water treatment method to purify their drinking water. Household assess to improved sanitation facilities was 86.3 percent with 8.3 percent of households using open defecation. In rural areas, over a third of households used open defecation with the highest percentage in the poorest households.

The percentage of households who adequately disposed of children's stools was low at 6.0 percent. A majority of households (68.1 percent) threw the child stools in the garbage which is considered an unsafe method of disposal.

Nearly all households (91.7 percent) in RMI had a specific place for handwashing with water and soap or other cleansing agent present. For the poorest households, this indicator was lower, at 81.0 percent.

Reproductive Health

Among mothers who had a live birth in the last two years, 92.7 percent received antenatal care from skilled personnel at least once during their pregnancy. In one out of three cases, antenatal care was provided by a medical doctor. A total of 67.8 percent of mothers who had a live birth during the last two years, had four or more antenatal care visits during their last pregnancy and 43.7 percent of mothers had their first antenatal care visit during the first trimester. However, only 31.1 percent of mothers who were not married received their first antenatal care visit during the first trimester.

A total of 92.4 percent of deliveries were attended by a skilled personnel and 9.7 percent were by C-section. Mothers in rural areas were less likely to have a delivery by a skilled attendant (66.2 percent) as well as mothers in the poorest households (73.0 percent). The majority of births were delivered in a public hospital (83.0 percent) with only 3.7 percent of births delivered at home. Two out of five of the poorest mothers gave birth in an outer island health centre or dispensary.

Early Childhood Development

In RMI, only 5.2 percent of children 36-59 months attended an organized early childhood education programme, however public school provided kindergarten is only offered with children entering at 5 or 6 years of age. Provision of organized early childhood education is available through private schools with children starting at 4 or 5 years of age. It is notable that the richest households had the highest percentage of children attending ECD (11.1 percent). In addition to poor attendance in early childhood education programmes for children 3 to 4 years of age, adult engagement with the child in activities that promote learning or school readiness was sub-optimal. A total of 72.3 percent of children were engaged by adult household members in four or more learning activities while only 59.3 percent of children were engaged by their mother in four or more learning activities. Only 1.6 percent of fathers have engagement with their children in activities that promote learning or school readiness. A total of 70.9 percent of children had access to two or more playthings and nearly one in five children lived in a household with 3 or more children's books. Some 9.1 percent of children aged under 5 were left with inadequate care during the week preceding the survey.

Among children aged 36-59 months, 78.9 percent were developmentally on track. There were no differences in the percentage of children developmentally on track by household wealth status, caregiver's education level, or urban and rural area.

Literacy and Education

In RMI, 99.3 percent of young caregivers aged 15-24 years and with a child under 5 years were literate. In terms of school readiness, the percentage of children attending Grade 1 who were attending kindergarten the previous year is 92.8 percent. Overall, 32.3 percent of primary school entry age children who live in a household with a child under 5 enter primary school Grade 1. In RMI, children are considered primary school entry age at 6 years, however many children start school later at 7 or 8 years. The net attendance ratio at primary level (adjusted) was 79.6 percent, with 8.7 percent of primary school age attending preschool and 10.0 percent not attending school or preschool. The net attendance ratio at primary level (adjusted) was higher for female children (83.2 percent) compared to boy children (76.5 percent). The net attendance ratio (adjusted) at secondary level was lower at 48.1 percent with 29.8 percent of children of secondary school age attending primary school and 22.6 percent of children out of school.

A total of 90.5 percent of children entering Grade 1 eventually reach Grade 8. Completion of primary school and transition into secondary school was similar with 87.0 percent of children completing primary school and 91.3 percent of children transitioning to

secondary school. In RMI, there was gender parity at the primary level, however, at the secondary level there are 1.20 secondary school age girls attending secondary school for every secondary school age boy attending secondary school.

Child Protection

In RMI, 83.8 percent of children under 5 years of age had their birth registered with civil authorities. Children in rural areas were less likely to have their birth registered (69.2 percent) as well as children from the poorest households (77.0 percent) and richest households (76.6 percent). The use of violent discipline methods was high in RMI, with 61.6 percent of children 1-4 years having faced any violent discipline method during the one month preceding the survey. Caregiver education level was inversely associated with use of any violent discipline method. Similarly, 69.1 percent of respondents felt that physical punishment should be used to discipline children. This indicator also showed an inverse association with the respondent's education level.

In total, 8.0 percent of children under 5 lived with neither biological parent with the highest prevalence among older children 36-59 months. Overall, 6.4 percent of children in RMI had one or both parents dead and 10.5 percent of children had at least one parent living abroad.

Conclusion

The RMI ICHNS 2017 Final Report presents a "report card" on RMI's nutrition situation for young children and their caregivers, highlighting the specific nutrition concerns where attention is required. Analysis of the ICHNS 2017 data reveals that malnutrition is high in RMI, with stunting in children and overweight in caregivers identified as national public health concerns. Additionally, while micronutrient status was not measured in the survey, poor dietary quality of both children and their caregivers indicates that prevalence of micronutrient deficiencies is high and universal.

While the historic reduction in morbidity and improved well-being in RMI are a victory, the potential increases in productivity and intellectual capacity due to reduction of malnutrition in children and their caregivers are substantial additional benefits not to be overlooked. These health improvements can ultimately reverse a cycle of dependence and can fuel a cycle of increased productivity, economic development and prosperity.

I. Introduction

Background

This report is based on the Republic of the Marshall Islands Integrated Child Health and Nutrition Survey (ICHNS), conducted in 2017 by the RMI Ministry of Health and Human Services (MoHHS) in collaboration with the RMI Economic, Policy Planning and Statistics Office (EPPSO). Technical and financial support was provided by the United Nations Children's Fund (UNICEF). The survey provides statistically sound and internationally comparable data essential for developing evidence-based policies and programmes, and for monitoring progress toward national goals and global commitments. Among these global commitments are those emanating from the World Fit for Children Declaration and Plan of Action, the Education for All Declaration and the Sustainable Development Goals (SDGs).

A Commitment to Action:

National and International Reporting Responsibilities

The governments that signed the Millennium Declaration and the World Fit for Children Declaration and Plan of Action also committed themselves to monitoring progress towards the goals and objectives they contained:

"We will monitor regularly at the national level and, where appropriate, at the regional level and assess progress towards the goals and targets of the present Plan of Action at the national, regional and global levels. Accordingly, we will strengthen our national statistical capacity to collect, analyse and disaggregate data, including by sex, age and other relevant factors that may lead to disparities, and support a wide range of child-focused research. We will enhance international cooperation to support statistical capacity-building efforts and build community capacity for monitoring, assessment and planning." (**A World Fit for Children**, paragraph 60)

"…We will conduct periodic reviews at the national and subnational levels of progress in order to address obstacles more effectively and accelerate actions…." (**A World Fit for Children**, paragraph 61)

The Plan of Action of the World Fit for Children (paragraph 61) also calls for the specific involvement of UNICEF in the preparation of periodic progress reports:

"… As the world's lead agency for children, the United Nations Children's Fund is requested to continue to prepare and disseminate, in close collaboration with Governments, relevant funds, programmes and the specialized agencies of the United Nations system, and all other relevant actors, as appropriate, information on the progress made in the implementation of the Declaration and the Plan of Action."

Similarly, the **Millennium Declaration** (paragraph 31) calls for periodic reporting on progress:

"…We request the General Assembly to review on a regular basis the progress made in implementing the provisions of this Declaration, and ask the Secretary-General to issue periodic reports for consideration by the General Assembly and as a basis for further action."

The Republic of the Marshall Islands (RMI) is located in the Central Pacific Ocean and covers an area of 181 square kilometres comprising 29 scattered and remote atolls. There are 1,225 islands and islets in RMI and most are not more than 10 feet in elevation above sea level. RMI is spread across 750,000 square miles of ocean with total land area of 181 square kilometres and some 370 km of coastline. RMI has a unique geography which is a challenge to the delivery of basic health services. Transportation, electricity and communication are also limited because of the isolated nature of the islands. The projected population as of 2017 in RMI is approximately 55,000 with the majority of the population living in the urban (73 percent) areas of Majuro and Kwajalein. The 27 percent of the population living in rural areas is dispersed amongst the outer atolls and islands.

RMI was traditionally dependent on fishing and subsistence agriculture, however, with increasing urbanization, the highly urbanized Marshallese depend on financial transfers from abroad and imports to meet national demand. The potential of the natural environment to sustain the population has been diminished due to contamination with radioactive wastes.

Climate change is a concern for RMI, which is extremely vulnerable to rising sea levels and subject to frequent droughts and cyclones. Recently RMI was affected by long periods of drought due to El Nino. The prolonged situation affected both agricultural production and household food security with resultant impact on health, nutrition, water, sanitation and education status of the population. Water scarcity, attributed to frequent drought, is an influencing factor to hygiene practices including hand washing and unhealthy household environments. Malnutrition in children is largely attributed to unhealthy household environments (poor sanitation, lack of clean water, prevalence of infectious diseases) as well as the prevalence of inadequate care and feeding practices (poor breastfeeding support, poor complementary feeding practices, inadequate dietary intake, household food insecurity), poverty, and the globalization of the food system and aggressive marketing of unhealthy food. These factors are negatively impacted during emergencies such as drought and cyclones with young children highly susceptible to deteriorating nutrition status.

There is limited data available on the nutrition status of young children and their mothers for RMI. The available data indicates that nearly 18 percent of infants are born with low birthweight and that exclusive breastfeeding is low at 31 percent of children under 6 months[2]. Micronutrient deficiencies are widely prevalent with nearly 30 percent of children under 5 years of age anaemic and 13 percent of preschool children deficient in vitamin A. While 1 out of 4 (24 percent) women of reproductive age are anaemic[3], anaemia is highest amongst pregnant women with nearly 2 out of 5 (38 percent) pregnant women anaemic.

13 *Global Nutrition Report, 2015.*

14 *Marshall Islands Food and Nutrition Profile (2014). EU, FAO, WFP, WHO and UNICEF.*

There is no available data on child anthropometric status in RMI as previous surveys did not collect child height and weight which are required to determine the national prevalence of stunting, underweight, wasting and overweight. In adults, the prevalence of both overweight and obesity is a serious public health concern with 79 percent of women overweight and 49 percent of women obese[13].

This ICHNS 2017 report presents key findings from the analysis of the ICHNS 2017 which was conducted in RMI in 2017. It assesses the current nutrition status in RMI of both children under 5 years of age and their caregivers and identifies nutrition status shortfalls with the goal of informing policy and programmatic action. Key features of the ICHNS 2017 survey include the availability of area level data on relevant nutrition indicators and the inclusion of data of household food security, maternal nutrition status, and maternal dietary quality which have previously never been collected in RMI. The ICHNS 2017 survey quantifies the prevalence of the nutrition conditions that are of greatest concern to the vulnerable populations of infants and young children and their caregivers. As RMI is experiencing a double burden of malnutrition with high prevalence of both under- and over-nutrition, the survey analysis report examines nationally-based and area-based indicators relevant to the country's current nutrition transition. The area level data are useful for identifying target areas requiring additional programming, training, and resources.

A well-nourished population is vital to a country's social and economic progress; however, RMI faces serious public health challenges from malnutrition. This Integrated Child Health and Nutrition Survey 2017 (ICHNS 2017) report aims to inspire and inform a political commitment to investment in nutrition programmes, to deliver effective and affordable interventions to women and children and to advance RMI's sustainable development agenda. The ICHNS 2017 results will be critically important for final SDG reporting, and are expected to form part of the baseline data.

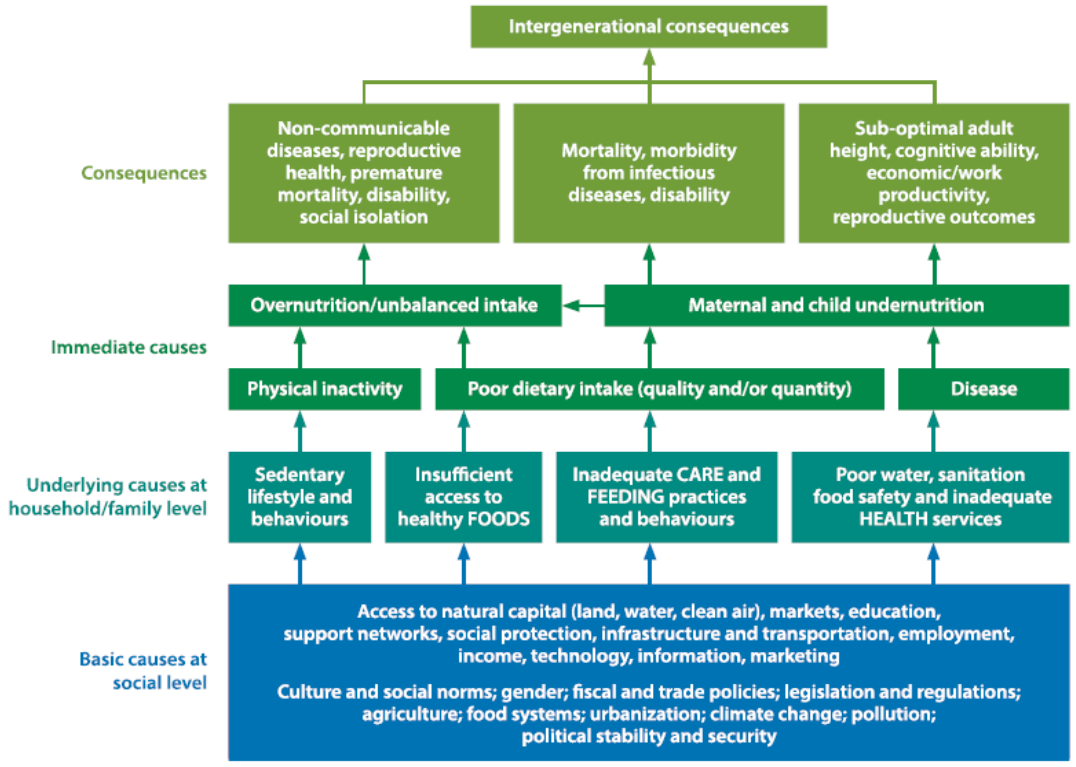
Survey Justification and Rationale

The Republic of the Marshall Islands implemented a DHS in 2007 and a National Census in 2011, however these surveys did not measure the prevalence of malnutrition, infant and young child feeding practices and their influencing variables in young children at the national and sub-national level. Therefore, findings from the ICHNS 2017 form the baseline for key nutrition indicators in the country, at both the national and sub-national level, which together with any future Demographic Health Surveys/ Multiple Indicator Cluster Surveys conducted in RMI, can provide evidence on progress towards achieving the Sustainable Development Goals.

The ICHNS 2017 is the most comprehensive nutrition assessment ever conducted in The Republic of the Marshall Islands. The ICHNS 2017 provides statistically representative prevalence of key parameters for urban and rural areas in RMI and may be used to fill

the existing data gaps and provide more robust updated data for policy makers and program managers. The principle survey design collected data on the current nutrition status of children under 5 years of age and their caregivers and the key determinants of optimal nutrition status in the country at the national and at the urban and rural level. As described in Figure 1, the survey will identify the critical influencing factors associated with malnutrition of children in the country.

Figure 1: *Short- and long-term consequences of child malnutrition as a component of the Child Malnutrition Conceptual Framework4*



The ICHNS 2017 is the first survey to assess in RMI both wealth and household food security status of households with under 5-year old children through the FAO and USAID Household Food Insecurity Access Scale measurement guide. The addition of household food security status allows for comparative assessment of nutrition status by target population group in relation to the socio-economic and food security status of the households they live. The survey is also the first in RMI to assess the dietary diversity of caregivers of children under 5 years of age through the FAO and USAID Women's Minimum Dietary Diversity indicator. Dietary diversity assessment of caregivers 15-49 years of age provides information on dietary quality and potential rationale for common types of micronutrient deficiencies in RMI women.

15. Basic, underlying and immediate causes are included in this figure, as well as outcomes of malnutrition. Figure adapted by ASEAN, UNICEF and WHO for publication in ASEAN/UNICEF/WHO (2016) Regional Report on Nutrition Security in ASEAN, Volume 2, from the 1997 UNICEF Conceptual Framework of Malnutrition.

A key strength of the survey is the measurement of immediate causes, underlying causes, basic causes and consequences of child nutrition status which allow for a full understanding of which factors place children at risk for malnutrition. The survey contributes important data on the nutrition status of both children under 5 years of age and their mothers which was unavailable prior to the ICHNS 2017. The area-level data collected for all nutrition indicators is useful for identifying under-performing areas where additional planning, training, and resources may be required for targeted support.

Survey Objectives

The objective of the ICHNS 2017 is to assess the current nutrition status and influencing variables to nutrition status in under 5 children and their mothers in the Republic of the Marshall Islands.

The survey:

1. Examines the prevalence and identify the key determinants of stunting, underweight, overweight and wasting in young children and examines the prevalence of overweight, underweight and short stature in caregivers of young children.

2. Establishes the current status of early child development, child functioning and child discipline practices in urban and rural children.

The RMI ICHNS 2017 will enable stakeholders in RMI to more effectively plan, manage and monitor existing nutrition programs and determine where programmatic revision may be needed to address gaps and barriers to effective coverage.

The 2017 ICHNS has as its primary objectives:

- To provide up-to-date information for assessing the situation of children and their caregivers in RMI;

- To generate data for the critical assessment of the progress made in various areas, and to put additional efforts in those areas that require more attention;

- To furnish data needed for monitoring progress toward goals established in the Millennium Declaration, Sustainable Development Goals and other internationally agreed upon goals, as a basis for future action;

- To collect disaggregated data for the identification of disparities, to allow for evidence based policy-making aimed at social inclusion of the most vulnerable;

- To contribute to the generation of baseline data for the post-2015 agenda;
- To validate data from other sources and the results of focused interventions.

The specific objectives and key metrics of the survey are outlined below with representativeness at the national and the urban and rural area level. The specific objectives have been organized in accordance with the determinant framework for optimal nutrition status presented in Figure 1.

Objectives for assessing nutrition status (overall program outcomes)

- Determine the prevalence of malnutrition in children 0-59 months of age (stratified at national, urban and rural level) and caregivers of children 0-59 months of age.

Objectives for assessing the immediate determinants of nutrition status

- Determine the prevalence of core IYCF practices, including the following indicators stratified at the national and urban/rural location level:
  - Exclusive breastfeeding and predominant breastfeeding for infants 0-5 months of age
  - Early initiation of breastfeeding for infants 0-23 months of age
  - Minimum dietary diversity for children 6-23 months of age
  - Minimum meal frequency for children 6-23 months of age
  - Minimum acceptable diet for children 6-23 months of age
  - Consumption of iron rich foods
  - Consumption of vitamin A rich foods
  - Consumption of low nutrient density foods
  - Bottle-feeding for children 0-23 months of age.
- Determine the quality of maternal diets at the national and urban/rural location level
  - Women's minimum dietary diversity for all caregivers 15-49 years
  - Consumption of iron rich foods
  - Consumption of vitamin A rich foods
  - Consumption of low nutrient density foods

- Determine the prevalence of low birthweight for children 0-59 months of age.
- Determine the health status of children 0-59 months of age as measured by fever, diarrhoea and Acute Respiratory Infection (ARI).
- Determine the coverage of the following nutrition interventions implemented at scale at the national and urban and rural areas:
  - Receipt of vitamin A supplementation for children 6-59 months of age.
  - Receipt of iron supplementation or other vitamin/mineral supplementation for children 0-59 months of age.
  - Receipt of deworming tablets for children 12-59 months of age.
  - Receipt and utilization of iron folic acid supplementation through ANC or health centres for mothers of children 0-23 months of age.

Objectives for assessing the underlying determinants of nutrition status

- Determine household food insecurity for households with children under 2 years of age
- Determine access to improved sanitation, water sources and improved hygiene practices.
- Determine quality of ANC care practices

Objectives for assessing child functioning for children 2-4 years of age

- Assess functional difficulties for seeing, hearing, mobility, communication/ comprehension, learning, relationships and playing.

Objectives for assessing child protection for children 0-59 months of age

- Determine the prevalence of birth registration for children 0-59 months of age
- Assess child disciplining methods for children 1-5 years of age
- Determine children's living arrangements and orphanhood for children 0-59 months of age

II. Sample and Survey Methodology

Sample Design

The sample for the Integrated Child Health and Nutrition Survey 2017 (ICHNS 2017) was designed to provide estimates for a large number of indicators on the situation of children and their caregivers at the national level and for urban and rural areas. The Republic of Marshall Islands (RMI) 2011 Census with 2017 projections was used as the sampling frame with identification of the primary sampling units (clusters) stratified for urban and rural areas selected systematically with probability proportional to size. In each selected cluster, a household listing was carried out to identify households with children under 5 years of age. In the 50 selected clusters, 12 households in each cluster for a total of 600 households were randomly sampled as the secondary sampling unit. During household listing exercises, several clusters had less than 12 households with children under 5 years of age necessitating a reduction in the total sample size to 581 households. The sample was stratified by urban and rural areas, and is not self-weighting. For reporting national level results, sample weights are used. A more detailed description of the sample design can be found in Appendix A: Sample Design.

Questionnaires

The survey used quantitative data collection methods with three sets of questionnaires used in the survey: 1) a household questionnaire which was used to collect basic demographic information on all ***de jure*** household members (usual residents), the household, and the dwelling; 2) a questionnaire for individual mothers or caregivers of children under 5 years of age administered in each household to all caregivers aged 15-49 years; and 3) an under 5 questionnaire, administered to mothers or caregivers for all children under 5 living in the household.

The following modules are included in the 2017 RMI ICHNS:

Household Questionnaire:

- Household Information Panel
- List of Household Members
- Education [5+]
- Household Characteristics
- Water and Sanitation
- Hand washing

Questionnaire for Individual Women:

- Woman's Information Panel
- Woman's Background
- Marriage/Union
- Fertility/Birth History
- Maternal and Newborn Health
- Women's Minimum Dietary Diversity
- Household Food Insecurity Access Scale
- Anthropometric Measurement

Questionnaire for Children Under 5:

- Under-Five Child Information Panel
- Under-Five's Background
- Birth Registration
- Early Childhood Development
- Child Discipline [1-4]
- Child Functioning [2-4]
- Breastfeeding and Dietary Intake
- Child Health
- Anthropometry

The questionnaires are based on the MICS 6 with the RMI DHS 2007 questionnaire utilized for household characteristics and asset ownership questions. All three questionnaires were reviewed by the Technical Working Group and shared with partners. From the MICS6 model English version, the questionnaires were customised and were pre-tested from February 7th-8th 2017, revised and translated into local Marshallese dialect by the MOHHS and EPPSO. Based on the results of the pre-test, modifications were made to the wording and translation of the questionnaires. A copy of the ICHNS 2017 questionnaires is provided in Appendix F.

In addition to the administration of questionnaires, enumerators observed the place for handwashing and measured the weights and heights of children age under 5 years and their caregivers 15-49 years of age. Details and findings of these observations and measurements are provided in the respective sections of the report.

Survey Teams

Three survey coordinators were identified by the MoHHS to coordinate the survey including training the enumerators and team leaders and monitoring the survey implementation. As the survey was collected using the Akvo mobile data collection platform, two database dashboard coordinators from the MoHHS provided technical support to the survey teams on network and dashboard related management of survey data.

The enumerator teams included the MoHHS, EPPSO and local NGO staff. In total, 20 enumerators and 4 supervisors were trained. The trained enumerators worked in teams of 4-5 for urban locations (Majuro and Ebeye) and in teams of 3-4 in rural locations. Each team included a team leader, 2-3 enumerators, 1 anthropometrist/measurer and oversight from 1 team supervisor. The anthropometrist/measurer was assisted by the team leader. Special consideration was given to select female enumerators to encourage an open and

comfortable environment for the survey collection within households. The enumerators were selected based on several criteria including: (i) the enumerator's ability to not bias the sample through asking leading questions or improper phrasing and (ii) ability to transcribe the response correctly. Enumerators who are conversant with anthropometry measurements and displayed strong capability in accurate measurements assessed through standardization test were selected to be a measurer. A pre-test and post-test were conducted to identify enumerators' interviewing and measurements skills.

Survey Instruments

The equipment, including height/length boards, electronic weighing scales, tablets with accessories and GPS units, were provided for the survey in the indicated amounts:

Equipment	Number Required	Spare equipment required
Measuring Boards	4	4
Electronic SECA scales	4	4
MUAC Tapes	20	20
Samsung Tablets and powerbank	25 (1 per team member and coordinators)	0

The UNICEF recommended measuring boards and electronic scales were procured by UNICEF Pacific country office in close collaboration with UNICEF Copenhagen office and were available for the survey. The tablets and powerbank were procured by UNICEF Pacific in Suva, Fiji based on specifications provided by Akvo which has been contracted to conduct the training of the survey team on how to use tablets for the survey.

Teams were allocated spare electronic scales and measuring boards to facilitate continuous and smooth data collection. USB flash drives were provided for back-up of survey data from smart phones and tablets in case of delays in instant transfer of data due to network connectivity issues especially in remote clusters.

Training

Training for the RMI ICHNS 2017 was conducted in three stages: (i) household listing (ii) Akvo training for the use of tablets in survey data collection and (iii) the collection of the three questionnaires and implementation of anthropometric measurements.

Training for household listing was conducted with survey teams in collaboration with the EPPSO during a half-day orientation. During the training, EPPSO provided cluster maps and the 2011 Census household listing. Instructions were provided on how to conduct the

location and cluster mapping and household listing. Following the orientation, the survey teams practiced the implementation of the household listing in selected clusters in Majuro between the February 22nd-25th. The EPPSO supervised the household listing to ensure accuracy and completeness of the household listing in the selected clusters.

Akvo, a non-profit organization, provided technical support to set up digital format of the survey questionnaires for mobile data collection and reporting as well as follow-up support for collection of the digital versions of the questionnaires. A 5-day Akvo training of trainers was conducted from February 13th to 17th. Three supervisors, 2 MoH database managers and 2 UNICEF technical staff were trained on the use of the Akvo dashboard and on the basic concepts of how to train enumerators to use the digitalized version of the questionnaires and the process of transmitting completed questionnaires to the survey coordinators on a timely basis for daily quality assurance checks. A pilot study was conducted to review the ease of use of the programmed questionnaire and to make any necessary revisions if required.

The main training of the enumerators and team leaders was conducted from February 27th to March 7th 2017. The training included 5 days in-class training that incorporates review of the survey questionnaires, anthropometric training for measurers and Akvo training to the enumerators for the use of digital questionnaires. The UNICEF technical staff, survey coordinators and the MoHHS database managers conducted the training of the enumerators on the use of digital tablets for interviews. The 5-day training was immediately followed by 3 days fieldwork practice, with each survey team covering a total of 12 households. During the 3-day fieldwork practice, survey teams practiced household listing and selection of households as per the protocol.

The general format for the training included an overview of the survey concepts, followed by a question-by -question walk-through of the module by a trainer. The enumerators were trained on the overall survey, and given an explanation of each question within the survey, as well as how to ask each question. The participants were engaged by reading questions out loud to ensure that the interviewers ask questions as they are written. The training also included tests for the enumerators, demonstration interviews, mock interviews and group interview practice sessions. In addition to classroom training, field practice sessions were provided to gain hands-on experience in conducting interviews and handling fieldwork logistics. The field training was conducted in a convenient, local village that has not been selected as a cluster for the actual survey. The teams practiced conducting household listing, selection of households, approach household heads and caregivers on the purpose of the survey, conduct interviews, use digital questionnaires and take anthropometric measurements of children and mothers. The teams were monitored by supervisors and any errors in household selection, interview techniques, data entry and measurements were corrected. The data from the field training were reviewed and analysed for data quality with feedback sessions conducted afterwards with pre- and post-tests.

Fieldwork

The main fieldwork was conducted from April 3rd until June 23rd, 2017 with all survey teams starting data collection in urban areas. A total of 4 teams comprising of 5 members each (total 20 enumerators) were deployed to 18 clusters in Majuro; while 2 teams of 4 members each were deployed to 7 clusters in Ebeye. For the outer islands, the team composition varied with teams of 3 to 4 team members. The rationale for increasing the number of teams (and reduction of team members) in the outer islands were for two reasons: (i) due to flight connectivity (which was generally once a week), the teams stayed in each cluster in the outer island for more than a week and hence had more time to complete the survey; this allowed more time for the teams to complete the household listing and conducting the survey, and (ii) to facilitate completion of the overall survey within a reasonable time period.

Under the overall supervision of the three survey coordinators, the team leaders were responsible for the mapping, household listing, quality data collection, editing and transmission of questionnaires to the respective coordinators. Each team leader liaised directly with the community leader in each of the enumeration areas to facilitate the team's work. Additionally, the survey coordinator maintained close contact and regular communication with the teams through phone and radio communication. The survey teams and supervisors were provided allowances for airtime to ensure communication to facilitate prompt corrective measures to deal with challenges as they arise in the field.

The survey coordinators provided support to their respective teams and were accountable for all data collection activities. Fieldwork supervision was coordinated by three senior survey coordinators from the MoHHS's and three senior EPPSO supervisors with support from the UNICEF technical team. The supervisors monitored the mapping, household listing and selection, interview techniques, digital data entry and measurements and provided corrective actions. The survey coordinators and UNICEF technical team also conducted random monitoring visits to observe the household listing, survey data collection and provided on-the-job feedback on data collection and recording. The survey coordinators and the UNICEF Nutrition Consultant based in Majuro reviewed all data entry prior to syncing the digital data online. Any observed errors in data collection were reviewed with the teams for corrective action in selected households.

Particular care was taken in the allocation of teams for remote outer islands where there was no communication access. Experienced team leaders who were familiar with the area and the communities were assigned to guide the teams. Having EPPSO and MOHHS staff as part of the team members was helpful as the staff were familiar with the communities.

Selected communities were informed about the survey through various communication channels. Messages were disseminated through radio, newspaper and SMS messages. Local chiefs and landlords were informed by the survey coordinators about the teams' visit to the clusters and to request their support by accompanying the teams for the mapping, household listing and data collection. The selected households were contacted by the team leaders to make an appointment with the household head and caregiver for the data collection.

Data Processing

Digital questionnaires from Akvo were used for data collection with paper based forms used as reference and back up. The digital format questionnaire had built-in quality checks including double entry and skip questions built into the system. The Akvo digital questionnaires did not allow for any questions to be left unanswered with error messages appearing at the end of each questionnaire indicating which questions are left unanswered. The geolocation information in the programme allowed for identifying the location of the selected household and the cluster. Additionally, the programme allowed for photo capture and obtaining consent from the households. The data gathered from questionnaires were submitted by the teams on daily basis and the information was instantly available on the Akvo web-based dashboard for review by the UNICEF Nutrition Consultant based in Majuro and the UNICEF EAPRO Nutrition Consultant based in Bangkok. The web-based dashboard allowed for real time data quality monitoring and follow-up with the teams for correction of errors and clarification as needed.

Stringent data quality assurance and data quality control measures were implemented throughout the survey implementation, processing and analysis. During survey implementation, incoming data was reviewed by the UNICEF EAPRO Nutrition Consultant with plausibility checks conducts for key socio-demographic indicators and anthropometric indicators. Any erroneous responses were tagged and the UNICEF Nutrition Consultant based in Majuro notified for follow up through checking paper forms and revisiting the household as necessary. After raw data was examined through plausibility checks, the final forms for each survey questionnaire were prepared and data were exported to SPSS version 22 for additional data cleaning and quality assurance by the UNICEF EAPRO Nutrition Consultant based in the Regional Office, Bangkok. The data cleaning process involved producing a set of (unweighted) frequency distributions for every variable in each data file which were checked for unusual values, those outside the range of most responses (outliers), and implausible answers to respective questions. Seemingly incorrect values were checked against original paper questionnaires.

For anthropometric measurements, data was exported to ENA software for additional quality assurance and plausibility analysis. Using the ENA standardized methodology, the overall data quality of anthropometric measurements in the ICHNS 2017 was rated as excellent. The sample of children for anthropometric measurements had no differences in sex ratio or age selection of children and very little digit preference for either weight or height. Additionally, there was little skewness or kurtosis in the weight-for-height z-scores of children indicating a normal distribution. Using the ENA software, the anthropometric data from the ICHNS 2017 was scored as excellent quality for both the overall data quality as well as each individual component of data quality assurance.

The ICHNS 2017 was not self-weighting. To generate national prevalence estimates for all indicators, weights were generated for household, children 0-59 months, and caregivers 15-49 years of age. Weighting estimates were applied for the development of all national estimates in the NNS V and are presented by cluster in Appendix A: Sample Design.

Data Analysis

Survey data were analysed using SPSS version 22 with the complex survey module and the analysis was conducted in three stages. The first stage involved calculation of composite variables, using the standardized MICS 5 protocol5 and the calculation and integration of sample weights. During this stage, coefficient of variation was calculated for all variables and confirmatory checks of recodes, transformations, and calculations were conducted. The second stage of analysis involved conducting descriptive analyses for all key survey indicators, including calculating proportions to derive prevalence estimates and calculating means and medians for continuous measurements. National prevalence estimates were calculated using a weighted analysis to account for the unequal probability of cluster selection in the two strata. Weighted percentages as well as unweighted counts are presented in the results tables.

In the third stage, bivariate analyses (chi-square, t-test) were performed to determine relationships between key dependent variables and influencing independent variables. The statistical precision of all estimates was assessed using 95 percent confidence limits that accounted for the complex stratified cluster sampling design. Table SS.1 presents the methodology used for the determination and classification of key socio-demographic and anthropometric indicators measured in the target populations.

<?> http://mics.unicef.org/tools?round=mics5#data-processing.

Table SS.1: Methods for classification of key household, dietary quality, and anthropometric indicators, ICHNS, 2017

Indicator	Classification method
Household wealth quintile index	The RMI DHS 2007 questionnaire for household characteristics and asset ownership was used to update MICS syntax for the calculation of wealth index quintiles
Household Food Insecurity Access Scale12	USAID FANTA HFIAS methodology used to calculate and categorize household food security status
Mothers' minimum dietary diversity score13	USAID FANTA and FAO Women's Minimum Dietary Diversity (W-MDD) methodology used to calculate mothers' dietary diversity score and percentage with minimum dietary diversity. W-MDD also used to assess consumption of specific food groups including consumption of iron-rich foods, vitamin A-rich foods, sugar-sweetened drinks, sugary and fried foods.
IYCF Indicators14	UNICEF and WHO standardized indicators
Child 0-59 months anthropometry15	Calculated using WHO Child Growth Standards and ANTHRO calculator with following cut-offs: • Wasting: < -2 SD WHZ • Stunting: < -2 SD HAZ • Underweight: < -2 SD WAZ • Overweight: > +2 SD WHZ
Mothers' anthropometry16	BMI calculated [weight (kg) / height $(m)^2$] with following cut-offs: • Underweight: < 18.5 kg/m^2 • Normal weight: 18.5-24.9 kg/m^2 • Overweight: 25.0-29.9 kg/m^2 • Obese: ≥ 30.0 kg/m^2 Women's short stature: height < 145 cm Women's borderline short stature: height < 150 cm

All analysis was performed with IBM SPSS Statistics version 22 using complex samples analysis. Sampling weights were applied for each dataset to take into consideration unequal probabilities of selection resulting from sample design and non- response.

Methodological Limitations

Limitations of the ICHNS 2017 are common to other large cross-sectional surveys. A key limitation is not being able to infer causality from observed associations between dependent and influencing variables. Survey data were only collected during the end of spring and beginning of summer (April to June, 2016) so no seasonal variations could be identified. In addition, in Majuro the household listing was conducted a month prior to the survey implementation and several of the selected households became empty or had moved within the time period. The households were replaced from the list of five reserved households in the original sampling plan. Absent or empty households were not an issue in Ebeye and the outer islands as the data collection was conducted immediately after the household listing. There were instances when the data entered to the tablets did not sync properly with the Akvo system. Where the tablets did not properly sync, the missing entries were managed by updating the tablet interphase and to provide a backup mobile data collection, hard copy questionnaires were additionally collected for Ebeye and outer islands. Data from the hard copy questionnaires were then inputted to the tablets immediately after return to Majuro.

Archiving and Dissemination

Steps were taken to ensure anonymity of all data in the datasets from the survey. The MoH will be the sole responsible focal agency of the data collected (hard and soft copies), cleaned and anonymised data. UNICEF will hold an anonymised copy of the dataset. The MOH will make the anonymised survey dataset available to responsible researchers as per government approved requests.

The MoHHS disseminated the survey findings with relevant sectors and partners through a dissemination meeting planned in mid-November 2017.

III. Sample Coverage and the Characteristics of Households and Respondents

Sample Coverage

During household listing exercises, several clusters had less than 12 households with children under 5 years of age necessitating a reduction in the total sample size from 600 to 581 households. Of these, 581 were successfully interviewed for a household response rate of 100 percent.

In the interviewed households, 704 women caregivers (age 15-49 years) with a child under 5 years were identified. Of these, 596 mothers and 102 caregivers were interviewed in the survey for a total of 698, yielding a response rate of 99.1 percent within the interviewed households. There were 881 children under age 5 listed in the household questionnaires. Questionnaires were completed for 881 of these children, which corresponds to a response rate of 100 percent within interviewed households.

Overall response rates of 99.1 and 100 percent are calculated for the individual interviews of women and under 5s, respectively (Table HH.1).

Table HH.1: Results of household, caregivers and under 5 interviews

Number of households, caregivers and children under 5 by interview results, and household, caregivers and under 5s response rates, RMI ICHNS, 2017

	Total	Area	
		Urban	Rural
Households [a]			
Sampled	600	300	300
Occupied	581	299	282
Interviewed	581	299	282
Household response rate	100.0	100.0	100.0
Caregivers of children under 5 [b]			
Eligible	704	379	325
Interviewed	698	376	322
Women's response rate	99.1	99.2	99.1
Women's overall response rate	99.1	99.2	99.1
Children under 5 [c]			
Eligible	881	490	391
Caregivers interviewed	881	490	391
Under 5s response rate	100.0	100.0	100.0
Under 5s overall response rate	100.0	100.0	100.0

[a] In the 50 selected clusters, 12 households in each cluster for a total of 600 households were to be randomly sampled. During household listing exercises, several clusters had less than 12 households with children under 5 years of age necessitating a reduction in the total sample size to 581 households.

[b] 596 mothers and 102 caregivers were interviewed in the survey for a total of 698.

[c] All eligible children 0-59 months of age in selected households participated in the survey, with several caregivers not completing components of the survey questionnaire. Specific population counts are included in the children's tables.

Response rates were very high. The response rate for households in both rural and urban areas was 100 percent. The response rate for eligible women was 99.1 percent: 99.1 percent in rural areas and 99.2 percent in urban areas. For children under 5 years of age, the response rate was 100 percent.

Characteristics of Households

Tables HH.3, HH.4 and HH.5 provide basic information on the households, caregiver's aged 15-49 and children under 5. Both unweighted and weighted numbers are presented. Such information is essential for the interpretation of findings presented later in the report and provide background information on the representativeness of the survey sample. The remaining tables in this report are presented only with unweighted numbers.

Table HH.3 provides basic background information on the households, including the sex of the household head, area, number of household members, education of household head, religion and ethnicity6 of the household head. These background characteristics are used in subsequent tables in this report; the figures in the table are also intended to show the numbers of observations by major categories of analysis in the report.

Table HH.3: Household composition

Percent and frequency distribution of households by selected characteristics, RMI ICHNS, 2017

	Weighted percent	Standard Error	95 percent CI		Number of households	
			Lower	Upper	Weighted	Unweighted
Total	**100.0**				**581**	**581**
Sex of household head						
Male	73.6	2.2	69.0	77.7	427	431
Female	26.4	2.2	22.3	31.0	154	150
Area						
Urban	80.4	1.4	77.6	83.0	467	299
Rural	19.6	1.4	17.0	22.4	114	282
Number of household members						
1-4	22.8	2.0	19.1	27.0	133	164
5-10	49.7	2.5	44.7	54.7	289	293
11+	27.5	2.4	23.1	32.3	160	124
Education of household head						
None	5.8	1.1	4.0	8.2	33	43
Primary	20.1	1.9	16.6	24.2	117	145
Secondary	48.5	2.6	43.5	53.5	282	273
Higher	25.6	2.3	21.4	30.4	149	120
Ethnicity						
Marshallese	98.5	0.6	96.7	99.3	572	574
Other	1.5	0.6	0.7	3.3	9	7
Religion						
Assembly of God	16.0	1.8	12.7	20.0	93	92
Protestant	51.3	2.5	46.3	56.3	298	324
Catholic	7.6	1.3	5.4	10.5	44	43
Other	25.0	2.2	20.9	29.7	145	122

6 This was determined by asking for the religion, native language and ethnic group of the head of household.

Head of household age						
Under 20 years	0.0	0.0	0.0	0.0	0	0
20-29 years	6.6	1.2	4.6	9.3	38	47
30-39 years	20.4	2.0	16.8	24.6	119	137
40-49 years	23.7	2.1	19.8	28.2	138	138
50 or older	47.7	2.6	42.7	52.7	277	248
Don't know	1.6	0.6	0.7	3.5	9	11
Mean household size	9.02	0.2			581	581

The weighted and unweighted total number of households are equal, since sample weights were normalized.[7] The table also shows the weighted mean household size estimated by the survey.

Table HH.3 shows that almost 3 in 4 (73.6 percent) households are male-headed and over 3 in 4 (77.2 percent) have five or more household members. Overall mean household size is 9.02 members. In total, 74.1 percent of the household heads have attained secondary education or above.

Characteristics of Caregivers Respondents 15-49 Years of Age and Children Under 5

Tables HH.4 and HH.5 provide information on the background characteristics of caregivers 15-49 years of age and of children under age 5. In both tables, the total numbers of weighted and unweighted observations are equal, since sample weights have been normalized (standardized).[23] In addition to providing useful information on the background characteristics of women and children under age 5, the tables are also intended to show the numbers of observations in each background category. These categories are used in the subsequent tabulations of this report.

Table HH.4 provides background characteristics of caregiver respondents aged 15-49 years. The table includes information on the distribution of women according to area, age, education8, wealth index quintiles9, religion of the household head, maternal marital status, motherhood status, parity, residence in current household, and previous place of residence.

Table HH.4 shows that an estimated 21.5 percent of mothers are currently married. Age

distribution of the women shows that almost half (45.7 percent) of caregivers interviewed are 20-29 years old.

Only a small percentage (1.0 percent) of the caregivers interviewed had no education and 80.7 percent of the women interviewed had secondary education or higher. The distribution of the women interviewed by wealth quintiles shows that 20.7 percent are from the poorest households and 17.8 percent are from the richest quintile.

23 Throughout this report, unless otherwise stated, "education" refers to highest educational level ever attended by the respondent when it is used as a background variable.

24 The wealth index is a composite indicator of wealth. To construct the wealth index, principal components analysis is performed by using information on the ownership of consumer goods, dwelling characteristics, water and sanitation, and other characteristics that are related to the household's wealth, to generate weights (factor scores) for each of the items used. First, initial factor scores are calculated for the total sample. Then, separate factor scores are calculated for households in urban and rural areas. Finally, the urban and rural factor scores are regressed on the initial factor scores to obtain the combined, final factor scores for the total sample. This is carried out to minimize the urban bias in the wealth index values.

Each household in the total sample is then assigned a wealth score based on the assets owned by that household and on the final factor scores obtained as described above. The survey household population is then ranked according to the wealth score of the household they are living in, and is finally divided into 5 equal parts (quintiles) from lowest (poorest) to highest (richest).

In the RMI ICHNS, 2017, see Household Questionnaire in Appendix F, questions HC8 and HC9 for the assets used in these calculations.

The wealth index is assumed to capture the underlying long-term wealth through information on the household assets, and is intended to produce a ranking of households by wealth, from poorest to richest. The wealth index does not provide information on absolute poverty, current income or expenditure levels. The wealth scores calculated are applicable for only the particular data set they are based on.

Further information on the construction of the wealth index can be found in Filmer, D and Pritchett, L. 2001. Estimating wealth effects without expenditure data – or tears: An application to educational enrolments in states of India. Demography 38(1): 115-132; Rutstein, SO and Johnson, K. 2004. The DHS Wealth Index. DHS Comparative Reports No. 6; and Rutstein, SO. 2008. The DHS Wealth Index: Approaches for Rural and Urban Areas. DHS Working Papers No. 60.

Table HH.4: Caregiver's background characteristics

Percent and frequency distribution of caregivers by selected background characteristics, RMI ICHNS, 2017

	Weighted percent	Number of women	
		Weighted	Unweighted
Total	100.0	698	698
Area			
Urban	81.9	572	376
Rural	18.1	126	322
Caregiver Age			
Under 20	4.0	28	26
20-29	45.7	318	317
30-39	36.8	256	247
40-49	10.5	73	83
50 and older	3.0	21	23
Caregiver's education			
None	1.0	7	8
Primary	18.3	127	143
Secondary	60.0	419	425
Higher	20.7	145	122
Wealth index quintile			
Poorest	20.7	144	302
Second	21.4	149	116
Middle	22.3	156	109
Fourth	17.8	125	91
Richest	17.8	124	80
Religion			
Assembly of God	17.5	122	114
Protestant	48.7	340	378
Catholic	7.8	54	54
Other	26.0	181	152
Maternal Married Status [1]			
Never married/in union	41.1	248	234
Currently married	21.5	130	134
Separated/Divorced/Widowed	3.5	21	21
Cohabitating	33.8	204	207
Relationship with under 5 child			
Mother	86.5	604	596
Caregiver	13.5	94	102
Parity			
1	31.5	190	178
2	26.5	160	164
3	19.4	117	114
4	12	72	72
5	5.2	31	38
6 +	5.5	32	30
Residence in current household			
0-4 years	19.2	134	126
5-9 years	19.9	139	123
10 or more years	60.8	425	449
Previous place of residence			
Different atoll/island	13.2	92	104
Same atoll, different island	15.5	108	90
Same atoll, different islet	1.6	11	13
Overseas	2.0	14	12
Same Islet, Same Zone, Same Atoll	67.7	472	479

1. For maternal married status, never married/in union was defined as the mother never married or not currently cohabitating with a partner while cohabitating was defined as the mother currently cohabiting with a partner regardless if the partner was the child's father.

Background characteristics of children under 5 are presented in Table HH.5. These include the distribution of children by several attributes: sex, area, age in months, respondent type, maternal age at birth, caregiver's education, wealth index quintile, religion, maternal married status, and father presence in household.

Table HH.5: Under 5s background characteristics

Percent and frequency distribution of children under 5 years of age by selected characteristics, RMI ICHNS, 2017

	Weighted percent	Number of under 5 children	
		Weighted	Unweighted
Total	100.0	881	881
Sex			
Male	51.7	456	455
Female	48.7	425	426
Area			
Urban	83.5	736	490
Rural	16.5	145	391
Age			
0-5 months	8.5	75	80
6-11 months	12.7	112	111
12-23 months	18.8	166	171
24-35 months	18.6	164	169
36-59 months	41.4	365	350
Respondent to the under 5 questionnaire			
Mother	85.9	757	752
Other caregiver	14.1	124	129
Maternal Age at Birth			
Less than 20 years	15.2	117	112
20-34 years	73.4	565	559
35-49 years	11.4	87	92
Caregiver's education			
None	1.5	13	12
Primary	18.8	164	181
Secondary	59.3	519	529
Higher	20.5	180	155
Wealth index quintile			
Poorest	19.4	171	370
Second	22.5	198	152
Middle	23.1	204	144
Fourth	16.6	146	108
Richest	18.4	162	107
Religion			
Assembly of God	16.3	143	133
Protestant	49.7	438	485
Catholic	8.0	70	68
Other	26.1	230	195
Maternal Married Status			
Not married	43.8	350	333
Currently married	21.7	173	175
Cohabitating	34.6	276	281
Father in Household			
Yes	72.1	635	623
No	27.9	246	258

Table HH.5 shows that 83.5 percent of children under 5 surveyed are from urban areas compared to 16.5 percent from rural areas. In 85.9 percent of cases, the respondent to the under 5 questionnaire was the natural mother and 1.5 percent of respondents had no education. A total of 35.0 percent of the children were from the two richest quintiles compared to 41.9 percent from two poorest quintiles. Over 7 out of 10 (72.1 percent) children lived in the same household as his or her father.

Housing Characteristics, Asset Ownership, and Wealth Quintiles

Tables HH.6, HH.7 and HH.8 provide further details on household level characteristics. HH.6 presents characteristics of housing, disaggregated by area, distributed by whether the dwelling has electricity, the main materials of the flooring, roof, and exterior walls, as well as the number of rooms used for sleeping.

Table HH.6 shows that 72.2 percent of all households have electricity with 81.7 percent of urban and 1 of 3 rural households having electricity. While a difference was found in household flooring with 91.4 percent of urban households with finished flooring compared to 84.6 percent of rural households, prevalence of finished roofing was the same in urban households (95.5 percent) as in rural households (95.4 percent).

Table HH.6: Housing characteristics

Percent distribution of households by selected characteristics, RMI ICHNS, 2017

	Total	Area		Unweighted Number	P-value
		Urban	Rural		
Electricity					
Yes	72.2	81.7	33.3	333	***
No	27.8	18.3	66.7	248	
Flooring					
Natural floor	1.9	1.5	3.5	12	--
Rudimentary floor	8.1	7.1	11.9	58	
Finished floor	90.1	91.4	84.6	511	
Roof					
Natural roofing	0.7	0	3.4	11	***
Rudimentary roofing	3.8	4.5	1.2	15	
Finished roofing	95.5	95.5	95.4	555	
Exterior walls					
Natural walls	0.6	0.4	1.6	6	--
Rudimentary walls	51	49.5	57.1	311	
Finished walls	48.4	50.1	41.3	264	
Rooms used for sleeping					
1	22	17.8	39.1	169	***
2	32.6	32.9	31.6	184	
3 or more	45.4	49.3	29.3	228	
Number of households	581	299	282	581	
Mean number of persons per room used for sleeping	2.47	2.58	2.01	581	

* P<0.05, ** P<0.01, *** P<0.001

In Table HH.7 households are distributed according to ownership of assets by households and by individual household members. This also includes ownership of dwelling.

Overall, 8.6 percent of households at the national level own a non-mobile telephone. Prevalence of a mobile phone in urban households was 70.7 percent compared to 26.1 percent in rural households and prevalence of internet connection in the home in urban households was 26.7 percent compared to 0.0 percent in rural households. In urban areas, 21.9 percent of households owned a car or truck compared to 3.0 percent in rural areas. Prevalence of dwelling ownership was 54.9 percent for rural households compared to 13.9 percent for urban households.

Table HH.7: Household and personal assets

Percentage of households by ownership of selected household and personal assets, and percent distribution by ownership of dwelling, RMI ICHNS, 2017

	Total	Area		P-value
		Urban	Rural	
Percentage of households that own a				
Radio	39.4	36.9	49.6	**
Television	48.4	55.6	18.5	***
Non-mobile telephone	8.6	10.5	0.7	***
Refrigerator	39.6	44.8	18.2	***
Percentage of households that own				
Agricultural land	9.0	4.9	25.8	***
Farm animals/Livestock	26.2	16.1	67.8	***
Percentage of households where at least one member owns or has a				
Fishing gear	44.3	37.6	72.1	***
Solar panel	11.1	1.3	51.3	***
Deep freezer	36.5	40.6	19.6	***
Communication antennae	5.1	4.4	8.2	--
Electric generator	1.2	0.6	3.8	**
CB radio	3.8	2.0	11.0	***
Video/DVD player	34	33.6	35.7	--
Washing Machine	38.9	43	21.8	--
Internet Connection	21.5	26.7	0.0	***
Sewing Machine	4.4	4.3	4.8	--
Electric Stove	9.0	8.8	10.0	--
Cassette Tape Player	10.6	10.8	9.7	--
Laptop	11.5	12.8	6.2	*
Microwave	9.8	11.2	4.3	**
Walkie Talkie	0.9	0.3	3.7	**
Watch	79.4	85	56.7	***
Mobile Telephone	62.0	70.7	26.1	***
Bicycle	43.9	39.5	61.8	***
Motorcycle/Scooter	2.4	1.9	4.0	--
Animal draw cart	2.4	0.6	9.9	***
Car/truck	18.2	21.9	3.0	***
Boat with motor	8.1	7.3	11.5	--
Sailing Canoe	4.9	1.2	20.1	***
Paddle Canoe	4.9	1.4	19.1	***
Ownership of dwelling				
Owned by a household member	21.9	13.9	54.9	***
Not owned	78.1	86.1	45.1	--
Number of households	581	299	282	

* P<0.05, ** P<0.01, *** P<0.001

Table HH.8 shows how the household populations in areas are distributed according to household wealth quintiles. Table HH.8 shows that 24.2 percent of the household population in urban areas falls into the richest category compared to 0.0 percent in rural areas. Of households with household head having no education, 75.0 percent fell into the poorest 2 wealth index quintiles, while only 12.5 percent fell into the top two quintiles. Of households with a household head with education higher than secondary, 9.4 percent fell into the bottom wealth index quintile and 35.8 percent fell into the top quintile.

Table HH.8: Wealth quintiles

Percent distribution of the household population by wealth index quintile, selected characteristics, RMI ICHNS, 2017

	Wealth index quintile					Total	Number of household members	P-value
	Poorest	Second	Middle	Fourth	Richest			
Total	20.1	20.1	20.0	20.2	19.6	100.0	4758	--
Sex of household head								
Male	21.3	21.3	18.4	19.9	19.1	100.0	3448	--
Female	18.0	16.0	24.0	22.0	20.0	100.0	1310	
Area								
Urban	4.7	23.5	23.5	24.2	24.2	100.0	2760	***
Rural	85.7	5.7	5.7	2.9	0.0	100.0	1998	
Number of household members								
1-5	27.7	18.5	15.4	20.0	18.5	100.0	691	**
6-10	18.4	21.8	21.8	20.7	17.2	100.0	2265	
11+	11.4	20.0	22.9	20.0	25.7	100.0	1802	
Education of household head								
None	25.0	50.0	12.5	12.5	0.0	100.0	350	***
Primary	30.3	21.2	24.2	12.1	12.1	100.0	1142	
Secondary	22.2	23.3	18.9	22.2	13.3	100.0	2275	
Higher	9.4	9.4	22.6	22.6	35.8	100.0	991	
Religion								
Assembly of God	18.5	29.6	14.8	22.2	14.8	100.0	15.7	*
Protestant	25.0	17.7	15.6	22.9	18.8	100.0	56.2	
Catholic	5.9	11.8	17.6	23.5	41.2	100.0	6.9	
Other	15.2	23.9	32.6	13.0	15.2	100.0	21.3	

* P<0.05, ** P<0.01, *** P<0.001

Wealth index quintiles are constructed by using data on housing characteristics, household and personal assets, and on water and sanitation via principal components analysis.

Household Food Security Status

Food security is "the condition in which all people at all times have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life"[10]. Food security requires sufficient supply of food, physical and economic access to food, and proper utilization of food through safe preparation methods, equitable food consumption in the household, and good health status to properly absorb nutrients from food to meet physiological requirements[11]. In order for a household to be food secure, all members of the household must not only have sufficient quantity of food to meet their caloric requirements, but also the types of food they prefer to consume. Multiple political, economic, social, cultural, and environmental factors affect food security, with seasonal food shortages common during the "lean" season when harvest crops are depleted and desirable foods like fruits, vegetables, meat, and dairy products are not readily available. The lack of food security, due to inadequate access to sufficient calories and to a variety of nutrient-dense foods, is a leading cause of global malnutrition.

There are various factors affecting household food security that vary by area and season. Standard indicators have been developed to assess household food security across countries and within countries. The most commonly used measure is the Household Food Insecurity Access Scale (HFIAS)[12] which is used to assess prevalence of household food insecurity based on a household's access to sufficient quantity of food and the types of foods household members prefer to consume. The HFIAS is a particularly useful measure for identifying vulnerable households for targeted interventions and for assessing changes in prevalence of household food insecurity over time.

The HFIAS questions (Table HH.9a) are grouped based on anxiety or uncertainty about household food supply and the household's access to sufficient quality and quantity of food for all households with a child under 2 years of age. The physical consequences or behaviours taken by household members to adapt to a lack of food quality and quantity, such as eating non-preferred foods or having smaller meals, are also examined.

In RMI, the majority of households with children under two years, 59.8 percent, were food secure while 40.2 percent of households had some level of food insecurity. Households with mild food insecurity (7.1 percent) have anxiety or worry about not having enough food to eat and may resort to eating non-preferred foods, however do not have to restrict their intake of food. Moderate food insecurity is classified in households by food restriction with a family member needing to eat smaller meals or eat fewer meals due to food insecurity. In RMI, 13.4 percent of households had moderate food insecurity. Severe food insecurity occurred in 19.7 percent of households where the household did not have any food in the house, a family member went to bed hungry at night or a family member went a whole day and night without eating due to food insecurity.

10 *FAO. 2002. The State of Food Insecurity in the World 2001.*
11 *https://publichealthreviews.biomedcentral.com/articles/10.1186/s40985-017-0056-5*
12 *Coates, Jennifer, Anne Swindale and Paula Bilinsky. 2007. Household Food Insecurity Access Scale (HFIAS) for Measurement of Household Food Access: Indicator Guide (v. 3). Washington, D.C.: FHI 360/FANTA.*

Table HH.9a: Food security by HFIAS category

Percent distribution of the households with children under 2 years by HFIAS Category, by selected characteristics, RMI ICHNS, 2017

Characteristics	Food secure		Mild food insecure		Mod. food insecure		Severe food insecure		Unweighted Count
	%	Unweighted Count	%	Unweighted Count	%	Unweighted Count	%	Unweighted Count	
Total	59.8	197	7.1	24	13.4	46	19.7	59	326
Did you worry that HH would not have enough food?									
Yes	4.4	14	48.1	10	76.6	36	72.4	42	102
How often did this happen?									
Rarely	100.0	14	82.8	7	67.5	25	34.8	14	60
Sometimes			17.2	3	32.5	11	62.8	27	41
Often							2.4	1	1
Were you/any HH members not able to eat foods you preferred?									
Yes	0.0	0	53.1	14	79.2	38	81.1	49	101
How often did this happen?									
Rarely	0.0	0	88.1	13	61.9	22	46.6	22	57
Sometimes	0.0	0	11.9	1	38.1	16	51.2	26	43
Often	0.0	0	0.0	0	0.0	0	2.2	1	1
Did you /any HH member have to eat a limited variety of foods?									
Yes	0.0	0	52.7	12	83.5	40	80.6	46	98
How often did this happen?									
Rarely	0.0	0	100.	12	54.0	21	42.8	18	51
Sometimes	0.0	0	0.0	0	42.1	18	55.0	27	45
Often	0.0	0	0.0	0	4.0	1	2.2	1	2
Did you /any HH member eat some foods that you really did not want to eat?									
Yes	0.0	0	34.4	7	66.0	34	80.2	47	88
How often did this happen?									
Rarely	0.0	0	100.	7	65.0	21	30.5	16	44
Sometimes	0.0	0	0.0	0	35.0	13	64.5	29	42
Often	0.0	0	0.0	0	0.0	0	5.0	2	2
Did you /any HH member have to eat a smaller meal?									
Yes	0.0	0	0.0	0	78.8	39	83.7	47	86
How often did this happen?									
Rarely	0.0	0	0.0	0	60.2	25	42.0	19	44
Sometimes	0.0	0	0.0	0	39.8	14	50.3	24	38
Often	0.0	0	0.0	0	0.0	0	7.7	4	4
Did you /any HH member have to eat fewer meals?									
Yes	0.0	0	0.0	0	62.3	34	82.4	45	79
How often did this happen?									
Rarely	0.0	0	0.0	0	62.4	24	39.5	18	42
Sometimes	0.0	0	0.0	0	37.6	10	60.5	27	37
Often	0.0	0	0.0	0	100.	34	100.	45	79
Was there ever no food to eat of any kind in your HH?									
Yes	0.0	0	0.0	0	0.0	0	78.1	43	43
How often did this happen?									
Rarely	0.0	0	0.0	0	0.0	0	46.5	19	19
Sometimes	0.0	0	0.0	0	0.0	0	53.5	24	24
Often	0.0	0	0.0	0	0.0	0	100.0	43	43
Did you /any HH members go to sleep at night hungry?									
Yes	0.0	0	0.0	0	0.0	0	68.9	41	41
How often did this happen?									
Rarely	0.0	0	0.0	0	0.0	0	57.0	23	23
Sometimes	0.0	0	0.0	0	0.0	0	43.0	18	18
Often	0.0	0	0.0	0	0.0	0	100.0	41	41
Did you go a whole day/night without eating?									
Yes	0.0	0	0.0	0	0.0	0	39.6	25	25
How often did this happen?									
Rarely	0.0	0	0.0	0	0.0	0	52.0	10	10
Sometimes	0.0	0	0.0	0	0.0	0	45.8	14	14
Often	0.0	0	0.0	0	0.0	0	2.2	1	1

* HFIAS was collected from caregivers with a child under 2 years of age only.

Table HH.9b presents the distribution of sampled households with a child under 2 years of age according to their food security status as measured by the Household Food Insecurity Access Scale. Overall, 40.2 percent of households were food insecure with mild, moderate or severe food insecurity. There were no differences between urban and rural areas however there was a strong association between food insecurity and household wealth. Poor households had the highest prevalence of food insecurity with 51.3 percent of the poorest households and 61.1 percent of the second poorest household's having food insecurity. Households where open defecation was practiced also had higher prevalence of food insecurity with 54.4 percent of household food insecure compared to 38.3 percent of households with improved sanitation.

Table HH.9b: Percent distribution of household by HFIAS category

Percent distribution of the households with a child under 2 years by HFIAS category, by selected characteristics, RMI ICHNS, 2017

Characteristics	Household number	Food secure				Food insecure				P-value
		Percent	95% CI		Unweighted Count	Percent	95% CI		Unweighted Count	
			Lower	Upper			Lower	Upper		
Total	326	59.8	53.3	66.1	197	40.2	33.9	46.7	129	--
Area										
Urban	180	59.9	52.2	67.2	107	40.1	32.8	47.8	73	--
Rural	146	59.6	51.1	67.6	90	40.4	32.4	48.9	56	
Wealth index quintile										
Poorest	139	48.7	38.7	58.9	79	51.3	41.1	61.3	60	***
Second	53	38.9	25.8	53.8	22	61.1	46.2	74.2	31	
Middle	56	64.1	49.3	76.6	38	--	--	--	18	
Fourth	43	72.9	56.9	84.6	31	--	--	--	12	
Richest	35	78.9	62.3	89.4	27	--	--	--	8	
Gender of Household Head										
Male	234	62.1	54.2	69.3	149	37.9	30.7	45.8	85	--
Female	92	54.3	42.4	65.7	48	45.7	34.3	57.6	44	
Number of household members										
5 or less	63	64.2	49.2	76.9	38	35.8	23.1	50.8	25	--
6-10	164	54.2	44.7	63.5	96	45.8	36.5	55.3	68	
11 or more	99	64.7	53.7	74.3	63	35.3	25.7	46.3	36	
Improved Sanitation Facility										
Improved	253	61.7	54.5	68.5	162	38.3	31.5	45.5	91	*
Open Defecation	73	45.6	32.3	59.5	35	54.4	40.5	67.7	38	

* P<0.05, ** P<0.01, *** P<0.001

III. Nutrition

Low Birth Weight

Weight at birth is a good indicator not only of a mother's health and nutritional status but also the newborn's chances for survival, growth, long-term health and psychosocial development. Low birth weight (defined as less than 2,500 grams) carries a range of grave health risks for children. Babies who were undernourished in the womb face a greatly increased risk of dying during their early days, months and years. Those who survive may have impaired immune function and increased risk of disease; they are likely to remain undernourished, with reduced muscle strength, throughout their lives, and suffer a higher incidence of diabetes and heart disease in later life. Children born with low birth weight also risk a lower IQ and cognitive disabilities, affecting their performance in school and their job opportunities as adults.

In the developing world, low birth weight stems primarily from the mother's poor health and nutrition. Three factors have most impact: the mother's poor nutritional status before conception, short stature (due mostly to undernutrition and infections during her childhood), and poor nutrition during pregnancy. Inadequate weight gain during pregnancy is particularly important since it accounts for a large proportion of foetal growth retardation. Moreover, diseases such as diarrhoea and malaria, which are common in many developing countries, can significantly impair foetal growth if the mother becomes infected while pregnant. Additional causes of low birth weight are cigarette smoking during pregnancy and becoming pregnant at an early age as young mothers who give birth when their own bodies have not finished growing have a higher risk of bearing low birth weight babies.

Babies born with high birth weight (≥ 4000g) are at increased risk for complications during delivery and negative health outcomes in childhood and later life. High birth weight is primarily due to excess maternal weight gain and or pre-existing or gestational diabetes in the mother. Genetics also plays a role as babies born to overweight or obese mothers are more likely to be large. Babies born over 4000g at birth are at higher risk for hypoglycaemia during the neonatal period and are more likely to be overweight or obese in childhood and adolescence.

Overall, 89.9 percent of children in RMI were weighed at birth and 11.6 percent of infants are estimated to weigh less than 2,500 grams at birth while 4.8 percent of infants weighed 4,000 grams or higher at birth (Table NU.1). Maternal short stature was associated with low birth weight with 25.3 percent of babies born to mothers under 145cm born low birthweight compared to 14.9 percent for mothers 145-149cm, 10.9 percent for mothers 150-159cm, and 0.5 percent for mothers taller than or equal to 160cm. Mothers with primary only education were more likely to have a low birthweight child (15.1 percent) compared to mothers with secondary (10.3 percent) or higher (8.9 percent) education. Having the father in household was associated with high birth weight at 5.9 percent versus 1.6 percent high birth weight for children not living in the same household as their father.

Table NU.1: Low birth weight and high birth weight infants [a]

Percentage of last live-born children 0-59 months of age that are estimated to have weighed below 2,500 grams, weighed exactly 2,500 grams or weighed 4,000 grams or higher at birth and percentage of live births weighed at birth, by selected characteristics, RMI ICHNS, 2017

	Percentage of live births															
	Below 2,500 grams[1]				At 2,500 grams				4,000 grams or higher				Number of children [b]	Weighed at birth[2]		Number of children
	Percent	Lower	Upper	P-value	Percent	Lower	Upper	P-value	Percent	Lower	Upper	P-value		Percent	P-value	
Total	11.6	9.1	14.7	--	0.9	0.4	2.3	--	4.8	3.3	6.9	--	685	89.9	--	881
Child gender																
Male	11.1	8.0	15.3	--	0.9	0.2	3.3	--	5.0	3.0	8.0	--	364	91.0	--	455
Female	12.2	8.5	17.1		1.0	0.3	3.3		4.6	2.7	7.8		321	88.7		426
Area																
Urban	11.3	8.6	14.8	--	0.9	0.3	2.5	--	5.0	3.4	7.3	--	450	94.6	***	490
Rural	13.8	9.8	19.2		1.0	0.2	4.1		3.3	1.6	6.7		235	65.9		391
Caregiver's education																
None	--	--	--	***	--	--	--	--	--	--	--	--	11	98.0	**	12
Primary	15.1	8.8	24.7		1.5	0.3	6.4		5.8	2.4	13.2		112	82.0		181
Secondary	10.3	7.3	14.2		0.7	0.2	2.5		3.9	2.4	6.4		428	91.6		529
Higher	8.9	5.0	15.6		1.3	0.2	8.5		7.0	3.6	13.0		133	92.6		155
Wealth index quintile																
Poorest	13.3	8.1	21.0	--	0.8	0.2	3.2	--	4.2	1.8	9.6	--	217	69.8	***	370
Second	16.3	11.0	23.5		1.6	0.4	6.1		3.5	1.4	8.3		146	99.7		152
Middle	7.8	3.9	15.2		0.7	0.1	5.0		6.2	3.2	11.8		126	90.4		144
Fourth	9.4	4.8	17.9		1.6	0.2	10.3		4.6	1.8	11.2		99	95.6		108
Richest	10.5	5.5	19.0		0.0	0.0	0.0		5.6	2.6	11.6		97	93.5		107
Father in Household																
Yes	12.2	9.2	15.9	--	0.9	0.3	2.7	--	5.9	4.0	8.6	*	502	91.3	*	623
No	10.0	6.2	15.8		1.2	0.3	4.6		1.6	0.5	4.8		183	86.3		258
Maternal Short Stature																
<145cm	25.3	12.3	44.9	**	3.7	0.5	25.1	--	3.7	0.5	22.4	--	32	91	--	43
145-149cm	14.9	9.6	22.5		5.8	2.9	5.2		5.8	2.9	11.4		168	89.1		229
150-159cm	10.9	7.9	14.8		4	2.4	2.8		4	2.4	6.4		432	90.3		538
≥160cm	0.5	0.1	3.8		9.6	9.6	0		9.6	3.7	22.7		51	90.2		65

* P<0.05, ** P<0.01, *** P<0.001

1 MICS indicator 2.20- Low birth weight infants below 2,500grams

2 MICS indicator 2.21 - Infants weighed at birth

[a] The percentage of births weighing below 2,500 grams, exactly 2,500 grams and above 4,000 grams is estimated from the mother's recall of the child's weight or the information on the health card if the child was weighed at birth.

[b] 33 children were weighted at birth but the caregiver did not know the weight. These children were excluded from the birth weight assessments.

Nutrition Status

Children's nutritional status is a reflection of their overall health. When children have access to an adequate food supply, are not exposed to repeated illness, and are well cared for, they reach their growth potential and are considered well nourished.

Undernutrition is associated with more than half of all child deaths worldwide. Undernourished children are more likely to die from common childhood ailments, and for those who survive, have recurring sicknesses and faltering growth. Three-quarters of children who die from causes related to malnutrition were only mildly or moderately malnourished – showing no outward sign of their vulnerability. The Sustainable Development Goal target is to end all forms of malnutrition by 2030 and by 2025 to reduce by 40 percent the number of children under 5 who are stunted and reduce the prevalence of children who are wasted to less than 5 percent. A reduction in the prevalence of malnutrition will also assist in the goal to reduce child mortality.

In a well-nourished population, there is a reference distribution of height and weight for children under age 5. Under-nourishment in a population can be gauged by comparing children to a reference population. The reference population used in this report is based on the WHO growth standards[13]. Each of the three nutritional status indicators – weight-for-age, height-for-age, and weight-for-height - can be expressed in standard deviation units (z-scores) from the median of the reference population.

Weight-for-age is a measure of both acute and chronic malnutrition. Children whose weight-for-age is more than two standard deviations below the median of the reference population are considered ***moderately or severely underweight*** while those whose weight-for-age is more than three standard deviations below the median are classified as ***severely underweight.***

Height-for-age is a measure of linear growth. Children whose height-for-age is more than two standard deviations below the median of the reference population are considered short for their age and are classified as ***moderately or severely stunted.*** Those whose height-for-age is more than three standard deviations below the median are classified as ***severely stunted.*** Stunting is a reflection of chronic malnutrition as a result of failure to receive adequate nutrition over a long period and recurrent or chronic illness.

Weight-for-height can be used to assess wasting and overweight status. Children whose ***weight-for-height*** is more than two standard deviations below the median of the reference population are classified as ***moderately or severely wasted,*** while those who fall more than three standard deviations below the median are classified as ***severely wasted***. Wasting is usually the result of a recent nutritional deficiency. The indicator of wasting may exhibit significant seasonal shifts associated with changes in the availability of food or disease prevalence.

13 *http://www.who.int/childgrowth/standards/technical_report*

Children whose weight-for-height is more than two standard deviations above the median reference population are classified as moderately or severely overweight.

In the RMI Integrated Child Health and Nutrition Survey 2017 (ICHNS 2017), weights and heights of all children under 5 years of age were measured using the anthropometric equipment recommended[14] by UNICEF. Findings in this section are based on the results of these measurements.

Tables NU.2a, NU.2b, and NU.2c show percentages of children classified into each of the above described categories, based on the anthropometric measurements that were taken during fieldwork. Additionally, the table includes mean z-scores for all three anthropometric indicators.

Children whose measurements are outside a plausible range are excluded from Tables NU.2a, NU.2b, and NU.2c. Children are excluded from one or more of the anthropometric indicators when their weights and heights have not been measured, whichever applicable. For example, if a child has been weighed but his/her height has not been measured, the child is included in underweight calculations, but not in the calculations for stunting and wasting. As shown in Table DQ.15 in Appendix D, there was a higher prevalence of 0 and 5 which indicates that rounding occurred but within the acceptable range for data quality.

The prevalence of moderate or severe underweight among children under 5 in RMI is reported at 11.7 percent which is classified as a medium public health concern by the WHO (Table NU.2a). Underweight was associated with child age, the youngest children 0-5 months of age having the lowest prevalence at 1.3 percent and the oldest children having the highest prevalence at 15.3 percent. Underweight was also associated with maternal nutrition status with obese mothers having the lowest prevalence of underweight (8.5 percent) compared to mothers with normal nutrition status (16.0 percent). Prevalence of underweight was associated with maternal marital status, with lower prevalence in children of currently married mothers (5.1 percent) compared to children whose mothers were not married (16.8 percent) or cohabitating (9.6 percent). While not significant, the prevalence of moderate or severe underweight was highest in children who were born low birth weight at 23.1 percent and in children whose mothers had short stature at 23.6 percent.

Over one in three children in RMI is moderately or severely stunted or too short for their age with stunting classified as a high public health concern by the WHO (Table NU.2b). The prevalence of stunting increased with child age with critically high levels of stunting in children 18-35 months of age with over 40 percent of children stunted (Figure NU.1). Stunting was associated with child age with children 0-5 months having the lowest prevalence and dramatically increasing between 6 to 23 months of age to 42.8 percent for children 12-23 months of age after which prevalence plateaued. Stunting was closely associated with

14 *See MICS Supply Procurement Instructions:* **http://www.childinfo.org/mics5_planning.html**

wealth index quintile with children under 5 in the poorest households in RMI having critically higher levels of moderate or severe stunting (44.5 percent) compared to children from richer wealth index quintiles. However, in even the wealthiest households, prevalence of stunting was elevated at 20 percent.

Moderate or severe wasting among children under 5 in RMI was 3.6 percent which is classified as acceptable by the WHO (Table NU.2c). There was little variation in wasting by household wealth or age of the child, however wasting surpassed 10 percent in children whose mothers were short stature (height <145cm) and was 6.7 percent in children whose mothers were 145-149cm tall. Prevalence of overweight in children under 5 years was low at 3.8 percent in RMI. Urban children were more likely to be overweight compared to rural children with 4.3 percent of urban children overweight compared to 1.3 percent of rural children.

Table NU.2a: Nutritional status of children: weight-for-age

Percentage of children under age 5 by nutritional status according to anthropometric indices: weight for age, by selected characteristics, RMI ICHNS, 2017

	Weight for age									
	Underweight (-2 SD)[1]				Severe Underweight (-3 SD)[2]				Mean Z-Score (SD)	Number of children under age 5
		95% CI				95% CI				
	%	Lower	Upper	P-value	%	Lower	Upper	P-value		
Total	11.7	9.3	14.5	--	2.7	1.6	4.5	--	-0.73	863
Child Age										
0-5m	1.3	0.4	4.2	*	1.0	0.2	4.0	--	-0.34	80
6-11m	11.5	6.1	20.7		2.8	0.7	10.6		-0.60	105
12-23m	8.2	4.5	14.5		2.7	0.9	8.2		-0.37	169
24-35m	12.1	7.2	19.6		3.3	1.3	8.5		-0.77	167
36-59m	15.3	11.2	20.7		2.8	1.2	6.3		-0.99	342
Child gender										
Male	13.5	10.0	18.0	--	3.0	1.4	5.9	--	-0.8	445
Female	9.7	6.8	13.5		2.5	1.2	4.9		-0.65	418
Area										
Urban	11.6	8.9	15.1	--	2.7	1.5	4.9	--	-0.7	474
Rural	11.8	8.8	15.6		2.6	1.3	5.0		-0.87	389
Caregiver's education										
None	--	--	--	*	--	--	--	--	--	12
Primary	13.5	8.3	21.3		2.0	0.5	7.9		-0.87	180
Secondary	13.1	9.9	17.2		3.2	1.8	5.8		-0.79	515
Higher	4.1	1.9	8.7		0.8	0.1	5.6		-0.35	152
Wealth index quintile										
Poorest	11.7	8.5	15.9	--	3.0	1.5	5.9	--	-0.92	365
Second	19.2	13.1	27.2		4.0	1.6	9.6		-0.92	150
Middle	9.1	5.2	15.6		2.4	0.7	7.8		-0.72	142
Fourth	10.3	5.4	18.7		2.1	0.5	8.2		-0.64	104
Richest	6.6	2.7	15.3		1.6	0.2	10.7		-0.38	102
Maternal Nutrition Status										
Underweight	--	--	--	**	--	--	--	--	--	12
Normal	16.0	10.5	23.6		2.7	0.8	8.2		-0.98	205
Overweight	13.2	8.5	19.9		4.7	2.3	9.4		-0.89	213
Obese	8.5	5.5	13.0		0.9	0.3	3.1		-0.54	301
Maternal Married Status										
Not married	16.8	12.3	22.6	**	2.8	1.3	6.2	--	-0.9	323
Currently married	5.1	2.6	10.1		0.5	0.1	2.1		-0.41	169
Cohabitating	9.6	6.2	14.6		3.5	1.6	7.6		-0.73	279
Child Birthweight										
Low Birthweight	23.1	14.2	35.2	**	4.8	1.4	15.1	--	-1.11	80
Normal	10.6	8.0	14.1		2.3	1.2	4.4		-0.7	555
High Birthweight	0.0	0.0	0.0		0.0	0.0	0.0		0.23	32
Maternal Short Stature										
<145cm	23.6	11.1	43.2	**	0	0	0	--	-1.26	42
145-149cm	17.7	12.5	24.5		4.7	2.2	9.9		-0.91	226
150-159cm	9.5	6.8	13.2		2.1	1	4.3		-0.69	524
>160cm	3.1	0.8	11.1		0	0	0		-0.11	65

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 2.1a - Underweight prevalence (moderate and severe)**

[2] **MICS indicator 2.1b - Underweight prevalence (severe)**

The percent 'below -2 standard deviations' includes those who fall below -3 standard deviations from the median.

Table NU.2b: Nutritional status of children: height-for-age

Percentage of children under age 5 by nutritional status according to anthropometric indices: height for age, by selected characteristics, RMI ICHNS, 2017

	Height for age									
	Stunted (-2 SD)[1]				Severe Stunted (-3 SD)[2]				Mean Z-Score (SD)	Number of children under age 5
	%	95% CI Lower	95% CI Upper	P-value	%	95% CI Lower	95% CI Upper	P-value		
Total	35.3	31.5	39.5	--	10.2	8	12.8		-1.49	871
Child Age										
0-5m	13.3	6.7	24.6	***	4.5	1.3	14.7	--	-0.64	80
6-11m	20.9	13.0	31.8		7.6	3.3	16.7		-1.07	110
12-23m	42.8	34.0	52.0		12.6	7.5	20.4		-1.47	170
24-35m	43.7	34.8	53.0		12.1	7.4	19.1		-1.67	166
36-59m	37.2	31.2	43.5		10.2	7.2	14.4		-1.73	345
Child gender										
Male	39.7	34.3	45.3	*	10.7	7.7	14.7	--	-1.66	451
Female	30.6	25.6	36.2		9.6	6.9	13.4		-1.31	420
Area										
Urban	34.6	30.2	39.2	--	9.6	7.1	12.7	--	-1.47	486
Rural	39.1	34.2	44.2		13.3	10.2	17.3		-1.62	385
Caregiver's education										
None	--	--	--	**	--	--	--	**	-2.06	12
Primary	41.3	32.7	50.5		17.7	11.6	26.0		-1.78	181
Secondary	37.8	32.9	43.0		9.4	6.9	12.7		-1.53	520
Higher	20.9	14.5	29.0		3.8	1.6	8.9		-1.07	154
Wealth index quintile										
Poorest	44.5	38.0	51.2	**	14.4	10.3	19.8	*	-1.74	364
Second	42.0	33.8	50.7		13.5	8.7	20.5		-1.7	151
Middle	37.4	29.2	46.4		11.0	6.5	18.0		-1.54	143
Fourth	29.4	20.7	39.9		8.5	4.1	16.8		-1.33	107
Richest	20.0	12.9	29.7		2.1	0.5	7.9		-1.05	106
Religion										
Assembly of God	33.6	24.7	43.9	**	9.0	4.6	16.8	--	-1.44	129
Protestant	39.6	34.1	45.3		12.9	9.5	17.1		-1.66	479
Catholic	10.2	4.8	20.4		3.1	0.9	9.9		-0.65	68
Other	35.9	28.7	43.7		8.0	4.8	13.0		-1.47	195
Maternal Nutrition Status										
Underweight	--	--	--	--	--	--	--	--	--	12
Normal	43.0	34.8	51.6		9.7	5.7	16.2		-1.68	204
Overweight	38.0	30.6	46.0		13.0	8.8	18.9		-1.64	215
Obese	32.3	26.2	38.9		8.5	5.4	13.2		-1.36	306
Maternal Married Status										
Not married	41.1	34.8	47.6	*	12.6	8.9	17.5	--	-1.65	327
Currently married	26.4	19.3	34.8		6.5	3.3	12.3		-1.12	173
Cohabitating	35.0	28.5	42.0		8.9	5.7	13.8		-1.54	279
Child Birthweight										
Low Birthweight	51.8	39.2	64.2	*	24.1	15.1	36.2	***	-2.07	81
Normal	33.1	28.7	37.9		8.0	5.8	11.1		-1.42	561
High Birthweight	26.4	13.2	46.0		4.9	1.1	19.6		-0.98	34
Maternal Short Stature										
<145cm	44.2	28	61.7	**	22	10.4	40.7	*	-1.87	42
145-149cm	43.1	35.4	51.1		13.5	9	19.7		-1.73	226
150-159cm	34.4	29.6	39.5		8.8	6.3	12.1		-1.47	532
>160cm	14.6	7.4	26.7		4.5	1.6	11.9		-0.71	65

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 2.2a and SDG Indicator-2.2.1- Stunting prevalence (moderate and severe)**

[2] **MICS indicator 2.2b - Stunting prevalence (severe)**

The percent 'below -2 standard deviations' includes those who fall below -3 standard deviations from the median.

Table NU.2c: Nutritional status of children: weight-for-height

Percentage of children under age 5 by nutritional status according to anthropometric indices: weight for height, by selected characteristics, RMI ICHNS, 2017

	Weight for height													
	Wasted (-2 SD)[1]				Severe Wasted (-3 SD)[2]				Overweight					
	95% CI				95% CI				95% CI					
	%	Lower	Upper	P-value	%	Lower	Upper	P-value	%	Lower	Upper	P-value	Mean Z-Score (SD)	Number of children under age 5
Total	3.6	2.4	5.6	--	1.1	0.5	2.6	--	3.8	2.5	5.8	--	0.19	858
Child Age														
0-5m	4.7	1.7	12.6	--	1.9	0.4	9.0	--	6.0	1.7	19.5	*	0.18	79
6-11m	5.7	2.5	12.5		1.0	0.2	3.9		2.7	0.8	9.1		0.09	105
12-23m	3.6	1.3	9.7		0.0	0.0	0.0		8.8	4.6	16.0		0.46	169
24-35m	4.2	1.8	9.7		1.7	0.4	6.6		3.9	1.5	9.5		0.2	165
36-59m	2.5	0.9	6.5		1.3	0.3	5.1		1.3	0.5	3.7		0.09	340
Mother's age at birth														
< 20 years	0.8	0.2	3.2	--	0.5	0.1	3.4	--	5.9	2.2	15.0	--	0.37	111
20-34 years	4.6	2.9	7.2		1.3	0.5	3.3		3.4	1.9	5.8		0.16	541
35-49 years	3.5	0.6	18.1		0.0	0.0	0.0		1.7	0.3	8.1		-0.08	90
Child gender														
Male	4.8	2.8	8.2	--	0.9	0.2	3.5	--	4.8	2.8	7.9	--	0.19	443
Female	2.4	1.2	4.7		1.4	0.5	3.7		2.8	1.4	5.6		0.18	415
Area														
Urban	3.6	2.2	6.0	--	1.2	0.5	3.0	--	4.3	2.8	6.7	**	0.21	473
Rural	3.6	2.1	6.2		0.9	0.3	2.9		1.3	0.6	2.8		0.08	385
Caregiver's education														
None	--	--	--	--	--	--	--	--	--	--	--	--	--	12
Primary	3.0	1.2	7.7		0.0	0.0	0.0		1.9	0.5	7.2		0.19	180
Secondary	4.3	2.5	7.2		1.3	0.5	3.3		4.7	2.8	7.7		0.14	511
Higher	1.6	0.5	5.0		0.8	0.1	5.6		3.6	1.4	8.5		0.35	151
Wealth index quintile														
Poorest	3.2	1.8	5.6	--	0.8	0.2	2.6	--	0.9	0.4	2.3	--	0.12	362
Second	7.4	3.8	14.1		1.2	0.3	4.8		2.6	1.0	6.4		0.09	149
Middle	1.7	0.4	6.7		1.0	0.1	7.0		5.7	2.7	11.6		0.27	141
Fourth	3.0	0.9	8.9		1.0	0.1	7.1		2.6	0.6	10.5		0.16	104
Richest	2.5	0.6	10.0		1.6	0.2	10.7		7.0	3.3	14.0		0.3	102
Maternal Nutrition Status														
Underweight	12.3	2.6	42.2	--	0.0	0.0	0.0	--	0.0	0.0	0.0	--	-0.71	12
Normal	5.0	2.4	10.3		1.0	0.2	4.5		3.0	1.1	7.9		-0.05	203
Overweight	5.8	2.8	11.8		2.2	0.6	7.2		3.6	1.5	8.3		0.15	212
Obese	1.5	0.6	3.8		0.4	0.1	2.6		3.4	1.6	7.0		0.32	299
Father in Household														
Yes	4.1	2.5	6.6	--	1.2	0.5	3.0	--	3.1	1.8	5.2	--	0.17	603
No	3.1	1.3	7.6		1.2	0.2	6.3		4.7	2.1	10.2		0.12	218
Child Birthweight														
Low Birthweight	4.8	1.7	12.5	--	1.5	0.2	9.8	--	3.7	0.9	14.3	--	0.11	81
Normal	3.8	2.2	6.3		0.9	0.3	2.7		3.9	2.3	6.4		0.16	561
High Birthweight	0.0	0.0	0.0		0.0	0.0	0.0		14.5	5.5	33.0		1.04	34
Maternal Short Stature														
<145cm	10.6	3.5	28.1	**	1.7	0.2	11.1	**	0	0	0	--	-0.27	42
145-149cm	6.7	3.5	12.2		3.2	1.1	8.6		4.7	2.1	10		0.17	224
150-159cm	2.2	1.1	4.5		0.1	0	0.6		4.2	2.5	6.9		0.21	521
>160cm	0	0	0		0	0	0		0.4	0.1	2.7		0.41	67

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 2.3a and SDG indicator 2.2.2 - Wasting prevalence (moderate and severe)**

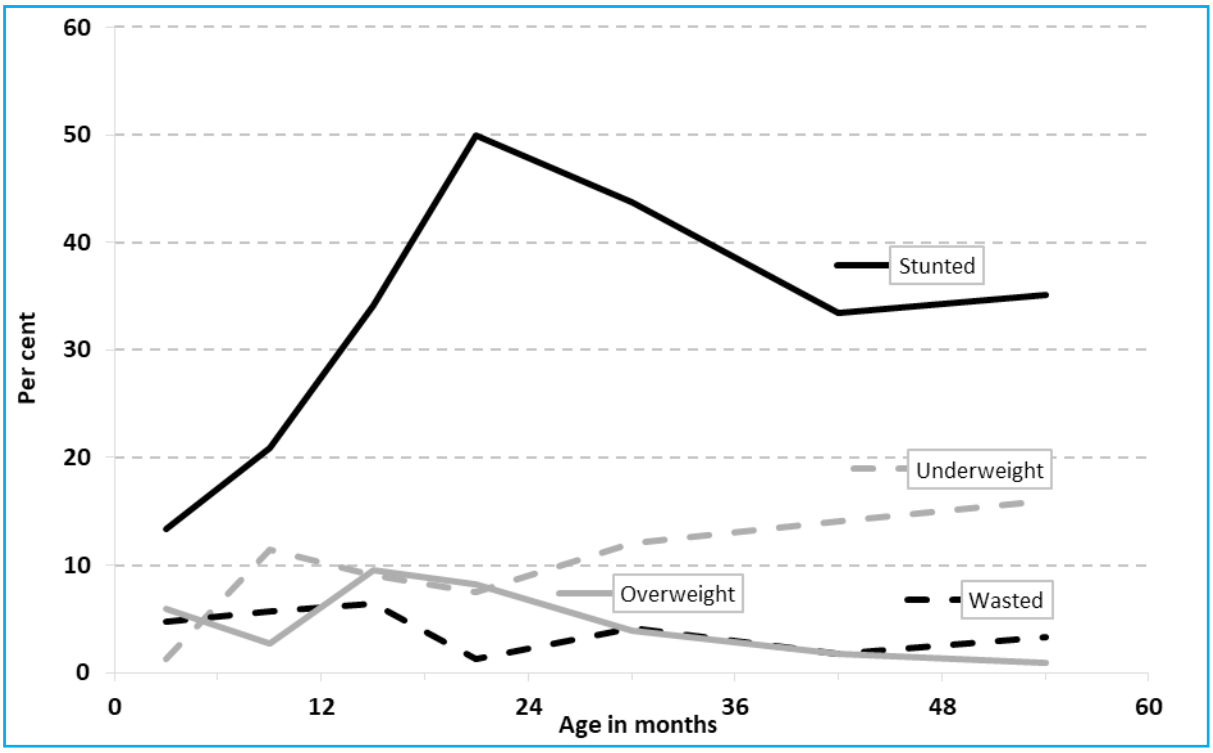
[2] **MICS indicator 2.3b - Wasting prevalence (severe)**

[7] **MICS indicator 2.4 and SDG indicator 2.2.2 - Overweight prevalence**

The percent 'below -2 standard deviations' includes those who fall below -3 standard deviations from the median.

Figure NU.1. presents the trends in stunting, underweight, wasting and overweight for children under 5 years of age. From the figure, the sharp increase in the prevalence of stunting between the ages of 6 and 23 months is seen for children with prevalence exceeding the WHO's threshold for a very high public health concern (40 percent).

Figure NU.1: Underweight, stunted, wasted and overweight children under age 5 (moderate and severe), RMI ICHNS, 2017



Breastfeeding and Infant and Young Child Feeding

Proper feeding of infants and young children can increase their chances of survival; it can also promote optimal growth and development, especially in the critical window from birth to 2 years of age. Breastfeeding for the first few years of life protects children from infection, provides an ideal source of nutrients, and is economical and safe. However, many mothers don't start to breastfeed early enough, do not breastfeed exclusively for the recommended 6 months or stop breastfeeding too soon. There are often pressures to switch to infant formula, which can contribute to growth faltering and micronutrient malnutrition and can be unsafe if hygienic conditions, including safe drinking water are not readily available. Studies have shown that, in addition to continued breastfeeding, consumption of appropriate, adequate and safe solid, semi-solid and soft foods from the age of 6 months onwards leads to better health and growth outcomes, with potential to reduce stunting during the first two years of life.[15]

UNICEF and WHO recommend that infants be breastfed within one hour of birth, breastfed exclusively for the first six months of life and continue to be breastfed up to 2 years of age and beyond.[16] Starting at 6 months, breastfeeding should be combined with safe, age-appropriate feeding of solid, semi-solid and soft foods.[17] A summary of key guiding principles[18], [19] for feeding 6-23-month olds is provided in the table below along with proximate measures for these guidelines collected in this survey.

The guiding principles for which proximate measures and indicators exist are:

I. continued breastfeeding;

II. appropriate frequency of meals (but not energy density); and

III. appropriate nutrient content of food.

Feeding frequency is used as proxy for energy intake, requiring children to receive a minimum number of meals/snacks (and milk feeds for non-breastfed children) for their age. Dietary diversity is used to ascertain the adequacy of the nutrient content of the food (not including iron) consumed. For dietary diversity, seven food groups were created for which a child consuming at least four of these is considered to have a better-quality diet. In most populations, consumption of at least four food groups means that the child has a high likelihood of consuming at least one animal-source food and at least one fruit or vegetable, in addition to a staple food (grain, root or tuber).[20]

These three dimensions of child feeding are combined into an assessment of the children who received appropriate feeding, using the indicator of “minimum acceptable diet”. To have a minimum acceptable diet in the previous day, a child must have received:

I. the appropriate number of meals/snacks/milk feeds;

II. food items form at least 4 food groups; and

III. Ibreastmilk or at least 2 milk feeds (for non-breastfed children).

Guiding Principle (age 6-23 months)	Proximate measures	Table
Continue frequent, on-demand breastfeeding for two years and beyond	Breastfed in the last 24 hours	NU.4
Appropriate frequency and energy density of meals	**Breastfed children** Depending on age, two or three meals/snacks provided in the last 24 hours **Non-breastfed children** Four meals/snacks and/or milk feeds provided in the last 24 hours	NU.6
Appropriate nutrient content of food	Four food groups[17] eaten in the last 24 hours	NU.6
Appropriate amount of food	No standard indicator exists	na
Appropriate consistency of food	No standard indicator exists	na
Use of vitamin-mineral supplements or fortified products for infant and mother	No standard indicator exists	na
Practice good hygiene and proper food handling	While it was not possible to develop indicators to fully capture programme guidance, one standard indicator does cover part of the principle: Not feeding with a bottle with a nipple	NU.9
Practice responsive feeding, applying the principles of psycho-social care	No standard indicator exists	na

Bhuta, Z. et al. 2013. Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? The Lancet June 6, 2013.

<?> WHO. 2003. Implementing the Global Strategy for Infant and Young Child Feeding. Meeting Report Geneva, 3-5 February 2003.

<?> WHO. 2003. Global Strategy for Infant and Young Child Feeding.

<?> PAHO. 2003. Guiding principles for complementary feeding of the breastfed child.

<?> WHO. 2005. Guiding principles for feeding non-breastfed children 6-24 months of age.

Table NU.3: Initial breastfeeding

Percentage of last live-born children in the last two years who were ever breastfed, breastfed within one hour of birth, and within one day of birth, and percentage who received a pre-lacteal feed, by selected characteristics, RMI ICHNS, 2017

	Percentage who were ever breastfed[1]				Percentage who were first breastfed:								Number of last live-born children in the last two years [a]	Percentage who received a pre-lacteal feed				Number of last live-born children in the last two years a
					Within one hour of birth[2]				Within one day of birth									
	Percent	Lower	Upper	P-value	Percent	Lower	Upper	P-value	Percent	Lower	Upper	P-value		Percent	Lower	Upper	P-value	
Total	87.4	82.1	91.3	--	60.8	54.5	66.8	--	64.5	58.1	70.3	--	355	24.4	18.8	31.1	--	273
Child gender																		
Male	88.6	81.3	93.3	--	58.3	49.7	66.5	--	62.1	53.4	70.1	--	195	24.2	16.9	33.4	--	149
Female	86.0	77.4	91.7		63.9	54.4	72.3		67.3	57.9	75.5		160	24.8	16.7	35.1		124
Area																		
Urban	86.9	80.5	91.4	--	61.0	53.4	68.1	--	64.0	56.4	70.9	--	188	24.3	17.8	32.2	--	149
Rural	89.8	83.9	93.7		60.2	52.3	67.6		66.7	59.0	73.7		167	25.2	18.0	33.9		124
Wealth index quintile																		
Poorest	83.1	71.2	90.7	--	56.3	46.1	66.1	--	60.3	49.9	69.9	--	161	23.8	16.0	33.9	--	117
Second	88.7	73.1	95.8		60.8	45.0	74.6		68.6	52.5	81.2		48	25.8	14.2	42.2		41
Middle	93.9	82.1	98.1		74.0	60.5	84.0		74.6	61.1	84.6		59	27.2	15.8	42.6		48
Fourth	89.9	74.3	96.5		54.8	38.3	70.3		57.3	40.6	72.5		42	24.8	11.6	45.4		33
Richest	80.6	64.4	90.5		54.7	39.2	69.3		59.0	43.2	73.0		45	19.8	9.0	37.9		34
Maternal Married Status																		
Not married	86.0	76.3	92.2	*	66.3	56.0	75.2	--	70.9	60.7	79.4	--	140	28.6	19.9	39.3	--	120
Currently married	82.3	66.9	91.5		60.1	45.5	73.0		65.9	51.1	78.2		64	21.3	11.2	36.8		53
Cohabitating	96.2	88.9	98.7		67.4	56.3	76.8		69.1	58.0	78.4		119	21.6	13.2	33.3		99
Father in Household																		
Yes	90.3	84.1	94.2	*	64.9	57.5	71.6	*	68.2	60.8	74.7	*	255	26.1	19.7	33.8	--	211
No	79.0	67.0	87.5		48.8	36.8	61.0		53.5	41.2	65.4		100	17.9	8.7	33.4		62
Assistance at delivery																		
Skilled attendant	93.3	87.2	96.6	--	81.3	74.2	86.8	--	86.0	79.1	90.9	--	220	24.5	18.5	31.6	--	225
Traditional birth attendant	85.5	56.9	96.3		77.5	54.5	90.9		83.9	56.9	95.3		45	18.2	9.1	33.0		45
Delivered in Health Facility																		
Yes	92.9	86.8	96.3	--	81.0	74.0	86.5	--	85.6	78.7	90.5	--	237	23.8	18.0	30.8	--	242
No	90.1	54.6	98.6		80.3	52.0	93.9		88.5	56.4	97.9		28	25.6	10.4	50.4		28

* P<0.05, ** P<0.01, *** P<0.001

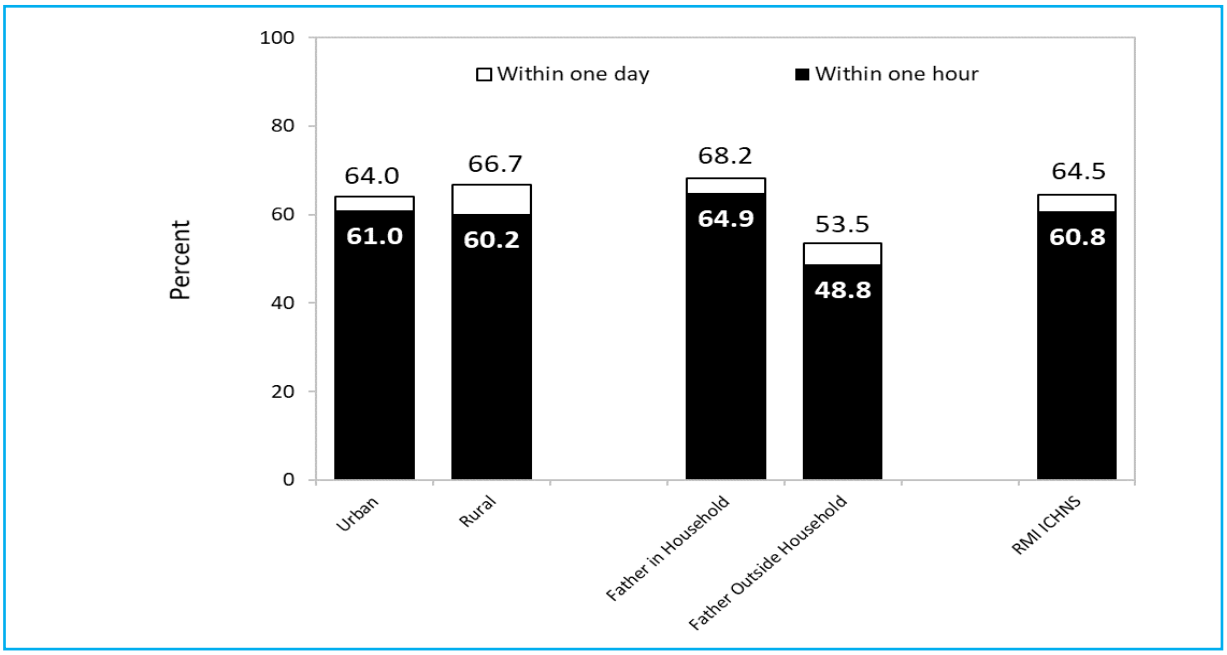
[1] **MICS indicator 2.5 - Children ever breastfed**

[2] **MICS indicator 2.6 - Early initiation of breastfeeding**

[a] A total of 362 children 0-23 months of age were included in the survey, however 7 children are excluded due to missing the infant and young child feeding component of the questionnaire and 89 children are missing from the prelacteal feeding questions.

Table NU.3 is based on mothers' reports of what their last live-born child, born in the last two years, was fed in the first few days of life. It indicates the proportion who were ever breastfed, those who were first breastfed within one hour and one day of birth, and those who received a pre-lacteal feed.[21] Although a very important step in management of lactation and establishment of a physical and emotional relationship between the baby and the mother, only 60.8 percent of babies are breastfed for the first time within one hour of birth and only 64.5 percent of newborns in RMI start breastfeeding within one day of birth. Initial breastfeeding practices did not differ by area or household wealth, however children with their fathers in the household had higher prevalence of ever breastfed, breastfed within one hour, and breastfed within one day. The findings are presented in Figure NU.2 by area and presence of the father in the household.

Figure NU.2: Initiation of breastfeeding, RMI ICHNS, 2017



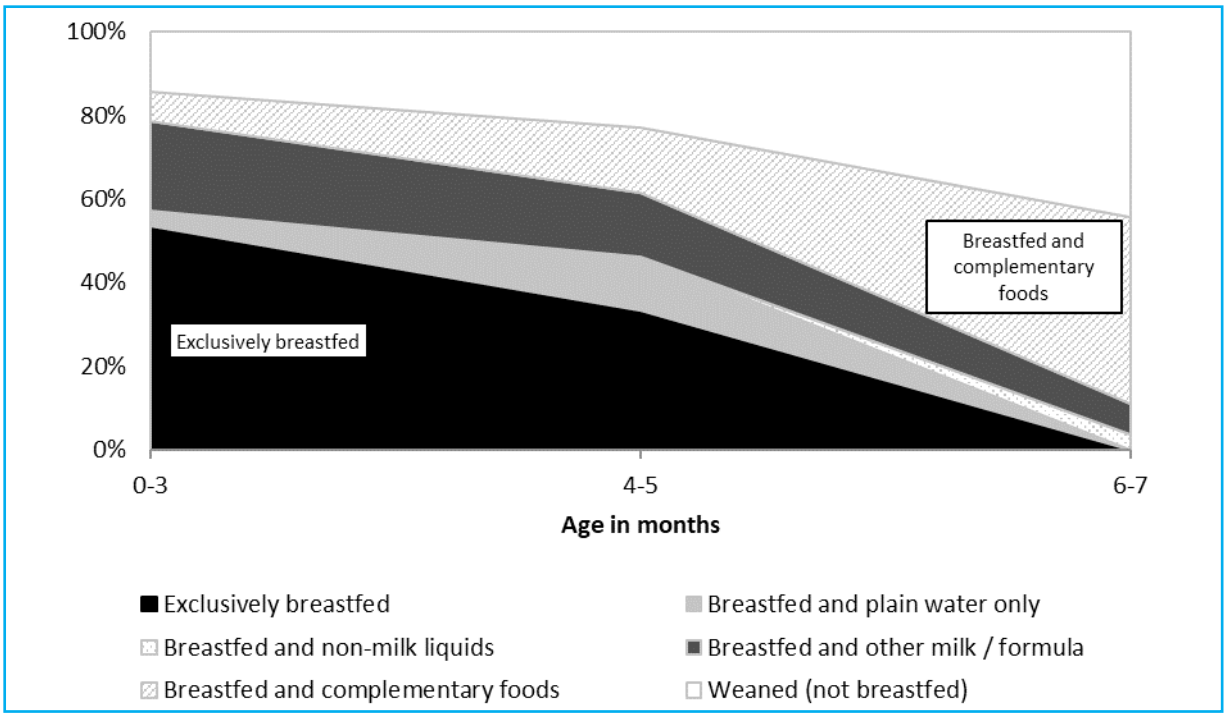
The set of Infant and Young Child Feeding indicators reported in tables NU.4 through NU.8 and Figure NU.3 are based on the mother's report of consumption of food and fluids during the day or night prior to being interviewed. Data are subject to a number of limitations, some related to the respondent's ability to provide a full report on the child's liquid and food intake due to recall errors as well as lack of knowledge in cases where the child was fed by other individuals.

Figure NU.3 shows the detailed pattern of breastfeeding by the child's age in months. Even at 0-3 months, almost half (46.4 percent) of children are receiving liquids or foods

21 Prelacteal feed refers to the provision any liquid or food, other than breastmilk, to a newborn during the period when breastmilk flow is generally being established (estimated here as the first 3 days of life).

other than breast milk, with other milk or formula being of highest prevalence. At age 4-5 months, only 1 in 3 children (33.3 percent) is exclusively breastfed. By the time a child is 6-7 month of age, 44.4 percent are no longer breastfed.

Figure NU.3: Infant feeding patterns by age, RMI ICHNS, 2017



In Table NU.4, breastfeeding status is presented for both Exclusively breastfed and Predominantly breastfed; referring to infants age less than 6 months who are breastfed, distinguished by the former only allowing vitamins, mineral supplements, and medicine and the latter allowing also plain water and non-milk liquids. The table also shows continued breastfeeding of children at 12-15 and 20-23 months of age.

An estimated 42.3 percent of children under 6 months old are exclusively breastfed and 50.9 percent are predominantly breastfed. By age 12-15 months, 40.5 percent of children are breastfed and by age 20-23 months, 34.2 percent are breastfed.

Given the small sample size of the survey there was limited power to detect significant difference by key characteristics for breastfeeding indicators. Prevalence of continued breastfeeding at age 12-15 months was found to be higher in female children (49.6 percent) compared to their male counterparts (29.9 percent) however this difference was not statistically significant.

Table NU.4: Breastfeeding

Percentage of living children according to breastfeeding status at selected age groups, by selected characteristics, RMI ICHNS, 2017

	Children age 0-5 months							Children age 12-15 months				Children age 20-23 months			
	Percent exclusively breastfed[1]			Percent predominantly breastfed[2]			Number of children [a]	Percent breastfed (Continued breastfeeding at 1 year)[3]			Number of children [b]	Percent breastfed (Continued breastfeeding at 2 years)[4]			Number of children [c]
	Percent	Lower	Upper	Percent	Lower	Upper		Percent	Lower	Upper		Percent	Lower	Upper	
Total	42.3	29.4	56.5	50.9	37.2	64.4	75	40.5	26.6	56.1	56	34.2	21.5	49.6	62
Child gender															
Male	41.4	25.2	59.8	54.8	36.6	71.8	42	29.9	13.9	53.0	26	22.7	11.2	40.6	38
Female	43.7	24.4	65.2	45.0	25.5	66.2	33	49.6	29.5	69.8	30	--	--	--	24
Area															
Urban	39.6	24.1	57.5	49.2	32.5	66.1	35	38.4	22.9	56.6	32	36.0	20.6	55.0	30
Rural	51.6	35.9	67.0	56.4	40.4	71.2	40	--	--	--	24	27.6	15.0	45.0	32

[1] **MICS indicator 2.7 - Exclusive breastfeeding under 6 months**

[2] **MICS indicator 2.8 - Predominant breastfeeding under 6 months**

[3] **MICS indicator 2.9 - Continued breastfeeding at 1 year**

[4] **MICS indicator 2.10 - Continued breastfeeding at 2 years**

Children exclusively breastfed: Children currently breastfeeding and no other liquid or food given with the exception of ORS and medicines.

Children predominantly breastfed: Children currently breastfeeding who are either exclusively breastfed or receiving plain water and non-milk liquids only with no animal milk or formula provided.

Titles of indicators on continued breastfeeding at 1 and 2 years reflect approximations of the age ranges covered.

[a] There were a total of 80 children 0-5 months of age in the survey, however 5 children did not have complete breastfeeding and feeding information.

[b] There were a total of 57 children 12-15 months of age however 1 child did not have complete breastfeeding and feeding information.

[c] There were 62 children 20-23 months of age with all children having complete breastfeeding and feeding information

The age-appropriateness of breastfeeding of children under 24 months of age is provided in Table NU.6. Different criteria of feeding are used depending on the age of the child. For infants aged 0-5 months, exclusive breastfeeding is considered age-appropriate feeding, while children aged 6-23 months are considered to be appropriately fed if they are receiving breast milk and solid, semi-solid or soft food. In RMI, 42.3 percent of children 0-5 are exclusively breastfed and only 39.2 percent of children aged 6-23 months are being appropriately breastfed and given solid, semi-solid or soft foods. A total of 39.8 percent of children aged 0-23 months are being appropriately breastfed. While there were no significant differences in the age-appropriate breastfeeding indictors and selected characteristics, there was a trend for higher appropriate breastfeeding of children 6-23 months and 0-23 months in rural areas compared to urban. Additionally, girls received higher appropriate breastfeeding at both 6-23 months and 0-23 months of age compared to boys. Similarly, children age 0-23 months living in households from the three poorer wealth quintiles (35.9 percent, 54.4 percent, 42.7 percent) are more likely to be appropriately breastfed and given solid, semi-solid or soft foods than the two richest wealth index quintiles (29.6 percent, 31.2 percent).

Table NU.6: Age-appropriate breastfeeding

Percentage of children age 0-23 months who were appropriately breastfed during the previous day, by selected characteristics, RMI ICHNS, 2017

	Children age 0-5 months		Children age 6-23 months		Children age 0-23 months	
	Percent exclusively breastfed[1]	Number of children [a]	Percent currently breastfeeding and receiving solid, semi-solid or soft foods	Number of children [b]	Percent appropriately breastfed[2]	Number of children [c]
Total	42.3	75	39.2	280	39.8	355
Child gender						
Male	41.4	42	36.6	153	37.6	195
Female	43.7	33	42.2	127	42.5	160
Area						
Urban	39.6	35	38.3	153	38.5	188
Rural	51.6	40	43.7	127	45.6	167
Wealth index quintile						
Poorest	42.6	39	35.9	122	37.5	161
Second	--	8	54.4	40	51.9	48
Middle	--	10	42.7	49	43.8	59
Fourth	--	8	29.6	34	27.8	42
Richest	--	10	31.2	35	37.1	45

[1] MICS indicator 2.7 - Exclusive breastfeeding under 6 months

[2] MICS indicator 2.12 - Age-appropriate breastfeeding

Children appropriately breastfed includes children age 0-5 months who are exclusively breastfed (see table NU.4) and children age 6-23 months who are currently breastfed and receiving any solid, semi-solid or soft foods.

[a] There were a total of 80 children 0-5 months of age in the survey, however 5 children did not have complete breastfeeding and feeding information.

[b] There were a total of 282 children 6-23 months of age however 2 children did not have complete breastfeeding and feeding information.

[c] There were 362 children 0-23 months of age with 7 children not having complete breastfeeding and feeding information.

Overall, 64.2 percent of infants 6-8 months old received solid, semi-solid or soft foods at least once during the previous day (Table NU.7). Prevalence was 59.6 percent among currently breastfeeding infants and higher among infants currently not breastfeeding however the sample size was too small to display prevalence. All indicators for introduction of solid, semi-solid, or soft foods were higher in rural areas compared to urban areas however due to low sample size cannot be displayed.

Table NU.7: Introduction of solid, semi-solid, or soft foods

Percentage of infants age 6-8 months who received solid, semi-solid, or soft foods during the previous day, by selected characteristics, RMI ICHNS, 2017

	Currently breastfeeding		Currently not breastfeeding		All		
	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods[1]	P-value	Number of children age 6-8 months[a]
Total	59.6	35	--	13	64.2	--	48
Sex							
Male	--	20	--	8	73.1	--	28
Female	--	15	--	5	--		20
Area							
Urban	--	20	--	10	60.5	--	30
Rural	--	15	--	3	--		18

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 2.13 - Introduction of solid, semi-solid or soft foods**

[a] There was a total of 49 children 6-8 months of age in the survey with 48 children having complete data

Table NU.8 shows that overall, about 6 out of 10 children aged 6-23 months (60.8 percent) were receiving solid, semi-solid or soft foods the minimum number of times. The proportion of children receiving the minimum dietary diversity, or foods from at least four food groups, was lower (42.5 percent) than that for minimum meal frequency (60.8 percent), indicating the need to focus on improving diet quality and nutrient intake among this vulnerable group. A higher proportion of older (12-23 month) children (49.3 percent) achieved minimum dietary diversity compared to younger (6-11 month) children (32.4 percent). The overall assessment using the indicator of minimum acceptable diet revealed that only 29.6 percent were benefitting from a diet sufficient in both diversity and frequency.

At 25.1 percent, children in the 6-11-month age group are less likely to receive a minimum acceptable diet compared to children in the 12-23 months age group at 32.6 percent. Prevalence of minimum dietary diversity in children 6-23 months was higher in urban areas (45.0 percent) than in rural areas (29.9 percent). Maternal dietary diversity was strongly associated with child dietary diversity, with 68.8 percent of children meeting minimum dietary diversity if their mothers also ate a diverse diet compared to 32.6 percent of children whose mothers did not consume a diverse diet.

Table NU.8: Infant and young child feeding (IYCF) practices

Percentage of children age 6-23 months who received appropriate liquids and solid, semi-solid, or soft foods the minimum number of times or more during the previous day, by breastfeeding status, by selected characteristics, RMI ICHNS, 2017

	Currently breastfeeding				Currently not breastfeeding					All						
	Percent of children who received:			Number of children age 6-23 months	Percent of children who received:				Number of children age 6-23 months	Percent of children who received:						Number of children age 6-23 months [a]
	Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet[1]		Minimum dietary diversity	Minimum meal frequency	Minimum acceptable diet[2]	At least 2 milk feeds[3]		Minimum dietary diversity[4]		Minimum meal frequency[5]		Minimum acceptable diet		
										Percent	P-value	Percent	P-value	Percent	P-value	
Total	34.9	64.5	26.0	144	49.8	57.2	33.0	39.4	134	42.5	--	60.8	--	29.6	--	278
Child Age																
6-11m	30.0	61.8	26.5	80	37.9	62.0	21.8	59.7	29	32.4	*	61.9	--	25.1	--	109
12-23m	41.5	68.0	25.4	64	53.6	55.7	36.5	33.0	105	49.3		60.0		32.6		169
Child gender																
Male	42.7	65.2	31.4	72	43.4	59.1	31.9	42.9	79	43.1	--	61.9	--	31.7	--	151
Female	27.3	63.7	20.9	72	58.8	54.5	34.5	34.6	55	41.8		59.5		27.1		127
Area																
Urban	36.9	63.7	26.6	81	52.9	59.8	34.9	42.0	72	45.0	*	61.7		30.8		153
Rural	25.1	68.2	23.2	63	34.6	44.3	23.6	26.4	62	29.9		56.1		23.4		125
Caregiver's education																
None	--	--	--	2	--	--	--	--	2	--	--	--	--	--	*	4
Primary	26.2	63.0	26.2	26	24.2	43.3	1.0	25.5	29	25.1		52.2		12.4		55
Secondary	39.3	60.8	25.4	93	49.9	55.2	34.8	44.0	76	44.3		58.2		29.8		169
Higher	28.2	75.4	28.2	23	70.4	74.2	53.2	41.0	27	52.2		74.7		42.5		50
Wealth index quintile																
Poorest	26.8	66.2	25.0	57	36.2	28.7	17.2	16.6	63	32.5	--	43.6	--	20.3	--	120
Second	41.3	77.9	33.6	30	23.5	46.6	23.5	46.2	10	36.2		69.0		30.7		40
Middle	37.6	57.8	23.9	25	50.5	54.1	25.6	33.9	24	43.9		56.0		24.7		49
Fourth	24.3	65.6	24.3	17	52.8	79.5	42.8	74.1	17	40.6		73.5		34.9		34
Richest	38.4	46.9	18.2	15	75.4	78.3	55.3	36.6	20	61.0		66.0		40.8		35
Maternal Minimum Dietary Diversity																
Yes	66.9	56.6	48.1	24	70.6	74.2	52.8	64.1	23	68.8	***	65.8	--	50.6	**	47
No	22.2	68.4	18.3	102	42.9	55.8	26.6	64.3	94	32.6		62.0		22.5		196

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 2.17a - Minimum acceptable diet (breastfed)**

[2] **MICS indicator 2.17b - Minimum acceptable diet (non-breastfed)**

[3] **MICS indicator 2.14 - Milk feeding frequency for non-breastfed children**

[4] **MICS indicator 2.16 - Minimum dietary diversity**

[5] **MICS indicator 2.15 - Minimum meal frequency**

[a] A total of 282 children 6-23 months of age where included in the survey, however 4 children did not include consumption of foods in the previous 24 hours.

The continued practice of bottle-feeding is a concern because of possible contamination due to unsafe water and lack of hygiene in preparation. Table NU.9 shows prevalence of bottle-feeding in RMI. Overall, 29.7 percent of children under 24 months of age are fed using a bottle with a nipple. There was no difference in bottle feeding by age of the child with 33.0 percent of infants under 6 months of age bottle-fed. Children born to mothers with parity of 4 or more (10.1 percent) had lower prevalence of being fed using a bottle with a nipple than with parity of one (30.6 percent) and 2-3 children (35.5 percent). Prevalence of being fed using a bottle with a nipple was highest among children with unmarried mothers (33.8 percent) compared to cohabitating mothers (27.9 percent) and currently married mothers (14.5 percent).

Table NU.9: Bottle feeding

Percentage of children age 0-23 months who were fed with a bottle with a nipple during the previous day, by selected characteristics, RMI ICHNS, 2017

	Percentage of children age 0-23 months fed with a bottle with a nipple[1]	P-value	Number of children age 0-23 months
Total	29.7	--	355
Child Age			
0-5m	33.0	--	75
6-11m	34.5		110
12-23m	25.2		170
Child gender			
Male	31.7	--	195
Female	27.3		160
Area			
Urban	31.1	--	188
Rural	23.6		167
Caregiver's education			
None	--	--	5
Primary	18.5		66
Secondary	31.4		217
Higher	33.4		67
Wealth index quintile			
Poorest	20.9	--	161
Second	23.7		48
Middle	33.1		59
Fourth	44.3		42
Richest	27.9		45
Maternal Parity			
1	30.6	**	94
2-3	35.5		147
4 or more	10.1		70
Maternal Married Status			
Not married	33.8	*	140
Currently married	14.5		64
Cohabitating	27.9		119

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 2.18 - Bottle feeding**

Children's consumption of nutrient rich and low nutrient density foods was measured in the RMI ICHNS 2017 to determine changing consumption patterns for children under 5 years and is presented for children 0-23 months in table NU.11a and for children 24-59 months in table NU.11b.

In Table NU.11a consumption of nutrient rich and low nutrient density food groups is presented for children 0-23 months. A third of infants under 6 months received infant formula (33.1 percent) and 15.8 percent received animal milk in the previous 24 hours. Children 6-23 months of age continued to receive infant formula or other "growing up milk" with 1 in 5 children 12-23 months of age receiving formula. The provision of tea or coffee was high with 28.5 percent of children 12-23 months of age receiving either tea or coffee which can inhibit iron absorption and lead to iron deficiency.

In children under 2 years of age, the consumption of iron rich foods was high with 67.0 percent of children 6-11 months and 79.7 percent of children 12-23 months receiving iron rich foods in the form of fish, poultry, meat or organ meats. However, consumption of vitamin A rich fruits and vegetables and dark green leafy vegetables was poor. Provision of fortified baby cereal was highest for children 6-11 months with over 1 in 4 children receiving fortified baby cereal as a complementary food. Children were more likely to receive nutrient rich foods if their mother had a minimally diverse diet indicating the link between what the mother eats and what she feeds her child.

Consumption of low nutrient density foods was high for young children under 2 years. In children 12-23 months of age, nearly 1 in 2 received a sugary food such as cakes, cookies, pies or candy in the previous 24 hours. A third of children 12-23 months received a sugar sweetened beverage.

Consumption of low nutrient density foods such as sugar sweetened beverages and sugary foods as well as nutrient rich foods like fortified baby cereals and dark green leafy vegetables was highest in urban areas. Additionally, consumption of infant formula was nearly double in urban areas (28.9 percent) compared to rural areas (16.2 percent).

In Table NU.11b consumption of nutrient rich and nutrient poor food groups is presented for children 24-59 months. After two years of age, children consume less complementary foods and more frequently partake in meals prepared for the household. In RMI, older children, 2-4 years of age, consume less infant formula and milk than younger children but increased their consumption of juice and tea or coffee with over a third of children 36-59 months consuming tea or coffee in the previous 24 hours. Consumption of iron rich foods is high with 88.3 percent of children consuming fish, poultry, meat or organ meats however consumption of vitamin A rich fruits and vegetables and dark green leafy vegetables remained low. There was a marked increase in consumption of low nutrient density foods in children 2-4 years of age compared to children under 2 years of age with 64.8 percent of older children consuming sugary foods and 56.5 percent of children consuming sugar sweetened beverages.

Similar to children under 2 years of age, consumption of low nutrient density and nutrient rich foods was highest in urban areas. Additionally, maternal dietary diversity was strongly correlated with child consumption of nutrient rich foods with 81.4 percent of children consuming vitamin A rich fruits and vegetables and 45.4 percent of children consuming dark green leafy vegetables if their mother had minimum dietary diversity.

Table NU.11: Consumption of nutrient-rich and low-nutrient-density food groups (0-23m)

Percentage of children age 0-23 months who were fed liquids, nutrient poor foods and nutrient rich foods during the previous day, by selected characteristics, RMI ICHNS, 2017

	Receipt of Liquids								Receipt of Low Nutrient Density Foods						Receipt of Nutrient Rich Foods						Number of children 0-23 months[k]
	Breastmilk		Infant Formula[a]		Milk [b]		Tea or Coffee		Sugar Sweetened Beverages [d]		Sugary Foods[e]		Oils, fats [f]		Iron rich foods [g]		Fortified Baby Cereal [h]		Vitamin A rich fruits and vegetables [i]		Dark green leafy vegetables [j]		
	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	
Total	55.6	--	26.6	--	20.5	--	17.9	--	22.9	--	31.6	--	13.7	--	63.7	--	14.9	--	32.9	--	10.4	--	355
Child Age																							
0-5m	81.3	***	33.1	--	15.8	--	7.7	***	5.4	*	7.3	***	3.2	**	19.2	***	12.8	***	7.3	***	0.0	**	75
6-11m	69.9		31.3		24.1		8.5		19.1		26.7		13.3		67.0		28.4		29.3		7.3		110
12-23m	35.5		20.8		20.0		28.5		32.6		44.8		18.3		79.7		6.7		45.9		16.8		170
Child gender																							
Male	52.6	--	28.8	--	19.9	--	18.5	--	25.2	--	31.8	--	10.8	--	59.7	--	14.0	--	32.7	--	11.4	--	195
Female	59.4		23.9		21.2		17.3		20.1		31.5		17.2		68.6		16.0		33.2		9.3		160
Area																							
Urban	54.8	--	28.9	**	22.2	*	16.0	*	24.6	*	35.1	***	14.6	--	65.1	--	16.4	*	32.6	--	12.0	**	188
Rural	59.5		16.2		12.5		26.5		15.2		15.7		9.4		57.4		8.0		34.7		3.2		167
Wealth index quintile																							
Poorest	50.0	--	15.3	*	12.4	--	26.7	*	20.5	--	21.9	--	9.2	**	54.5	--	10.5	--	39.5	--	5.5	--	161
Second	75.0		21.2		20.5		27.8		24.7		35.4		3.8		60.5		10.4		33.5		10.3		48
Middle	55.7		23.0		20.5		11.0		30.6		38.7		25.4		67.5		10.5		25.4		6.7		59
Fourth	50.0		39.5		19.2		19.3		19.0		25.7		8.5		71.7		27.8		25.8		10.4		42
Richest	49.2		37.8		31.2		6.0		17.6		35.8		18.0		65.3		18.1		41.3		21.4		45
Women's MDD Final																							
No	56.5	--	28.6	--	23.2	--	17.7	--	22.7	--	29.5	--	13.0	--	61.3	--	17.6	--	21.6	***	2.7	***	252
Yes	53.7		33.8		20.2		22.5		31.6		41.0		17.9		72.2		10.5		59.3		30.5		60

* P<0.05, ** P<0.01, *** P<0.001

[a] Infant formula, such as Similac, Bonna, Bonamil, Morinaga BF, Enfamil
[b] Milk from animals, such as fresh, tinned, or powdered milk (not sweetened condensed milk)
[d] Sugar sweetened beverages such as carbonated soft drinks
[e] Any sugary foods such as chocolates, sweets, candies, pastries, cakes or biscuits (including condensed milk and ice cream)
[f] Any oil, fats, or butter, or foods made with any of these including cream and sour cream.
[g] Red meat, pork and poultry, seafood, beans, dark green leafy vegetables, such as spinach, dried fruit, such as raisins and apricots, iron-fortified cereals, breads and pastas, peas
[h] Any baby food, such as commercially fortified baby food, e.g. Cerelac, Gerber, Hero or Nestum
[i] Sweet potatoes, carrots, dark green leafy vegetables, winter squashes, lettuce, dried prunes, dried apricots, dried peaches, cantaloupe, bell peppers, mango, papaya
[j] Collard, spinach, mustard and dandelion green, kale
[k] There were 362 children 0-23 months of age with 7 children not having complete breastfeeding and feeding information.

Table NU.11b: Consumption of nutrient rich and low-nutrient-density food groups (24-59m)

Percentage of children age 24-59 months who were fed liquids, nutrient poor foods and nutrient rich foods during the previous day, by selected characteristics, RMI ICHNS, 2017

	Receipt of Liquids								Receipt of Low Nutrient Density Foods								Receipt of Nutrient Rich Foods								Number of children 24-59 months [k]
	Breastmilk		Infant Formula [a]		Milk [b]		Juice [c]		Tea or Coffee		Sugar Sweetened Beverages [d]		Sugary Foods [e]		Oils, fats [f]		Iron rich foods [g]		Fortified Baby Cereal [h]		Vitamin A rich fruits and vegetables [i]		Dark green leafy vegetables [j]		
	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	%	P-value	
Total	18.1	--	10.0	--	16.1	--	57.1	--	36.1	--	56.5	--	64.8	--	29.9	--	88.3	--	5.7	--	50.6	--	15.6	--	516
Child Age																									
24-35m	32.5	***	11.8	--	16.1	--	58.7	--	32.7	--	54.4	--	62.9	--	29.0	--	90.6	--	9.2	--	51.6	--	13.6	--	166
36-59m	11.8		9.2		16.1		56.4		37.6		57.3		65.6		30.2		87.3		4.2		50.1		16.5		350
Child gender																									
Male	19.0	--	11.3	--	13.2	--	61.5	--	44.4	**	61.1	--	66.7	--	30.8	--	87.8	--	6.5	--	55.6	--	16.7	--	257
Female	17.2		8.6		19.1		52.7		27.7		51.8		62.8		28.9		88.8		4.9		45.4		14.6		259
Area																									
Urban	18.4	--	11.3	***	17.6	**	58.7	*	35.3	--	60.1	***	69.6	***	32.7	***	87.9	--	6.6	**	50.2	--	18.4	***	292
Rural	16.6		3.1		8.2		48.8		40.4		37.2		38.9		14.8		90.4		0.8		52.4		1.2		224
Wealth index quintile																									
Poorest	12.8	--	7.8	--	12.2	--	45.2	*	44.4	--	47.5	--	40.3	***	14.3	*	86.5	--	5.3	--	46.2	--	1.1	***	209
Second	19.4		9.4		11.9		55.2		35.0		66.0		68.5		27.9		88.0		7.2		43.6		13.4		98
Middle	20.4		9.1		14.4		50.9		30.6		49.4		68.2		39.7		87.9		7.9		47.2		12.7		83
Fourth	21.3		8.2		20.5		72.1		38.1		65.4		68.2		33.9		91.5		6.1		53.7		19.4		64
Richest	16.1		15.2		23.8		65.7		34.2		53.5		76.7		32.4		88.2		1.2		65.2		33.1		62
Women's MDD Final																									
No	12.7	--	17.2	--	14.0	--	51.9	*	29.4	*	46.4	**	57.3	--	17.9	*	81.5	**	4.9	--	35.8	***	0.3	***	97
Yes	28.4		22.8		22.4		74.6		53.6		75.8		75.9		38.9		100.		13.6		81.4		45.4		43

* P<0.05, ** P<0.01, *** P<0.001

[a] Infant formula, such as Similac, Bonna, Bonamil, Morinaga BF, Enfamil
[b] Milk from animals, such as fresh, tinned, or powdered milk (not sweetened condensed milk)
[c] Juice or juice drinks
[d] Sugar sweetened beverages such as carbonated soft drinks
[e] Any sugary foods such as chocolates, sweets, candies, pastries, cakes or biscuits (including condensed milk and ice cream)
[f] Any oil, fats, or butter, or foods made with any of these including cream and sour cream.
[g] Red meat, pork and poultry, seafood, beans, dark green leafy vegetables, such as spinach, dried fruit, such as raisins and apricots, iron-fortified cereals, breads and pastas, peas
[h] Any baby food, such as commercially fortified baby food, e.g. Cerelac, Gerber, Hero or Nestum
[i] Sweet potatoes, carrots, dark green leafy vegetables, winter squashes, lettuce, dried prunes, dried apricots, dried peaches, cantaloupe, bell peppers, mango, papaya
[j] Collard, spinach, mustard and dandelion green, kale
[k] There were a total of 519 children 24-59 months of age with 3 children having incomplete dietary records.

Caregiver Nutrition Status

Table NU.12 presents a summary of the nutritional status and dietary quality of sampled mothers and caregivers with a child under 5 years in the ICHNS 2017.

Table NU.12: Nutrition status of caregivers with a child under 5

Percent distribution of the nutrition status of caregivers, by selected characteristics, RMI ICHNS, 2017

	Percent	Lower 95% CI	Upper 95% CI	Unweighted
Nutrition status				673
Underweight	1.8	0.9	3.5	
Overweight	72.7	68.4	76.5	
Obese	45.1	40.6	49.7	
Height Categories				
Under 145cm	4.4	3.0	6.3	37
145-149cm	21.7	18.2	25.7	151
150-159cm	64.4	60.0	68.6	424
160 and taller	9.5	7.2	12.6	61
Minimum Dietary Diversity [1]	27.2	21.7	33.6	324
Mean number of food groups	3.58			324
Consumption nutrient rich foods				
Iron rich foods	75.3	68.9	80.7	
Dark Green leafy vegetables	14.8	10.6	20.1	
Vitamin A rich fruits and vegetables	36.2	30.1	42.7	
Other Vegetables	14.5	10.5	19.8	
Other Fruits	34.3	28.3	40.9	
Consumption low nutrient density foods				
Fats and oils	23.6	18.3	29.8	
Savoury and fried snacks	25.7	20.2	32.2	
Sweet foods	46.8	40.3	53.4	
Sugar sweetened beverages	41.0	34.8	47.6	
Total any low nutrient density foods	63.5	57.0	69.6	

1. Minimum dietary diversity for women and consumption of nutrient rich and low nutrient density foods was measured only in caregivers with a child under 2 years.

As shown in Table NU.13, caregivers aged 15-49 years had very high prevalence of overweight and obesity. Three out of four mothers in RMI are overweight with nearly one in two mothers obese. Percentage of overweight and obesity increased with maternal age with nearly all women 40-49 years of age (93.3 percent) overweight or obese. Prevalence of overweight and obesity was high for even the youngest caregivers with 39.6 percent of women under 20 years overweight and 15.7 percent obese. There was no association between overweight and obesity and household wealth with mothers in the poorest households as likely to be overweight as mothers in the wealthiest households.

Table NU.13: Caregivers aged 15-49 years nutrition status

Percent distribution of nutrition status of caregivers aged 15-49 years, by selected characteristics, RMI ICHNS, 2017

	Underweight		Overweight		Obese		Mean BMI		Unweighted
	%	P-value	%	P-value	%	P-value	%	P-value	
Total	1.8		72.7		45.1		29.5		673
Caregiver's Age									
Under 20	0.0	***	39.6	***	15.7	***	24.3	***	25
20-29	2.1		62.9		31.5		27.7		317
30-39	1.9		82.3		60.0		31.8		246
40-49	0.7		93.3		62.3		32.4		83
Area									
Urban	1.9		73.1		45.6		29.6	--	365
Rural	1.5		70.8		42.9		29.0		308
Caregiver's Education									
None	--		--	*	--		--	--	7
Primary	1.3		65.4		42.5		28.7		131
Secondary	1.4		70.7		43.8		29.2		414
Higher	3.4		83.7		49.8		31.0		121
Wealth index quintile									
Poorest	1.4		73.5		45.6		29.1	--	289
Second	2.1		64.4		37.2		28.2		114
Middle	0.7		75.8		53.7		30.3		104
Fourth	1.1		71.6		41.1		29.5		89
Richest	4.1		78.9		47.6		30.8		77
Household Food Security									
Food Secure	3.0	*	65.4		30.8		28.0	--	129
Food Insecure	0.5		74.4		41.5		29.3		191
Maternal Parity									
1	3.2		62.5	**	39.8	***	28.5	***	176
2-3	0.9		72.2		36.8		29.0		278
4 or more	0.0		83.5		63.0		31.9		140
Married Status									
Never Married	1.4		67.0	*	35.5	**	28.6	**	233
Currently Married	1.7		83.6		59.6		31.7		134
Divorced/ Separated/ Widowed	5.9		55.4		37.0		26.1		21
Cohabitating	0.9		71.8		44.2		29.6		206
Minimum Dietary Diversity									
Yes	0.6	*	71.0		35.8		28.8	--	256
No	4.0		70.1		41.3		29.0		69

* P<0.05, ** P<0.01, *** P<0.001

While prevalence of short stature (height < 145cm) was relatively low at 4.4 percent in caregivers, over one in four mothers had borderline short stature or short stature with a height less than 150cm. Short stature in women is indicative of earlier growth restriction during childhood with a short stature woman usually stunted as a child. While not significant, there was a general trend of decreasing short stature in caregivers with increasing household wealth. A total of 30.4 percent of caregivers in the poorest households were under 150 cm compared to 16.2 percent of caregivers in the richest households.

Table NU.14: Caregiver's short stature

Percent distribution of short status of caregivers aged 15-49 years, by selected characteristics, RMI ICHNS, 2017

	Under 145cm	145-150cm	150-159cm	160cm and taller	Unweighted	P-value
Total	4.4	21.7	64.4	9.6	671	
Caregiver's Age						
Under 20	3.7	19.4	76.9	0.0	25	--
20-29	5.3	24.1	60.5	10.0	317	
30-39	3.1	19.6	67.7	9.6	246	
40-49	4.3	19.7	65.0	11.0	83	
Area						
Urban	3.7	21.3	64.9	10.1	364	--
Rural	7.3	23.6	62.1	7.1	307	
Caregiver's Education						
None	--	--	--	--	7	--
Primary	7.9	23.0	64.6	4.7	130	
Secondary	4.3	23.2	62.5	10.0	413	
Higher	1.2	16.7	69.3	12.8	121	
Wealth index quintile						
Poorest	7.3	23.1	63.9	5.9	288	--
Second	6.1	26.1	58.8	9.0	114	
Middle	5.1	19.7	69.7	5.2	103	
Fourth	2.3	22.6	59.7	15.4	89	
Richest	0	16.2	69.9	14.0	77	
Religion						
Assembly of God	6.5	21.7	66.8	4.7	108	**
Protestant	4.3	26.7	61.1	7.9	368	
Catholic	5.3	17.4	52.6	24.1	49	
Other	2.4	13.3	72.5	11.8	146	
Maternal Married Status						
Never Married	5.2	22.5	64.9	7.3	233	**
Currently Married	1.6	14.5	68.2	15.7	134	
Divorced/Separated/Widowed	--	--	--	--	21	
Cohabitating	4.3	27.2	62.6	5.9	206	

* P<0.05, ** P<0.01, *** P<0.001

Dietary practices for caregivers with a child under 2 years was poor in RMI with only 27.4 percent of caregivers meeting minimum dietary diversity (Table NU.15). Minimum dietary diversity was positively associated with household wealth, however only 43.4 percent of the wealthiest mothers consumed a diet which met minimum dietary diversity. Additionally, while minimum dietary diversity was higher in urban areas with 31.6 percent compared to only 8.1 percent of women in rural areas, the majority of all caregivers in RMI consumed poor quality diets.

While consumption of iron rich foods was high in RMI (75.3 percent), however only 14.8 percent of caregivers consumed dark green leafy vegetables and 36.2 percent of mothers consumed vitamin A rich fruits and vegetables. In contrast to poor consumption of nutrient rich foods, consumption of low nutrient and high calorie foods such as cakes, cookies, sugar sweetened beverages and fried snacks was high with 63.5 percent of caregivers consuming at least one of these foods in the last 24 hours. There were little differences in the consumption of high calorie, low nutrient foods by household wealth, urban or rural areas or other maternal characteristics with consumption high for all caregivers.

Table NU.15: Caregiver's dietary diversity

Percent distribution of dietary diversity of caregivers aged 15-49 years, by selected characteristics, RMI ICHNS, 2017

	Minimum Dietary Diversity	P-value	Mean number of Food Groups	Nutrient rich food groups: Iron Rich Foods	Nutrient rich food groups: Dark Green leafy vegetables	Nutrient rich food groups: Vitamin A rich fruits and vegetables	Low nutrient density food groups: Fats and oils	Low nutrient density food groups: Savoury and fried snacks	Low nutrient density food groups: Sweet foods	Low nutrient density food groups: Sugar sweetened beverages	Low nutrient density food groups: Total Any Low Nutrient Foods	Unweighted	P-value
Total	27.4		3.58	75.3	14.8	36.2	23.6	25.7	46.8	41.0	63.5	324	--
Caregiver's Age													
Under 20	--	***	--	--	--	--	--	--	--	--	--	19	--
20-29	25.3		3.50	72.5	15.2	38.5	19.1	25.4	46.9	41.1	63.6	182	
30-39	31.9		3.66	78.6	17.3	32.3	30.7	25.3	48.0	42.6	63.4	93	
40-49	23.3		3.94	84.7	13.8	31.7	26.2	32.2	51.3	39.7	64.6	30	
Area													
Urban	31.6	***	3.80	74.6	17.3	37.6	25.6	28.1	51.4	42.4	65.1	177	--
Rural	8.1		2.54	78.4	3.1	29.5	14.5	14.8	25.6	34.6	56.1	147	
Caregiver's Education													
None	--		--	--	--	--	--	--	--	--	--	2	--
Primary	20.1		3.24	81.6	5.7	30.2	27.4	30.3	44.9	30.7	61.6	56	
Secondary	27.7		3.57	72.7	16.0	35.5	21.8	24.7	49.2	44.4	64.0	209	
Higher	31.1		3.81	77.5	16.7	41.8	25.7	24.5	40.6	39.2	62.7	57	
Wealth index quintile													
Poorest	17.9		2.83	76.4	5.0	36.0	12.6	14.6	26.3	33.8	53.2	140	--
Second	28.0		3.78	76.0	21.2	39.0	17.9	31.1	53.6	44.0	68.0	52	
Middle	25.1		3.65	79.4	13.7	27.1	36.3	33.8	58.8	53.7	73.1	56	
Fourth	26.8		3.57	68.0	18.6	35.3	21.4	24.1	37.0	27.1	54.0	42	
Richest	43.4		4.17	75.2	16.2	48.2	28.0	22.6	57.3	43.3	67.5	34	
Household Food Security													
Food Insecure	23.5		3.75	72.4	13.1	32.5	16.9	18.6	42.5	42.0	63.2	128	--
Food Secure	30.2		3.35	77.5	16.1	38.9	28.5	30.5	49.9	40.4	63.8	191	
Caregiver's Nutrition Status													
Underweight	--		--	--	--	--	--	--	--	--	--	5	*
Normal	25.6		3.52	77.7	13.9	39.3	14.5	24.9	48.5	32.2	61.2	99	
Overweight	23.7		3.35	70.0	11.5	32.9	23.1	26.4	44.0	37.4	61.9	100	
Obese	29.5		3.75	77.4	19.2	34.2	31.9	25.9	46.2	49.6	65.3	119	

* P<0.05, ** P<0.01, *** P<0.001

IV. Child Health

Care of Illness

A key strategy for accelerating progress toward SDG 3 is to tackle the diseases that are the leading killers of children under 5. Diarrhoea and pneumonia are two such diseases. The Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea (GAPPD) aims to end preventable pneumonia and diarrhoea death by reducing mortality from pneumonia to 3 deaths per 1000 live births and mortality from diarrhoea to 1 death per 1000 live births by 2025.

Table CH.4 presents the percentage of children under 5 years of age who were reported to have had an episode of diarrhoea, symptoms of acute respiratory infection (ARI), or fever during the 2 weeks preceding the survey. These results are not measures of true prevalence, and should not be used as such, but rather the period-prevalence of those illnesses over a two-week time window.

The definition of a case of diarrhoea or fever, in this survey, was the mother's (or caregiver's) report that the child had such symptoms over the specified period; no other evidence was sought beside the opinion of the mother. A child was considered to have had an episode of ARI if the mother or caregiver reported that the child had, over the specified period, an illness with a cough with rapid or difficult breathing, and whose symptoms were perceived to be due to a problem in the chest or both a problem in the chest and a blocked nose. While this approach is reasonable in the context of the ICHNS survey, these basically simple case definitions must be kept in mind when interpreting the results, as well as the potential for reporting and recall biases. Further, diarrhoea, fever and ARI are not only seasonal but are also characterized by the often-rapid spread of localized outbreaks from one area to another at different points in time. The timing of the survey and the location of the teams might thus considerably affect the results, which must consequently be interpreted with caution. For these reasons, although the period-prevalence over a two-week time window is reported, these data should not be used to assess the epidemiological characteristics of these diseases but rather to obtain denominators for the indicators related to use of health services and treatment.

Overall, 9.3 percent of children under 5 years of age were reported to have had diarrhoea in the two weeks preceding the survey, 2.9 percent symptoms of ARI, and 11.5 percent an episode of fever (Table CH.4). Children's age was associated with both diarrhoea and ARI with ARI highest in children 6-11 months of age (8.7 percent) and diarrhoea highest in children 12-35 months of age. Mother's age was associated with symptoms or ARI with 0.4 percent in children of mothers less than 20 years old, 1.8 percent in mothers 20-34 years old and 5.9 percent in mothers 35-49 years old at the time of the child's birth. There was no significant difference in prevalence of fever and selected characteristics.

Table CH.4: Reported disease episodes

Percentage of children age 0-59 months for whom the mother/caregiver reported an episode of diarrhoea, symptoms of acute respiratory infection (ARI), and/or fever in the last two weeks, by selected characteristics, RMI ICHNS, 2017

	Percentage of children who in the last two weeks had:						Number of children age 0-59 months
	An episode of diarrhoea		Symptoms of ARI [a]		An episode of fever		
	Percentage	P-value	Percentage	P-value	Percentage	P-value	
Total	9.3	--	2.9	--	11.5	--	874
Child Age							
0-5m	2.6	**	1.1	**	9.6	--	77
6-11m	7.6		8.7		14.7		108
12-23m	13.7		3.1		16.1		170
24-35m	16.8		1.6		8.9		169
36-59m	5.8		1.9		10.0		350
Mother's age at birth							
Less than 20 years	13.6	--	0.4	*	12.5	--	112
20-34 years	8.8		1.8		10.2		552
35-49 years	11.9		5.9		10.5		92
Child gender							
Male	9.5	--	3.2	--	10.7	--	450
Female	9.1		2.5		12.3		424
Area							
Urban	9.1	--	2.8	--	12.0	--	484
Rural	10.4		3.0		9.0		390
Caregiver's education							
None	--	--	--	--	--	--	12
Primary	11.9		4.0		12.0		180
Secondary	8.5		1.8		9.6		525
Higher	10.1		4.5		16.6		153
Wealth index quintile							
Poorest	8.5	--	1.7	--	9.5	--	369
Second	8.2		2.3		14.2		149
Middle	10.5		5.3		11.8		143
Fourth	10.2		4.0		10.4		106
Richest	9.2		0.7		10.9		107
Maternal Married Status							
Not married	11.0	--	3.0	--	13.4	--	330
Currently married	5.7		1.5		10.5		173
Cohabitating	10.2		2.0		8.4		279
Father in Household							
Yes	9.6	--	2.8	--	10.8	--	617
No	8.4		3.1		13.3		257

* P<0.05, ** P<0.01, *** P<0.001

[a] Suspected ARI: Children with symptoms of ARI are those who had an illness with a cough, accompanied by a rapid or difficult breathing and whose symptoms were due to a problem in the chest, or both a problem in the chest and a blocked nose.

Diarrhoea

Diarrhoea is a leading cause of death among children under 5 worldwide. Most diarrhoea-related deaths in children are due to dehydration from loss of large quantities of water and electrolytes from the body in liquid stools. Management of diarrhoea – either through oral rehydration salts (ORS) or a recommended home fluid (RHF) – can prevent many of these deaths. In addition, provision of zinc supplements has been shown to reduce the duration and severity of the illness as well as the risk of future episodes within the next two or three months. Preventing dehydration and malnutrition by increasing fluid intake and continuing to feed the child are also important strategies for managing diarrhoea.

In the RMI ICHNS, 2017, mothers or caregivers were asked whether their child under age 5 had an episode of diarrhoea in the two weeks prior to the survey. In cases where mothers reported that the child had diarrhoea, a series of questions were asked about the treatment of the illness, including what the child had been given to drink and eat during the episode and whether this was more or less than what was usually given to the child.

The overall period-prevalence of diarrhoea in children under 5 years of age is 9.3 percent (Table CH.4) and ranged from 9.1 percent in urban areas to 10.4 percent in rural areas. The highest period-prevalence is seen among children age 12-35 months which corresponds to the period of time where children increase their consumption of complementary foods and have increased mobility.

Table CH.5 shows the percentage of children with diarrhoea in the two weeks preceding the survey for whom advice or treatment was sought and where. Overall, a health facility or provider was seen in 47.1 percent of cases, predominantly in the public sector (36.2 percent). For boys (49.9 percent) and girls (50.4 percent) the prevalence of "No advice or treatment sought" was about the same at 50 percent.

Table CH.5: Care-seeking during diarrhoea

Percentage of children age 0-59 months with diarrhoea in the last two weeks for whom advice or treatment was sought, by source of advice or treatment, by selected characteristics, RMI ICHNS, 2017

	Percentage of children with diarrhoea for whom:						
	Advice or treatment was sought from:						
	Health facilities or providers						
	Public	Private	Community health provider [a]	Other source	A health facility or provider [1, b]	No advice or treatment was sought	Number of children age 0-59 months with diarrhoea in the last two weeks
Total	36.2	0.0	10.9	2.8	47.1	50.2	86
Child gender							
Male	35.7	0.0	9.1	5.3	44.8	49.9	44
Female	36.7	0.0	12.8	0.0	49.6	50.4	42
Area							

Urban	43.9	0.0	0.0	2.9	43.9	53.2	45
Rural	2.7	0.0	58.4	2.1	61.1	36.8	41
Caregiver's education							
None	28.5	0.0	17.7	0.0	46.2	53.8	25
Primary	36.4	0.0	7.6	5.1	43.9	50.9	44
Secondary	--	--	--	--	--	--	17
Higher	36.2	0.0	10.9	2.8	47.1	50.2	86
Maternal Married Status							
Not married	34.6	0.0	8.9	0.8	43.5	55.6	40
Currently married	--	--	--	--	--	--	9
Cohabitating	31.9	0.0	10.2	1.1	42.0	56.8	29
Father in Household							
Yes	36.0	0.0	9.4	3.7	45.4	50.9	60
No	36.8	0.0	15.2	0.0	52.0	48.0	26

[1] **MICS indicator 3.10 - Care-seeking for diarrhoea**

[a] Community health provider includes both public (Community health worker and Mobile/Outreach clinic) and private (Mobile clinic) health facilities

[b] Includes all public and private health facilities and providers, but excludes private pharmacy

The denominator for this table is number of children with diarrhoea during the last two weeks.

Table CH.6 provides statistics on drinking and feeding practices during diarrhoea. One fifth (20.0 percent) of children under 5 years of age with diarrhoea were given more to drink than usual while 76.2 percent were given the same or less. About 54.3 percent were given somewhat less, same or more, but 45.3 percent were given much less or nothing to drink. Almost one third (29.9 percent) of children under 5 years of age with diarrhoea were given more to eat than usual while 62.3 percent were given the same or less. About 65.5 percent were given somewhat less, same or more (continued feeding), but 33.4 percent were given much less or nothing to eat.

Table CH.6: Feeding practices during diarrhoea

Percent distribution of children age 0-59 months with diarrhoea in the last two weeks by amount of liquids and food given during episode of diarrhoea, by selected characteristics, RMI ICHNS, 2017

	Drinking practices during diarrhoea						Eating practices during diarrhoea						Number of children age 0-59 months with diarrhoea in the last two weeks
	Child was given to drink:					Total	Child was given to eat:					Total	
	Much less	Somewhat less	More	Nothing	Missing/DK		Much less	Somewhat less	More	Nothing	Missing/DK		
Total	41.9	34.3	20.0	3.4	0.4	100.0	26.7	35.6	29.9	6.7	1.1	100.0	86
Child gender													
Male	35.1	34.0	25.0	5.9	0.0	100.0	24.3	26.4	37.9	9.3	2.1	100.0	44
Female	49.6	34.6	14.3	0.7	0.8	100.0	29.3	45.9	21.0	3.7	0.0	100.0	42
Area													
Urban	43.7	33.5	19.0	3.8	0.0	100.0	28.7	33.4	31.4	6.6	0.0	100.0	45
Rural	34.4	37.7	24.0	1.7	2.1	100.0	17.9	45.5	23.5	7.2	5.9	100.0	41
Caregiver's education													
None	38.9	38.2	21.2	0.0	1.7	100.0	5.1	53.9	38.1	0.0	2.9	100.0	25
Primary	50.6	29.3	13.9	6.3	0.0	100.0	37.9	31.1	25.7	4.6	0.7	100.0	44
Secondary	--	--	--	--	--	--	--	--	--	--	--	--	17
Higher	41.9	34.3	20.0	3.4	0.4	100.0	26.7	35.6	29.9	6.7	1.1	100.0	86
Maternal Married Status													
Not married	43.1	35.2	13.6	7.3	0.8	100.0	25.3	32.0	33.9	8.8	0.0	100.0	40
Currently married	--	--	--	--	--	--	--	--	--	--	--	--	9
Cohabitating	36.5	35.3	28.3	0.0	0.0	100.0	26.3	40.1	25.0	7.5	1.1	100.0	29
Father in Household													
Yes	40.9	34.6	19.4	4.6	0.5	100.0	32.2	34.1	26.9	5.3	1.5	100.0	60
No	45.0	33.4	21.6	0.0	0.0	100.0	10.6	40.0	38.7	10.7	0.0	100.0	26

The denominator for this table is number of children with diarrhoea during the last two weeks.

Table CH.7 shows the percentage of children receiving ORS, and recommended homemade fluids during the episode of diarrhoea. Since children may have been given more than one type of liquid, the percentages do not necessarily add up to 100. About 28.4 percent received ORS or health personnel recommended homemade fluid. A total of 24.0 percent of children were given any type of ORS and 14.3 percent received recommended homemade fluid. Children 0-23 months with an episode of diarrhoea in the last two weeks were twice as likely to receive ORS or recommended homemade fluid (40.7 percent) compared to children 24-59 months of age (20.2 percent).

Table CH.7: Oral rehydration solutions, recommended homemade fluids, and zinc

Percentage of children age 0-59 months with diarrhoea in the last two weeks, and treatment with oral rehydration salts (ORS), recommended homemade fluids, and zinc, by selected characteristics, RMI ICHNS, 2017

	Percentage of children with diarrhoea who received:							
	Oral rehydration salts (ORS)					Zinc		Number of children age 0-59 months with diarrhoea in the last two weeks
	Fluid from packet	Pre-packaged fluid	Any ORS	Any recommended homemade fluid	ORS or any recommended homemade fluid	Any zinc	ORS and zinc[1]	
Total	18.9	16.9	24.0	14.3	28.4	10.5	7.5	86
Child Age								
0-23	34.0	28.8	37.2	23.0	40.7	18.8	17.5	31
24-59	8.8	9.0	15.1	8.5	20.2	4.9	0.9	55
Child gender								
Male	18.6	11.1	23.8	14.4	27.8	8.4	3.8	44
Female	19.3	23.5	24.2	14.2	29.0	12.8	11.7	42
Area								
Urban	20.8	16.1	23.5	14.5	26.9	9.8	8.1	45
Rural	10.7	20.3	26.3	13.6	35.0	13.2	4.9	41
Caregiver's education								
None	17.2	9.4	25.0	8.4	31.7	4.3	0.0	25
Primary	23.8	24.5	27.1	17.7	32.3	16.5	13.9	44
Secondary	--	--	--	--	--	--	--	17
Higher	18.9	16.9	24.0	14.3	28.4	10.5	7.5	86
Maternal Married Status								
Not married	10.9	10.9	17.9	8.6	19.9	3.1	1.9	40
Currently married	--	--	--	--	--	--	--	9
Cohabitating	11.6	9.6	15.2	14.2	19.3	4.9	0.0	29
Father in Household								
Yes	17.3	18.8	22.1	16.9	26.7	13.5	9.6	60
No	23.7	11.3	29.6	6.7	33.2	1.5	1.5	26

[1] **MICS indicator 3.11 - Diarrhoea treatment with oral rehydration salts (ORS) and zinc**

Solid Fuel Use

More than 3 billion people around the world rely on solid fuels for their basic energy needs, including cooking and heating. Solid fuels include biomass fuels, such as wood, charcoal, crops or other agricultural waste, dung, shrubs and straw, and coal. Cooking and heating with solid fuels leads to high levels of indoor smoke which contains a complex mix of health-damaging pollutants. The main problem with the use of solid fuels is their incomplete combustion, which produces toxic elements such as carbon monoxide, polyaromatic hydrocarbons, and sulphur dioxide (SO2), among others. Use of solid fuels increases the risks of incurring acute respiratory illness, pneumonia, chronic obstructive lung disease, cancer, and possibly tuberculosis, asthma, or cataracts, and may contribute to low birth weight of babies born to pregnant women exposed to smoke. The primary indicator for monitoring use of solid fuels is the proportion of the population using solid fuels as the primary source of domestic energy for cooking, shown in Table CH.12.

Overall, 12.4 percent of the household population in RMI uses solid fuels for cooking, consisting mainly of coconut husks and shells (10.6 percent). Use of solid fuels for cooking is very low in urban areas (2.8 percent), but very high in rural areas, where they are used by almost two thirds of household members (65.0 percent). Household wealth and the educational level of the household head are also important indicators for solid fuel use. The findings show that use of solid fuel ranges from 54.4 percent of household members in the poorest wealth index quintile to 9.8 percent in the second quintile, 0.0 in the third, 1.7 in the fourth and 0.0 in the richest quintile. The educational level of the household head is also inversely related to the percentage of the household population using solid fuel for cooking with 26.6 percent of household members with their household head having no education and 21.5 percent having primary education only compared to 10.8 percent and 5.5 percent for secondary and higher, respectively.

Table CH.12: Solid fuel use

Percent distribution of household members according to type of cooking fuel mainly used by the household, and percentage of household members living in households using solid fuels for cooking, by selected characteristics, RMI ICHNS, 2017

	Percentage of household members in households mainly using:								
	Electricity	Liquefied Petroleum Gas (LPG)	Solar energy	Wood	Coconut husks/shells	Total	Solid fuels for cooking[1]	P-value	Number of household members
Total	11.8	75.4	0.4	1.9	10.6	100.0	12.4	--	4758
Sex of household head									
Male	10.7	75.9	0.5	1.6	11.4	100.0	13.0	--	3448
Female	14.6	74.1	0.1	2.7	8.5	100.0	11.1		1310
Area									
Urban	11.8	85.3	0.1	1.1	1.7	100.0	2.8	***	2760
Rural	11.9	21.1	1.9	5.9	59.1	100.0	65.0		1998
Number of household members									
1-5	8.9	67.1	1.9	2.4	19.8	100.0	22.1	--	691
5-10	11.1	73.2	0.4	2.3	13.0	100.0	15.2		2265
11+	13.1	79.3	0.0	1.4	6.2	100.0	7.6		1802
Education of household head									
None	10.4	62.5	0.5	5.7	20.9	100.0	26.6	***	350
Primary	7.1	70.1	1.2	4.6	16.9	100.0	21.5		1142

Secondary	9.7	79.3	0.2	1.2	9.7	100.0	10.8		2275
Higher	19.8	74.7	0.0	0.3	5.2	100.0	5.5		991
Wealth index quintile									
Poorest	4.0	40.3	1.3	5.0	49.4	100.0	54.4	***	1884
Second	9.3	80.6	0.2	4.3	5.5	100.0	9.8		850
Middle	3.5	96.2	0.3	0.0	0.0	100.0	0.0		774
Fourth	14.1	84.2	0.0	0.0	1.7	100.0	1.7		634
Richest	29.2	70.8	0.0	0.0	0.0	100.0	0.0		616

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 3.15 - Use of solid fuels for cooking**

Households that use solid fuels for cooking (wood, coconut husks) as the main type of fuel used for cooking.
Denominators are obtained by weighting the number of households by the number of household members.

Solid fuel use by place of cooking is depicted in Table CH.13. The presence and extent of indoor pollution are dependent on cooking practices, places used for cooking, as well as types of fuel used. According to the RMI ICHNS, 2017, only 0.4 percent of household members living in households using solid fuels for cooking cook food in a separate room that is used as a kitchen. The majority of household members live in households where food is cooked in a separate building (34.1 percent) or outdoors (65.5 percent). Nearly all urban households cook food outdoors (96.3 percent) compared to 58.2 percent of households in rural areas.

Table CH.13: Solid fuel use by place of cooking

Percent distribution of household members in households using solid fuels by place of cooking, by selected characteristics, RMI ICHNS, 2017

	Place of cooking					
	In the house in a separate room used as kitchen	In a separate building	Outdoors	Total	P-value	Number of household members in households using solid fuels for cooking
Total	0.4	34.1	65.5	100.0	--	1449
Sex of household head						
Male	0.6	39.9	59.5	100.0	*	1128
Female	0.0	16.5	83.5	100.0		321
Area						
Urban	0.0	3.7	96.3	100.0	**	108
Rural	0.5	41.3	58.2	100.0		1341
Number of household members						
1-5	2.2	36.4	61.4	100.0	--	301
6-10	0.0	42.0	58.0	100.0		818
11+	0.0	17.5	82.5	100.0		330
Education of household head						
None	0.0	24.9	75.1	100.0	--	150
Primary	0.0	38.6	61.4	100.0		486
Secondary	0.0	28.1	71.9	100.0		640
Higher	3.8	53.7	42.5	100.0		173
Wealth index quintile						
Poorest	0.5	40.8	58.7	100.0	--	1330
Second	0.0	8.1	91.9	100.0		106
Middle	0.0	0.0	0.0	100.0		0
Fourth	0.0	0.0	100.0	100.0		13
Richest	0.0	0.0	0.0	100.0		0

* P<0.05, ** P<0.01, *** P<0.001

Denominators are obtained by weighting the number of households using solid fuels for cooking by the number of household members.

Children's receipt of micronutrient supplementation and deworming is depicted in Table CH.14. Overall, 54.4 percent of children age 6-59 months received high dose vitamin A supplement in the last 6 months, 11.3 percent of children 0-59 months received iron supplementation during the past 7 days, and 32.1 percent of children 12-59 months received deworming in the previous 6 months. Of children aged 12-23 months 20.3 percent received deworming in the previous 6 months compared to 30.2 percent of children 24-35 months and 38.2 percent of children 36-49 months. There were no significant differences between child age and receipt of vitamin A supplementation or iron supplementation. Of children living in urban areas, 12.9 percent received iron supplementation during the past 7 days compared to 3.5 percent of children in rural areas. Children with low birthweight (12.0 percent) and normal birthweight (11.1 percent) received iron supplementation during the past 7 days at a lower prevalence than children with high birth weight (27.9 percent). For vitamin A supplementation and deworming, coverage was highest among the richest households (68.0 percent and 39.8 percent respectfully).

Table CH.14: Children's receipt micronutrient supplementation and deworming

Percent distribution of children age 6-59 months by receipt of high dose vitamin A supplement in the last 6 months, receipt of iron supplementation in the previous 7 days for children 0-59 months of age and receipt of deworming in the previous 6 months for children 12-59 months of age, by selected characteristics, RMI ICHNS, 2017

	Percentage of children who received vitamin A during the last 6 months			Percentage of children who received iron supplementation during the past 7 days			Percentage of children who received deworming in the previous 6 months		
	%	P-value	Number of children age 6-59 months	%	P-value	Number of children age 0-59 months	%	P-value	Number of children age 12-59 months
Total	54.4	--	797	11.3	--	874	32.1	--	689
Child Age									
0-5m				6.9	--	77			
6-11m	50.2	--	108	14.6		108			
12-23m	52.1		170	8.5		170	20.3	***	170
24-35m	56.1		169	11.2		169	30.2		169
36-59m	56.0		350	12.5		350	38.2		350
Child gender									
Male	49.8	*	408	12.7	--	450	29.6	--	353
Female	59.3		389	9.9		424	34.7		336

Area									
Urban	55.6	--	447	12.9	***	484	31.6	--	385
Rural	48.4		350	3.5		390	34.2		304
Wealth index quintile									
Poorest	55.2	**	330	7.3	--	369	30.5	*	286
Second	42.9		139	13.4		149	21.2		122
Middle	58.7		133	15.0		143	37.6		111
Fourth	48.4		98	11.1		106	32.6		84
Richest	68.0		97	8.6		107	39.8		86
Religion									
Assembly of God	56.8	--	122	9.6	*	132	40.0	--	107
Protestant	54.2		442	9.7		484	34.4		379
Catholic	53.3		58	23.8		65	23.4		51
Other	53.8		175	11.9		193	24.9		152
Maternal Nutrition Status									
Underweight	--	***	11	0.0	--	12	--	--	8
Normal	44.2		177	9.0		205	27.6		150
Overweight	51.5		196	11.1		216	34.4		167
Obese	63.8		285	12.9		307	34.5		251
Maternal Married Status									
Not married	56.4	--	299	19.2	***	330	28.7	--	246
Currently married	59.3		158	7.7		173	35.6		142
Cohabitating	51.3		250	3.8		279	33.7		221
Child Birthweight									
Low Birthweight	55.8	--	79	12.0	*	82	31.6	--	67
Normal	55.5		512	11.1		564	31.8		440
High Birthweight	77.1		31	27.9		34	41.6		26

* P<0.05, ** P<0.01, *** P<0.001

V. Water and Sanitation

Safe drinking water is a basic necessity for good health. Unsafe drinking water can be a significant determinant of diseases such as cholera, typhoid, and schistosomiasis. Drinking water can also be contaminated with chemical and physical contaminants with harmful effects on human health. In addition to preventing disease, improved access to drinking water may be particularly important for women and children, especially in rural areas, who bear the primary responsibility for carrying water, often for long distances.[22]

Inadequate disposal of human excreta and personal hygiene are associated with a range of diseases including diarrhoeal diseases and polio and are important determinants of stunting. Improved sanitation can reduce diarrhoeal disease by more than a third[23], and can substantially lessen the adverse health impacts of other disorders among millions of children in many countries.

SDG targets 6.1 and 6.2 focus on achieving universal and equitable access to safe and affordable drinking water for all and achieving access to adequate and equitable sanitation and hygiene for all and end open defecation by 2030.

For more details on water and sanitation and to access some reference documents, please visit data.unicef.org[24] or the website of the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation[25].

Use of Improved Water Sources

The distribution of the population in households with a child under 5 by main source of drinking water is shown in Table WS.1. The population using ***improved sources*** of drinking water are those using any of the following types of supply: piped water (into dwelling, compound, yard or plot, to neighbour, public tap/standpipe), tube well/borehole, protected well, protected spring, and rainwater collection. Bottled water is considered as an improved water source only if the household is using an improved water source for handwashing and cooking.

WHO/UNICEF. 2012. Progress on Drinking water and Sanitation: 2012 update.

Cairncross, S et al. 2010. Water, sanitation and hygiene for the prevention of diarrhoea. International Journal of Epidemiology 39: i193- i205.

http://data.unicef.org/water-sanitation

http:// www.wssinfo.org

Table WS.1: Use of improved water sources

Percent distribution of household population according to main source of drinking water and percentage of household population using improved drinking water sources, by selected characteristics, RMI ICHNS, 2017

	Main source of drinking water														
	Improved sources								Unimproved sources						
	Piped water														
	Into dwelling	Into yard/ plot	To neigh-bour	Public tap/ stand-pipe	Tube-well/ bore-hole	Pro-tected well	Rain-water collection	Bottled water [a]	Unpro-tected well	Tanker truck	Bottled water [a]	Other	Total	Percentage using improved sources of drinking water[1]	Number of household members
Total	4.0	5.1	0.9	3.8	0.0	0.5	67.6	18.1	0.0	0.0	0.0	0.0	100.0	100.0	4758
Sex of household head															
Male	4.5	5.3	0.6	2.8	0.1	0.6	69.6	16.4	0.0	0.0	0.0	0.0	100.0	100.0	3448
Female	2.6	4.4	1.8	6.2	0.0	0.3	62.5	22.3	0.0	0.0	0.0	0.0	100.0	100.0	1310
Area															
Urban	4.4	5.3	1.1	3.4	0.0	0.2	64.5	21.1	0.0	0.0	0.0	0.0	100.0	100.0	2760
Rural	1.8	3.9	0.2	5.7	0.3	2.2	84.7	1.3	0.0	0.0	0.0	0.0	100.0	100.0	1998
Number of household members															
1-5	5.0	3.4	0.3	5.0	0.0	2.1	63.3	20.8	0.0	0.0	0.0	0.0	100.0	100.0	691
5-10	3.9	4.4	0.0	5.0	0.1	0.5	70.6	15.5	0.0	0.0	0.0	0.0	100.0	100.0	2265
11+	3.8	6.1	2.0	2.3	0.0	0.2	65.9	19.8	0.0	0.0	0.0	0.0	100.0	100.0	1802
Education of household head															
None	26.2	3.0	0.0	0.0	0.0	2.7	66.3	1.7	0.0	0.0	0.0	0.0	100.0	100.0	350
Primary	0.2	5.9	4.7	4.4	0.0	0.5	70.7	13.6	0.0	0.0	0.0	0.0	100.0	100.0	1142
Secondary	2.4	2.7	0.1	4.5	0.0	0.2	71.6	18.6	0.0	0.0	0.0	0.0	100.0	100.0	2275
Higher	4.7	9.5	0.0	2.8	0.2	0.7	57.9	24.2	0.0	0.0	0.0	0.0	100.0	100.0	991
Wealth index quintile															
Poorest	1.5	3.3	0.2	6.1	0.2	1.1	85.5	2.2	0.0	0.0	0.0	0.0	100.0	100.0	1884
Second	3.8	3.7	2.3	1.0	0.0	0.0	78.8	10.4	0.0	0.0	0.0	0.0	100.0	100.0	850
Middle	5.0	1.1	0.0	6.6	0.0	0.4	71.0	15.9	0.0	0.0	0.0	0.0	100.0	100.0	774
Fourth	2.8	2.5	2.3	3.8	0.0	0.3	68.4	19.8	0.0	0.0	0.0	0.0	100.0	100.0	634
Richest	6.3	15.2	0.0	1.5	0.0	0.9	33.9	42.4	0.0	0.0	0.0	0.0	100.0	100.0	616

[1] MICS indicator 4.1; MDG indicator 7.8 - Use of improved drinking water sources

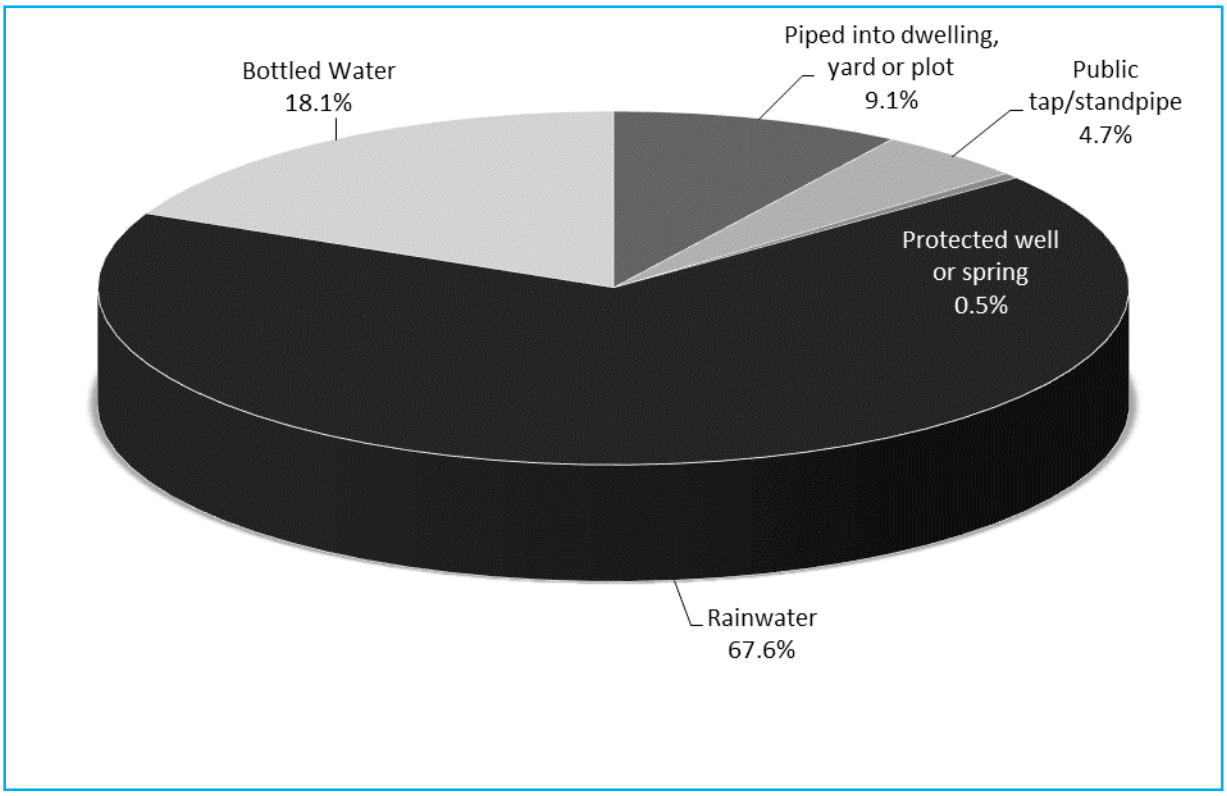
[a] Households using bottled water as the main source of drinking water are classified into improved or unimproved drinking water users according to the water source used for other purposes such as cooking and handwashing.

Denominators are obtained by weighting the number of households by the total number of household members.

Overall, 100 percent of the population uses an improved source of drinking water, primarily via bottled water and rain water collection. The source of drinking water for the population varies strongly by area (Table WS.1). In rural areas, the primary source of drinking water is rain water at 84.7 percent prevalence. The predominant sources in urban areas is rain water (64.5 percent) and bottled water (21.1 percent). The use of bottled water and rain water collection as sources of drinking water for the population vary strongly by wealth index quintile. The use of rain water collection is most prevalent in the poorest wealth index quintile (85.5 percent) and progressively less prevalent in richer quintiles. The use of bottled water is most prevalent in the richest wealth index quintile (42.4 percent) and progressively less prevalent in poorer quintiles. Use of protected wells were more prevalent in rural areas (2.2 percent) compared to urban areas (0.2 percent) as was use of public tap/standpipe with 5.7 percent prevalence in rural areas compared to 3.4 percent prevalence in urban areas. In urban areas, the prevalences of piped water into dwelling and into yard/plot were higher in urban areas (4.4 and 5.3 percent) compared to rural areas (1.8 and 3.9 percent).

Figure WS.1. presents an overview of the percent distribution of household members in RMI by source of drinking water.

Figure WS.1: Percent distribution of household members by source of drinking water, RMI ICHNS, 2017



Use of household water treatment is presented in Table WS.2. Households were asked about ways they may be treating water at home to make it safer to drink. Boiling water, adding bleach or chlorine, using a water filter, and using solar disinfection are considered as effective treatment of drinking water. Table WS.2 shows water treatment by all household members and the percentage of those living in households using improved water sources and also using appropriate water treatment methods.

There was universal use of improved water in RMI, however 58.8 percent of the population used an addition method to treat drinking water. Boiling water is the most common method (42.1 percent) used for water treatment followed by adding bleach (7.3 percent), using a water filter (4.8 percent) and straining water through a cloth (4.6 percent).

Variations were observed in the use of water treatment methods between rural and urban areas. In urban areas, 7.3 percent of the household population used a water filter for water treatment while only 3.8 percent do so in rural areas. Adding bleach as a method of water treatment is more prevalent in rural areas (16.5 percent) than urban areas (9.0 percent) and prevalence of using no water treatment method was higher in urban areas (40.0 percent) than in rural areas (32.4 percent).

Table WS.2: Household water treatment

Percentage of household population by drinking water treatment method used in the household, and for household members living in households where an unimproved drinking water source is used, the percentage who are using an appropriate treatment method, by selected characteristics, RMI ICHNS, 2017

	Water treatment method used in the household					Number of household member	Any household water treatment method	Percentage of household members in household using unimproved drinking water sources and using an appropriate water treatment method	Number of household members in households using unimproved drinking water source
	None	Boil	Add bleach/ chlorine	Strain through a cloth	Use water filter				
Total	41.2	42.1	7.3	4.6	4.8	4758	58.8	0.0	0
Sex of household head									
Male	41.2	42.1	7.3	4.6	4.8	431	58.8	0.0	0
Female	32.6	36.0	17.4	2.4	11.7	150	67.4	0.0	0
Area									
Urban	40.0	39.7	9.0	4.1	7.3	299	60.0	0.0	0
Rural	32.4	43.7	16.5	3.6	3.8	282	67.6	0.0	0
Number of household members									
1-5	31.4	46.7	8.0	5.9	8.0	164	68.6	0.0	0
5-10	37.8	44.5	10.5	2.8	4.4	293	62.2	0.0	0
11+	41.4	35.0	10.3	4.7	8.5	124	58.6	0.0	0
Education of household head									
None	37.1	44.1	9.3	7.8	1.7	43	62.9	0.0	0
Primary	30.1	45.2	8.4	7.3	9.1	145	69.9	0.0	0
Secondary	39.7	40.2	8.8	4.4	6.9	273	60.3	0.0	0
Higher	43.9	36.1	14.2	0.0	5.8	120	56.1	0.0	0
Wealth index quintile									
Poorest	44.9	33.7	12.7	5.0	3.7	265	55.1	0.0	0
Second	39.9	39.4	10.5	7.7	2.5	98	60.1	0.0	0
Middle	24.5	57.0	10.2	4.5	3.8	82	75.5	0.0	0
Fourth	45.3	36.8	11.5	2.2	4.2	72	54.7	0.0	0
Richest	42.1	32.0	6.1	0.0	19.8	64	57.9	0.0	0

[1] **MICS indicator 4.2 - Water treatment**

Drinking water is considered appropriately treated if one the following methods of treatment is used: boiling; adding bleach or chlorine; using a water filter; or using solar disinfection.

Note that all households used improved sources of drinking water so the total percentage of household members in the household using an unimproved drinking water source and using an appropriate water treatment method is zero.

Denominators are obtained by weighting the number of households by the number of household members.

The amount of time it takes to obtain water is presented in Table WS.3 and the person who usually collects the water in Table WS.4. Note that for Table WS.3, household members using water on premises are also shown in this table and for others, the results refer to one roundtrip from home to drinking water source. Information on the number of trips made in one day was not collected.

Table WS.3 shows that for 82.7 percent of the household population, the drinking water source is on premises. The availability of water on premises is associated with greater use, better family hygiene and better health outcomes. For a water collection round trip of 30 minutes or more it has been observed that households carry progressively less water and are likely to compromise on the minimal basic drinking water needs of the household. For 11.2 percent of the population, it takes the household 30 minutes or more to get to the water source and bring water. In urban areas, 12.5 percent of household members were found to spend 30 minutes or more collecting water compared to 4.5 percent in rural areas which is attributed to higher use of bottled water in urban areas. Household members in the richest wealth index quintile have the highest prevalence of 30 or more minutes time to their water source at 26.8 percent compared to 4.2 percent, 5.3 percent, 9.1 percent, and 11.3 percent for the less wealthy quintiles.

Table WS.3: Time to source of drinking water

Percent distribution of household population according to time to go to source of drinking water, get water and return, for users of improved drinking water sources, by selected characteristics, RMI ICHNS, 2017

	Time to source of drinking water						
	Users of improved drinking water sources						
	Water on premises	Less than 30 minutes	30 minutes or more	Missing/DK	Total	P-value	Number of household members
Total	82.7	4.5	11.2	1.5	100.0	--	4758
Sex of household head							
Male	82.1	4.9	12.0	1.0	100.0	--	3448
Female	84.4	3.5	9.2	2.9	100.0		1310
Area							
Urban	81.6	4.4	12.5	1.6	100.0	--	2760
Rural	89.1	5.2	4.5	1.2	100.0		1998
Number of household members							
1-5	82.5	6.8	8.8	1.9	100.0	--	691
5-10	86.6	3.6	9.5	0.2	100.0		2265
11+	79.2	4.8	13.4	2.6	100.0		1802
Education of household head							
None	86.4	13.6	0.0	0.0	100.0	*	350
Primary	84.2	3.0	7.8	5.0	100.0		1142
Secondary	79.7	6.2	13.6	0.5	100.0		2275
Higher	86.7	0.3	11.8	1.1	100.0		991
Wealth index quintile							
Poorest	80.1	14.8	4.2	1.0	100.0	***	1884
Second	87.2	5.3	5.3	2.3	100.0		850
Middle	89.9	0.4	9.1	0.6	100.0		774

Fourth	83.7	2.7	11.3	2.3	100.0	634
Richest	71.4	0.3	26.8	1.5	100.0	616

* P<0.05, ** P<0.01, *** P<0.001

Only responses for users of improved drinking water are included as 100 percent of households used improved water.
Water on premises: water in dwelling or water in own plot or yard.
Water not on premises is based on water elsewhere than in dwelling or own plot or yard.

Time to water source is based on responses to how long does it take to go there, get water and come back in minutes.

Denominators are obtained by weighting the number of households by the number of household members.

Table WS.4 shows that for the majority of households (82.9 percent) an adult man usually collects drinking water when the source is not on premises. Adult women collect water in 2.4 percent of cases while, for the rest of the households, male (9.1 percent) or female (0.2 percent) children under age 15 usually collect the water. The prevalence of men retrieving the water is higher in rural areas (91.1 percent) than in urban areas (82.1 percent).

Table WS.4: Person collecting water

Percentage of households without drinking water on premises, and percent distribution of households without drinking water on premises according to the person usually collecting drinking water used in the household, by selected characteristics, RMI ICHNS, 2017

	Percentage of households without drinking water on premises	Number of households	Person usually collecting drinking water						Number of households without drinking water on premises
			Adult woman	Adult man	Female child under age 15	Male child under age 15	Missing/Don't Know	Total	
Total	17.3	581	2.4	82.9	0.2	9.1	5.5	100.0	78
Area									
Urban	18.4	299	2.1	82.1	0.0	10.0	5.8	100.0	44
Rural	10.9	282	5.4	91.1	1.7	0.0	1.8	100.0	34

Use of Improved Sanitation

An improved sanitation facility is defined as one that hygienically separates human excreta from human contact. Improved sanitation facilities for excreta disposal include flush or pour flush to a piped sewer system, septic tank, or pit latrine; ventilated improved pit latrine, pit latrine with slab, and use of a composting toilet. The data on the use of improved sanitation facilities in RMI are provided in Table WS.5.

Nearly one out of ten household members in RMI (8.3 percent) practices open defecation with no sanitation facility (Table WS.5). The table indicates that practice of open defecation is strongly correlated with wealth and is profoundly different between urban (3.5 percent) and rural (34.7 percent) areas. In rural areas, the population primarily uses septic tanks (56.7 percent) or simply have no facilities (34.7 percent). In contrast, the most common facilities in urban areas are flush toilets with connection to a piped sewer system (50.0 percent) or septic tank (45.3 percent).

Table WS.5: Types of sanitation facilities

Percent distribution of household population according to type of toilet facility used by the household, by selected characteristics, RMI ICHNS, 2017

	Type of toilet facility used by household							
	Improved sanitation facility					Open defecation (no facility, bush, field)	Total	Number of household members
	Flush/Pour flush to:				Pit latrine with slab			
	Piped sewer system	Septic tank	Pit latrine	Unknown place/not sure/ DK where				
Total	42.7	47.0	0.6	0.4	0.9	8.3	100.0	4758
Sex of household head								
Male	41.6	48.0	0.5	0.6	1.2	8.0	100.0	3448
Female	45.5	44.7	0.8	0.0	0.2	8.9	100.0	1310
Area								
Urban	50.0	45.3	0.1	0.4	0.7	3.5	100.0	2760
Rural	3.0	56.7	2.9	0.7	2.0	34.7	100.0	1998
Number of household members								
1-5	28.6	44.4	1.3	1.0	3.8	20.9	100.0	691
5-10	41.7	45.3	0.8	0.8	1.2	10.2	100.0	2265
11+	47.0	49.3	0.2	0.0	0.0	3.6	100.0	1802
Education of household head								
None	30.0	36.2	1.0	1.9	7.7	23.1	100.0	350
Primary	28.1	54.6	2.2	0.0	1.2	13.9	100.0	1142
Secondary	48.1	43.8	0.2	0.7	0.4	6.9	100.0	2275
Higher	46.3	50.1	0.0	0.0	0.2	3.3	100.0	991
Ethnicity								
Marshallese	42.2	47.4	0.6	0.5	0.9	8.4	100.0	4712
Other	87.9	12.1	0.0	0.0	0.0	0.0	100.0	46
Religion								
Assembly of God	45.4	48.0	0.4	0.0	1.0	5.2	100.0	746
Protestant	39.7	49.5	0.8	0.5	0.7	8.7	100.0	2672
Catholic	58.1	38.1	0.0	0.0	0.0	3.8	100.0	328
Other	43.2	43.5	0.3	0.7	1.6	10.7	100.0	1012
Head of household age								
Under 20 years	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
20-29 years	35.0	50.3	2.6	0.0	0.0	12.1	100.0	261
30-39 years	43.9	39.0	1.2	0.7	0.9	14.4	100.0	920
40-49 years	39.0	50.6	0.3	1.3	0.9	7.9	100.0	1080
50 or older	44.6	47.6	0.3	0.1	1.1	6.3	100.0	2398
Don't know	40.1	52.3	0.0	0.0	0.0	7.6	100.0	99
Wealth index quintile								
Poorest	21.6	39.5	2.4	1.8	1.7	33.0	100.0	1884
Second	50.2	38.6	0.5	0.5	2.8	7.3	100.0	850
Middle	45.7	52.9	0.0	0.0	0.0	1.4	100.0	774
Fourth	49.9	48.3	0.0	0.0	0.0	1.8	100.0	634
Richest	44.2	55.8	0.0	0.0	0.0	0.0	100.0	616

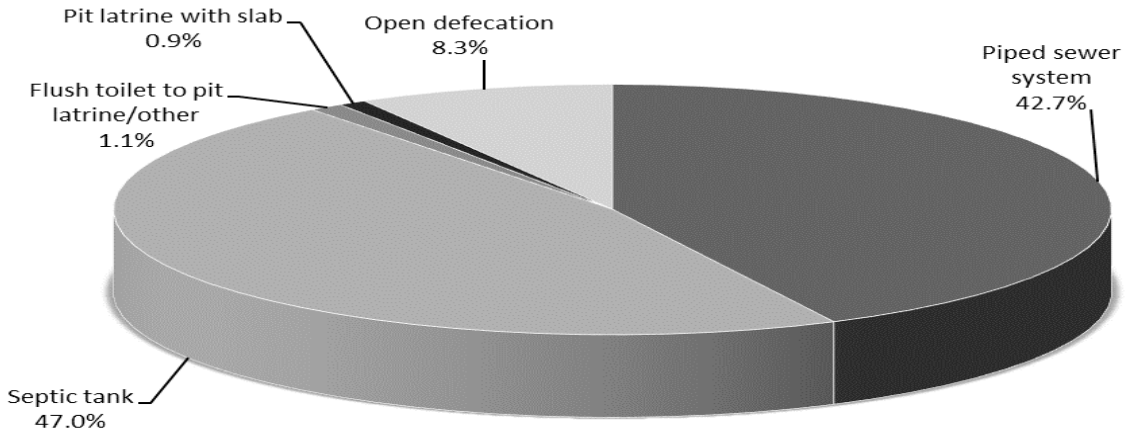
Improved sanitation facilities are: Flush/Pour flush toilet to piped sewer system, septic tank, pit latrine, or to unknown place, and pit latrine with slab.

There were no forms of unimproved pit latrines or other forms of toilet in use in RMI with all unimproved sanitation facilities attributed to open defecation.

Denominators are obtained by weighting the number of households by the number of household members.

Figure WS.2 presents the distribution of the survey population by use and sharing of sanitation facilities.

Figure WS.2: Percent distribution of household members by use of sanitation facilities, RMI ICHNS, 2017



The SDGs and the WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation classify otherwise acceptable sanitation facilities which are public or shared between two or more households as unimproved. Therefore, "use of improved sanitation" is used both in the context of this report and as an SDG indicator to refer to improved sanitation facilities, which are not public or shared. Data on the use of improved sanitation are presented in Tables WS.6 and WS.7.

As shown in Table WS.6, 91.7 percent of the household population is using an improved sanitation facility. Only 5.5 percent of households use an improved toilet facility that is public or shared with other households. Rural households are slightly more likely than urban households to use a shared toilet facility of an improved type (6.9 percent and 5.2 percent respectively). Use of non-shared improved sanitation facilities and use of open defecation was correlated to wealth index quintile and education. Open defecation was practiced by 23.1 percent of household members with no education and 33.0 percent of the poorest households, while 92.3 percent of household members whose household head had higher education and 100 percent of the wealthiest households used improved sanitation facilities that were not shared.

Table WS.6: Use and sharing of sanitation facilities

Percent distribution of household population by use of private and public sanitation facilities and use of shared facilities, by users of improved sanitation facilities, by selected characteristics, RMI ICHNS, 2017

	Users of improved sanitation facilities				Open defecation (no facility, bush, field)	Total	P-value	Number of household members
	Not shared[1]	Public facility	Shared by: 5 households or less	Shared by: More than 5 households				
Total	86.3	0.0	4.1	1.4	8.3	100.0	--	4758
Sex of household head								
Male	85.4	0.0	4.9	1.6	8.0	100.0	--	3448
Female	88.5	0.0	1.8	0.8	8.9	100.0		1310
Area								
Urban	91.3	0.0	3.8	1.4	3.5	100.0	***	2760
Rural	58.4	0.0	5.4	1.5	34.7	100.0		1998
Number of household members								
1-5	73.9	0.0	3.4	1.8	20.9	100.0	**	691
5-10	84.1	0.0	3.9	1.8	10.2	100.0		2265
11+	91.2	0.0	4.4	0.9	3.6	100.0		1802
Education of household head								
None	63.6	0.0	10.2	3.2	23.1	100.0	*	350
Primary	80.6	0.0	4.6	0.8	13.9	100.0		1142
Secondary	88.0	0.0	3.3	1.8	6.9	100.0		2275
Higher	92.3	0.0	3.6	0.7	3.3	100.0		991
Ethnicity								
Marshallese	86.5	0.0	4.1	1.0	8.4	100.0	***	4712
Other	63.7	0.0	0.0	36.3	0.0	100.0		46
Wealth index quintile								
Poorest	62.4	0.0	3.5	1.1	33.0	100.0	***	1884
Second	81.1	0.0	8.2	3.4	7.3	100.0		850
Middle	93.7	0.0	4.3	0.6	1.4	100.0		774
Fourth	92.8	0.0	3.6	1.8	1.8	100.0		634
Richest	100.0	0.0	0.0	0.0	0.0	100.0		616

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 4.3; MDG indicator 7.9 - Use of improved sanitation**

Denominators are obtained by weighting the number of households by the number of household members.
The distribution of users of between types of improved and unimproved sanitation facilities are as shown in Table WS.5.

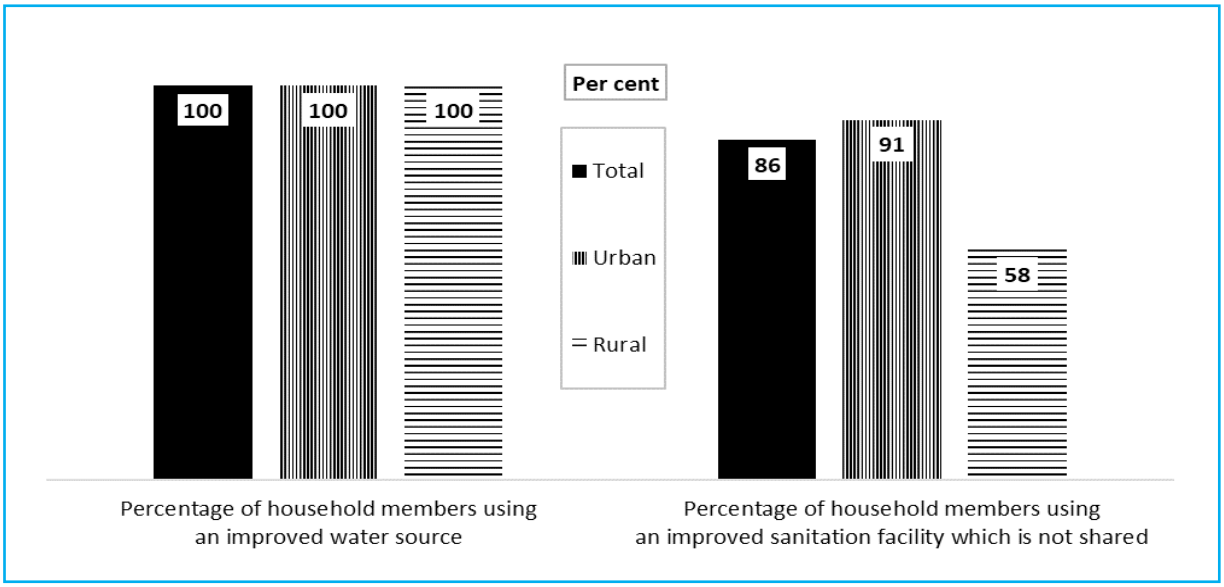
Having access to both an improved drinking water source and an improved sanitation facility brings the largest public health benefits to a household.[26] In its 2008 report[27], the JMP developed a new way of presenting the access figures, by disaggregating and refining the data on drinking-water and sanitation and reflecting them in "ladder" format. This ladder allows a disaggregated analysis of trends in a three-rung ladder for drinking-water and a four-rung ladder for sanitation. For sanitation, this gives an understanding of the proportion of population with no sanitation facilities at all – who revert to open defecation, of those reliant on technologies defined by JMP as "unimproved," of those sharing sanitation facilities of otherwise acceptable technology, and those using "improved" sanitation facilities.

26 *Wolf, J et al. 2014. Systematic review: Assessing the impact of drinking water and sanitation on diarrhoeal disease in low- and middle-income settings: systematic review and meta-regression. Tropical Medicine and International Health 2014.*

27 *WHO/UNICEF JMP. 2008. MDG assessment report. http://www.wssinfo.org/fileadmin/user_upload/resources/1251794333-JMP_08_en.pdf*

Table WS.7 presents the percentages of household population by these drinking water and sanitation ladders. The table also shows the percentage of household members using both improved sources of drinking water[28] and an improved sanitary means of excreta disposal. In RMI the prevalence of household members using improved drinking water sources and improved sanitation facilities is 86.3 percent. Members in households in urban areas, with greater number of members, with household head with higher education level, and in higher wealth index quintiles are more likely to use an improved drinking water source and improved sanitation facilities compared to their counterparts. These results are presented by urban and rural areas in Figure WS.3.

Figure WS.3: Use of improved drinking water sources and improved sanitation facilities by household members, RMI ICHNS, 2017



Disposal of faeces of children 0-2 years of age is presented in Table WS.8. Safe disposal of a child's faeces is disposing of the stool, by the child using a toilet or by rinsing the stool into a toilet or latrine. Putting disposable diapers with solid waste, a very common practice throughout the world has thus far been classified as an inadequate means of disposal of child faeces for concerns about poor disposal of solid waste itself. This classification is currently under review.

In only 6.0 percent of cases, child faeces were disposed of safely the last time the child passed stool. Prevalence of disposal of children's faeces into the garbage was 68.1 percent. Child age was closely associated with safe disposal of stools with children 12-23 months old (12.0 percent) having higher prevalence than children 6-11 months (1.0 percent) and 0-5 months of age (0.0 percent).

28 *Those indicating bottled water as the main source of drinking water are distributed according to the water source used for other purposes such as cooking and handwashing.*

Table WS.7: Drinking water and sanitation ladders

Percentage of household population by drinking water and sanitation ladders, by selected characteristics, RMI ICHNS, 2017

	Percentage of household population using:											
	Improved drinking water[1, a]				Unimproved sanitation							
	Piped into dwelling, plot or yard	Other improved	Unimproved drinking water	Total	Improved sanitation[2]	Shared improved facilities	Unimproved facilities	Open defecation	Total	Improved drinking water sources and improved sanitation	P-value	Number of household members
Total	10.0	90.0	0.0	100.0	86.3	5.5	0.0	8.3	100.0	86.3	--	4758
Sex of household head												
Male	10.5	89.5	0	100.0	85.4	6.6	0.0	8.0	100.0	85.4	--	3448
Female	8.7	91.3	0	100.0	88.5	2.6	0.0	8.9	100.0	88.5		1310
Area												
Urban	10.7	89.3	0	100.0	91.3	5.2	0.0	3.5	100.0	91.3	***	2760
Rural	5.8	94.2	0	100.0	58.4	6.9	0.0	34.7	100.0	58.4		1998
Number of household members												
1-5	8.7	91.3	0	100.0	73.9	5.2	0.0	20.9	100.0	73.9	***	691
5-10	8.4	91.6	0	100.0	84.1	5.7	0.0	10.2	100.0	84.1		2265
11+	11.8	88.2	0	100.0	91.2	5.2	0.0	3.6	100.0	91.2		1802
Education of household head												
None	29.2	70.8	0	100.0	63.6	13.4	0.0	23.1	100.0	63.6	***	350
Primary	10.8	89.2	0	100.0	80.6	5.4	0.0	14.0	100.0	80.6		1142
Secondary	5.2	94.8	0	100.0	88.0	5.1	0.0	6.9	100.0	88.0		2275
Higher	14.2	85.8	0	100.0	92.4	4.3	0.0	3.3	100.0	92.3		991
Wealth index quintile												
Poorest	4.9	95.1	0	100.0	62.4	4.6	0.0	33.0	100.0	62.4	***	1884
Second	9.7	90.3	0	100.0	81.1	11.6	0.0	7.3	100.0	81.1		850
Middle	6.1	93.9	0	100.0	93.7	4.9	0.0	1.4	100.0	93.7		774
Fourth	7.6	92.4	0	100.0	92.8	5.4	0.0	1.8	100.0	92.8		634
Richest	21.4	78.6	0	100.0	100.0	0.0	0.0	0.0	100.0	100.0		616

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 4.1; SDG indicator 6.1.1 Proportion of population using safely managed drinking water services**

[2] **MICS indicator 4.3; SDG indicator 6.2.1 Proportion of population using safely managed sanitation services**

[a] Those indicating bottled water as the main source of drinking water are distributed according to the water source used for other purposes such as cooking and handwashing.

Denominators are obtained by weighting the number of households by the total number of household members.

Table WS.8: Disposal of child's faeces

Percent distribution of children age 0-2 years according to place of disposal of child's faeces, and the percentage of children age 0-2 years whose stools were disposed of safely the last time the child passed stools, by selected characteristics, RMI ICHNS, 2017

	Place of disposal of child's faeces										Percentage of children whose last stools were disposed of safely[1]	P-value	Number of children age 0-2 years
	Child used toilet/latrine	Put/rinsed into toilet or latrine	Put/rinsed into drain or ditch	Thrown into garbage	Buried	Left in the open	Thrown in the ocean	Other	Missing/DK	Total			
Total	4.5	1.5	0.2	68.1	8.6	0.8	4.0	8.6	3.7	100.0	6.0	--	362
Child Age													
0-5m	0.0	0.0	0.8	71.3	7.2	0.0	2.2	10.2	8.4	100.0	0.0	***	80
6-11m	0.0	1.0	0.0	71.2	9.5	1.0	3.3	9.3	4.7	100.0	1.0		111
12-23m	9.5	2.5	0.2	64.6	8.6	1.1	5.3	7.3	0.9	100.0	12.0		171
Mother's age at birth													
Less than 20 years	0.0	0.0	0.0	79.7	9.3	0.0	3.6	2.6	4.8	100.0	0.0	--	40
20-34 years	3.8	1.8	0.2	65.2	8.1	1.3	4.9	9.9	4.8	100.0	5.6		234
35-49 years	12.9	2.7	0.0	70.5	9.9	0.0	1.2	2.8	0.0	100.0	15.5		41
Child gender													
Male	3.7	2.8	0.1	69.7	8.6	1.0	2.3	6.5	5.3	100.0	6.4	--	197
Female	5.4	0.0	0.3	66.3	8.5	0.6	6.0	11.1	1.8	100.0	5.4		165
Area													
Urban	4.8	1.8	0.0	73.3	4.6	0.0	2.6	8.5	4.4	100.0	6.6	--	195
Rural	2.9	0.0	1.3	43.8	27.2	4.7	10.5	9.0	0.5	100.0	2.9		167
Wealth index quintile													
Poorest	2.4	0.0	1.1	58.0	21.5	3.9	8.6	4.1	0.4	100.0	2.4	--	161
Second	0.0	0.0	0.0	79.4	7.7	0.0	5.7	0.0	7.1	100.0	0.0		52
Middle	3.0	6.2	0.0	76.0	4.5	0.0	3.2	2.9	4.2	100.0	9.2		60
Fourth	9.3	0.0	0.0	68.2	8.2	0.0	1.8	8.6	3.9	100.0	9.3		44
Richest	8.7	0.0	0.0	57.6	0.0	0.0	0.0	30.4	3.2	100.0	8.7		45

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 4.4 - Safe disposal of child's faeces**

Handwashing

Handwashing with water and soap is the most cost-effective health intervention to reduce both the incidence of diarrhoea and pneumonia in children under 5[29]. It is most effective when done using water and soap after visiting a toilet or cleaning a child, before eating or handling food and, before feeding a child. Monitoring correct handwashing behaviour at these critical times is challenging. A reliable alternative to observations or self-reported behaviour is assessing the likelihood that correct handwashing behaviour takes place by asking if a household has a specific place where people wash their hands and, if yes, observing whether water and soap (or other local cleansing materials) are available at this place[30].

In RMI, 97.7 percent of the households with a specific place for handwashing was observed while 2.3 percent of households could not indicate a specific place where household members usually wash their hands (Table WS.9). Prevalence was 91.7 percent for "Households with a specific place for handwashing where water and soap or other cleansing agent are present". This same indicator was associated with wealth index quintile, having higher prevalence in wealthier households.

As shown in Table WS.10, 1.2 percent of households did not have any soap or other cleansing agent in the household. In the remaining 98.8 percent of households, either the soap or other cleansing agent was observed or shown to the interviewer (Table WS.10). The percentage of households with soap or other cleansing agent anywhere in the dwelling was lower with lower levels of education of the household head. Rural areas had about the same percentage of households (99.5 percent) with soap or other cleansing agent anywhere in the dwelling as households in urban areas (98.6 percent).

29 Cairncross, S and Valdmanis, V. 2006. Water supply, sanitation and hygiene promotion Chapter 41 in Disease Control Priorities in Developing Countries. 2nd Edition, Edt. Jameson et al. The World Bank.
30 Ram, P et al. editors. 2008. Use of a novel method to detect reactivity to structured observation for measurement of handwashing behavior. American Society of Tropical Medicine and Hygiene.

Table WS.9: Water and soap at place for handwashing

Percentage of households where place for handwashing was observed, percentage with no specific place for handwashing, and percent distribution of households by availability of water and soap at specific place for handwashing, by selected characteristics, RMI ICHNS, 2017

	Percentage of households:					Place for handwashing observed										
	Where place for handwashing was observed			With no specific place for hand-washing in the dwelling, yard, or plot	Number of house-holds	Water is available and:			Water is not available and:			No specific place for hand-washing in the dwelling, yard, or plot	Total	Percent-age of house-holds with a specific place for hand-washing where water and soap or other cleansing agent are present[1]	P-value	Number of house-holds where place for hand-washing was observed or with no specific place for hand-washing in the dwelling, yard, or plot
							No soap:			No soap:						
	Fixed facility in dwelling	Fixed facility in yard or plot	Bucket/ Jug/ Kettle for hand-washing			Soap present	Ash, mud, or sand present	No other cleansing agent present	Soap present	Ash, mud, or sand present	No other cleansing agent present					
Total	32.2	31.3	34.2	2.3	581	84.7	7.0	0.9	3.8	1.3	0.0	2.3	100.0	91.7	--	581
Sex of household head																
Male	30.4	31.1	35.6	2.9	431	83.7	6.8	1.2	4.0	1.4	0.0	2.9	100.0	90.5	--	431
Female	37.1	31.9	30.3	0.6	150	87.5	7.6	0.0	3.5	0.9	0.0	0.6	100.0	95.0		150
Area																
Urban	36.5	34.5	27.2	1.8	299	85.8	6.4	1.1	3.5	1.4	0.0	1.8	100.0	92.2	--	299
Rural	14.3	18.3	63.1	4.3	282	80.2	9.4	0.0	5.0	1.0	0.0	4.3	100.0	89.7		282
Number of household members																
1-5	39.1	25.8	32.7	2.4	164	79.9	8.3	1.3	7.2	0.8	0.0	2.4	100.0	88.2	--	164
5-10	25.9	34.7	38.0	1.5	293	86.7	8.3	0.0	3.1	0.5	0.0	1.5	100.0	95.0		293
11+	37.7	30.0	28.6	3.6	124	85.2	3.5	2.1	2.4	3.2	0.0	3.6	100.0	88.7		124
Education of household head																
None	30.0	37.8	31.2	1.0	43	81.6	6.9	5.0	5.5	0.0	0.0	1.0	100.0	88.4	--	43
Primary	22.6	37.0	39.5	0.9	145	83.6	5.8	2.9	6.4	0.5	0.0	0.9	100.0	89.4		145
Secondary	29.9	31.4	35.7	3.0	273	82.4	8.5	0.0	3.7	2.5	0.0	3.0	100.0	90.9		273
Higher	44.4	25.3	28.0	2.3	120	90.7	5.2	0.0	1.8	0.0	0.0	2.3	100.0	95.9		120
Wealth index quintile																
Poorest	7.6	21.2	68.3	2.9	265	74.3	6.8	1.3	10.7	4.0	0.0	2.9	100.0	81.0	***	265
Second	20.2	42.6	35.9	1.3	98	81.2	8.9	2.5	4.2	1.9	0.0	1.3	100.0	90.1		98
Middle	34.7	29.3	32.7	3.3	82	90.0	4.3	0.0	2.5	0.0	0.0	3.3	100.0	94.3		82
Fourth	38.4	40.9	18.4	2.3	72	92.1	5.6	0.0	0.0	0.0	0.0	2.3	100.0	97.7		72
Richest	69.4	22.5	6.5	1.5	64	89.1	9.4	0.0	0.0	0.0	0.0	1.5	100.0	98.5		64

* P<0.05, ** P<0.01, *** P<0.001

[1] MICS indicator 4.5 - Place for handwashing

Only households where the place for handwashing was observed by the interviewer and households with no specific place for handwashing are included in the denominator of the indicator. Households with water at place for handwashing and soap or other cleansing agent at place for handwashing are included in the numerator.

Table WS.10: Availability of soap or other cleansing agent

Percent distribution of households by availability of soap or other cleansing agent in the dwelling, by selected characteristics, RMI ICHNS, 2017

	Place for handwashing observed				Place for handwashing not observed			Total	Percentage of households with soap or other cleansing agent anywhere in the dwelling[1]	Number of households
	Soap or other cleansing agent observed	Soap or other cleansing agent not observed at place for handwashing: Soap or other cleansing agent shown	Soap or other cleansing agent not observed at place for handwashing: No soap or other cleansing agent in household	Soap or other cleansing agent not observed at place for handwashing: Not able/Does not want to show soap or other cleansing agent	Soap or other cleansing agent shown	No soap or other cleansing agent in household	Not able/Does not want to show soap or other cleansing agent			
Total	86.5	10.4	0.9	0.0	1.9	0.4	0.0	100.0	98.8	581
Sex of household head										
Male	84.4	11.5	1.2	0.0	2.4	0.5	0.0	100.0	98.3	431
Female	92.2	7.2	0.0	0.0	0.6	0.0	0.0	100.0	100.0	150
Area										
Urban	88.0	9.2	1.1	0.0	1.5	0.3	0.0	100.0	98.6	299
Rural	80.4	15.3	0.0	0.0	3.8	0.5	0.0	100.0	99.5	282
Number of household members										
1-5	83.5	12.8	1.3	0.0	2.0	0.4	0.0	100.0	98.3	164
5-10	88.4	10.2	0.0	0.0	1.5	0.0	0.0	100.0	100.0	293
11+	85.6	8.7	2.1	0.0	2.7	1.0	0.0	100.0	96.9	124
Education of household head										
None	64.0	30.0	5.0	0.0	1.0	0.0	0.0	100.0	95.0	43
Primary	85.0	11.3	2.9	0.0	0.9	0.0	0.0	100.0	97.1	145
Secondary	86.1	10.9	0.0	0.0	2.5	0.6	0.0	100.0	99.4	273
Higher	93.5	4.1	0.0	0.0	2.0	0.4	0.0	100.0	99.6	120
Wealth index quintile										
Poorest	69.3	26.5	1.3	0.0	2.5	0.4	0.0	100.0	98.2	265
Second	78.6	17.5	2.5	0.0	1.3	0.0	0.0	100.0	97.5	98
Middle	95.1	1.6	0.0	0.0	3.3	0.0	0.0	100.0	100.0	82
Fourth	96.5	1.2	0.0	0.0	2.3	0.0	0.0	100.0	100.0	72
Richest	98.5	0.0	0.0	0.0	0.0	1.5	0.0	100.0	98.5	64

[1] MICS indicator 4.6 - Availability of soap or other cleansing agent

Households with soap anywhere in the dwelling are those where soap was observed by the interviewer at the place for handwashing and those households where soap was not observed at the place for handwashing but soap was shown to the interviewer.

Soap includes bar soap, powder, liquid or paste detergent and liquid soap; other cleansing agents include ash.

VI. Reproductive Health

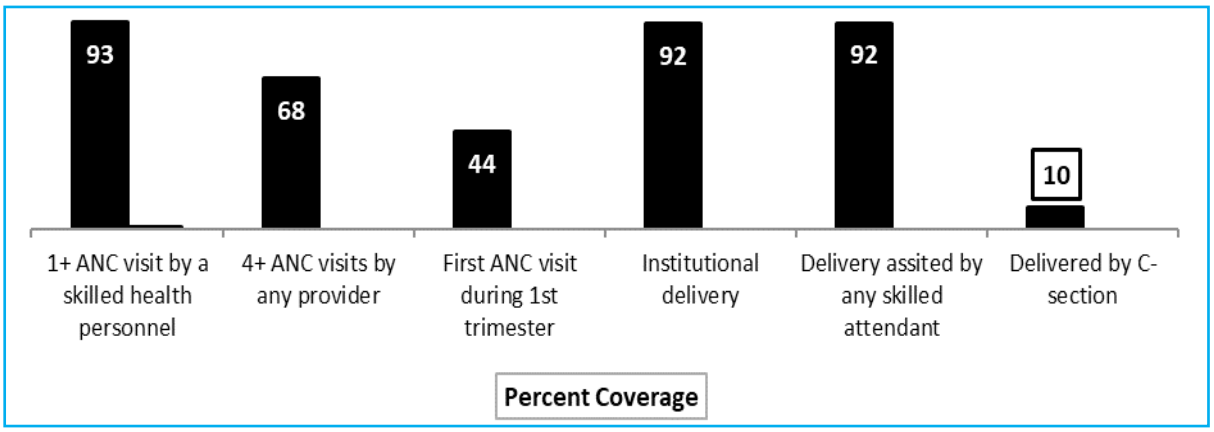
Antenatal Care

The antenatal period presents important opportunities for reaching pregnant women with a number of interventions that may be vital to their health and well-being and that of their infants. Better understanding of foetal growth and development and its relationship to the mother's health has resulted in increased attention to the potential of antenatal care as an intervention to improve both maternal and newborn health. For example, antenatal care can be used to inform women and families about risks and symptoms in pregnancy and about the risks of labour and delivery, and therefore it may provide the route for ensuring that pregnant women do, in practice, deliver with the assistance of a skilled health care provider. Antenatal visits also provide an opportunity to supply information on birth spacing, which is recognized as an important factor in improving infant survival. Tetanus immunization during pregnancy can be life-saving for both the mother and the infant. The prevention and treatment of malaria among pregnant women, management of anaemia during pregnancy and treatment of sexually transmitted infections (STIs) can significantly improve foetal outcomes and improve maternal health. Adverse outcomes such as low birth weight can be reduced through a combination of interventions to improve women's nutritional status and prevent infections (e.g., malaria and STIs) during pregnancy. More recently, the potential of the antenatal care as an entry point for HIV prevention and care, in particular for the prevention of HIV transmission from mother to child, has led to renewed interest in access to and use of antenatal services.

WHO previously recommended a minimum of 4 antenatal visits, however based on a review of the effectiveness of different models of antenatal care the WHO updated its guidance for a minimum of 8 antenatal visits. It is of crucial importance for pregnant women to start attending antenatal care visits as early in pregnancy as possible in order to prevent and detect pregnancy conditions that could affect both the woman and her baby. Antenatal care should continue throughout the entire pregnancy.

Antenatal care coverage indicators (at least one visit with a skilled provider and 4 or more visits with any providers) are used to track progress toward the Millennium Development Goal 5 of improving maternal health. Figure RH.1. presents an overview of key reproductive health indicators in RMI.

Figure RH.1: Receipt of ANC services and place of delivery, RMI ICHNS 2017



The type of personnel providing antenatal care to women aged 15-49 years who gave birth in the two preceding years is presented in Table RH.7.

Table RH.7: Antenatal care coverage [a]

Percent distribution of mothers age 15-49 years with a live birth in the last two years by antenatal care provider during the pregnancy for the last birth, by selected characteristics, RMI ICHNS, 2017

	Provider of antenatal care [b]					No antenatal care	Total	Any skilled provider [1,c]	Number of women with a live birth in the last two years	P-value
	Medical doctor	Nurse/ Midwife	Health Assistant	Traditional birth attendant	Local Healer					
Total	36.6	46.8	9.3	1.2	1.7	4.4	100.0	92.7	270	
Mother's age at birth										
Less than 20 years	29.3	49.0	9.6	6.9	1.1	4.1	100.0	87.9	32	--
20-34 years	37.5	48.4	8.2	0.6	1.0	4.3	100.0	94.1	200	
35-49 years	40.0	32.8	15.6	0.0	5.8	5.8	100.0	88.5	35	
Area										
Urban	37.2	50.7	4.9	0.9	1.9	4.5	100.0	92.7	147	--
Rural	34.0	27.9	30.9	2.4	0.7	4.2	100.0	92.7	123	
Mother's education										
None	--	--	--	--	--	--	--	--	3	**
Primary	32.6	50.1	12.2	1.3	0.7	3.0	100.0	95.0	47	
Secondary	41.1	44.3	11.2	0.3	0.0	3.1	100.0	96.6	167	
Higher	29.2	49.7	2.3	3.3	6.6	8.9	100.0	81.2	53	
Wealth index quintile										
Poorest	31.6	40.0	22.9	2.0	0.0	3.5	100.0	94.5	116	--
Second	42.9	44.5	3.8	0.0	0.0	8.8	100.0	91.2	41	
Middle	37.2	48.9	10.4	3.0	0.5	0.0	100.0	96.5	48	
Fourth	52.9	41.5	0.7	0.0	4.8	0.0	100.0	95.2	32	
Richest	20.6	58.4	5.7	0.0	4.2	11.1	100.0	84.7	33	
Maternal Nutrition Status										

Underweight	--	--	--	--	--	--	--	--	6	**
Normal	41.4	47.1	9.4	0.3	0.4	1.3	100.0	98.0	88	
Overweight	33.6	42.3	8.8	2.6	2.6	10.1	100.0	84.7	80	
Obese	38.4	47.6	9.9	0.9	2.3	1.0	100.0	95.9	91	
Maternal Parity										
1	31.8	54.1	5.2	2.5	0.4	6.0	100.0	91.1	82	--
2-3	38.6	43.3	11.3	0.2	3.6	3.0	100.0	93.2	121	
4 or more	41.4	43.2	11.7	0.9	0.0	2.7	100.0	96.3	57	
Maternal Married Status										
Not married	30.4	56.2	10.6	0.5	0.3	2.1	100.0	97.1	119	--
Currently married	35.4	40.9	12.0	0.0	3.5	8.2	100.0	88.3	52	
Cohabitating	44.8	39.4	6.1	2.8	2.2	4.8	100.0	90.3	98	
Father in Household										
Yes	36.6	44.8	10.3	1.4	2.1	4.8	100.0	91.7	209	--
No	36.5	54.8	5.2	0.5	0.0	3.0	100.0	96.5	61	

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 5.5a**

[a] 53 caregivers did not participate as they were not the mother and 39 mothers did not complete the ANC section of the questionnaire.

[b] Only the most qualified provider is considered in cases where more than one provider was reported.

[c] Skilled providers include *Medical doctor* and *Nurse/Midwife*.

The results show that a relatively small percentage of women (4.4 percent) do not receive antenatal care. In RMI, the majority of antenatal care is provided by either medical doctors (36.6 percent) or nurse/midwife (46.8 percent). Of mothers with a live birth in the last two years, over half (50.7 percent) in urban areas were provided antenatal care by a nurse/midwife compared to 27.9 percent in rural areas. Interestingly, the highest prevalence of no antenatal care was in mothers with higher education (8.9 percent) compared to about 3.0 percent for those with less educational attainment.

Table RH.8 shows the number of antenatal care visits during the latest pregnancy that took place within the two years preceding the survey, regardless of provider, by selected characteristics. A total of 67.8 percent of mothers received antenatal care at least four times and 29.9 percent received antenatal care 8 times or more. While not significant, there was higher prevalence of mothers having 4 or more ANC visits in urban areas (70.1 percent) than in rural areas (56.5 percent).

Table RH.8 also provides information about the timing of the first antenatal care visit. Overall, 43.7 percent of women with a live birth in the last two years had their first antenatal care visit during the first trimester of their last pregnancy, with a median of 3.7 months of pregnancy at the first visit among those who received antenatal care. Prevalence of first antenatal visit during the first trimester was not significantly different by area with 41.6 percent in the rural areas compared to 44.2 percent in urban areas.

Table RH.8: Number of antenatal care visits and timing of first visit [a]

Percent distribution of mothers age 15-49 years with a live birth in the last two years, by selected characteristics, RMI ICHNS, 2017

	Percent distribution of women who had:									Percent distribution of women by number of months pregnant at the time of first antenatal care visit								Number of women with a live birth in the last two years	Median months pregnant at first ANC visit	Number of women with a live birth in the last two years who had at least one
	No antenatal care visits	1 visit	2 visits	3 visits	4 or more visits[1]	DK/ Missing	Total	8 or more visits[2]	P-value	No antenatal care visits	First trimester	4-5 months	6-7 months	8+ months	DK/ Missing	Total	P-value			
Total	4.4	1.8	4.7	6.5	67.8	14.7	100.0	29.9	--	4.4	43.7	30.9	11.5	3.9	5.6	100.0	--	270	3.7	258
Mother's age at birth (Years)																				
Less than 20	4.1	1.1	0.0	13.2	71.2	10.4	100.0	33.8	--	4.1	23.6	49.9	18.5	0.0	3.9	100.0	--	32	4.4	31
20-34	4.3	1.1	5.6	6.8	66.7	15.6	100.0	30.3		4.3	44.1	29.1	11.0	5.2	6.4	100.0		200	3.8	191
35-49	5.8	7.0	4.0	0.0	69.3	14.0	100.0	26.2		5.8	57.2	24.9	8.9	0.0	3.2	100.0		35	2.8	33
Area																				
Urban	4.5	1.6	4.1	6.1	70.1	13.6	100.0	30.9	--	4.5	44.2	32.1	10.1	4.3	4.9	100.0	--	147	3.7	140
Rural	4.2	3.1	7.6	8.8	56.5	19.8	100.0	25.3		4.2	41.6	25.1	18.2	2.1	8.9	100.0		123	3.9	118
Mother's education																				
None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	4.9	3
Primary	3.0	0.0	5.4	9.3	54.0	28.4	100.0	24.9		3.0	40.4	33.9	12.4	0.0	10.4	100.0		47	3.6	46
Secondary	3.1	0.6	5.4	7.3	74.2	9.4	100.0	32.3		3.1	45.6	30.6	13.0	3.8	3.9	100.0		167	3.8	162
Higher	8.9	6.2	2.5	3.0	60.3	19.1	100.0	27.5		8.9	42.8	27.9	6.7	6.9	6.9	100.0		53	3.5	48
Wealth index quintile																				
Poorest	3.5	2.6	11.0	9.8	56.2	17.0	100.0	24.1	--	3.5	39.1	33.1	13.0	4.6	6.8	100.0	--	116	4.1	112
Second	8.8	0.0	5.4	4.8	62.8	18.3	100.0	23.8		8.8	50.0	22.3	7.7	5.6	5.6	100.0		41	3.5	37
Middle	0.0	2.1	5.5	9.1	66.8	16.5	100.0	24.6		0.0	29.4	39.8	17.1	5.4	8.2	100.0		48	4.3	48
Fourth	0.0	4.8	0.0	4.9	79.0	11.2	100.0	37.3		0.0	50.2	37.1	12.7	0.0	0.0	100.0		32	3.4	32
Richest	11.1	0.0	0.0	2.5	77.6	8.9	100.0	43.7		11.1	56.7	19.3	4.8	2.6	5.6	100.0		33	3.0	29
Maternal Nutrition Status																				

Table RH.8: Number of antenatal care visits and timing of first visit [a]

Percent distribution of mothers age 15-49 years with a live birth in the last two years, by selected characteristics, RMI ICHNS, 2017

	Percent distribution of women who had:									Percent distribution of women by number of months pregnant at the time of first antenatal care visit								Number of women with a live birth in the last two years	Median months pregnant at first ANC visit	Number of women with a live birth in the last two years who had at least one
	No antenatal care visits	1 visit	2 visits	3 visits	4 or more visits[1]	DK/ Missing	Total	8 or more visits[2]	P-value	No antenatal care visits	First trimester	4-5 months	6-7 months	8+ months	DK/ Missing	Total	P-value			
Underweight	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**	6	5.2	4
Normal	1.3	2.1	4.2	10.4	68.3	13.6	100.0	39.1		1.3	38.5	35.3	13.9	7.0	4.0	100.0		88	4.1	87
Overweight	10.1	3.1	5.2	6.9	66.1	8.6	100.0	26.0		10.1	38.2	36.3	12.3	2.0	1.1	100.0		80	3.8	72
Obese	1.0	0.7	4.7	3.3	70.5	19.8	100.0	26.3		1.0	53.3	25.0	7.5	1.7	11.5	100.0		91	3.2	90
Maternal Married Status																				
Not married	2.1	0.7	3.5	8.1	69.0	16.6	100.0	26.9	--	2.1	31.1	42.7	13.8	2.6	7.7	100.0	**	119	4.2	117
Currently married	8.2	0.0	0.0	7.8	66.4	17.6	100.0	28.3		8.2	58.6	15.8	7.7	0.0	9.6	100.0		52	2.8	48
Cohabitating	4.8	4.4	9.1	3.9	67.2	10.7	100.0	34.5		4.8	48.9	26.7	11.2	7.8	0.7	100.0		98	3.7	93
Father in Household																				
Yes	4.8	2.0	5.5	4.1	68.1	15.5	100.0	25.8	*	4.8	45.8	28.8	10.1	4.2	6.2	100.0	--	209	3.6	199
No	3.0	1.4	1.5	16.3	66.6	11.3	100.0	46.3		3.0	35.5	39.2	16.8	2.4	3.1	100.0		61	4.0	59

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 5.5b**

[2] WHO Guideline on Antenatal Care (2016) recommends a minimum of 8 contacts with ANC to reduce perinatal mortality and improve women's experience of care.

[a] 53 caretakers did not participate as they were not the mother and 39 mothers did not complete the ANC section of the questionnaire.

The number of antenatal care visits is inclusive of antenatal care received from any provider, skilled or unskilled. The number of months pregnant at the time of first antenatal care visit is also inclusive of antenatal care received from any provider. The median does not include women who have not had any ANC visits, or women who responded that they did not know the number of visits received.

The table is based on all women who had a live birth in the last two years. Antenatal care during the pregnancy of the last birth is taken into account.

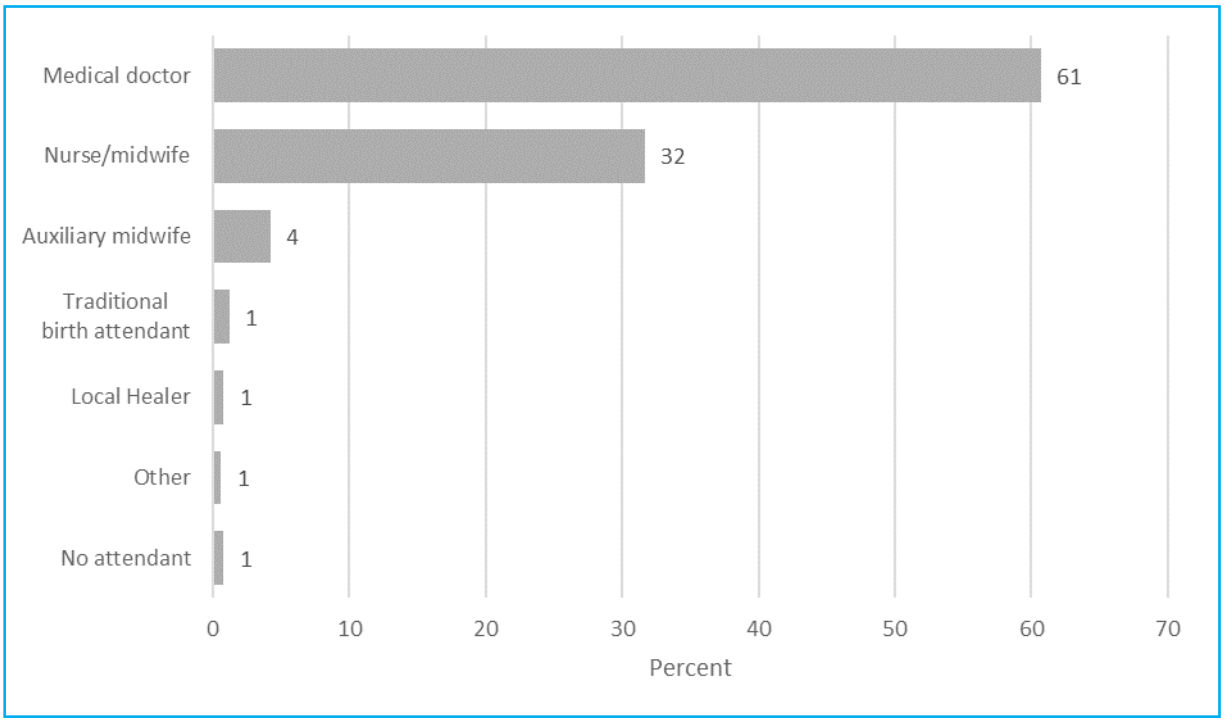
Assistance at Delivery

About three quarters of all maternal deaths occur due to direct obstetric causes.[31] The single most critical intervention for safe motherhood is to ensure that a competent health worker with midwifery skills is present at every birth, and in case of emergency that transport is available to a referral facility for obstetric care. The skilled attendant at delivery indicator is used to track progress toward the Sustainable Development Goal 3 of improving maternal health.

The ICHNS 2017 included a number of questions to assess the proportion of births attended by a skilled attendant. *A skilled attendant* includes a doctor, nurse, or midwife.

Overall, almost 1 in 10 (9.7 percent) of women who delivered in the last two years had a C-section and an estimated 92.4 percent of deliveries occurring in the two years preceding the survey were assisted by skilled personnel (Table RH.10). A total of 60.7 percent of births in the two years preceding the ICHNS 2017 were delivered with the assistance of a medical doctor. A nurse or a midwife assisted with the delivery of 31.7 percent of births. In rural areas, the percentage of births assisted by a doctor is 34.1 percent compared to 66.2 percent in urban areas. Wealth index quintile shows a positive association with deliveries assisted by skilled attendant with 73.0 percent of deliveries in the poorest quintile compared to 90.2 percent in the second, 99.5 percent in the third and 100 percent in the 2 richest quintiles. Figure RH.3. presents and overview of person assisting at delivery for the national level in RMI.

Figure RH.3: Person assisting at delivery, RMI ICHNS, 2017



31 Say, L et al. 2014. **Global causes of maternal death: a WHO systematic analysis.** *The Lancet Global Health 2(6): e323-33. DOI: 10.1016/S2214-109X(14)70227-X*

Table RH.10: Assistance during delivery and caesarean section [a]

Percent distribution of mothers age 15-49 years with a live birth in the last two years by person providing assistance at delivery, and percentage of births delivered by C-section, by selected characteristics, RMI ICHNS, 2017

	Person assisting at delivery													
	Medical doctor	Nurse/ Midwife	Auxiliary midwife	Traditional birth attendant	Local Healer	Relative/Friend	Other	No attendant	Total	Delivery assisted by any skilled attendant[1,b]	P-value	Percent delivered by C-section [2]	P-value	Number of women who had a live birth in the last two years
Total	60.7	31.7	4.2	1.2	0.8	0.0	0.6	0.8	100.0	92.4	--	9.7	--	270
Area														
Urban	66.2	31.7	0.0	0.5	0.0	0.0	0.7	0.9	100.0	97.8	***	10.3	--	147
Rural	34.1	32.0	24.7	4.7	4.4	0.0	0.0	0.0	100.0	66.2		6.8		123
Mother's education														
None	--	--	--	--	--	--	--	--	--	--	--	--	--	3
Primary	49.0	40.2	8.0	0.6	2.2	0.0	0.0	0.0	100.0	89.2		3.5		47
Secondary	70.0	22.5	3.8	1.9	0.5	0.0	0.0	1.3	100.0	92.5		11.7		167
Higher	44.7	50.2	2.1	0.0	0.5	0.0	2.5	0.0	100.0	94.9		7.4		53
Wealth index quintile														
Poorest	44.9	28.1	20.5	3.4	3.1	0.0	0.0	0.0	100.0	73.0	***	10.1	--	116
Second	62.2	28.0	0.0	2.7	0.0	0.0	3.1	4.1	100.0	90.2		14.4		41
Middle	68.1	31.4	0.0	0.0	0.5	0.0	0.0	0.0	100.0	99.5		5.9		48
Fourth	69.6	30.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0		5.5		32
Richest	58.7	41.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0		13.4		33
Maternal Nutrition Status														
Underweight	--	--	--	--	--	--	--	--	--	--	*	--	--	6
Normal	74.3	17.5	4.3	2.7	1.2	0.0	0.0	0.0	100.0	91.8		12.1		88
Overweight	53.9	34.1	5.2	0.9	1.2	0.0	2.0	2.6	100.0	88.0		6.8		80
Obese	58.6	38.2	3.0	0.3	0.0	0.0	0.0	0.0	100.0	96.8		11.1		91
Father in Household														
Yes	59.3	33.1	4.4	1.1	0.4	0.0	0.7	1.0	100.0	92.4	--	9.8	--	209
No	66.5	26.2	3.4	1.9	2.0	0.0	0.0	0.0	100.0	92.7		9.3		61

* P<0.05, ** P<0.01, *** P<0.001

[1] MICS indicator 5.7; SDG indicator 3.1.2 – Proportion of births attended by skilled health personnel

[2] MICS indicator 5.9 - Caesarean section

[a] 53 caregivers did not participate as they were not the mother and 39 mothers did not complete the ANC section of the questionnaire.

[b] Skilled attendants include *Medical doctor* and *Nurse/Midwife*.

Place of Delivery

Increasing the proportion of births that are delivered in health facilities is an important factor in reducing the health risks to both the mother and the baby. Proper medical attention and hygienic conditions during delivery can reduce the risks of complications and infection that can cause morbidity and mortality to either the mother or the baby. Table RH.11 presents the percent distribution of women age 15-49 who had a live birth in the two years preceding the survey by place of delivery, and the percentage of births delivered in a health facility, according to background characteristics.

Table RH.11: Place of delivery [a]

Percent distribution of mothers age 15-49 years with a live birth in the last two years by place of delivery of their last birth, by selected characteristics, RMI ICHNS, 2017

	Place of delivery					Total	Delivered in health facility[1]	P-value	Number of women with a live birth in the last two years
	Hospital		Outer Island Health Center/ Dispensary	Home	Other				
	Public sector	Private sector							
Total	83.0	0.0	9.1	3.7	4.1	100.0	92.1	--	270
Area									
Urban	92.0	0.0	0.9	2.2	4.9	100.0	93.0	--	147
Rural	39.1	0.0	49.0	11.3	0.6	100.0	88.1		123
Mother's education									
None	--	--	--	--	--	--	--	--	3
Primary	85.5	0.0	12.5	2.0	0.0	100.0	98.0		47
Secondary	83.3	0.0	8.5	4.3	3.9	100.0	91.8		167
Higher	81.4	0.0	7.3	3.7	7.6	100.0	88.7		53
Wealth index quintile									
Poorest	50.8	0.0	39.8	8.9	0.5	100.0	90.6	**	116
Second	89.1	0.0	1.0	9.8	0.0	100.0	90.2		41
Middle	100.0	0.0	0.0	0.0	0.0	100.0	100.0		48
Fourth	100.0	0.0	0.0	0.0	0.0	100.0	100.0		32
Richest	73.9	0.0	4.2	0.0	21.9	100.0	78.1		33
Maternal Parity									
1	85.5	0.0	5.9	5.6	3.0	100.0	91.4	--	82
2-3	81.5	0.0	12.1	1.5	4.9	100.0	93.6		121
4 or more	84.9	0.0	6.8	5.9	2.4	100.0	91.7		57
Maternal Married Status									
Not married	85.7	0.0	10.1	2.5	1.7	100.0	95.9	**	119
Currently married	75.1	0.0	6.7	5.9	12.4	100.0	81.8		52
Cohabitating	84.7	0.0	9.6	3.9	1.9	100.0	94.3		98
Father in Household									
Yes	82.5	0.0	8.8	3.6	5.2	100.0	91.3	--	209
No	85.1	0.0	10.6	4.4	0.0	100.0	95.6		61

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 5.8 - Institutional deliveries**

[a] 53 caregivers did not participate as they were not the mother and 39 mothers did not complete the ANC section of the questionnaire.

A total of 92.1 percent of births in RMI are delivered in a health facility; 83.0 percent of deliveries occur in public sector facilities (Table RH.11). Relatively few births (3.7 percent) take place at home. Prevalence of delivery in a health facility was much lower for women

in the richest wealth index quintile at 78.1 percent compared to the other quintiles which ranged from 90.6 and 90.2 percent for the two poorest quintiles to 100 percent for the middle and fourth quintiles. Prevalence of delivery in a health facility was also associated with maternal marital status, married mothers delivering their children in health facilities at a lower prevalence (81.8 percent) compared to unmarried (95.9 percent) or cohabitating (94.3 percent) mothers.

Receipt of Micronutrient Supplementation and Deworming

Pregnant women should receive daily iron folate supplementation throughout their pregnancy with a minimum of 90 iron folate tablets recommended to reduce maternal anaemia. Table RH.12 shows the coverage of prenatal supplementation in RMI with pregnant women receiving iron tablets, iron folate tablets, and multi-micronutrient tablets and 67.4 percent of pregnant women receiving any type of iron folic acid tablets. However, only a quarter of pregnant women received 90 or more iron folic acid tablets indicating that pregnant women are not receiving adequate iron supplementation to prevent anaemia during pregnancy. Few pregnant women received deworming during pregnancy (13.1 percent) with more women receiving deworming in urban areas (14.4 percent) compared to rural areas (7.2 percent).

Table RH.12: Receipt of micronutrient supplementation and deworming during pregnancy

Percent distribution of mothers age 15-49 years with a live birth in the last two years who took micronutrient supplementation or deworming during their pregnancy, by selected characteristics, RMI ICHNS, 2017

	Received iron tablets	Received iron folate tablets	Received multi-micronutrient tablets	Received any iron folic acid tablets	Consumed 90 iron folate tablets or more	Received deworming tablet	Unweighted Count
Total	33.5	31.9	49.0	67.4	25.7	13.1	317
Mother's age at birth							
Less than 20 years	41.7	24.8	48.2	60.1	14.0	8.2	39
20-34 years	34.6	34.6	46.7	67.1	26.3	15.3	234
35-49 years	21.8	20.2	61.0	73.7	33.8	6.0	41
Area							
Urban	33.7	33.1	47.8	66.8	26.0	14.4	174
Rural	32.3	26.1	55.2	70.4	24.4	7.2	143
Wealth index quintile							
Poorest	33.8	23.7	52.4	66.7	19.3	10.6	139
Second	33.7	19.4	41.5	55.1	23.8	18.5	48
Middle	30.2	31.4	48.5	68.6	27.2	11.8	55
Fourth	23.9	37.1	51.6	71.6	29.9	10.6	38
Richest	47.0	51.7	51.7	76.0	29.6	14.7	37
Maternal Married Status							
Not married	39.8	30.2	43.8	62.6	22.8	12.6	137
Currently married	32.9	30.9	61.6	72.5	23.1	11.8	64
Cohabitating	26.6	34.4	47.2	69.6	31.0	14.7	115
Father in Household							
Yes	32.9	33.1	50.4	69.4	28.9	14.2	247
No	35.6	27.3	43.5	59.2	13.2	9.0	70

[a] 275 mothers and 42 caregivers responded to receipt of micronutrient supplementation with caregivers responding for the mother. 11 caregivers and 34 mothers did not complete the micronutrient supplementation section of the questionnaire.

VII. Early Childhood Development

Early Childhood Care and Education

Readiness of children for primary school can be improved through attendance to early childhood education programmes or through pre-school attendance. Early childhood education programmes include programmes for children that have organised learning components as opposed to baby-sitting and day-care which do not typically have organised education and learning.

In RMI, there is no provision of public pre-school or pre-kindergarten. Kindergarten starts at 5 years of age through public schools and private schools offer pre-school for children 4-5 years of age. The lack of public availability organized early childhood education programmes for children 3-4 years of age is reflected in the findings of the ICHNS 2017 with only 5.2 percent of children aged 36-59 months attending an organized early childhood education programme (Table CD.1). Enrolment in kindergarten, which starts from the age of 5, is accounted for in Table ED2.

While not significant, a trend in increased attendance in early childhood education by socio-economic status is seen with prevalence in the richest wealth index quintile at 11.1 percent while the poorer quintiles range between 1.8 and 6.5 percent. Caregiver's higher level of education was associated with higher prevalence of the child's attendance; 12.6 percent of children with a caregiver who had higher education attended early childhood education compared to 2.1 percent for secondary level and 4.4 percent for primary level.

Table CD.1: Early childhood education [a]

Percentage of children age 36-59 months who are attending an organized early childhood education programme, by selected characteristics, RMI ICHNS, 2017

	Percentage of children age 36-59 months attending early childhood education[1]	Number of children age 36-59 months	P-value
Total	5.2	350	--
Sex			
Male	5.2	178	--
Female	5.3	172	
Area			
Urban	4.9	203	--
Rural	6.9	147	
Age of child			
36-47 months	3.0	169	--
48-59 months	7.2	181	
Caregiver's education			
None	--	5	*
Primary	4.4	81	
Secondary	2.1	199	
Higher	12.6	61	
Wealth index quintile			
Poorest	4.4	138	--
Second	1.8	66	
Middle	3.1	58	
Fourth	6.5	40	
Richest	11.1	48	
Maternal Married Status			
Not married	3.9	121	--
Currently married	7.8	79	

Cohabitating	3.8	101

* P<0.05, ** P<0.01, *** P<0.001

[1] MICS indicator 6.1 - Attendance to early childhood education

[a] Early childhood education is measured for children 36-59 months of age while kindergarten in RMI is usually provided from 5 years of age.

Quality of Care

It is well recognized that a period of rapid brain development occurs in the first 3-4 years of life, and the quality of home care is a major determinant of the child's development during this period.[32] In this context, engagement of adults in activities with children, presence of books in the home for the child, and the conditions of care are important indicators of quality of home care. As set out in *A World Fit for Children*, "children should be physically healthy, mentally alert, emotionally secure, socially competent and ready to learn."[33]

Information on a number of activities that support early learning was collected in the survey. These included the involvement of adults with children in the following activities: reading books or looking at picture books, telling stories, singing songs, taking children outside the home, compound or yard, playing with children, and spending time with children naming, counting, or drawing things.

For 72.3 percent of children aged 36-59 months, an adult household member engaged in four or more activities that promote learning and school readiness during the three days preceding the survey (Table CD.2). The mean number of activities that adults engaged in with children was 4.2. The table also indicates that the father's involvement in such activities was limited. The father's involvement in four or more activities was 1.6 percent, far lower than the level of the mother's involvement (59.3 percent).

Mother's level of education was associated with engagement in four or more activities with mothers with primary level education involved at a prevalence of 37.6 percent compared to 61.4 percent for those with secondary level education and 74.6 percent for those with higher education. Prevalence was also much higher for married mothers at 79.3 percent compared to 52.5 percent for cohabitating mothers and mothers who were never married, widowed or divorced (53.9 percent).

32 Grantham-McGregor, S et al. 2007. Developmental Potential in the First 5 Years for Children in Developing Countries. The Lancet 369: 60–70

33 UNICEF. 2002. A World Fit For Children adopted by the UN General Assembly at the 27th Special Session, 10 May 2002: 2.

Table CD.2: Support for learning

Percentage of children age 36-59 months with whom adult household members engaged in activities that promote learning and school readiness during the last three days, and engagement in such activities by biological fathers and mothers, by selected characteristics, RMI ICHNS, 2017

	Percentage of children with whom adult household members have engaged in four or more activities[1]			Percentage of children living with their:		Number of children age 36-59 months	Percentage of children with whom biological fathers have engaged in four or more activities[2]				Percentage of children with whom biological mothers have engaged in four or more activities[3]			
	%	P-value	Mean number of activities with adult household members	Biological father	Biological mother		%	P-value	Mean number of activities with biological fathers	Number of children age 36-59 months living with their biological fathers	%	P-value	Mean number of activities with biological mothers	Number of children age 36-59 months living with their biological mothers
Total	72.3	--	4.2	68.4	85.8	350	1.6	--	0.3	239	59.3	--	3.6	299
Sex														
Male	71.8	--	4.2	71.3	87.2	178	1.7	--	0.4	124	57.4	--	3.6	154
Female	72.7		4.2	65.1	84.1	172	1.5		0.3	115	61.5		3.7	145
Area														
Urban	71.3	--	4.2	68.2	86.1	203	1.7	--	0.3	137	59.1	--	3.6	175
Rural	77.8		4.5	69.6	83.8	147	1.4		0.4	102	60.4		3.7	124
Age of child														
36-47 months	75.4	--	4.3	65.1	88.2	169	1.4	--	0.4	110	62.2	--	3.7	146
48-59 months	69.3		4.2	71.4	83.4	181	1.8		0.3	129	56.5		3.5	153
Caregiver's education [a]														
None	--	**	3.8	--	--	5	--	*	--	5	--	**	--	5
Primary	50.2		3.3	70.5	79.7	81	6.4		0.6	58	37.6		2.7	66
Secondary	75.5		4.3	70.5	86.1	199	0.0		0.3	140	61.4		3.8	169
Higher	85.0		4.9	60.8	92.1	61	0.0		0.1	34	74.6		4.2	56
Wealth index quintile														
Poorest	70.7	--	4.0	67.2	83.5	138	1.2	--	0.3	92	51.8	--	3.2	115
Second	69.2		3.9	73.7	86.2	66	3.4		0.4	50	56.8		3.3	57
Middle	66.4		4.1	69.3	79.8	58	2.2		0.4	43	56.0		3.6	48
Fourth	72.7		4.3	57.8	90.3	40	0.0		0.2	22	63.7		3.8	36
Richest	82.9		4.9	69.1	90.5	48	0.0		0.3	32	68.3		4.3	43
Mother's age at birth														
Less than 20 years	56.8	*	3.8	56.4	100.0	47	0.0	--	0.4	28	42.2	*	3.2	47

Table CD.2: Support for learning

Percentage of children age 36-59 months with whom adult household members engaged in activities that promote learning and school readiness during the last three days, and engagement in such activities by biological fathers and mothers, by selected characteristics, RMI ICHNS, 2017

	Percentage of children with whom adult household members have engaged in four or more activities[1]			Percentage of children living with their:		Number of children age 36-59 months	Percentage of children with whom biological fathers have engaged in four or more activities[2]				Percentage of children with whom biological mothers have engaged in four or more activities[3]			
	%	P-value	Mean number of activities with adult household members	Biological father	Biological mother		%	P-value	Mean number of activities with biological fathers	Number of children age 36-59 months living with their biological fathers	%	P-value	Mean number of activities with biological mothers	Number of children age 36-59 months living with their biological mothers
20-34 years	75.1		4.3	80.0	100.0	211	0.3		0.3	168	64.2		3.8	211
35-49 years	54.7		3.7	83.1	100.0	37	0.0		0.1	31	52.8		3.3	37
Maternal Marital Status														
Not Married	62.9	**	3.9	56.4	99.1	121	0.0	--	0.2	65	53.9	**	3.4	120
Married	89		5.0	95.0	100.0	79	0.0		0.2	75	79.3		4.6	79
Cohabitating	65		3.9	90.3	98.0	101	0.6		0.4	91	52.5		3.3	100
Father Lives in Household														
Staying Elsewhere	81.2	*	4.7	0.0	63.8	111	0.0	--	0.0	0	63.3	--	4.0	69
Living in Household	68.1		4.0	100.0	95.9	239	1.6		0.3	239	58.1		3.5	230

* P<0.05, ** P<0.01, *** P<0.001

1 MICS indicator 6.2 - Support for learning

[2] MICS Indicator 6.3 - Father's support for learning

[3] MICS Indicator 6.4 - Mother's support for learning

[a] The background characteristic "Caregiver's education" refers to the education level of the respondent to the Questionnaire for Children Under Five, and covers both mothers and primary caregivers, who are interviewed when the mother is not listed in the same household. Since indicator 6.4 reports on the biological mother's support for learning, this background characteristic refers to only the educational levels of biological mothers when calculated for the indicator in question.

MICS Indicator 6.2 is calculated as: Engagement of household members age 15 or over in four or more activities.

Both indicator 6.2 and the mean number of activities in which household members engage with the child are calculated irrespective of the number of household members and whether mother or father are living in the household.

For father's and mother's engagement (indicators 6.3 and 6.4), the denominator is confined to those children actually living with their father and mother, respectively.

The maximum number of activities is 6, as asked in the under 5 questionnaire. The activities include: (A) Reading books to or looking at picture books with the child, (B) Telling stories to the child, (C) Singing songs to or with the child, including lullabies, (D) Taking the child outside the home, compound, yard, or enclosure, (E) Playing with the child, and (F) Naming, counting, or drawing things to or with the child.

Exposure to books in early years not only provides the child with greater understanding of the nature of print, but may also give the child opportunities to see others reading, such as older siblings doing school work. Presence of books is important for later school performance. The mothers/caregivers of all children under 5 were asked about number of children's books or picture books they have for the child, and the types of playthings that are available at home.

In RMI, fewer than one in five (18.5 percent) children aged 0-59 months live in households where at least three children's books are present for the child (Table CD.3). The proportion of children with 10 or more books declines to 3.5 percent. A much higher percentage of urban children (20.8 percent) have access to three or more children's books than those living in rural households (6.8 percent). The presence of children's books is also positively correlated with the child's age: in the homes of 22.9 percent of children aged 24-59 months, there are three or more children's books, while the figure is 11.9 percent for children aged 0-23 months.

The mother's education and household wealth status are positively correlated with the percentage of children who have three or more children's books at home. Children with caregivers with primary level education have 3 or more books in the home (13.1 percent) compared to 16.0 percent with caregivers with secondary level education and 32.5 percent with caregivers with higher education. Children in the richest wealth quintile are well over ten times more likely (44.0 percent) to have three or more children's books compared to children in poorest wealth quintile (3.2 percent). There is higher prevalence of 3 or more books in the home for children of mothers who are married (28.5 percent) than for those with mothers who are not married (12.3 percent) and those who are cohabitating (19.4 percent).

Table CD.3 also shows that 70.9 percent of children aged 0-59 months had two or more kinds of playthings to play with in their homes. Playthings included in the questionnaires were homemade toys (such as dolls and cars or other toys made at home), toys that came from a store and household objects (such as pots and bowls) or objects and materials found outside the home (such as sticks, rocks, animal shells or leaves). A total of 69.0 percent of children play with toys that come from a store, 66.4 percent of children play with homemade toys or objects found outside and 68.1 percent of children play with homemade toys.

Table CD.3: Learning materials

Percentage of children under age 5 by numbers of children's books present in the household, and by playthings that child plays with, by selected characteristics, RMI ICHNS, 2017

	Percentage of children living in households that have for the child:			Percentage of children who play with:					
	3 or more children's books[1]	P-value	10 or more children's books	Home-made toys	Toys from a shop/ manu-factured toys	House-hold objects/ objects found outside	Two or more types of play-things[2]	P-value	Number of children under age 5
Total	18.5	--	3.5	68.1	69.0	66.4	70.9	--	881
Sex									
Male	15.6	--	1.5	63.8	63.8	64.6	65.8	**	455
Female	21.6		5.6	72.6	74.5	68.4	76.3		426
Area									
Urban	20.8	***	4.0	68.5	73.5	65.4	71.8	--	490
Rural	6.8		0.9	65.9	46.1	71.5	66.1		391
Age of child									
0-23m	11.9	***	1.3	53.9	53.8	46.4	52.3	***	362
24-59m	22.9		5.0	77.5	79.1	79.8	83.2		519
Caregiver's education									
None	--	***	--	--	--	--	--	--	12
Primary	13.1		0.0	64.5	61.9	71.5	68.3		181
Secondary	16.0		2.6	66.7	66.8	64.8	68.8		529
Higher	32.5		9.6	75.0	81.4	64.7	78.0		155
Wealth index quintile									
Poorest	3.2	***	0.0	63.7	42.3	68.8	61.3	*	370
Second	7.8		1.3	72.5	67.9	70.5	72.9		152
Middle	23.6		1.8	61.9	74.5	63.7	67.0		144
Fourth	15.7		6.3	66.5	79.0	62.2	72.5		108
Richest	44.0		9.5	76.3	82.5	66.2	81.9		107
Maternal Married Status									
Not married	12.3	**	2.0	60.6	63.2	59.2	63.9	*	333
Currently married	28.5		4.2	75.3	74.9	66.7	75.3		175
Cohabitating	19.4		2.8	71.5	71.0	73.8	74.5		281
Father in Household									
Yes	18.7	--	3.2	68.4	66.8	65.0	68.9	--	623
No	17.9		4.2	67.3	74.6	70.1	75.8		258

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 6.5 - Availability of children's books**

[2] **MICS indicator 6.6 - Availability of playthings**

Leaving children alone or in the presence of other young children is known to increase the risk of injuries.34 In the ICHNS 2017, two questions were asked to find out whether children age 0-59 months were left alone during the week preceding the interview, and whether children were left in the care of other children under 10 years of age.

Table CD.4 shows that 4.9 percent of children aged 0-59 months were left in the care of another child younger than 10 years of age for more than an hour in the past week, while 9.1 percent were left alone during the week preceding the interview. Combining the two care indicators, it is calculated that a total of 9.1 percent of children were left with inadequate care during the previous week, either by being left alone or in the care of another child. A higher percentage of children in rural areas (13.4 percent) were left with inadequate care in the previous week compared to children in urban areas (8.2 percent). Children aged 24-59 months are more likely (10.7 percent) to be left with inadequate care compared to children aged 0-23 months (6.6 percent). Children of mothers with primary education were less likely to be left with inadequate care (7.0 percent) than children whose mothers had higher education (17.0 percent).

Table CD.4: Inadequate care

Percentage of children under age 5 left alone or left in the care of another child younger than 10 years of age for more than one hour at least once during the past week, by selected characteristics, RMI ICHNS, 2017

	Percentage of children under age 5:				
	Left alone in the past week	Left in the care of another child younger than 10 years of age in the past week	Left with inadequate care in the past week[1]	P-value	Number of children under age 5
Total	9.1	4.9	9.1	--	881
Sex					
Male	8.5	4.8	8.5	--	455
Female	9.7	5.1	9.7		426
Area					
Urban	8.2	4.9	8.2	*	490
Rural	13.4	5.0	13.4		391
Age of child					
0-23m	6.6	3.3	6.6	--	362
24-59m	10.7	6.0	10.7		519
Caregiver's education					
None	--	--	--	**	12
Primary	7.0	4.3	7.0		181
Secondary	6.9	4.2	6.9		529
Higher	17.0	8.2	17.0		155
Wealth index quintile					
Poorest	9.9	3.9	9.9	--	370
Second	8.0	4.2	8.0		152
Middle	10.7	7.3	10.7		144
Fourth	7.8	2.2	7.8		108
Richest	8.6	6.4	8.6		107
Mother's age at birth					
Less than 20 years	11.0	2.8	11.0	--	112
20-34 years	8.2	5.6	8.2		559
35-49 years	11.7	6.9	11.7		92
Maternal Married Status					

34 Grossman, DC. 2000. The History of Injury Control and the Epidemiology of Child and Adolescent Injuries. The Future of Children, 10(1): 23-52.

Not married	8.7	6.3	8.7	--	333
Currently married	6.3	0.9	6.3		175
Cohabitating	10.4	6.3	10.4		281
Father in Household					
Yes	8.1	4.5	8.1	--	623
No	11.7	6.1	11.7		258
* P<0.05, ** P<0.01, *** P<0.001					
[1] **MICS indicator 6.7 - Inadequate care**					

Inadequate care is defined as children left alone or in the care of another child younger than 10 years of age more than one hour at least once in the past week.

Developmental Status of Children

Early childhood development is defined as an orderly, predictable process along a continuous path, in which a child learns to handle more complicated levels of moving, thinking, speaking, feeling and relating to others. Physical growth, literacy and numeracy skills, socio-emotional development and readiness to learn are vital domains of a child's overall development, which is a basis for overall human development. 35

A 10-item module was used to calculate the Early Child Development Index (ECDI). The primary purpose of the ECDI is to inform public policy regarding the developmental status of children in RMI. The index is based on selected milestones that children are expected to achieve by ages 3 and 4. The 10 items are used to determine if children are developmentally on track in four domains:

- Literacy-numeracy: Children are identified as being developmentally on track based on whether they can identify/name at least ten letters of the alphabet, whether they can read at least four simple, popular words, and whether they know the name and recognize the symbols of all numbers from 1 to 10. If at least two of these are true, then the child is considered developmentally on track.
- Physical: If the child can pick up a small object with two fingers, like a stick or a rock from the ground and/or the mother/caregiver does not indicate that the child is sometimes too sick to play, then the child is regarded as being developmentally on track in the physical domain.
- Social-emotional: Children are considered to be developmentally on track if two of the following are true: If the child gets along well with other children, if the child does not kick, bite, or hit other children and if the child does not get distracted easily.
- Learning: If the child follows simple directions on how to do something correctly and/or when given something to do, is able to do it independently, then the child is considered to be developmentally on track in this domain.

35 Shonkoff, J and Phillips, D (eds). 2000. From neurons to neighborhoods: the science of early childhood development. Committee on Integrating the Science of Early Childhood Development, National Research Council, 2000.

ECDI is then calculated as the percentage of children who are developmentally on track in at least three of these four domains.

The results are presented in Table CD.5.

In RMI, 78.9 percent of children aged 36-59 months are developmentally on track. As expected, the ECDI is higher (85.9 percent) in the older age group (48-59 months) than among those aged 36-47 months (71.3 percent) since children acquire more skills with age.

The analysis of four domains of child development shows that 92.8 percent of children are on track in the physical domain, but much less on track in social-emotional (72.4 percent) and literacy-numeracy (55.4 percent) domains and slightly less in learning (87.6 percent) domains. In each individual domain except physical the higher score is associated with older children.

Table CD.5: Early child development index

Percentage of children age 36-59 months who are developmentally on track in literacy-numeracy, physical, social-emotional, and learning domains, and the early child development index score, by selected characteristics, RMI ICHNS, 2017

	Percentage of children age 36-59 months who are developmentally on track for indicated domains				Early child development index score[1]		Number of children age 36-59 months
	Literacy-numeracy	Physical	Social-Emotional	Learning	Percentage	P-value	
Total	55.4	92.8	72.4	87.6	78.9	--	350
Sex							
Male	57.3	95.0	69.5	87.7	79.6	--	178
Female	53.2	90.4	75.6	87.6	78.2		172
Area							
Urban	55.5	92.4	71.8	86.7	77.8	--	203
Rural	54.5	95.4	75.5	92.8	85.3		147
Age of child							
36-47 months	47.0	92.8	68.1	84.0	71.3	**	169
48-59 months	63.1	92.9	76.3	90.9	85.9		181
Caregiver's education							
None	--	--	--	--	--	--	5
Primary	39.2	87.7	64.2	75.6	67.5		81
Secondary	56.5	92.4	71.6	88.1	80.0		199
Higher	71.8	98.4	79.5	97.8	85.5		61
Wealth index quintile							
Poorest	48.5	94.8	73.4	89.3	83.6	--	138
Second	41.4	90.6	69.5	83.4	67.2		66
Middle	61.6	92.9	70.1	83.7	81.4		58
Fourth	54.4	88.5	77.3	95.5	84.6		40
Richest	70.9	96.4	73.9	90.1	81.8		48
Religion							
Assembly of God	44.9	86.5	74.8	86.9	78.3	--	55
Protestant	56.6	93.9	74.9	90.2	81.3		195
Catholic	46.9	96.6	65.7	85.8	72.7		27
Other	62.6	93.9	67.8	83.6	76.5		73
Mother's age at birth							
Less than 20 years	42.7	86.1	71.3	80.3	69.8	--	47
20-34 years	59.2	94.4	70.7	88.8	81.3		211
35-49 years	62.4	89.8	74.5	98.0	83.4		37
Maternal Parity							
1	62.5	98.0	84.2	80.3	75.0	--	48
2-3	56.0	90.3	69.5	87.0	79.5		147
4 or more	54.6	90.3	62.3	91.3	77.5		91

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 6.8 - Early child development index**

Children 36-59 months of age were assessed for developmentally on track in four domains:
Literacy-numeracy: Developmentally on track if at least two of the following are true: Can identify/name at least ten letters of the alphabet, Can read at least four simple, popular words, Knows the name and recognizes the symbol of all numbers from 1 to 10.
Physical: Developmentally on track if one or both of the following is true: Can pick up a small object with two fingers, like a stick or a rock from the ground, Is not sometimes too sick to play.
Social-emotional: Developmentally on track if at least two of the following are true: Gets along well with other children, Does not kick, bite, or hit other children, Does not get distracted easily.
Learning: Developmentally on track if one or both of the following is true: Follows simple directions on how to do something correctly, When given something to do, is able to do it independently.

MICS indicator 6.8 is calculated as the percentage of children who are developmentally on track in at least three of the four component domains (literacy-numeracy, physical, social-emotional, and learning).

Child Functioning

Table CF.1 provides an assessment of children 2-4 years of age with a functional difficulty in one of the eight domains: seeing, hearing, walking, finer motor, communication, learning, playing and controlling behaviour. A child was determined to have a functional difficulty if they had a lot of difficulty or cannot do an activity at all or answered a lot more for controlling behaviour. Prevalence of functional difficulty was low among children with 3.7 percent of children having at least one functional difficulty in any one domain. A higher percentage of children 49-59 months of age had at least one functional difficulty (6.9 percent) than children 24-35 months (3.1 percent) or 36-47 months (1.5 percent).

Table CF.1: Child functioning for children aged 2-4

Percentage of children aged 2-4 years with functional difficulty in at least one domain, by selected characteristics, RMI ICHNS, 2017

	Percentage of children aged 2-4 years who have functional difficulty for the indicated domains								Percentage of children with functional difficulty in at least one domain	Number of children aged 2-4 years
	Seeing	Hearing	Walking	Fine motor	Communication	Learning	Playing	Controlling behaviour		
Total	0.1	0.3	1.1	0.2	1.5	0.3	0.9	0.5	3.7	519
Sex										
Male	0.0	0.4	0.7	0.1	1.1	0.4	0.0	0.7	2.2	258
Female	0.2	0.2	1.5	0.3	1.8	0.3	1.7	0.2	5.3	261
Area										
Urban	0.0	0.3	1.1	0.0	1.5	0.3	0.9	0.3	3.5	295
Rural	0.6	0.5	0.8	1.2	1.5	0.8	0.8	1.6	5.1	224
Age										
24-35m	0.0	0.0	0.0	0.2	0.2	0.0	2.4	0.3	3.1	169
36-47m	0.0	0.2	0.1	0.1	0.9	0.1	0.1	0.4	1.5	184
48-59m	0.3	0.7	3.2	0.2	3.4	0.9	0.2	0.7	6.9	166
Caregiver's education										
No Education	--	--	--	--	--	--	--	--	--	7
Primary	0.0	0.0	2.0	0.0	2.5	0.0	0.0	0.4	4.9	112

Secondary	0.2	0.1	1.2	0.3	0.9	0.2	1.5	0.3	3.9	310
Higher	0.0	1.1	0.0	0.0	2.4	1.1	0.0	1.1	2.4	86
Wealth index quintile										
Poorest	0.5	0.4	0.7	1.0	2.1	0.7	0.7	1.4	5.3	209
Second	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Middle	0.0	0.0	3.2	0.0	1.5	0.0	2.0	0.0	6.8	84
Fourth	0.0	1.3	0.0	0.0	3.1	1.3	1.8	1.3	4.9	64
Richest	0.0	0.0	1.2	0.0	1.3	0.0	0.0	0.0	2.5	62

Functional difficulty is defined as follows:
For children aged 2-4, the definition includes “a lot of difficulty” and “cannot do at all” for all questions, and “a lot more” for the question on controlling behaviour.

Children with functional difficulties should receive appropriate assistive devices in a timely manner. Table CF.2 presents the percentage of children who use assistive devices and the percentage of children who use assistive devices who continue to have difficulty. In RMI, 15.1 percent of children 2-4 years wear glasses, 1.9 percent of children use a hearing aid and 0.6 percent of children use equipment or receive assistance for walking. Very few children (0.6 percent) have difficulty seeing when wearing their glasses. The sample size was too small for the number of children using hearing aids and using equipment or receiving assistance for walking to present prevalence of difficulty using these assistive devices.

Table CF.2: Use of assistive devices for children aged 2-4

Percentage of children aged 2-4 years who use assistive devices and have functional difficulty within domains of assistive devices, by selected characteristics, RMI ICHNS, 2017

	Percentage of children aged 2-4 years who:				Percentage of children aged 2-4 years using assistive devices who have difficulty:					
	Wear glasses	Use hearing aid	Use equip-ment or receive assistance for walking	Number of children aged 2-4 years	Seeing when wearing glasses	Number of children wearing glasses	Hearing when using hearing aid	Number of children using hearing aids	Walking when using equipment or receiving assistance	Number of children using equipment or receiving assistance for walking
Total	15.1	1.9	0.6	519	0.6	71	--	8	--	3
Sex										
Male	15.8	2.5	0.7	258	0.0	32	--	4	--	1
Female	14.5	1.3	0.6	261	1.3	39	--	4	--	2
Area										
Urban	16.3	2.1	0.7	295	0.0	50	--	6	--	2
Rural	9.0	0.9	0.4	224	--	21	--	2	--	1
Age										
24-35m	15.6	1.5	0.2	169	--	23	--	2	--	1

36-48m	11.7	1.0	0.0	184	--	21	--	2	--	0
49-58m	18.5	3.3	1.7	166	1.6	27	--	4	--	2
Caregiver's education										
No School	--	--	--	7	--	14	--	1	--	0
Primary	12.7	2.1	0.0	112	1.1	40	--	4	--	3
Secondary	14.1	0.9	1.0	310	--	16	--	3	--	0
Higher	22.3	5.0	0.0	86	0.6	70	--	8	--	3
Wealth index quintile										
Poorest	11.8	0.7	0.3	209	--	13	--	2	--	0
Second	12.6	1.7	0.0	100	--	18	--	1	--	1
Middle	24.4	1.9	1.5	84	--	8	--	1	--	0
Fourth	11.4	1.3	0.0	64	--	9	--	2	--	1
Richest	13.6	3.9	1.2	62	0.6	71	--	8	--	3

VIII. Literacy and Education

Literacy Among Young Caregivers

The Youth Literacy Rate reflects the outcomes of primary education over the previous 10 years or so. As a measure of the effectiveness of the primary education system, it is often seen as a proxy measure of social progress and economic achievement. In RMI ICHNS 2017, since only a mother's questionnaire was administered, the results are based only on female caregivers aged 15-24 years with a child under 5. Literacy is assessed on the ability of the respondent to read a short simple statement or based on school attendance.

The literacy rate is presented in Table ED.1. Table ED.1 indicates that 99.3 percent of young caregivers in RMI are literate and that literacy status varies slightly by area, education and age of the woman. In urban areas 99.1 percent of caregivers were literate compare to 100 percent of caregivers in rural areas.

Table ED.1: Literacy (young caregivers)

Percentage of women age 15-24 years who are literate, by selected characteristics, RMI ICHNS, 2017

	Percentage literate[1]	Cannot read at all	Number of women age 15-24 years	P-value
Total	99.3	0.7	164	--
Area				
Urban	99.1	0.9	94	--
Rural	100.0	0.0	70	
Education				
None	93.8	6.2	16	*
Primary	100.0	0.0	116	
Secondary	100.0	0.0	32	
Higher	99.3	0.7	164	
Age				
15-19	95.1	4.9	25	*
20-24	100.0	0.0	139	
Wealth index quintile				
Poorest	100.0	0.0	65	--
Second	96.9	3.1	32	
Middle	100.0	0.0	34	
Fourth	100.0	0.0	17	
Richest	100.0	0.0	16	
Religion				
Assembly of God	96.2	3.8	26	--
Protestant	100.0	0.0	85	
Catholic	100.0	0.0	16	
Other	100.0	0.0	37	

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 7.1**

Percentage of women age 15-24 years who are able to read a short simple statement about everyday life or who attended secondary or higher education are classified as literate.

School Readiness

Attendance to pre-school education is important for the readiness of children to school. Table ED.2 shows the proportion of children in the first grade of primary school (regardless of age) who attended kindergarten the previous year[36]. As only households with a child under 5 were included in the RMI ICHNS 2017, all indicators for education apply to children who live in a household with a child under 5 years only.

Overall, 92.8 percent of children who are currently attending the first grade of primary school attended kindergarten the previous year. The proportion among males is lower (87.6 percent) than females (97.5 percent) and higher in urban areas (94.3 percent) compared to 86.6 percent among children living in rural areas. The analysis takes into account all children attending first grade, regardless of their age. It is notable that the majority of children were older than 6 years, the entry age for first grade. High previous attendance of first graders in kindergarten, but low attendance of children in ECD services for children 3-4 years of age, indicate that children do universally attend kindergarten but enrol at a later age.

Table ED.2: School readiness

Percentage of children attending first grade of primary school who attended kindergarten the previous year, by selected characteristics, RMI ICHNS, 2017

	Percentage of children attending first grade who attended kindergarten in previous year[1]	Number of children attending first grade of primary school	P-value
Total	92.8	101	--
Sex			
Male	87.6	55	*
Female	97.5	46	
Area			
Urban	94.3	50	--
Rural	86.6	51	
Child Age			
5	--	3	**
6	100.0	34	
7	95.0	45	
8+	--	19	

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 7.2 - School readiness; SDG indictor 4.2.2**

The numerator includes children for whom: Currently attend primary school, grade 1 and attended preschool or ECD the previous year.
The denominator is the number of children attending first grade of primary school regardless of age.

36 The computation of the indicator does not exclude repeaters, and therefore is inclusive of both children who are attending primary school for the first time, as well as those who were in the first grade of primary school the previous school year and are repeating. Children repeating may have attended pre-school prior to the school year during which they attended the first grade of primary school for the first time; these children are not captured in the numerator of the indicator

Primary and Secondary School Participation

Universal access to basic education and the completion of pre-primary and primary education by the world's children is one of the Sustainable Development Goals. Education is a vital prerequisite for combating poverty, empowering women, protecting children from hazardous and exploitative labour and sexual exploitation, promoting human rights and democracy, protecting the environment, and influencing population growth.

Of children who are of primary school entry age (age 6) in RMI, 32.3 percent are attending the first grade of primary school (Table ED.3). Differentials are present by sex and urban-rural areas. Prevalence of boys' timely participation is 27.7 percent compared to 37.6 percent for girls. Children's participation to primary school is timelier in rural areas (41.5 percent) than in urban areas (30.9 percent).

Table ED.3: Primary school entry

Percentage of children of primary school entry age (6 years) entering grade 1 (net intake rate), by selected characteristics, RMI ICHNS, 2017

	Percentage of children of primary school entry age entering grade 1[1]	Number of children of primary school entry age	P-value
Total	32.3	123	--
Sex			
Male	27.7	67	--
Female	37.6	56	
Area			
Urban	30.9	77	--
Rural	41.5	46	

[1] MICS indicator 7.3 - Net intake rate in primary education

The denominator is the number of children who were of primary school entry age (6-years) at the beginning of the current (or the most recent) school year. This is established by rejuvenating children to the first month of the current (or most recent) school year by using information on the date of birth, if available, and information on when the current (or most recent) school year began. If the date of birth is not available, then a full year is subtracted from the current age of the child at the time of survey, if the interview took place more than 6 months after the school year started. If the latter is less than six months and the date of birth is not available, the current age is assumed to be the same as the age at the beginning of the school year.

The numerator includes those children in the denominator for whom attend either first or second grade. Grade 2 of primary school is accepted to take early starters into account.

Table ED.4 provides the percentage of children of primary school age 6 to 13 years who are attending primary or secondary school[37] and those who are out of school. The majority of children of primary school age are attending school (79.6 percent). However, 18.7 percent of the children are out of school, though primarily due to a very low attendance rate (34.4 percent) for children age 6, who appear to be starting late in school, as seen by a relatively high percentage attending pre-school. A total of 10 percent of children of primary school age were not attending preschool, primary or secondary school with higher prevalence in urban areas (11.4 percent) compared to 3.8 percent in rural areas.

37 Ratios presented in this table are "adjusted" since they include not only primary school attendance, but also secondary school attendance in the numerator.

Table ED.4: Primary school attendance and out of school children

Percentage of children of primary school age (6-13 years) attending primary or secondary school (adjusted net attendance ratio), percentage attending preschool, and percentage out of school, by selected characteristics, RMI ICHNS, 2017

	Male						Female						Total					
		Percentage of children:						Percentage of children:						Percentage of children:				
	Net attendance ratio (adjusted)	Not attending school or preschool	Attending preschool	Out of school[a]	Number of children	P-value	Net attendance ratio (adjusted)	Not attending school or preschool	Attending preschool	Out of school[a]	Number of children	P-value	Net attendance ratio (adjusted)[1]	Not attending school or preschool	Attending preschool	Out of school[a]	Number of children	P-value
Total	76.5	12.1	8.7	20.8	516	--	83.2	7.7	8.6	16.3	454	--	79.6	10.0	8.7	18.7	970	--
Area																		
Urban	73.4	14.3	9.3	23.5	271	***	82.0	8.2	9.4	17.5	238	*	77.4	11.4	9.3	20.7	509	***
Rural	89.8	2.5	6.2	8.7	245		88.6	5.4	5.3	10.7	216		89.2	3.8	5.8	9.6	461	
Age at beginning of school year																		
6	31.2	19.9	44.5	64.5	67	--	38.1	13.7	48.2	61.9	56	--	34.4	17.0	46.3	63.3	123	--
7	80.8	3.9	15.3	19.2	59		88.8	5.2	6.0	11.2	54		84.7	4.5	10.7	15.3	113	
8	87.6	12.4	0.0	12.4	53		86.7	8.8	3.9	12.8	67		87.1	10.4	2.2	12.6	120	
9	83.7	9.7	2.5	12.2	76		96.8	3.2	0.0	3.2	61		89.7	6.7	1.3	8.1	137	
10	85.5	12.5	2.0	14.5	78		83.7	14.8	1.0	15.8	55		84.7	13.5	1.6	15.1	133	
11	77.8	15.0	0.0	15.0	63		88.4	7.4	0.0	7.4	49		82.1	11.9	0.0	11.9	112	
12	87.5	10.5	0.0	10.5	63		97.1	2.9	0.0	2.9	54		92.0	7.0	0.0	7.0	117	
13	85.8	10.7	0.0	10.7	57		92.9	4.5	2.6	7.1	58		89.1	7.8	1.2	9.0	115	
Head of Household Gender																		
Male	77.3	12.1	8.8	20.9	371	--	82.9	7.2	9.6	16.9	332	--	80.0	9.8	9.2	19.0	703	--

Female	74.3	11.9	8.4	20.3	145		88.6	5.4	5.3	10.7	122		78.7	10.4	7.3	17.7	267	
Wealth index quintile																		
Poorest	82.4	8.7	8.2	16.9	242	--	83.1	10.5	5.7	16.3	197	--	82.7	9.5	7.1	16.6	439	--
Second	80.2	13.9	4.8	18.7	77		87.4	4.0	8.6	12.6	81		83.8	8.9	6.7	15.6	158	
Middle	68.9	13.2	8.9	22.1	74		75.0	10.7	12.3	23.1	66		71.8	12.0	10.5	22.6	140	
Fourth	66.4	22.8	10.8	33.6	54		83.8	7.3	8.9	16.2	61		75.6	14.5	9.8	24.4	115	
Richest	80.6	5.9	11.1	17.0	69		86.7	6.2	7.1	13.3	49		83.1	6.0	9.4	15.5	118	

[1] MICS indicator 7.4

[a] The percentage of children of primary school age out of school are those not attending school and those attending preschool

The adjusted primary school net attendance ratio (NAR) is the percentage of children of primary school age (as of the beginning of school year) who are attending primary or secondary school. Children of primary school age at the beginning of the school year currently attending primary or secondary school are included in the numerator (attendance to secondary school is included to take into account early starters). Children that did not attend school in the current school year, but have already completed primary school are also included in the numerator. All children of primary school age (at the beginning of the school year) are included in the denominator.

Ratios presented in this table are termed “adjusted” since they include not only primary school attendance, but also secondary school attendance in the numerator.

The percentage of children:
i) Not attending school are those who did not attend school or preschool in the current school year and have not completed primary school (ED5=2 and ED4<>last grade of primary school).
ii) Attending preschool are those who in the current school year have been attending preschool school (ED6A=0).
iii) Out of school children are the sum of i) and ii).

Children for whom it is not known whether they are attending school (ED5>2), for whom level of current attendance is not known (ED6A>3), or those who are likely misclassified as attending level(s) above secondary education (ED6A>2) are not considered out of school. This group should consist of very few cases (missing and inconsistent values). Therefore, the results in the NAR and Out of School columns do not necessarily sum to 100.

The age at the beginning of the school year is estimated by rejuvenating children to the first month of the (current or most recent) school year by using information on the date of birth (HL5), if available, and information on when the current (or most recent) school year began. If the date of birth is not available, then a full year is subtracted from the current age of the child at the time of survey (HL6), if the interview took place more than 6 months after the school year started. If the latter is less than six months and the date of birth is not available, the current age is assumed to be the same as the age at the beginning of the school year.

The table is based on a 6-year primary school system, for ages 6 to 11. This should be adapted in accordance with the country-specific primary school ages as indicated by ISCED.

The secondary school net attendance ratio is presented in Table ED.5[38]. Attendance is less than for primary school with only about half (48.1 percent) of the children attending school. Of the remaining half, most are attending primary school, but almost one out four children (22.6 percent) of secondary school age are completely out of school.

Age shows a strong positive correlation with being out of school. 17.9 percent of 14-year-old children and 17.1 percent of 15 years old children are out of school. This dramatically increases to 25.8 percent for children aged 16 and 29.4 percent for children aged 17. Attendance is higher in households with a male head of household (52.3 percent) compared to female (34.5 percent). Almost one of three children of secondary school age in the poorest households (32.7 percent) are out of school compared to 1 in 7 (14.0 percent) in the richest households.

Table ED.5 reflects the findings of Table ED.4 with late enrolment a contributing factor to low enrolment in both primary and secondary school. For children aged 14 years, only 18.8 percent were enrolled in secondary school or higher while the majority (65.5 percent) were attending primary school. High attendance of secondary school age children in primary school was also seen in older children with 1 in 4 children 15 years of age and 1 in 5 children 16 years of age attending primary school.

38 Ratios presented in this table are "adjusted" since they include not only secondary school attendance, but also attendance to higher levels in the numerator.

Table ED.5: Secondary school attendance and out of school children

Percentage of children of secondary school age (14-17 years) attending secondary school or higher (adjusted net attendance ratio), percentage attending primary school, and percentage out of school, by selected characteristics, RMI ICHNS, 2017

	Male					Female					Total				
		Percentage of children:					Percentage of children:					Percentage of children:			
	Net attend-ance ratio (adjusted)	Attending primary school	Out of school[a]	Number of children	P-value	Net attend-ance ratio (adjusted)	Attending primary school	Out of school[a]	Number of children	P-value	Net attend-ance ratio (adjusted)[1]	Attending primary school	Out of school[a]	Number of children	P-value
Total	46.7	32.3	20.9	168	--	49.8	26.6	24.7	141	--	48.1	29.8	22.6	309	--
Area															
Urban	48.3	30.6	21.2	95	--	49.2	26.3	25.8	89	--	48.7	28.6	23.3	184	--
Rural	38.7	41.5	19.8	73		53.8	28.3	17.9	52		44.9	36.0	19.0	125	
Age at beginning of school year															
14	7.3	79.5	13.3	48	--	30.6	51.1	22.6	40	--	18.8	65.5	17.9	88	--
15	58.6	27.1	14.3	45		51.0	28.4	20.6	34		55.2	27.7	17.1	79	
16	55.1	17.6	27.3	29		54.2	21.3	24.5	36		54.6	19.5	25.8	65	
17	59.8	12.5	27.7	46		67.4	0.0	32.6	31		62.5	8.0	29.4	77	
Head of Household Gender															
Male	50.1	33.1	16.8	131	*	55.3	23.2	23.2	102	--	52.3	28.9	19.5	233	*
Female	32.6	29.2	38.2	37		36.0	35.4	28.6	39		34.5	32.6	33.0	76	
Wealth index quintile															
Poorest	28.1	38.2	33.7	64	--	37.4	31.2	31.4	51	--	32.1	35.2	32.7	115	--
Second	59.1	26.3	14.6	37		57.2	21.3	26.5	28		58.3	24.2	19.6	65	
Middle	39.4	39.4	21.2	28		47.8	18.5	33.8	20		42.9	30.7	26.4	48	
Fourth	46.3	28.5	25.2	19		52.0	28.9	19.2	21		49.3	28.7	22.0	40	
Richest	56.1	30.1	13.8	20		51.9	33.9	14.2	21		54.1	31.9	14.0	41	

[1] MICS indicator 7.5 - Secondary school net attendance ratio (adjusted)

[a] The percentage of children of secondary school age out of school are those who are not attending primary, secondary, or higher education

The adjusted secondary school net attendance ratio (NAR) is the percentage of children of secondary school age (as of the beginning of the current or most recent school year) who are attending secondary school or higher (higher levels are included to take early starters into account). Children of secondary school age currently attending secondary school or higher are included in the numerator. Children that did not attend school in the current school year, but have already completed secondary school are also included in the numerator. All children of secondary school age at the beginning of the school year are included in the denominator.

Ratios presented in this table are termed “adjusted” since they include not only secondary school attendance, but also attendance to higher levels of education.

The percentage of children of secondary school age who are attending primary school should be used to complete the analysis for secondary school age children, including the adjusted secondary school net attendance ratio and the percentage of children of secondary school age out of school.

The percentage of children out of school are those who are not attending secondary school or higher, those who are not attending primary school, and those who have not already completed secondary school.

The age at the beginning of the school year is estimated by rejuvenating children to the first month of the (current or most recent) school year by using information on the date of birth, if available, and information on when the current (or most recent) school year began. If the date of birth is not available, then a full year is subtracted from the current age of the child at the time of survey, if the interview took place more than 6 months after the school year started. If the latter is less than six months and the date of birth is not available, the current age is assumed to be the same as the age at the beginning of the school year.

The percentage of children entering first grade who eventually reach the last grade of primary school is presented in Table ED.6. Of all children starting grade one, the majority (90.5 percent) will eventually reach grade 8. The survey included only questions on school attendance in the current and previous year. Thus, the indicator is calculated synthetically by computing the cumulative probability of survival from the first to the last grade of primary school, as opposed to calculating the indicator for a real cohort which would need to be followed from the time a cohort of children entered primary school, up to the time they reached the last grade of primary school. Repeaters are excluded from the calculation of the indicator, because it is not known whether they will eventually graduate. As an example, the probability that a child will move from the first grade to the second grade is computed by dividing the number of children who moved from the first grade to the second grade (during the two consecutive school years covered by the survey) by the number of children who have moved from the first to the second grade plus the number of children who were in the first grade the previous school year, but dropped out. Both the numerator and denominator exclude children who repeated during the two school years under consideration.

The percentage of children reaching the last grade of primary school is quite high across all background characteristics. Boys (87.3 percent) are less likely to reach primary grade 8 than girls (94.6 percent) and children in urban areas (87.1 percent) are less likely to reach primary grade 8 than children in rural areas (93.3 percent).

The primary school completion rate and transition rate to secondary education are presented in Table ED.7. The primary completion rate is the ratio of the total number of students, regardless of age, entering the last grade of primary school for the first time, to the number of children of the primary graduation age at the beginning of the current (or most recent) school year.

Table ED.7 shows that the primary school completion rate is 87.0 percent and 91.3 percent of the children who were attending the last grade of primary school in the previous school year were found to be attending the first grade of secondary school in the school year of the survey. The table also provides “effective” transition rate which takes account of the presence of repeaters in the final grade of primary school. This indicator better reflects situations in which pupils repeat the last grade of primary education but eventually make the transition to the secondary level. The simple transition rate tends to underestimate pupils’ progression to secondary school as it assumes that the repeaters never reach secondary school. The table shows that in total 92.7 percent of the children in the last grade of primary school are expected to move on to secondary school.

The primary school completion rate for boys is 101.8 percent compared to 72.4 percent for girls. The primary completion rate is higher in rural areas at 101.9 percent compared to urban areas at 74.2 percent.

Table ED.6: Children reaching last grade of primary school

Percentage of children entering first grade of primary school who eventually reach the last grade of primary school (Survival rate to last grade of primary school), by selected characteristics, RMI ICHNS, 2017

	Percent attending grade 1 last school year who are in grade 2 this school year	Percent attending grade 2 last school year who are attending grade 3 this school year	Percent attending grade 3 last school year who are attending grade 4 this school year	Percent attending grade 4 last school year who are attending grade 5 this school year	Percent attending grade 5 last school year who are attending grade 6 this school year	Percent attending grade 6 last school year who are attending grade 7 this school year	Percent attending grade 7 last school year who are attending grade 8 this school year	Percent who reach grade 8 of those who enter grade 1[1]
Total	99.1	97.6	99.2	98.5	100.0	97.8	97.9	90.5
Sex								
Male	98.3	98.5	98.5	97.4	100.0	97.5	96.4	87.3
Female	100.0	96.5	100.0	100.0	100.0	98.1	100.0	94.6
Area								
Urban	98.4	94.8	98.4	97.1	100.0	100.0	97.8	87.1
Rural	100.0	100.0	100.0	100.0	100.0	95.2	98.0	93.3

[1] MICS indicator 7.6

Children reaching the last grade of primary, also known as the survival rate to the last grade of primary school, is defined as the percentage of children attending the first grade of primary school who would be expected to reach the last grade of primary school, if current rates of transition from one grade of primary school to the next were applicable.

Since the survey collects information on the attendance of children to primary school only for two school years (the current school year and the previous school year), it is not possible to follow a real cohort of children entering primary school and reaching (or dropping out before they do so) the last grade of primary school. Therefore, calculations are carried out on the basis of a hypothetical cohort that is assumed to experience transition rates during the previous and current school years.

To calculate the first probability above, the number of children who were attending the first grade of primary school during the previous school year and moved on to the second grade of primary school in the current year are divided by the number of children who were in the first grade last year and graduated to second grade or dropped out of school. In short, this is the percentage of children who successfully moved from grade 1 to grade 2. Children who are repeating the first grade do not enter the calculation because it is not known whether they will eventually graduate.

The calculation of the other probabilities is similar: the number who graduated from one grade to another divided by the number who graduated or dropped out of that grade.

All probabilities are then multiplied together to obtain the cumulative probability of reaching the last grade among those who enter first grade.

Table ED.7: Primary school completion and transition to secondary school

Primary school completion rates and transition and effective transition rates to secondary school, by selected characteristics, RMI ICHNS, 2017

	Primary school completion rate[1]	Number of children of primary school completion age	Transition rate to secondary school[2]	Number of children who were in the last grade of primary school the previous year	Effective transition rate to secondary school	Number of children who were in the last grade of primary school the previous year and are not repeating that grade in the current school year
Total	87.0	115	91.3	69	92.7	68
Sex						
Male	101.8	57	87.5	32	87.5	32
Female	72.4	58	94.6	37	97.2	36
Area						
Urban	74.2	62	85.7	42	87.8	41
Rural	101.9	53	100.0	27	100.0	27

[1] MICS indicator 7.7 - Primary completion rate

[2] MICS indicator 7.8 - Transition rate to secondary school

The primary completion rate is the ratio of the total number of students, regardless of age, entering the last grade of primary school for the first time, to the number of children of the primary graduation age at the beginning of the current (or most recent) school year, calculated as: Primary completion rate = 100 * (number of children attending the last grade of primary school - repeaters) / (number of children of primary school completion age at the beginning of the school year).

Repeaters are those in the last grade of primary in both the current and previous school year. The denominator are children whose age at the beginning of the school year is equal to the age corresponding to the last grade of primary school.

The transition rate to secondary education is the percentage of children who were in the last grade of primary school during the previous school year and who are attending the first grade of secondary school in the current (or most recent) school year, calculated as: Transition rate to secondary education = 100 * (number of children in the first grade of secondary school who were in the last grade of primary school the previous year) / (number of children in the last grade of primary school the previous year).

The effective transition rate is similar to the transition rate, except that the denominator also excludes repeaters. The calculation is: 100 * (number of children in the first grade of secondary school who were in the last grade of primary school the previous year) / (number of children in the last grade of primary school the previous year who are not repeating the last grade of primary school in the current year).

The ratio of girls to boys attending primary and secondary education is provided in Table ED.8. These ratios are better known as the Gender Parity Index (GPI). Notice that the ratios included here are obtained from net attendance ratios rather than gross attendance ratios. The latter provide an erroneous description of the GPI mainly because, in most cases, the majority of over-age children attending primary education tend to be boys. When reporting the net attendance ratio (NAR), data from Tables ED.4 and ED.5 should be used for primary and secondary school attendance respectfully while Table ED.8 provides a measure of the gender parity index (GPI) for primary and secondary school.

The table shows that gender parity for primary school is at 1.04, indicating little difference in the attendance of girls and boys to primary school. However, the indicator increases to 1.20 for secondary education indicting a disadvantage among boys. The disadvantage of boys in secondary school is particularly pronounced in rural areas (1.49).

Table ED.8: Education gender parity

Ratio of adjusted net attendance ratios of girls to boys, in primary and secondary school, by selected characteristics, RMI ICHNS, 2017

	Primary school			Secondary school		
	Primary school adjusted net attendance ratio (NAR), girls	Primary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for primary school adjusted NAR[1]	Secondary school adjusted net attendance ratio (NAR), girls	Secondary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for secondary school adjusted NAR[2]
Total	85.2	81.7	1.04	49.3	41.1	1.20
Area						
Urban	81.9	74.2	1.10	48.3	46.3	1.04
Rural	88.9	89.9	0.99	50.9	34.3	1.49

[1] MICS indicator 7.9;

[2] MICS indicator 7.10;

The gender parity index (GPI) is the ratio of female to male adjusted net attendance ratios (primary or secondary). The primary and secondary adjusted net attendance ratios are presented in more detail in tables ED.4 and ED.5.

The percentage of girls in the total out of school population, in both primary and secondary school, are provided in Table ED.9. The table shows that at the primary level girls account for 40.8 percent of the out-of-school population. Girls' share increased to 47.4 percent, however, at the secondary level. In rural areas, girls compose slightly more than half of the out-of-school population at the primary level but only 39.0 percent at the secondary level. In urban areas, girls compose 39.6 percent of the out-of-school population at the primary level and almost half (48.7 percent) at the secondary level.

Table ED.9: Out of school gender parity

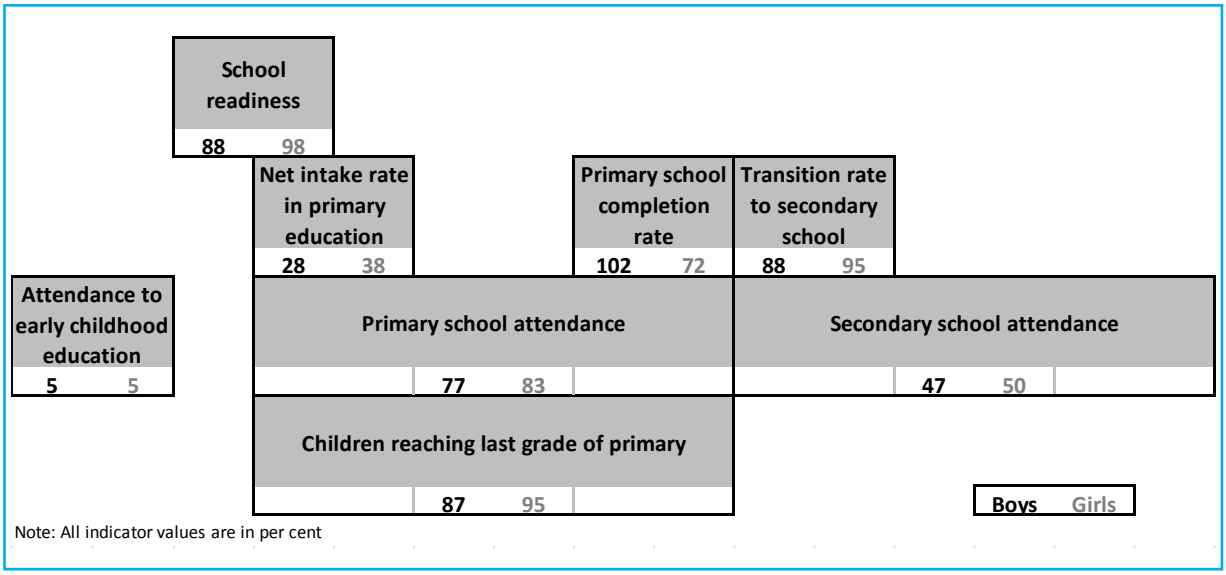
Percentage of girls in the total out of school population, in primary and secondary school, by selected characteristics, RMI ICHNS, 2017

	Primary school				Secondary school			
	Percentage of out of school children	Number of children of primary school age	Percentage of girls in the total out of school population of primary school age	Number of children of primary school age out of school	Percentage of out of school children	Number of children of secondary school age	Percentage of girls in the total out of school population of secondary school age	Number of children of secondary school age out of school
Total	18.7	970	40.8	148	22.6	309	47.4	67
Area								
Urban	20.7	509	39.6	105	23.3	184	48.7	41
Rural	9.6	461	51.5	43	19.0	125	39.0	26

The percentage of out of school children can be found in tables ED.4 and ED.5 for primary and secondary school ages, respectively. These form the denominators of the calculation of the percentage of girls in the total out of school population of primary and secondary school ages.

Figure ED.1 brings together all of the attendance and progression related education indicators covered in this chapter, by sex. Information on attendance to early childhood education is also included, which was covered in Chapter VIII, in Table CD.1.

Figure ED.1: Education indicators by sex, RMI ICHNS, 2017



IX. Child Protection

Birth Registration

Having a name and nationality is every child's right, enshrined in the Convention on the Rights of the Child (CRC) and other international treaties. Yet the births of around one in four children under the age of five worldwide have never been recorded.39 This lack of formal recognition by the State usually means that a child is unable to obtain a birth certificate. As a result, he or she may be denied health care or education. Later in life, the lack of official identification documents can mean that a child may enter into marriage or the labour market, or be conscripted into the armed forces, before the legal age. In adulthood, birth certificates may be required to obtain social assistance or a job in the formal sector, to buy or prove the right to inherit property, to vote and to obtain a passport. Registering children at birth is the first step in securing their recognition before the law, safeguarding their rights, and ensuring that any violation of these rights does not go unnoticed.40

The lack of adequate knowledge of how to register a child can present another major obstacle to the fulfilment of a child's right to identity. In RMI, however, data show that 62.5 percent of mothers of unregistered children reported that they know how to register a birth, which points to the existence of other major barriers to birth registration.

Table CP.1 reveals that the births of 83.8 percent of children under 5 in RMI have been registered. Overall, birth certificates were seen by enumerators for only 47.1 percent of children. The percentage of certificates observed was lower in rural areas (31.1 percent) compared to urban areas (50.2 percent). Prevalence of birth registration was higher in urban areas with 86.6 percent registered compared to 69.2 percent in rural areas. The prevalence was also much higher for children whose delivery was assisted by a skilled attendant (81.3 percent) compared to those assisted by a traditional birth attendant (57.5 percent). Prevalence of registration was statistically associated with wealth with lowest registration in the poorest (77.0 percent) and richest (76.6 percent) wealth index quintiles compared to the middle three quintiles which ranged from 91.9 percent in the second poorest quintile to 86.0 percent in the middle to 85.5 percent in the fourth quintile.

39 *UNICEF. 2014. The State of the World's Children 2015. UNICEF.*
40 *UNICEF. 2013. Every Child's Birth Right: Inequities and trends in birth registration. UNICEF.*

These findings are also presented in Figure CP.1.

Table CP.1: Birth registration

Percentage of children under age 5 by whether birth is registered and percentage of children not registered whose mothers/ caregivers know how to register birth, by selected characteristics, RMI ICHNS, 2017

	Children under age 5 whose birth is registered with civil authorities					Number of children under age 5	Children under age 5 whose birth is not registered	
	Has birth certificate		No birth certificate	Total registered[1]			Percent of children whose mother/ caregiver knows how to register birth	Number of children under age 5 without birth registration
	Seen	Not seen		Percent	P-value			
Total	47.1	32.3	4.4	83.8	--	881	62.5	185
Child Age								
0-5m	41.1	24.3	9.5	74.9	--	80	56.2	25
6-11m	56.8	22.3	4.2	83.3		111	68.3	27
12-23m	51.6	27.6	1.8	81.0		171	70.0	35
24-35m	46.7	32.6	4.9	84.2		169	58.7	38
36-59m	43.5	39.0	4.3	86.8		350	59.6	60
Child gender								
Male	46.5	33.3	5.3	85.1	--	455	67.2	96
Female	47.7	31.2	3.4	82.3		426	58.2	89
Area								
Urban	50.2	32.2	4.2	86.6	***	490	66.8	66
Rural	31.1	32.8	5.4	69.2		391	52.9	119
Caregiver's education								
None	--	--	--	--	**	12	--	2
Primary	36.3	31.2	6.9	74.3		181	37.9	50
Secondary	52.8	30.4	4.5	87.6		529	63.2	101
Higher	39.2	40.9	1.3	81.4		155	95.9	30
Wealth index quintile								
Poorest	37.7	35.4	3.9	77.0	**	370	48.7	103
Second	59.5	28.5	3.9	91.9		152	--	17
Middle	55.9	26.4	3.7	86.0		144	46.0	25
Fourth	39.7	39.0	6.7	85.5		108	--	15
Richest	37.4	34.9	4.2	76.6		107	91.2	25
Maternal Married Status								
Not married	58.2	27.9	2.9	88.9	*	333	53.1	46
Currently married	44.6	31.4	6.2	82.3		175	77.4	40
Cohabitating	37.4	37.2	5.2	79.7		281	60.3	74
Father in Household								
Yes	50.5	30.5	4.2	85.2	--	623	63.3	124
No	38.2	36.9	4.9	80.0		258	60.8	61
Assistance at delivery								
Skilled attendant	52.7	23.5	5.1	81.3	**	225	67.5	47
Traditional birth attendant	24.5	24.7	8.4	57.5		45	--	23

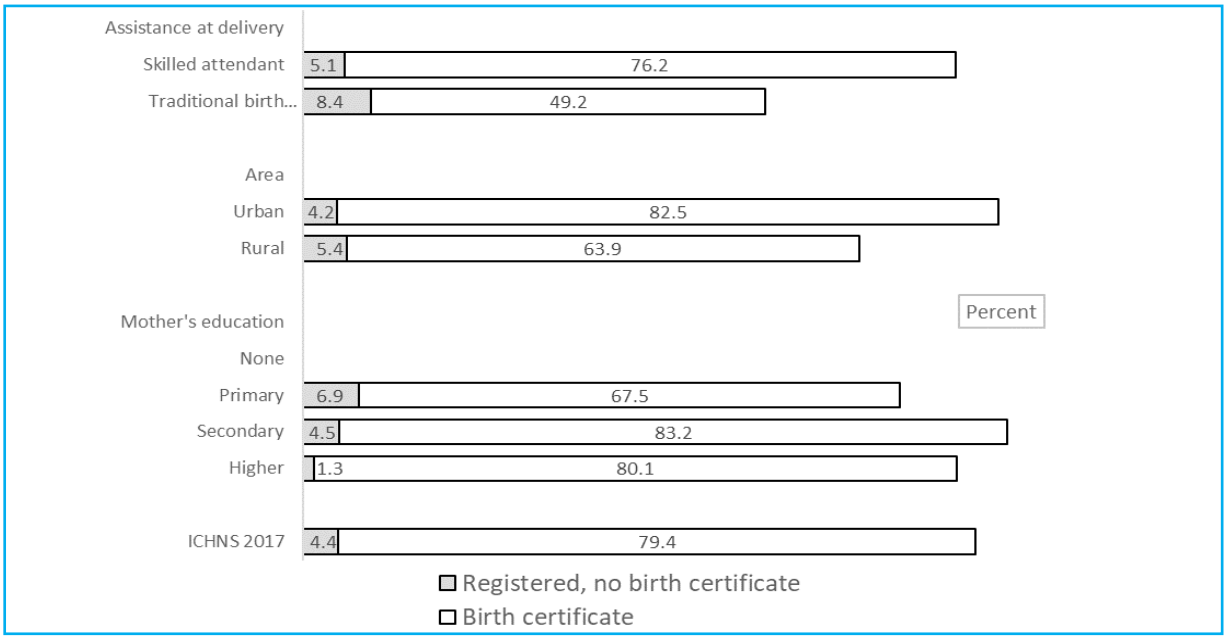
* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 8.1 - Birth registration**

Children age 0-59 months whose birth is registered includes:
- children whose birth certificate was seen by the interviewer,
- children reported to have a birth certificate that was not seen by the interviewer, and
- children who do not have a birth certificate but are reported to have been registered with civil authorities.

The denominator for children whose mothers/caregiver know how to register birth includes children who are not registered as well as children whose registration status is unknown.

Figure CP.1: Children under 5 whose births are registered, RMI ICHNS, 2017



Child Discipline

Teaching children self-control and acceptable behaviour is an integral part of child discipline in all cultures. Positive parenting practices involve providing guidance on how to handle emotions or conflicts in manners that encourage judgment and responsibility and preserve children's self-esteem, physical and psychological integrity and dignity. Too often however, children are raised through the use of punitive methods that rely on the use of physical force or verbal intimidation to obtain desired behaviours. Studies have found that exposing children to violent discipline have harmful consequences, which range from immediate impacts to long-term harm that children carry forward into adult life[41],[42],[43]. Violence hampers children's development, learning abilities and school performance; it inhibits positive relationships, provokes low self-esteem, emotional distress and depression; and, at times, it leads to risk taking and self-harm.

In the survey, respondents to the household questionnaire were asked a series of questions on the methods adults in the household used to discipline a selected child during the past month. In RMI, 64.0 percent of children aged 1-4 years were subjected to at least one form of psychological or physical punishment by household members during the past month.

For the most part, households employ a combination of violent disciplinary practices,

41 Straus, MA and Paschall MJ. 2009. *Corporal Punishment by Mothers and Development of Children's Cognitive Ability: A longitudinal study of two nationally representative age cohorts*. Journal of Aggression, Maltreatment & Trauma 18(5): 459-83.

42 Erickson, MF and Egeland, B. 1987. *A Developmental View of the Psychological Consequences of Maltreatment*. School Psychology Review 16: 156-68.

43 Schneider, MW et al. 2005. *Do Allegations of Emotional Maltreatment Predict Developmental Outcomes Beyond that of Other Forms of Maltreatment?*. Child Abuse & Neglect 29(5): 513–32.

reflecting caregivers' motivation to control children's behaviour by any means possible. While 30.6 percent of children experienced psychological aggression, about 61.6 percent experienced physical punishment. The most severe forms of physical punishment (hitting the child on the head, ears or face or hitting the child hard and repeatedly) are overall less common; 7.6 percent of children were subjected to severe physical punishment.

Boys were subjected to physical discipline (61.9 percent) at almost exactly the same prevalence as girls (61.4 percent). There was also no significant difference in the use of any violent discipline methods between urban (62.9 percent) and rural areas (69.7 percent). Prevalence of any violent discipline method was higher in older children with children aged 35-49 months at 70.0 percent compared to children 24-35 months at 62.3 percent and children 12-23 months at 52.4 percent. Mother's marital status was associated with violent discipline methods with children of mothers who were currently married (53.7 percent) having much lower prevalence than those who were not married (63.7 percent) or cohabitating (72.4 percent).

Table CP.5: Child discipline

Percentage of children age 1-4 years by child disciplining methods experienced during the last one month, by selected characteristics, RMI ICHNS, 2017

	Percentage of children age 1-4 years who experienced:						Number of children age 1-4years
	Only non-violent discipline	Psychological aggression	Physical punishment		Any violent discipline method[1]		
			Any	Severe	Percentage	P-value	
Total	26.6	30.6	61.6	7.6	64.0	--	690
Child Age							
12-23m	29.6	16.6	50.1	2.0	52.4	***	171
24-35m	28.1	25.8	60.3	8.2	62.3		169
36-59m	24.6	39.0	67.5	9.8	70.0		350
Child gender							
Male	28.2	32.8	61.9	10.2	63.9	--	354
Female	25.0	28.2	61.4	4.7	64.1		336
Area							
Urban	27.3	29.8	60.6	7.7	62.9	--	386
Rural	22.9	34.2	67.2	6.9	69.7		304
Caregiver's education							
None	--	--	--	--	--	**	11
Primary	17.5	32.2	75.2	8.2	76.7		143
Secondary	32.3	32.9	57.7	8.9	60.6		412
Higher	20.3	22.9	63.1	3.3	65.0		120
Wealth index quintile							
Poorest	24.9	40.3	65.2	9.7	69.5	--	286
Second	27.5	35.6	58.5	9.5	61.1		123
Middle	20.5	22.5	71.8	5.2	72.5		111
Fourth	31.5	31.5	58.1	5.7	59.3		84
Richest	30.4	23.2	52.9	7.2	55.9		86
Maternal Married Status							
Not married	28.5	35.3	60.3	11.3	63.7	*	246
Currently married	28.6	16.5	52.1	1.3	53.7		143
Cohabitating	21.1	33.5	70.9	8.2	72.4		221
Father in Household							
Yes	26.4	29.8	61.6	7.2	63.7	--	487

Table CP.5: Child discipline						
No	27.3	32.6	61.8	8.5	64.8	203

* P<0.05, ** P<0.01, *** P<0.001

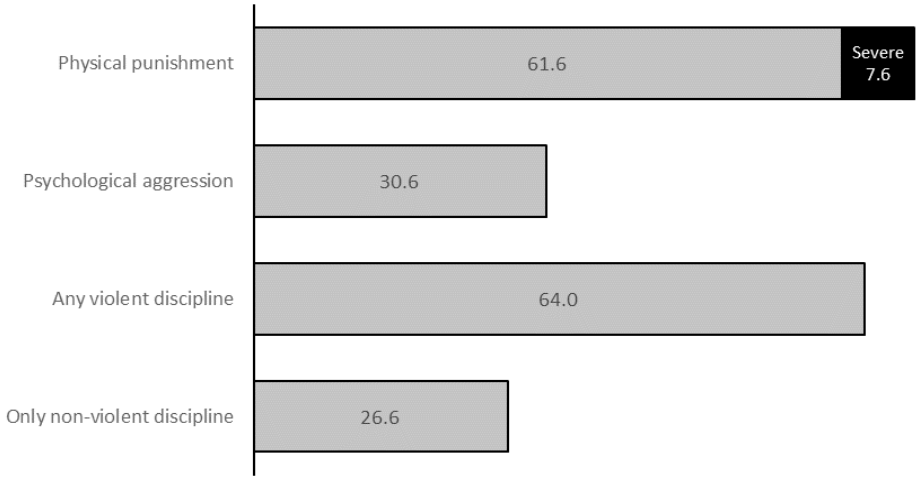
[1] MICS indicator 8.3 - Violent discipline

Columns of the table refer to the following:
(B) Only non-violent discipline: Took away privileges, forbade something the child liked or did not allow the child to leave the house, or explained why the child's behaviour was wrong only.
(C) Psychological aggression: Shouted, yelled at or screamed at the child or called the child dumb, lazy or another similar name.
(D) Any physical punishment: Shook the child or Spanked, hit or slapped the child on the bottom with bare hand or Hit the child on the bottom or elsewhere on the body with something like a belt, hairbrush, stick or other hard object or Hit or slapped the child on the face, head or ears or Hit or slapped the child on the hand, arm or leg or Beat the child up, that is hit him/her over and over as hard as one could.
(E) Severe physical punishment: Hit or slapped the child on the face, head or ears or beat the child up, that is hit him/her over and over as hard as one could.
(F) Any violent discipline method: Shook the child; Shouted, yelled at or screened at the child; Spanked, hit or slapped the child with bare hand; Hit the child on the bottom or elsewhere on the body with something like a belt, hairbrush, stick or other hard object; Called the child dumb, lazy or another similar name; Hit or slapped the child on the face, head or ears; Hit or slapped the child on the hand, arm or leg; or Beat the child up, that is hit him/her over and over as hard as one could.

Child disciplining methods in this table should be considered as lower bounds of the actual discipline methods used by the household members, since children who may have been separated from the household members (e.g. at boarding school) during the past month are considered not to have been subjected to any disciplining method.

Figure CP.2. summarizes child disciplining methods for children 12-59 months of age in RMI. In total, 64.0 percent of children were subjected to physical punishment and/or psychological aggression as a method of discipline while only 26.6 percent of children received only non-violent discipline. Concerningly, 7.6 percent of children 1-4 years of age were subjected to severe physical punishment where they were hit or slapped on the face, head or ears or hit repeatedly as hard as the adult could.

Figure CP.2: Child disciplining methods, children age 12-59 months of age, RMI ICHNS, 2017



Violent methods are common forms of discipline in RMI, Table CP.6 reveals that the majority of caregivers (69.1 percent) believe that physical punishment is a necessary part of child-rearing. Overall, respondents with low educational attainment are more likely to find physical punishment as necessary in disciplining children. Additionally, associated with higher prevalence of belief in the necessity of physical punishment were greater child age, wealth of the household, maternal status of not married or cohabitating, and a mother who does not engage in 4 or more activities with the child. Mothers who did not engage in 4 or more activities with their child had higher belief that physical punishment is a necessary part of child-rearing (83.5 percent) compared to mothers who engaged in 4 or more activities (65.2 percent).

Table CP.6: Attitudes toward physical punishment

Percentage of respondents to the child discipline module who believe that physical punishment is needed to bring up, raise, or educate a child properly, by selected characteristics, RMI ICHNS, 2017

	Respondent believes that a child needs to be physically punished		Number of respondents to the child discipline module
	Percent	P-value	
Total	69.1	--	690
Child Age			
12-23m	59.4	***	171
24-35m	69.3		169
36-59m	73.4		350
Child gender			
Male	72.3	--	354
Female	65.7		336
Area			
Urban	69.8	--	386
Rural	65.3		304
Caregiver's education			
None	--	**	11
Primary	78.5		143
Secondary	70.3		412
Higher	59.6		120
Wealth index quintile			
Poorest	69.3	*	286
Second	70.7		123
Middle	79.8		111
Fourth	58.3		84
Richest	63.3		86
Maternal Married Status			
Not married	68.9	*	246
Currently married	57.2		143
Cohabitating	74.9		221
Mother Engages in 4 or more activities with child			
Yes	65.2	**	179
No	83.5		120
Father in Household			
Yes	65.5	--	203
No	70.5		487

* P<0.05, ** P<0.01, *** P<0.001

Children's Living Arrangements

The CRC recognizes that "the child, for the full and harmonious development of his or her personality, should grow up in a family environment, in an atmosphere of happiness, love and understanding". Millions of children around the world grow up with without the care of their parents for several reasons, including due to the premature death of the parents or their migration for work. In most cases, these children are cared for by members of their extended families, while in others, children may be living in households other than their own, as live-in domestic workers for instance. Understanding the children's living arrangements, including the composition of the households where they live and the relationships with their primary caregivers, is key to design targeted interventions aimed at promoting child's care and wellbeing.

Table CP.14 presents information on the living arrangements and orphanhood status of children under age 18. A total of 70.5 percent of children age 0-4 years in RMI live with both their parents, 19.9 percent live with mothers only and 1.6 percent live with fathers only. A total of 7.2 percent of children live with neither of their biological parents while both of them are alive while 14.5 percent live with mothers only while the biological father is alive.

Few children have lost one or both parents. A total of 5.9 percent of children have only their mother alive and 0.5 percent of children have only their father alive. Table CP.14 shows that the percentage of children living with neither biological parents is the highest (11.5 percent) in the oldest child age group (36-59 months). Table CP.14 also shows that the percentage of children living with one or both parents dead is highest in children whose mother is less than 20 years of age (14.3 percent).

Table CP.14: Children's living arrangements and orphanhood

Percent distribution of children age 0-4 years according to living arrangements, percentage of children age 0-4 years not living with a biological parent and percentage of children who have one or both parents dead, by selected characteristics, RMI ICHNS, 2017

	Living with both parents	Living with neither biological parent				Living with mother only		Living with father only		Total	Living with neither biological parent[1]		One or both parents dead [2]		Number of children age 0-5 years
		Only father alive	Only mother alive	Both alive	Both dead	Father alive	Father dead	Mother alive	Mother dead		%	P-value	%	P-value	
Total	70.5	0.3	0.5	7.2	0.0	14.5	5.4	1.4	0.2	100.0	8.0	--	6.4	--	881
Child Age															
0-5m	68.2	0.0	0.0	0.8	0.0	20.8	10.3	0.0	0.0	100.0	0.8	*	10.3	--	80
6-11m	72.7	0.0	0.0	5.0	0.0	11.6	9.1	1.5	0.0	100.0	5.0		9.1		111
12-23m	77.2	0.0	0.4	6.7	0.0	9.9	4.4	1.4	0.0	100.0	7.1		4.9		171
24-35m	73.7	0.0	1.0	5.5	0.0	16.9	2.7	0.3	0.0	100.0	6.5		3.7		169
36-59m	65.9	0.6	0.6	10.1	0.1	15.2	5.0	2.0	0.4	100.0	11.5		6.7		350
Mother's age at birth															
Less than 20 years	53.9	0.0	0.0	0.0	0.0	0.0	31.8	14.3	0.0	100.0	0.0	--	14.3	**	112
20-34 years	81.4	0.0	0.0	0.0	0.0	0.0	13.9	4.7	0.0	100.0	0.0		4.7		559
35-49 years	90.6	0.0	0.0	0.0	0.0	0.0	8.1	1.3	0.0	100.0	0.0		1.3		92
Child gender															
Male	72.2	0.1	0.8	6.0	0.1	15.6	3.5	1.8	0.0	100.0	6.9	--	4.4	*	455
Female	68.7	0.4	0.3	8.4	0.0	13.4	7.5	0.9	0.4	100.0	9.1		8.6		426
Area															
Urban	71.0	0.2	0.4	6.7	0.0	14.3	5.9	1.4	0.2	100.0	7.3	*	6.6	--	490
Rural	68.3	0.7	1.1	9.4	0.3	15.9	3.1	0.9	0.3	100.0	11.5		5.5		391
Wealth index quintile															
Poorest	69.6	0.2	1.0	10.1	0.2	14.3	3.9	0.5	0.3	100.0	11.5	--	5.6	--	370
Second	71.3	0.0	1.5	5.7	0.0	11.5	7.2	2.3	0.6	100.0	7.2		9.2		152
Middle	70.4	0.3	0.0	5.9	0.0	12.2	8.6	2.6	0.0	100.0	6.1		8.8		144
Fourth	66.8	0.9	0.0	8.2	0.0	22.9	1.2	0.0	0.0	100.0	9.1		2.1		108
Richest	74.0	0.0	0.0	6.6	0.0	13.9	4.8	0.7	0.0	100.0	6.6		4.8		107
Maternal Parity															
1	63.4	0.0	0.0	0.0	0.0	22.7	13.9	0.0	0.0	100.0	0.0	--	13.9	***	182
2-3	80.1	0.0	0.0	0.0	0.0	16.1	3.9	0.0	0.0	100.0	0.0		3.9		384
4 or more	88.0	0.0	0.0	0.0	0.0	8.6	2.4	1.1	0.0	100.0	0.0		2.4		191

* P<0.05, ** P<0.01, *** P<0.001

[1] **MICS indicator 8.13 - Children's living arrangements**

[2] **MICS indicator 8.14 - Prevalence of children with one or both parents dead**

MICS definition for children who are not living with at least one biological parent includes either because the parents live elsewhere or because the parents are dead
The denominator in this table is children age 0-4 years in the list of household members.

The RMI Integrated Child Health and Nutrition Survey 2017 (ICHNS 2017) included a simple measure of one particular aspect of migration related to what is termed 'children left behind', i.e. for whom one or both parents have moved abroad. While the body of literature is growing, the long-term effects of the benefits of remittances versus the potential adverse psycho-social effects are not yet conclusive, as there is somewhat conflicting evidence regarding the impacts on children.

Besides presenting simple prevalence rates, the results of the ICHNS 2017 presented in Table CP.15 will greatly help fill the data gap on the topic of migration.

More than one in ten children (10.5 percent) age 0-4 has one or both parents living abroad; 7.4 percent with only the father living abroad, 0.9 with only the mother living abroad, and 2.2 percent with both parents living abroad.

There are non-significant differences between groups of children, as the percentage of at least one parent living abroad is higher in urban areas (11.0 percent) than rural areas (8.0 percent) and among children with caregivers who have higher education (14.0 percent). Prevalence of at least one parent living abroad was significantly associated with child age, at 14.0 percent of children 35-49 months, 12.2 percent of children 24-35 months, 7.0 percent of children 12-23 months and 1.9 percent of children 6-11 months but then higher again for children age 0-5 at 10.0 percent.

Table CP.15: Children with parents living abroad

Percent distribution of children age 0-4 years by residence of parents in another country, by selected characteristics, RMI ICHNS, 2017

	Percent distribution of children age 0-4 years: With at least one parent living abroad					Percentage of children age 0-4 years with at least one parent living abroad[1]		
	Only mother abroad	Only father abroad	Both mother and father abroad	With neither parent living abroad	Total	Percent	P-value	Number of children age 0-4 years
Total	0.9	7.4	2.2	89.5	100.0	10.5	--	881
Child Age								
0-5m	0.0	9.6	0.4	90.0	100.0	10.0	*	80
6-11m	0.0	1.5	0.4	98.1	100.0	1.9		111
12-23m	0.0	3.9	3.0	93.0	100.0	7.0		171
24-35m	0.2	9.3	2.7	87.8	100.0	12.2		169
36-59m	2.0	9.5	2.5	86.0	100.0	14.0		350
Child gender								
Male	1.4	7.3	1.0	90.3	100.0	9.7	--	455
Female	0.3	7.5	3.4	88.7	100.0	11.3		426
Area								
Urban	0.9	8.1	1.9	89.0	100.0	11.0	--	490
Rural	0.6	4.0	3.5	92.0	100.0	8.0		391
Caregiver's education								
None	--	--	--	--	--	--	--	12
Primary	3.4	5.1	0.5	91.1	100.0	8.9		181
Secondary	0.4	6.9	2.5	90.3	100.0	9.7		529
Higher	0.0	10.7	3.3	86.0	100.0	14.0		155
Wealth index quintile								
Poorest	0.5	6.9	2.7	90.0	100.0	10.0	--	370
Second	2.0	6.2	3.5	88.3	100.0	11.7		152
Middle	0.6	6.9	0.8	91.6	100.0	8.4		144
Fourth	1.1	12.5	1.8	84.7	100.0	15.3		108
Richest	0.0	5.4	2.3	92.3	100.0	7.7		107
Maternal Parity								
1	0.0	9.1	0.0	90.9	100.0	9.1	--	182
2-3	0.0	8.6	0.0	91.4	100.0	8.6		384
4 or more	0.0	5.1	0.0	94.9	100.0	5.1		191

* P<0.05, ** P<0.01, *** P<0.001

[1] MICS indicator 8.15 - Children with at least one parent living abroad

Conclusions and Recommendations

The Republic of the Marshall Islands is classified as an upper middle-income country with high literacy rates, steadily declining child mortality and maternal mortality rates and major improvements in infrastructure development with improved quality of housing, water and sanitation in the past 30 years. Despite this progress, the results of the ICHNS 2017 indicate that widespread nutrition challenges remain. The burgeoning double burden of malnutrition, manifested in a high prevalence of stunting in children under 5 years of age, high and widespread household food insecurity and a critically high prevalence of overweight and obesity in women, adversely impacts individual and family well-being at the community level, poses exorbitant economic costs on the health system, and negatively impacts the country's long-term development.

Prevalence of stunting in children under 5 years of age is classed as a high public health concern with prevalence of stunting in children 12-35 months of age critically high.

The ICHNS 2017 revealed that stunting is a high public health concern in RMI with 35 percent of children under 5 years of age stunted and 10 percent of children severely stunted. The prevalence of stunting was significantly associated with age and gender of the child with highest prevalence in children 12-35 months of age and boys having significantly higher prevalence of stunting (40 percent) compared to girls (31 percent, $P<0.01$). There was no significant difference in the prevalence of stunting by area with similar prevalence for both urban and rural areas. Child stunting is attributed to multivariate factors with the prevalence of child stunting in RMI associated with socio-economic status as well as maternal characteristics, child feeding practices, and child care practices.

Children from the poorest two wealth index quintiles had over twice the prevalence of stunting (44.5 percent, 42.0 percent) compared to the wealthiest children (20.0 percent, $P<0.01$). However, in even the wealthiest children, the prevalence of stunting surpasses the WHO's classification for a public health concern. Access to improved sanitation was associated with child stunting in RMI. While all households had access to improved drinking water in the survey, only 86.3 percent of households used improved sanitation facilities that were not shared, with 8.3 percent of households practicing open defecation. Use of unimproved sanitation facilities was associated with higher prevalence of stunting (45.1 percent) compared to children whose households used improved sanitation facilities (34.2 percent, $P<0.05$).

Maternal indicators such as maternal education achievement, married status, and short stature were strongly associated with child stunting. Prevalence of child stunting was inversely associated with caregiver education with highest prevalence of stunting among

children whose caregivers had primary education only (41.3 percent) or secondary education only (37.8 percent) compared to children whose mothers obtained higher education (20.9 percent, P<0.01). Children of mothers who were currently married had lower prevalence of stunting (26.4 percent) compared to children whose mothers were not married (41.1 percent) or cohabitating with their partner (35.0 percent, P<0.05).

Maternal short stature was high in RMI with 26.1 percent of mothers less than 150cm tall. Short stature in the mother impacts the infant's growth and development in utero through intrauterine growth restriction and contributes directly to low birthweight and early stunting in infants. In RMI, children whose mothers were less than 150cm tall had significantly higher prevalence of stunting (45.3 percent) compared to children whose mothers were 150-159cm (35.8 percent) or 160cm and taller (12.1 percent, P<0.01). Children who were born with low birthweight, representing 11.6 percent of all children, also had significantly higher prevalence of stunting (51.8 percent) compared to children with normal birthweight (33.1 percent) or high birthweight (26.4 percent, P<0.01).

Inadequate child feeding and care practices were associated with child stunting in RMI. Consumption of high calorie, low nutrient density foods was high among all children under 5 years of age, with consumption of sugar-sweetened beverages associated with higher prevalence of stunting (40.5 percent) compared to children who did not consume these foods (31.8 percent, P<0.05). Consumption of any junk foods, including sugar-sweetened beverages, sugary foods such as cakes, cookies and candy, and fried, fatty foods was also associated with higher prevalence of stunting (39.3 percent) compared to children who did not consume these foods (27.7 percent, P<0.01).

Poor child care and development practices were also associated with higher prevalence of stunting. Children who had 10 or more books at home had dramatically lower prevalence of stunting (6.7 percent) compared to children with 3 or more books (30.3 percent) or less than 3 books (37.5 percent, P<0.01). Children who were not stunted had higher father engagement in school readiness activities compared to children who were stunted (P<0.01) although there was no difference in maternal engagement or caregiver engagement between stunted and non-stunted children. Physical punishment was associated with child stunting with children who were severely punished having dramatically higher prevalence of stunting (66.8 percent) compared to children who were not severely punished (37.8 percent, P<0.01).

In RMI, high prevalence of stunting in children under 5 years of age is associated with maternal nutrition status, infant and young children feeding practices and care, development practices, and a multitude of influencing variables from the environment. The low prevalence of both underweight and wasting in children indicates that children receive sufficient calories in their diets, with stunting likely attributed to poor maternal nutrition during pregnancy, a presence of micronutrient deficiencies throughout infancy and young childhood, and poor child care and development practices.

Poor infant and young child feeing practices place children at risk of malnutrition in RMI.

While 87 percent of children ever receive breastmilk in RMI only 61 percent are put to the breast within one hour of birth and only 42 percent receive exclusive breastfeeding for the first six months of life indicating that the majority of infants in RMI do not receive optimum nutrition and immunity benefits from breast milk. The prevalence of continued breastfeeding in RMI was found to decrease gradually with child age with 41 percent of children receiving any breastmilk at 1 year of age and 34 percent of children receiving any breastmilk at 2 years of age.

Complementary feeding practices were poor in RMI with only 64 percent of infants 6-8 months of age receiving timely introduction of solid, semi-solid or soft foods during the previous day and poor dietary diversity and feeding frequency of children 6 to 23 months of age. Only 43 percent of children received minimum dietary diversity with foods from 4 or more foods groups in the previous day while only 61 percent of children received the minimum number of meals or snacks in the previous day. For breastfed children, only a quarter (26 percent) had a minimal acceptable diet while a third of non-breastfed children (33 percent) were provided a minimal acceptable diet.

Poor dietary diversity in children was attributed to low consumption of micronutrient-rich fruits and vegetables. While a large majority of children consumed iron rich foods with good consumption of meat and fish, only 13 percent of children 6-23 months and 16 percent of children 24-59 months consumed dark green leafy vegetables. Only a third of children 6-23 months (33 percent) and 51 percent of children 24-59 months of age received vitamin A rich fruits and vegetables. Notably, consumption of tea or coffee was high for young children with 1 in 5 (21 percent) children 6-23 months of age and over a third (36 percent) of children 24-59 months of age consuming tea or coffee. Tea and coffee inhibit the absorption of iron and zinc from the diet and can lead to anaemia in young children.

While consumption of nutrient rich foods was poor, young children had high consumption of low nutrient density foods with 51 percent of children 6-23 months and 83 percent of children 24-59 months of age consuming at least one junk food in the previous day. Consumption of sugar-sweetened beverages and sweet foods such as cakes, cookies, and candies was high with 65 percent of children 24-59 month consuming a sweet food and 57 percent of children 24-59 months of age consuming a sugar-sweetened beverage in the previous day.

Child feeding practices were significantly associated with area, wealth index quintiles, maternal education achievement, maternal nutrition status and maternal dietary diversity. Maternal overweight was associated with a lower prevalence of minimum acceptable

diet for children compared to children whose mothers were of normal weight (28 percent vs 43 percent, P<0.001). Additionally, maternal education was strongly associated with child feeding practices, with consumption of not only nutrient-rich foods increasing with maternal education but low nutrient density foods as well. Children whose mothers obtained a higher education level had the highest prevalence of minimum acceptable diet (42.5 percent) and high consumption of sugary foods (64.6 percent). Consumption of both nutritious foods and low nutrient density foods was significantly higher in urban areas compared to rural areas with urban children having higher consumption of green leafy vegetables and minimum dietary diversity as well as significantly higher consumption of sugar-sweetened drinks, sweet foods, and fried and fatty foods.

In RMI, less than half of infants are exclusively breastfed and receive water, milk, juice and complementary foods at an early age. These foods have lower nutrition value than breastmilk and can quickly lead to the development of micronutrient deficiencies, stunting and wasting. Children who receive poor infant and young child feeding practices are placed at further risk of micronutrient deficiencies and stunting. When complementary foods are introduced to children in RMI, they tend to be micronutrient poor with few fruits and vegetables provided to the child. While few children received dark green leafy vegetables or vitamin A rich fruits and vegetables, over half of children aged 6-23 months received sweet foods such as cakes, cookies or candy, sugar-sweetened beverages or other low nutrient density food in the previous day. Consumption of nutrient poor but calorie rich foods places children at risk of overweight and obesity while providing little nutrition value, worsening micronutrient deficiencies and stunting.

Prevalence of overweight in caregivers of children under 5 years of age is a critical public health concern for RMI with women consuming diets poor in nutrient rich fruits and vegetables but rich in junk foods.

The prevalence of overweight and obesity among mothers with children under 5 years of age in RMI has reached epidemic proportions and is a major public health challenge facing the country. Nearly three in four caregivers in RMI is overweight (73 percent) with 45 percent of caregivers obese. There was no association between prevalence of overweight and wealth index quintile or area, however maternal age, marital state and education were all strongly associated with overweight. Prevalence of overweight increased with maternal education achievement with 85 percent of caregivers with higher education overweight compared to 64 percent of caregivers with primary only education (P<0.01). Caregiver overweight also increased significantly with maternal age with 33 percent of caregivers under age 20 overweight compared to 94 percent of caregivers 40-49 years of age (P<0.001). Married women had the highest prevalence of overweight (83.4 percent) compared to never married women (67.6 percent) and cohabitating women (72.2 percent, P<0.05).

While prevalence of borderline short stature (height < 150cm) was high in caregivers (26 percent) there was no significant association between short stature and demographic or socio-economic factors in RMI. There was a general trend for short stature to be highest among the poorest women with primary level only or no education who lived in food insecure households and in rural areas.

Caregivers had very poor minimum dietary diversity (27 percent) indicating that women do not consume sufficient diets to prevent micronutrient deficiencies. There were stark differences in minimum dietary diversity by area with 31 percent of caregivers in urban areas and only 8 percent of caregivers in rural areas meeting minimum dietary diversity ($P<0.01$). Wealthier caregivers had higher dietary diversity (42 percent) compared to the poorest caregivers (18 percent). Similar to the findings in children, caregivers in urban areas consumed more nutritious foods such as dark green leafy vegetables, vitamin A rich vegetables, other fruits and vegetables but they also consumed more junk foods such as sweet foods and fried savoury snacks. Consumption of fruits and vegetables was very poor among caregivers in rural areas with only 3 percent consuming dark green leafy vegetables, 13 percent consuming vitamin A rich vegetables, 4 percent consuming other vegetables and 19 percent consuming other fruits. Consumption of meat, fish and starches was high in caregivers in both urban and rural areas.

There is a strong correlation between minimum dietary diversity in caregivers and minimum acceptable diet in their children. Of children with caregivers with minimum dietary diversity, 51 percent of children received a minimal acceptable diet, compared to 23 percent of children with caregivers whose diets did not meet minimum dietary diversity. The association was also present for specific food groups with 61 percent of children receiving vitamin A rich foods if their caregivers consumed vitamin A rich foods compared to only 25 percent of children whose caregivers did not consume vitamin A rich foods ($P<0.05$). Consumption of low nutrient density foods was correlated between caregivers and their children as well, with higher consumption of sugary foods in children whose caregivers consumed sugary foods (60 percent) compared to children whose caregivers did not consume sugary foods (28 percent, $P<0.05$).

In RMI, caregivers with children under 5 years of age have a critically high prevalence of overweight and obesity with poor dietary practices a major contributing factor to overweight. The prevalence of overweight is nearly universal in RMI, with high prevalence regardless of area, age, wealth index quintile, or education level. Dietary practices are poor for the majority of caregivers, however dietary diversity is lowest in rural areas where mothers have very poor consumption of vegetables and fruits. Consumption of low nutrient density foods is substantial in caregivers in both urban and rural areas, however consumption is higher in urban areas. There was a strong association between maternal and child diet on their dietary diversity, consumption of nutrient rich foods and dietary

quality. Maternal dietary choices frame the foods young children are fed. Meeting the standard of dietary diversity in both the mother and the child is necessary to prevent micronutrient deficiencies and stunting.

Receipt of targeted nutrition interventions to prevent micronutrient deficiency is poor among children and pregnant women.

RMI implements several targeted nutrition interventions to prevent micronutrient deficiencies in young children and pregnant women. Twice-yearly vitamin A supplementation is an essential intervention for children 6-59 months of age to reduce child mortality and morbidity as well as vitamin A deficiency. While WHO recommends coverage should be higher than 70 percent, coverage in RMI was 54 percent with coverage lower in rural areas, poorer households and male children. Complementary to the distribution of vitamin A supplementation, all children 12-59 months of age should receive deworming twice per year at the same time as VAS. In RMI, only 32 percent of children received deworming in the past 6 months.

Poor receipt and compliance with iron folic acid supplementation guidance for pregnant women can lead to maternal anaemia with reduced physical and cognitive growth in the infant during gestation and increased risk of maternal death during childbirth. Per WHO recommendations, all pregnant women should receive daily supplementation with iron and folic acid, with women consuming at least 90 iron folic acid supplements during their pregnancy. Of mothers in RMI with a child under 2 years of age, only 67 percent received iron folate supplementation during their last pregnancy and only 26 percent received 90 or more iron folate tablets.

Pregnant women and young children have high nutrient requirements to meet their rapid growth needs. Receipt of vitamin A supplementation and deworming for children and iron folic acid supplementation for pregnant women prevents against deficiency and can have long-term benefits for cognitive and physical development in children. As previous surveys indicate that both vitamin A deficiency and anaemia are public health concerns in RMI, coverage of essential programmes such as vitamin A supplementation and deworming to children and iron folic acid supplementation to pregnant women needs to be strengthened in order to prevent deficiencies in these targeted population groups.

Poverty reduction strategies are an integral component to reduce malnutrition in RMI with a focus on rural areas.

Despite the high prevalence of overweight and obesity among mothers in RMI, the ICHNS 2017 revealed that food insecurity is a major problem in the country, 40 percent of households with a child under 2 years of age experienced some level of food insecurity

and 1 in 5 households (20 percent) had severe food insecurity. The ICHNS 2017 revealed marked socio-economic disparities in food security status, with 51 percent of the poorest households having some level of food insecurity and 28 percent of the poorest households severely food insecure.

The term food security involves all household members so the findings of the ICHNS 2017 leave unclear which household members are disproportionately affected by food insecurity in RMI. Further understanding is needed in order to target programmes to ensure adequate diets are available and accessible to the most vulnerable individuals.

Dietary approaches are key to address high prevalence of malnutrition in RMI, however nutrition-sensitive approaches are necessary to reduce prevalence of inflammation, infection and disease in children which contributes to stunting and micronutrient deficiencies. Universal access to improved sanitation facilities is required to reduce repeated infections and is recommended as an essential part of RMI's comprehensive nutrition strategy.

While access to improved sources of drinking water was universal in RMI, only 86.3 percent of households with a child under 5 used improved sanitation with 8.3 percent of all households practicing open defecation. Use of poor sanitation or no facility was highest in rural areas with over 1 in 3 households (34.7 percent) practicing open defecation and only 58.4 percent of rural households having access to improved sanitation. There were marked differences in the practice of open defecation and household wealth with 72.8 percent of all households we practiced open defecation falling under the poorest wealth index quintile. There was a significant association between child stunting and practice of open defecation in RMI. The prevalence of stunting was 45.1 percent in households where open defecation was practiced compared to 34.2 percent in households with toilet facilities ($P<0.05$).

Nearly all households had a specific place for handwashing where water and soap or other cleansing agent were present (91.7 percent), however only a third of households (32.2 percent) had a fixed handwashing facility in the dwelling. The majority of households had a fixed handwashing facility in the yard or plot (31.3 percent) or used a bucket or a kettle for handwashing (34.2 percent). There was an association between the type of handwashing facility in a household and child stunting with the lowest prevalence of stunting in households with a fixed handwashing facility in the dwelling (28.2 percent) compared to households who used a bucket or kettle for handwashing (39.6 percent, $P<0.05$).

Ensuring universal access to food security, improved sanitation and hygiene through poverty reduction strategies is a critical nutrition-sensitive component for reducing the burden of malnutrition in RMI.

Summary

The ICHNS 2017 Final Report presents a “report card” on RMI’s nutrition situation, highlighting the specific nutrition concerns where attention is required. Analysis of the ICHNS 2017 data reveals that malnutrition is high in RMI, with stunting in children and overweight in mothers identified as national public health concerns. Additionally, while micronutrient status was not measured in the survey, poor dietary quality of both children and their mothers indicates that prevalence of micronutrient deficiencies is high and universal.

While the historic reduction in morbidity and improved well-being in RMI are a victory, the potential increases in productivity and intellectual capacity due to reduction of malnutrition in children and their mothers are substantial additional benefits not to be overlooked. It is easy to imagine the positive effect a child can have on a household when he or she grows up to his or her full productive capability. When we extrapolate that to a town, to an area and to the national scale we can start to imagine how increases in health and well-being and improvements in intellectual capacity at the population level can multiply recursively through increased creativity, motivation and drive. These health improvements can ultimately reverse a cycle of dependence and can fuel a cycle of increased productivity, economic development and prosperity.

APPENDICES

Appendix A. Sample Design

The primary objective of the sample design for the RMI ICHNS 2017 was to produce statistically reliable estimates of most indicators, at the national level and for urban and rural areas. Urban and rural areas were defined as the sampling strata.

A multi-stage, stratified cluster sampling approach was used for the selection of the survey sample.

Sample Size and Sample Allocation

Child nutrition status has not been previously measured in RMI with the primary variables of interest, namely stunting, wasting, and overweight in young children and short stature, underweight and overweight in mothers of young children unknown. To obtain a conservative sample size for the survey, an estimated prevalence of stunting at 20 percent in the population was used. The formula for calculating the final sample size taking into account non-response was:

$$n = \frac{DEFF^2 \times ((1/P - 1)/\alpha^2)}{(Ri \times Rh \times d)}$$

Where:
N= *sample size in households*
DEFF= *design effect*
P= *estimated proportion*
α = *relative standard error*
Ri= *individual response rate*
Rh= *household response rate*
d= *number of eligible individuals per household*

Using an absolute precision of 6 percent, a 95 percent confidence interval, a design effect of 1.5, a 98 percent household response rate and a 95 percent individual response rate, the sample size per stratum was 270 children 0-59 months of age. The sample was rounded up to 300 children 0-59 months of age for each urban and rural stratum. This sample provided a 95 percent CI for stunting if 20 percent prevalence between 14.5 percent to 25.5 percent for the urban and rural strata and between 16.1 percent- 23.9 percent for the national strata.

A total of 50 clusters and 600 households were randomized selected nationwide with 25 clusters and 300 households in urban areas and 25 clusters and 300 households in rural areas. In each cluster, 12 households with children 0-59 months of age were randomly selected from household lists developed prior to the survey. For each sampled child aged 0-59 months targeted for the child questionnaire, their respective mothers or caregivers were selected for the maternal questionnaire and household questionnaire.

Sampling Frame and Selection of Clusters

The 2011 census frame with 2017 population projections was used for the selection of clusters. Census enumeration areas were defined as primary sampling units (PSUs), and were selected from each of the sampling strata by using systematic PPS (probability proportional to size) sampling procedures, based on the number of households in each enumeration area from the 2011 Population and Housing Census frame. The first stage of sampling was thus completed by selecting the required number of enumeration areas from urban and rural strata.

The atolls of Kwajalein and Majuro were selected for urban areas while the atolls of Allinglaplap, Ailuk, Arno, Aur, Bikini, Ebon, Enewetak, Jabat, Jaluit, Kli, Lae, Lib, Likiep, Maloelap, Mejit, Mili, Namdrik, Namu, Rongelap, Ujae, Ujelang, Utrik, Wotho, Wotje were selected for rural areas. To ensure that the minimum number of 12 children per cluster were available for randomized clusters, only islands with a total population greater than 200 were included in PPS sampling. 25 clusters were selected for both urban and rural strata. Final selected clusters are presented in Table SD.1.

Table SD.1: Allocation of Sample Clusters (Primary Sampling Units) to Sampling Strata

	Population (2017 Estimates)			Number of Clusters		
	Total	Urban	Rural	Total	Urban	Rural
Total	55,236	40,736	14,500	50	25	25

Name of Atoll	Name of Island	Projected Population 2017	Number of Urban Clusters	Number of Rural Clusters
Kwajalein	Ebeye Zone 1	2438	2	
	Ebeye Zone 2	2132	1	
	Ebeye Zone 3	1525	1	
	Ebeye Zone 4	2008	1	
	Ebeye Zone 5	1888	2	

Majuro	Rita 1	1757	1
	Rita 2	2174	2
	Jenrok	2311	1
	Downtown	1341	1
	Uliga	1033	1
	Small Island	1508	1
	Delap 2	1288	1
	Delap 3	1882	1
	Delap 4	1924	2
	Jable/Long Island	542	1
	Long Island	1284	1
	Rairok	1236	1
	Ajeltake	1374	1
	Ajeltake/Woja	945	1
	Laura 2	982	1
	Ejit	267	1
Ailinglaplap	Jeh	293	1
	Woja	503	1
	Bouj	229	1
	Airok	274	1
Ailuk	Ailuk	310	1
Arno	Ulien	201	1
Aur	Tabal	233	1
Ebon	Toka	222	1
Enewetak	Enewetak	690	2
Jaluit	Jabwor	931	2
	Jaluit	288	1
Kili	Kili	569	2
Lae	Lae	344	1
Mejit	Mejit	362	1
Mili	Mili	239	1
Namdrik	Namdrik	528	2
Namu	Majkin	315	1
Ujae	Ujae	378	1
Utrik	Utrik	452	1
Wotje	Wotje	751	2

Large enumeration areas that contained more than one cluster were segmented. Enumeration areas that were subdivided into smaller segments include Rita 2 and Delap 4 in Majuro, Ebeye zone 1 and Ebeye Zone 5 in Kwajalein; Kili, Jabwor, Enewetak, Namdrik and Wotje in the outer islands.

The enumeration areas were segmented based on well-defined landmarks and taking into consideration that the segments were roughly of equal size, if feasible.

Listing Activities

Since the sampling frame (the 2011 census) was not up-to-date, a new listing of households was conducted in all the sample enumeration areas prior to the selection of households. For this purpose, listing teams were formed who visited all of the selected enumeration areas and listed all households with a child under 5 years of age in the enumeration areas.

The main objective of the household listing operation was to create a complete and updated list of households for all selected clusters, so that the sampled households can represent the total population. This list then served as a sampling frame for the final selection of households during the second stage of sampling.

One-day orientation including piloting was provided to the enumerators on how to conduct the mapping and household listing. A total of 20 enumerators were trained to do the household listing. The household listing was conducted by teams of 3 enumerators. Two enumerators were responsible for the numbering and tagging of households; and the third member was responsible for collecting household details including name of the head of the household, total number of family members and number of children under 5. The exercise was undertaken with guidance and overall supervision from EPPSO and survey supervisors and in collaboration with the closest health centre staff and village chiefs.

During the household listing operation, each selected cluster was visited to update the household listing. The following steps were undertaken:

- Review and update the existing map of the cluster. Specifically, the teams update the new and old structures and possible hidden structures
- Record on the listing forms description of every structure together with details of the household and presence of children under 5 in the households

Maps of the selected clusters prepared by the EPPSO for the 2011 RMI Census were used as a reference for the household listing operations. The cluster maps were reviewed to examine key landmarks and boundaries. Online google earth (https://www.google.com/earth/) images for each selected cluster were examined with the census maps to verify boundaries, landmarks, abolished structures and new structures. Hard copies of the google maps were printed and were cross checked and validated by the EPPSO technical team. The validated maps for each cluster were printed and distributed to each team. Electronic versions of the cluster maps were also provided to the teams.

Information from the household listing was collected using digital tablets which included GPS coordinates of each household in the cluster. The collected data were synced online and maps were created using the CartoDB online application (https://carto.com/). CartoDB is an online interphase that generates GPS collected information into an online map. The maps generated were cross-checked with the original cluster maps by EPPSO for accuracy.

Selection of Households

In the selected enumerator areas (clusters) listed in Table SD.1, a complete list of all occupied residential households was obtained by the survey enumerators from the household listing activity. All private households within the selected village or enumeration area (EA) was listed and recorded along with the contact information of the head of the household, number of children under 5 and total number of household members. Households that did not have children under 5 years were excluded and only households with children under 5 were included in the listing. This listing was used for random selection of households with children under 5 from selected enumeration areas.

Two separate approaches were undertaken for the household listing in selected urban and rural clusters:

a) Household listing was implemented by survey teams in advance of the survey for the 18 selected clusters in Majuro

b) Household listing was conducted immediately prior to the survey data collection for the remaining 7 clusters m in Ebeye and in the 25 outer rural atolls. For the selected clusters in Ebeye and outer islands, the household listing was conducted by the survey enumerators in collaboration with the health staff from the closest health centres on these islands.

From the total updated household list, 12 households with children under 5 were randomly selected using the systematic random selection procedure. All occupied residential households with a child 0-59 months of age were numbered sequentially beginning with 1 and continuing to the total number of households in the cluster. A sampling interval was calculated by dividing the total number of applicable households by 12 and a random number was generated through www.random.org using 1 as the starting number and the total number of households as the maximum. The first household generated was selected as the random number with additional 11 households selected by adding the sampling intervals to the generated random number until all 12 households were selected. In some clusters, where there were less than 12 households with U5 children the teams were instructed to interview all the households with child under 5.

Several challenges were faced with the household listing and household selection

activities. In a few clusters specifically in Majuro, it was found that some of the selected households did not have children under 5 and hence had to be excluded. This was because at the time of the household listing, the caregivers had provided the incorrect age of the child. As there was a time lapse from the time of household listing to actual survey implementation, a few households had moved away permanently either to another location within Majuro or to another island or had moved to another country. A series of home visits and phone call follow-ups were made to ascertain that the households had moved. For those households that had moved permanently, reserve household was randomly selected as replacement. This was not an issue for Ebeye and outer islands.

Calculation of Sample Weights

The RMI ICHNS 2017 sample is not self-weighting. Essentially, by allocating equal numbers of households to urban and rural areas, different sampling fractions were used in each area since the sizes of the areas varied. For this reason, sample weights were calculated and these were used in the subsequent analyses of the survey data.

The major component of the weight is the reciprocal of the sampling fraction employed in selecting the number of sample households in that particular sampling stratum (*h*) and PSU (*i*):

$$W_{hi} = \frac{1}{f_{hi}}$$

The term f_{hi}, the sampling fraction for the ***i-th*** sample PSU in the ***h-th*** stratum, is the product of probabilities of selection at every stage in each sampling stratum:

$$f_{hi} = p_{1hi} \times p_{2hi} \times p_{3hi}$$

where p_{shi} is the probability of selection of the sampling unit at stage ***s*** for the ***i-th*** sample PSU in the ***h-th*** sampling stratum. Based on the sample design, these probabilities were calculated as follows:

$p_{1hi} = \frac{n_h \times M_{hi}}{M_h}$,

n_h = number of sample PSUs selected in stratum *h*
M_{hi} = number of households in the 2010 Census frame for the *i-th* sample PSU in stratum *h*
M_h = total number of households in the 2010 Census frame for stratum *h*

p_{2hi} = proportion of the PSU listed the *i-th* sample PSU stratum *h* (in the case of PSUs that were segmented); for non-segmented PSUs, $p_{2hi} = 1$

$p_{3hi} = \frac{\emptyset}{M'_{hi}}$

M'_{hi} = number of households listed in the *i-th* sample PSU in stratum *h*

Since the number of households in each enumeration area (PSU) from the 2011 Census frame with updated 2017 population projections used for the first stage selection and the updated number of households in the enumeration area from the listing are generally different, individual overall probabilities of selection for households in each sample enumeration area (cluster) were calculated.

A final component in the calculation of sample weights takes into account the level of non-response for the household and individual interviews. The adjustment for household non-response in each stratum is equal to:

$$\frac{1}{\boldsymbol{R}_{h}}$$

where RR_h is the response rate for the sample households in stratum ***h***, defined as the proportion of the number of interviewed households in stratum ***h*** out of the number of selected households found to be occupied during the fieldwork in stratum ***h***.

Similarly, adjustment for non-response at the individual level (caregivers and under 5 children) for each stratum is equal to:

$$\frac{1}{\boldsymbol{R}_{h}}$$

where RR_h is the response rate for the individual questionnaires in stratum ***h***, defined as the proportion of eligible individuals (caregivers and under 5 children) in the sample households in stratum ***h*** who were successfully interviewed.

After the completion of fieldwork, response rates were calculated for each sampling stratum. These were used to adjust the sample weights calculated for each cluster. Response rates in the RMI ICHNS 2017 are shown in Table HH.1 in this report.

The non-response adjustment factors for the individual caregiver and under 5 questionnaires were applied to the adjusted household weights. Numbers of eligible caregivers and under 5 children were obtained from the roster of household members in the Household Questionnaire for households where interviews were completed.

The design weights for the households were calculated by multiplying the inverse of the probabilities of selection by the non-response adjustment factor for each enumeration area. These weights were then standardized (or normalized), one purpose of which is to

make the weighted sum of the interviewed sample units equal to the total sample size at the national level. Normalization is achieved by dividing the full sample weights (adjusted for nonresponse) by the average of these weights across all households at the national level. This is performed by multiplying the sample weights by a constant factor equal to the unweighted number of households at the national level divided by the weighted total number of households (using the full sample weights adjusted for nonresponse). A similar standardization procedure was followed in obtaining standardized weights for the individual caregiver and under 5 questionnaires.

Sample weights were appended to all data sets and analyses were performed by weighting households, women, or under 5s with these sample weights.

Table SD.2: Calculated sample weights for households, caregivers and children

Cluster	Normalized Household Weight	Normalized Caregiver Weight	Normalized Child Weight
1	1.496992	1.450944	1.430566
2	1.496992	1.450944	1.430566
3	2.618778	2.538224	2.502575
4	1.872197	1.814607	1.789122
5	2.465633	2.389790	2.356226
6	1.159435	1.123770	1.107987
7	1.159435	1.123770	1.107987
8	2.158067	2.091684	2.062308
9	1.334913	1.293851	1.275679
10	1.334913	1.293851	1.275679
11	2.838286	2.750979	2.712343
12	1.646308	1.595667	1.573256
13	1.268566	1.229544	1.212276
14	1.851777	1.794816	1.769609
15	1.581221	1.532583	1.511058
16	2.311212	2.240119	2.208657
17	1.18113	1.144798	1.128720
18	1.18113	1.144798	1.128720
19	0.66618	0.645689	0.636620
20	1.577393	1.528872	1.507399
21	1.517411	1.470735	1.450079
22	1.687146	1.635249	1.612283
23	1.160073	1.124389	1.108597
24	1.206016	1.168919	1.152502
25	0.327985	0.317896	0.313432
26	0.359816	0.348748	0.328587
27	0.617684	0.598684	0.564075
28	0.280766	0.272129	0.256398
29	0.336919	0.326555	0.307677
30	0.38031	0.368611	0.347302
31	0.246308	0.238732	0.224931
32	0.285888	0.277094	0.261075
33	0.273108	0.264708	0.249405
34	0.423701	0.410668	0.386927
35	0.423701	0.410668	0.386927
36	0.571741	0.554154	0.522119
37	0.571741	0.554154	0.522119
38	0.35351	0.342635	0.322828
39	0.349681	0.338925	0.319332
40	0.349681	0.338925	0.319332
41	0.422425	0.409431	0.385762
42	0.44412	0.430459	0.405575
43	0.293528	0.284499	0.268052
44	0.324157	0.314186	0.296023
45	0.324157	0.314186	0.296023
46	0.386691	0.374796	0.353130
47	0.46454	0.450250	0.424222
48	0.55515	0.538074	0.506968
49	0.461349	0.447158	0.421308
50	0.461349	0.447158	0.421308

Appendix B. List of Personnel Involved in the Survey

Technical Working Group	
Mailynn Konelius	Deputy Secretary of Health
Francyne Wase-Jacklick	Assistant Secretary Office of Health Planning, Policy and Statistics
Daisy Pedro	Immunization Program Manager
Frederick de Brum	Director of EPPSO
Herokko Neamon	Public Health Chief Nurse
Charles Lomae	Vaccine, Storage and Handling Nurse Supervisor
Caroline Johnny	MCH, Family Planning and Reproductive Health Coordinator
John Henry	EPPSO Senior Statistician
Carolynn Neamon	Statistics Specialist
Joyceline R. Mellan	Statistics Specialist

Survey Consultants	
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Jessica Blankenship	UNICEF EAPRO Consultant

Survey Coordinators	
Herokko Neamon	Public Health Chief Nurse
Charles Lomae	Vaccine, Storage and Handling Nurse Supervisor
Caroline Johnny	MCH, Family Planning and Reproductive Health Coordinator

Survey Enumerators	
Jacqueline Mojilong	MOH Nurse
Rosebella Jennet	MOH Nurse
Shellyann Mejbon	MOH Nurse
Deanechson Kaious	MOH Nurse
Kacy Lucky	MOH Nurse
George Beio	Ebeye, Hospital Vital Statistics Specialist
Jimberline Nashion	Enumerator
Ngiel Rang	Enumerator
Brandon Johnson	Enumerator
Joseph Allen	Enumerator
Fiora Lomae	Enumerator
Carlmai Melong	Enumerator
Janen Torelik	Enumerator
Jelmira Jatios	Enumerator
Dennis Kanes	Enumerator
Hanamo Luke Lakior	Enumerator
Scottie Jason	Enumerator
Rafael Capelle	Enumerator
Benty Jirokele	Enumerator
Wanna Jejon	Enumerator
Neilani Kenja	Enumerator

Household Listing Enumerators	
Kacy Lucky	MOH Nurse
Jimberline Nashion	Enumerator
Ngiel Rang	Enumerator
Brandon Johnson	Enumerator
Joseph Allen	Enumerator
Fiora Lomae	Enumerator
Carlmai Melong	Enumerator
Janen Torelik	Enumerator
Jelmira Jatios	Enumerator
Dennis Kanes	Enumerator
Hanamo Luke Lakior	Enumerator
Scottie Jason	Enumerator
Rafael Capelle	Enumerator
Benty Jirokele	Enumerator
Wanna Jejon	Enumerator
Neilani Kenja	Enumerator
Kela Santein	Enumerator
Kimberlynn Kalles	Enumerator
Eslin Matthew	Enumerator
Neti Louis	Enumerator

Appendix C. Estimates of Sampling Errors

The sample of respondents selected in the RMI Integrated Child Health and Nutrition Survey (RMI ICHNS 2017) is only one of the samples that could have been selected from the same population, using the same design and 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 the estimates from all possible samples. The extent of variability is not known exactly, but can be estimated statistically from the survey data.

The following sampling error measures are presented in this appendix for each of the selected indicators:

- *Standard error* (*se*): Standard error is the square root of the variance of the estimate. For survey indicators that are means, proportions or ratios, the Taylor series linearization method is used for the estimation of standard errors. For more complex statistics, such as fertility and mortality rates, the Jackknife repeated replication method is used for standard error estimation.

- *Coefficient of variation* (*se*/*r*) is the ratio of the standard error to the value (*r*) of the indicator, and is a measure of the relative sampling error.

- *Design effect* (*deff*) is the ratio of the actual variance of an indicator, under the sampling method used in the survey, to the variance calculated under the assumption of simple random sampling based on the same sample size. The ***square root of the design effect*** (***deft***) is used to show the efficiency of the sample design in relation to the precision. A ***deft*** value of 1.0 indicates that the sample design of the survey is as efficient as a simple random sample for a particular indicator, while a ***deft*** value above 1.0 indicates an increase in the standard error due to the use of a more complex sample design.

- *Confidence limits* are calculated to show the interval which contains the true value of the indicator for the population, with a specified level of confidence. For ICHNS 2017 results 95 percent confidence intervals are used, which is the standard for this type of survey. The concept of the 95 percent confidence interval can be understood in this way: if many repeated samples of identical size and design were taken and the confidence interval computed for each sample, then 95 percent of these intervals would contain the true value of the indicator.

For the calculation of sampling errors from ICHNS 2017 data, SPSS Version 22 Complex Samples module was used.

The results are shown in the tables that follow. In addition to the sampling error measures

described above, the tables also include weighted and unweighted counts of denominators for each indicator. Given the use of normalized weights, by comparing the weighted and unweighted counts it is possible to determine whether a particular domain has been under-sampled or over-sampled compared to the average sampling rate. If the weighted count is smaller than the unweighted count, this means that the particular domain had been over-sampled. As explained later in the footnote of Table SE.1, there is an exception in the case of indicators 4.1 and 4.3, for which the unweighted count represents the number of sample households, and the weighted counts reflect the total population.

Sampling errors are calculated for indicators of primary interest, for the national level and for urban and rural areas. Of the selected indicators, 4 are based on household members, 6 are based on caregivers, and 18 are based on children under 5. Table SE.1 shows the list of indicators for which sampling errors are calculated, including the base population (denominator) for each indicator. Tables SE.2 shows the calculated sampling errors for selected domains.

Table SE.1: Indicators selected for sampling error calculations

List of indicators selected for sampling error calculations, and base populations (denominators) for each indicator, RMI ICHNS, 2017[a]

MICS5 Indicator		Base Population
Household members		
4.1	Use of improved drinking water sources	All household members
4.3	Use of improved sanitation	All household members
7.4	Primary school net attendance ratio (adjusted)	Children of primary school age
--	Household food security	All households with a child under 2 years of age
Caregivers		
5.5a	Antenatal care coverage (1+ times, skilled provider)	Mothers of children under 5 years,15-49 years, and a live birth in the last 2 years
5.5b	Antenatal care coverage (4+ times, any provider)	Mothers of children under 5 years,15-49 years, and a live birth in the last 2 years
5.7	Skilled attendant at delivery	Mothers of children under 5 years,15-49 years, and a live birth in the last 2 years
--	Overweight (BMI>25kg/m$^{2)}$	Caregivers age 15-49 years
--	Short stature <150cm	Caregivers age 15-49 years
--	Caregiver minimum dietary diversity	Caregivers age 15-49 years
Under 5s		
2.1a	Underweight prevalence (moderate and severe)	Children under age 5 years
2.1b	Underweight prevalence (severe)	Children under age 5 years
2.2a	Stunting prevalence (moderate and severe)	Children under age 5 years
2.2b	Stunting prevalence (severe)	Children under age 5 years
2.3a	Wasting prevalence (moderate and severe)	Children under age 5 years
2.3b	Wasting prevalence (severe)	Children under age 5 years
2.4	Overweight prevalence	Children under age 5 years

2.2	Low birth weight	Children under age 5 years
2.6	Early initiation of breastfeeding	Children under age 2 years
2.7	Exclusive breastfeeding under 6 months	Children under age 6 months
2.15	Minimum feeding frequency	Children age 6-23 months
2.16	Minimum dietary diversity	Children age 6-23 months
6.1	Attendance in early childhood education	Children age 36-59 months
6.2	Adult support for learning	Children age 36-59 months
6.7	Left in inadequate care in the past week	Children under age 5 years
6.8	Early child development index score	Children age 36-59 months
8.1	Birth registration	Children under age 5 years
8.3	Violent discipline	Children age 1-5 years

Table SE.2: Sampling errors: Total sample

Standard errors, coefficients of variation, design effects (deff), square root of design effects (deff), and confidence intervals for selected indicators, RMI ICHNS, 2017[a]

MICS5 Indicator	Indicator Name	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deff)	Weighted count	Unweighted count	Confidence limits	
									Lower bound r-2se	Upper bound r+2se
Household members										
4.1	Use of improved drinking water sources	1	0	0			5239	581	1	1
4.3	Use of improved sanitation	0.863	0.016	0.019	1.295	1.138	5239	581	0.831	0.895
7.4	Primary school net attendance ratio (adjusted)	0.796	0.016	0.021	1.617	1.272	986	970	0.764	0.828
--	Household Food Security	0.599	0.033	0.055	1.448	1.203	329	326	0.534	0.663
Caregivers										
5.5a	Antenatal care coverage (1+ times, skilled provider)	0.927	0.02	0.021	3.365	1.834	264	270	0.889	0.965
5.5b	Antenatal care coverage (4+ times, any provider)	0.795	0.032	0.041	1.624	1.274	226	224	0.731	0.859
5.7	Skilled attendant at delivery	0.924	0.014	0.015	1.411	1.188	264	270	0.897	0.952
--	Overweight (BMI>25kg/m^2)	0.727	0.021	0.028	1.444	1.202	674	673	0.686	0.767
--	Short stature <150cm	0.261	0.02	0.077	1.408	1.186	672	671	0.686	0.767
--	Caregiver minimum dietary diversity	0.274	0.031	0.112	1.52	1.233	324	324	0.214	0.335
Under 5s										
2.1a	Underweight prevalence (moderate and severe)	0.117	0.014	0.116	1.543	1.242	846	863	0.089	0.144

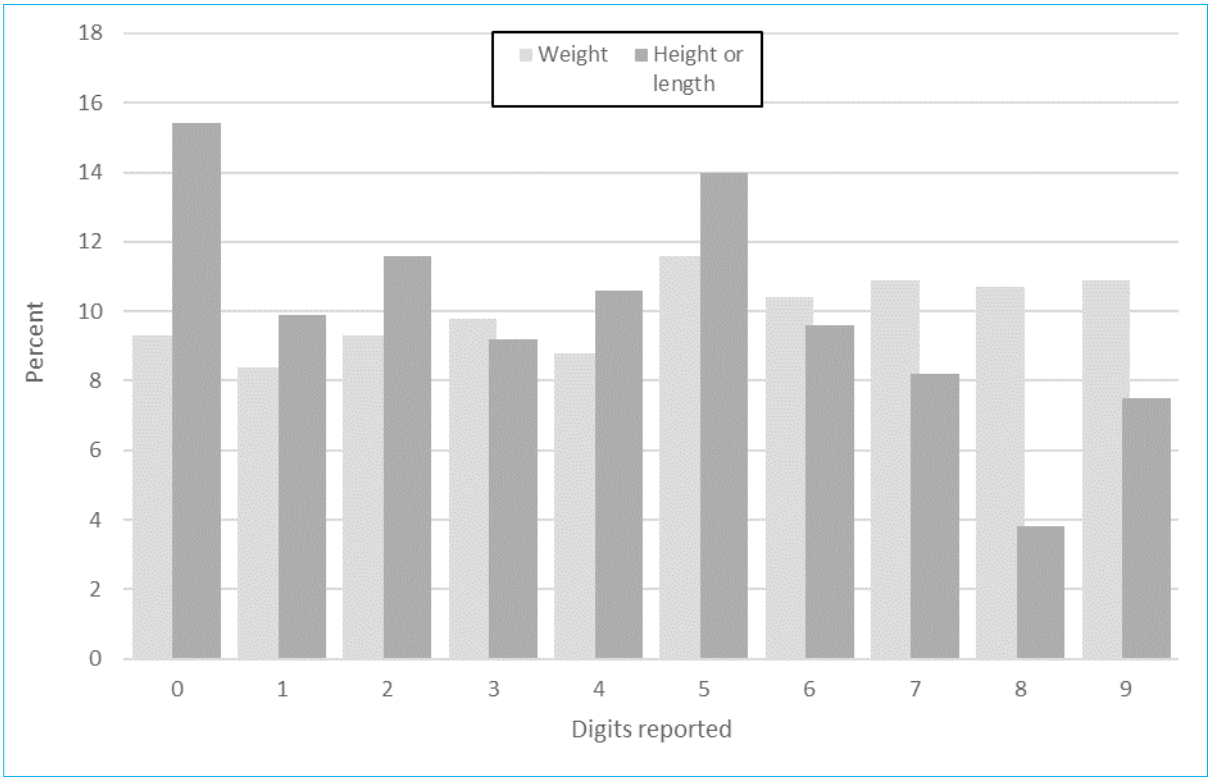
2.1b	Underweight prevalence (severe)	0.027	0.006	0.234	1.313	1.146	846	863	0.014	0.04
2.2a	Stunting prevalence (moderate and severe)	0.353	0.021	0.06	1.713	1.309	873	871	0.31	0.396
2.2b	Stunting prevalence (severe)	0.102	0.015	0.148	2.163	1.471	873	871	0.072	0.132
2.3a	Wasting prevalence (moderate and severe)	0.036	0.007	0.182	1.071	1.035	844	858	0.023	0.05
2.3b	Wasting prevalence (severe)	0.011	0.004	0.37	1.361	1.167	844	858	0.003	0.02
2.4	Overweight prevalence	0.038	0.009	0.232	1.82	1.349	844	858	0.02	0.056
2.2	Low birth weight	0.116	0.018	0.154	2.118	1.455	760	685	0.08	0.152
2.6	Early initiation of breastfeeding	0.608	0.031	0.051	1.423	1.193	342	355	0.546	0.67
2.7	Exclusive breastfeeding under 6 months	0.423	0.07	0.166	1.492	1.222	67	75	0.281	0.565
2.15	Minimum feeding frequency	0.608	0.047	0.077	2.525	1.589	274	278	0.514	0.701
2.16	Minimum dietary diversity	0.425	0.045	0.106	2.309	1.519	274	278	0.334	0.516
6.1	Attendance in early childhood education	0.052	0.011	0.211	0.856	0.925	365	350	0.03	0.074
6.2	Adult support for learning	0.723	0.037	0.052	2.448	1.564	365	350	0.647	0.798
6.7	Left in inadequate care in the past week	0.091	0.018	0.195	3.327	1.824	881	881	0.055	0.126
6.8	Early child development index score	0.789	0.027	0.035	1.57	1.253	365	350	0.734	0.844
8.1	Birth registration	0.838	0.025	0.03	4.089	2.022	881	881	0.787	0.888
8.3	Violent discipline	0.64	3.036	0.052	3.373	1.837	694	690	0.573	0.708

Table DQ.15: Heaping in anthropometric measurements

Distribution of weight and height/length measurements by digits reported for the decimal points, RMI ICHNS 2017

Total	Weight		Height or Length	
Digits	Number	Percent	Number	Percent
0	82	9.3	136	15.4
1	74	8.4	87	9.9
2	82	9.3	102	11.6
3	86	9.8	81	9.2
4	77	8.8	94	10.6
5	102	11.6	123	14
6	92	10.4	84	9.6
7	96	10.9	72	8.2
8	94	10.7	33	3.8
9	96	10.9	66	7.5
0 or 5	184	20.9	259	29.4

Figure DQ.2: Weight and height/length measurements by digits reported for the decimal points, RMI ICHNS, 2017



Appendix E. RMI ICHNS, 2017 Indicators: Numerators and Denominators

MICS INDICATOR		MODULE [18]	NUMERATOR	DENOMINATOR	SDG INDICATOR REFERENCE
NUTRITION					
2.1a 2.1b	Underweight prevalence	AN	Number of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median weight for age of the WHO standard	Total number of children under age 5	
2.2a 2.2b	Stunting prevalence	AN	Number of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median height for age of the WHO standard	Total number of children under age 5	SDG 2.2.1
2.3a 2.3b	Wasting prevalence	AN	Number of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median weight for height of the WHO standard	Total number of children under age 5	SDG 2.2.2
2.4	Overweight prevalence	AN	Number of children under age 5 who are above two standard deviations of the median weight for height of the WHO standard	Total number of children under age 5	SDG 2.2.2
2.5	Children ever breastfed	MN	Number of women with a live birth in the last 2 years who breastfed their last live-born child at any time	Total number of women with a live birth in the last 2 years	
2.6	Early initiation of breastfeeding	MN	Number of women with a live birth in the last 2 years who put their last newborn to the breast within one hour of birth	Total number of women with a live birth in the last 2 years	
2.7	Exclusive breastfeeding under 6 months	BD	Number of infants under 6 months of age who are exclusively breastfed	Total number of infants under 6 months of age	
2.8	Predominant breastfeeding under 6 months	BD	Number of infants under 6 months of age who received breast milk as the predominant source of nourishment during the previous day	Total number of infants under 6 months of age	
2.9	Continued breastfeeding at 1 year	BD	Number of children age 12-15 months who received breast milk during the previous day	Total number of children age 12-15 months	

MICS INDICATOR		MODULE [18]	NUMERATOR	DENOMINATOR	SDG INDICATOR REFERENCE
2.10	Continued breastfeeding at 2 years	BD	Number of children age 20-23 months who received breast milk during the previous day	Total number of children age 20-23 months	
2.12	Age-appropriate breastfeeding	BD	Number of children age 0-23 months appropriately fed during the previous day	Total number of children age 0-23 months	
2.13	Introduction of solid, semi-solid or soft foods	BD	Number of infants age 6-8 months who received solid, semi- solid or soft foods during the previous day	Total number of infants age 6-8 months	
2.14	Milk feeding frequency for non-breastfed children	BD	Number of non-breastfed children age 6-23 months who received at least 2 milk feedings during the previous day	Total number of non-breastfed children age 6-23 monthsWW	
2.15	Minimum meal frequency	BD	Number of children age 6-23 months who received solid, semi-solid and soft foods (plus milk feeds for non-breastfed children) the minimum number of times or more during the previous day	Total number of children age 6-23 months	
2.16	Minimum dietary diversity	BD	Number of children age 6-23 months who received foods from 4 or more food groups during the previous day	Total number of children age 6–23 months	
2.17a 2.17b	Minimum acceptable diet	BD	(a) Number of breastfed children age 6-23 months who had at least the minimum dietary diversity and the minimum meal frequency during the previous day (b) Number of non-breastfed children age 6-23 months who received at least 2 milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal	(a) Number of breastfed children age 6–23 months (b) Number of non-breastfed children age 6–23 months	
2.18	Bottle feeding	BD	Number of children age 0-23 months who were fed with a bottle during the previous day	Total number of children age 0-23 months	
2.20	Low birth weight infants	MN	Number of live births in the last 5 years weighing below 2,500 grams at birth	Total number of children under age 5	
2.21	Infants weighed at birth	MN	Number of most recent live births in the last 5 years who were weighed at birth	Total number of most recent live births in the last 5 years	
CHILD HEALTH					
3.10	Care-seeking for diarrhoea	CA	Number of children under age 5 with diarrhoea in the last 2 weeks for whom advice or treatment was sought from a health facility or provider	Total number of children under age 5 with diarrhoea in the last 2 weeks	

MICS INDICATOR		MODULE [18]	NUMERATOR	DENOMINATOR	SDG INDICATOR REFERENCE
3.S11	Diarrhoea treatment with oral rehydration salts (ORS)	CA	Number of children under age 5 with diarrhoea in the last 2 weeks who received ORS	Total number of children under age 5 with diarrhoea in the last 2 weeks	
3.15	Use of solid fuels for cooking	HC	Number of household members in households that use solid fuels as the primary source of domestic energy to cook	Total number of household members	
WATER AND SANITATION					
4.1	Use of improved drinking water sources	WS	Number of household members using improved sources of drinking water	Total number of household members	
4.2	Water treatment	WS	Number of household members in households using unimproved drinking water who use an appropriate treatment method	Total number of household members	
4.3	Use of improved sanitation	WS	Number of household members using improved sanitation facilities which are not shared	Total number of household members	
4.4	Safe disposal of child's faeces	CA	Number of children age 0-2 years whose last stools were disposed of safely	Total number of children age 0-2 years	
4.5	Place for handwashing	HW	Number of households with a specific place for handwashing where water and soap or other cleansing agent are present	Total number of households	
4.6	Availability of soap or other cleansing agent	HW	Number of households with soap or other cleansing agent	Total number of households	
REPRODUCTIVE HEALTH					
5.5a 5.5b	Antenatal care coverage	MN	Number of women age 15-49 years with a live birth in the last 2 years who were attended during their last pregnancy that led to a live birth (a) at least once by skilled health personnel (b) at least four times by any provider	Total number of women age 15-49 years with a live birth in the last 2 years	

MICS INDICATOR		MODULE [18]	NUMERATOR	DENOMINATOR	SDG INDICATOR REFERENCE
5.7	Skilled attendant at delivery	MN	Number of women age 15-49 years with a live birth in the last 2 years who were attended by skilled health personnel during their most recent live birth	Total number of women age 15-49 years with a live birth in the last 2 years	
5.8	Institutional deliveries	MN	Number of women age 15-49 years with a live birth in the last 2 years whose most recent live birth was delivered in a health facility	Total number of women age 15-49 years with a live birth in the last 2 years	
5.9	Caesarean section	MN	Number of women age 15-49 years whose most recent live birth in the last 2 years was delivered by caesarean section	Total number of women age 15-49 years with a live birth in the last 2 years	
CHILD DEVELOPMENT					
6.1	Attendance in early childhood education	EC	Number of children age 36-59 months who are attending an early childhood education programme	Total number of children age 36-59 months	
6.2	Support for learning	EC	Number of children age 36-59 months with whom an adult has engaged in four or more activities to promote learning and school readiness in the last 3 days	Total number of children age 36-59 months	
6.3	Father's support for learning	EC	Number of children age 36-59 months whose biological father has engaged in four or more activities to promote learning and school readiness in the last 3 days	Total number of children age 36-59 months	
6.4	Mother's support for learning	EC	Number of children age 36-59 months whose biological mother has engaged in four or more activities to promote learning and school readiness in the last 3 days	Total number of children age 36-59 months	
6.5	Availability of children's books	EC	Number of children under age 5 who have three or more children's books	Total number of children under age 5	
6.6	Availability of playthings	EC	Number of children under age 5 who play with two or more types of playthings	Total number of children under age 5	
6.7	Inadequate care	EC	Number of children under age 5 left alone or in the care of another child younger than 10 years of age for more than one hour at least once in the last week	Total number of children under age 5	
6.8	Early child development index	EC	Number of children age 36-59 months who are developmentally on track in at least three of the following four domains: literacy-numeracy, physical, social-emotional, and learning	Total number of children age 36-59 months	SDG 4.2.1

MICS INDICATOR		MODULE [18]	NUMERATOR	DENOMINATOR	SDG INDICATOR REFERENCE
LITERACY AND EDUCATION					
7.1	Literacy rate among young caregivers	WB	Number of caregivers age 15-24 years who are able to read a short simple statement about everyday life or who attended secondary or higher education	Total number of caregivers age 15-24 years	
7.2	School readiness	ED	Number of children in first grade of primary school who attended preschool during the previous year	Total number of children attending the first grade of primary school	SDG 4.2.2
7.3	Net intake rate in primary education	ED	Number of children of school-entry age who enter the first grade of primary school	Total number of children of school-entry age	
7.4	Primary school net attendance ratio (adjusted)	ED	Number of children of primary school age currently attending primary or secondary school	Total number of children of primary school age	
7.5	Secondary school net attendance ratio (adjusted)	ED	Number of children of secondary school age currently attending secondary school or higher	Total number of children of secondary school age	
7.6	Children reaching last grade of primary	ED	Proportion of children entering the first grade of primary school who eventually reach last grade		
7.7	Primary completion rate	ED	Number of children attending the last grade of primary school (excluding repeaters)	Total number of children of primary school completion age (age appropriate to final grade of primary school)	
7.8	Transition rate to secondary school	ED	Number of children attending the last grade of primary school during the previous school year who are in the first grade of secondary school during the current school year	Total number of children attending the last grade of primary school during the previous school year	
7.9	Gender parity index (primary school)	ED	Primary school net attendance ratio (adjusted) for girls	Primary school net attendance ratio (adjusted) for boys	SDG. 4.5.1
7.10	Gender parity index (secondary school)	ED	Secondary school net attendance ratio (adjusted) for girls	Secondary school net attendance ratio (adjusted) for boys	SDG. 4.5.1
CHILD PROTECTION					
8.1	Birth registration	BR	Number of children under age 5 whose births are reported registered	Total number of children under age 5	SDG 16.9.1

MICS INDICATOR		MODULE [18]	NUMERATOR	DENOMINATOR	SDG INDICATOR REFERENCE
8.3	Violent discipline	CD	Number of children age 1-4 years who experienced psychological aggression or physical punishment during the last one month	Total number of children age 1-4 years	
8.13	Children's living arrangements	HL	Number of children age 0-4 years living with neither biological parent	Total number of children age 0-4 years	
8.14	Prevalence of children with one or both parents dead	HL	Number of children age 0-4 years with one or both biological parents dead	Total number of children age 0-4 years	
8.15	Children with at least one parent living abroad	HL	Number of children 0-4 years with at least one biological parent living abroad	Total number of children age 0-4 years	

HOUSEHOLD QUESTIONNAIRE

Republic of Marshall Islands Integrated Child Health and Nutrition Survey 2017

MODULE HH: HOUSEHOLD INFORMATION PANEL

HH

HH1. Cluster number: ___ ___ ___	**HH2**. Household number: ___ ___
HH3. Interviewer's name and number: Name _____ ___ ___	**HH4**. Team Leader's name and number: Name_____ ___ ___
HH5. Day / Month / Year of interview: ___ ___ /___ ___ / 2 0 1 ___	**HH7**. NAME OF ATOL/ISLAND (ETAN AELON EO AM/(etan bukon eo a)
HH6. Area: Urban..... 1 Rural 2	**HH8.** Name of Zone/Village

We are from *THE MINISTRY OF HEALTH AND THE NATIONAL STATISTICS OFFICE RMI.* We are conducting a survey about the situation of children, families and households. I would like to talk to you about these subjects. The interview will take about ***30*** minutes and you can stop the interview at any time. All the information we obtain will remain strictly confidential and anonymous. May I start now?

Iakwe eta in (etam). Team in ej itok jen Jikin Ejmuur eo, im Office eo an jikin Bonbon eo. Komij kommane juon jerbal in ekkatak ikkijen ejmuur ko an ajiri ro, bamle ko, im barenwot jikin jokwe ko ilo Majuro, Ebeye, im Outer Islands. Imaron ke konono ak kajitok kajitok kein ibbam emaron bok 20 jima minit aetokan ak jabrewot ien komaron kabojrak io. Aolep melele kein konaj litok renaj bed ilo aer nojak im enaj an wot rejerbal rein. Kejro maron ke wonmanlok im jinoe?

☐ AET/*Yes, permission is given* ↓ETAL NAN (*Go to HH18 to record the time and then begin the interview).*
☐ JAB/*No, permission is not given* ↓ETAL NAN (*Circle 04 in HH9. Discuss this result with your supervisor).*

HH9. Result of household interview:

Completed/**Ededelok** 01
No household member or no competent respondent at home at time of visit/**Ejelok ro remaron uak mweo** 02
Entire household absent for extended period of time/**Ri-mweo eto aer jako ilo juon tore aetok** 03
Refused/**Rejab konaan remakoko** 04
Dwelling vacant / Address not a dwelling/**Ejelok kobban ak ejab juon jikin joke** 05
Dwelling destroyed/**Mweo emoj an jorran** 06
Dwelling not found/M**weo kojab maron loe** 07
Other (*specify*)**wawein ko jet** _____ 96

After the household questionnaire has been completed, fill in the following information:
Ne emoj an dredrelok aolep kajitok kein ilo form in, kanne melele kein ilal:

HH11. Total number of household members**:** **Woran aolep armij ro rej joke mwin:** ___ ___	**HH17**. Field editor's name and number: Name_____ ___ ___
HH14. Number of children under age 5: **Woran ajiri ro lalin 5 yio** ___ ___	**HH18**. Main data entry clerk's name and number: Name_____ ___ ___
HH15. Number of under 5 questionnaires completed ___ ___ **Woran form edredrelok an ro ilalin 5 yio**	
HH16. Number of maternal questionnaires for children under 5 completed: W**oran form ko an ro jinen ajiri ro ilalin 5 yio** . ___ ___	**HH19. Record the time** Hour(s) ___ ___ Minute(s) ___ ___

MODULE HL: LIST OF HOUSEHOLD MEMBERS HL

First, please tell me the name of each person who usually lives here, starting with the head of the household. **Mokta, komaron ke jouj im letok etan aolep ro ekka aer joke MWIN, JINO JEN EO EJ JEBAN MWIN.**

List the head of the household in line 01. List all household members (HL2), their relationship to the household head (HL3), and their sex (HL4)

Then ask: Are there any others who live here, even if they are not at home now? **Ebar lon ke armij rej joke mwin im komeloklok in letok etaer ak rejako ilo torein?**

If yes, complete listing for questions HL2-HL4. Then, ask questions starting with HL5 for each person at a time.

Use an additional questionnaire if all rows in the List of Household Members have been used.

									For children age **0-4**	*For children age* **0-17** *years*						*For Children age* **0-4**
HL1. *Line no.*	**HL2**. Name	**HL3**. What is the relationship of (*name*) to the head of household? **Ta kadkad in (et eo) nan eo ej jeban mwin)**	**HL4**. Is (*name*) male or female? **Ej juon maan ke kora** 1 Male 2 Female		**HL5**. What is (*name*)'s date of birth? **Ta ien lotak eo an (et eo)?**	**HL6**. How old is (*name*)? **Jete an (et eo) yio?** *Record in completed years. If age is 95 or above, record '95'.*	**HL6A.** Did (*name*) stay here last night? **(Et eo) ekar ke kiki mwein bon ak bed ie?)** 1 Yes 2 No		**HL7B**. *Circle line no. if* **0-4**. **Doululi line no eo, ne ajiri eo ej 0-4.**	**HL11**. Is (*name*)'s natural mother alive? **Jinen (et eo) ej mour wot ke?** 1 Yes 2 No↘	**HL12**. Does (*name*)'s natural mother live in this household? **Jinen ej ke jokwe mwin?** *If "Yes", record line no. of mother and go to HL13. If "No", record 00.*	**HL12A**. Where does (*name*)'s natural mother live? **Ia eo jinen (et eo) ej joke ie?** 1 In another household in this country/ **Bar ilo juon em ilo ene in?** 2 Institution in this country 3 Abroad/**likin majol** 8 DK/**jab jela**	**HL13**. Is (*name*)'s natural father alive? **Jemen (et eo) ej mour wot ke?** 1 Yes 2No↘ **HL15** 8DK↘ **HL15**	**HL14**. Does (*name*)'s natural father live in this household? **Jemen (eteo) ej ke jokwe mwin?** *If "Yes", record line no. of father and go to HL15. If "No", record 00.* ***Ne uak eo ej AET, je line nomba ne an im etal wot nan HL 15***	**HL14A**. Where does (*name*)'s natural father live? **Ia eo Jemen (et eo) ej jokwe ie?** 1 In another household in this country. **ilo bar joun em** 2 Institution in this country 3 Abroad/**likin Majo**l 8 DK	**HL15**. *Record line no. of mother from HL12 if indicated/* *If HL12 is blank or '00' ask:* Who is the primary caregiver of (*name*)? **Won ej bok eddoin im lale (et eo)?**
					98 DK	9998 DK											
Line	Name	Relation*	M	F	Month	Year	Age	Y N	0-4	Y N DK	Mother		Y N DK	Father		Mother
01		**0 1**	1	2	__ __	__ __	__ __	1 2	01	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
02		__ __	1	2	__ __	__ __	__ __	1 2	02	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
03		__ __	1	2	__ __	__ __	__ __	1 2	03	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __

04		__ __	1 2	__ __	__ __	__ __	1 2	04	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
05		__ __	1 2	__ __	__ __	__ __	1 2	05	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
06		__ __	1 2	__ __	__ __	__ __	1 2	06	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
07		__ __	1 2	__ __	__ __	__ __	1 2	07	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
08		__ __	1 2	__ __	__ __	__ __	1 2	08	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
09		__ __	1 2	__ __	__ __	__ __	1 2	09	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
10		__ __	1 2	__ __	__ __	__ __	1 2	10	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
11		__ __	1 2	__ __	__ __	__ __	1 2	11	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
12		__ __	1 2	__ __	__ __	__ __	1 2	12	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
13		__ __	1 2	__ __	__ __	__ __	1 2	13	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
14		__ __	1 2	__ __	__ __	__ __	1 2	14	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __
15		__ __	1 2	__ __	__ __	__ __	1 2	15	1 2 8	__ __	1 2 3 8	1 2 8	__ __	1 2 3 8	__ __

Tick here if additional questionnaire used ☐

Probe for additional household members.
Probe especially for any infants or small children not listed, and others who may not be members of the family (such as servants, friends) but who usually live in the household.
Insert names of additional members in the household list and complete form accordingly. ***Bar etale im lukun lale elane ebar lon ajiri ej jokwe ilo mweo ak ejjab lukun nejin armij ro mwin. Elane ewor bar je etaer ilo laajrak in etan armij ro ilo mweo..***

Now for each woman age 15-49 years, write her name and line number and other identifying information in the information panel of a separate Individual Women's Questionnaire.
For each man age 15-49 years, write his name and line number and other identifying information in the information panel of a separate Individual Man's Questionnaire.
For each child under age 5, write his/her name and line number AND the line number of his/her mother or caregiver in the information panel of a separate Under-5 Questionnaire.
You should now have a separate questionnaire for each eligible woman, each eligible man, and each child under five in the household. ***Elane ewor maan ak kora ilo mweo dettaer ej 15 yio lok nan 49 yio, ekwe je etaer ilo laajrak in kajitok ko an emaan im kora jimor. Ajiri ro ilalin 5 yio je etaer im nomba ko aer ilo laajrak in kajitok ko an ajiri wot.***

* *Codes for* ***HL3****: Relationship to head of household:*

01 Head
02 Spouse / Partner
03 Son / Daughter
04 Son-In-Law / Daughter-In-Law
05 Grandchild
06 Parent
07 Parent-In-Law
08 Brother / Sister
09 Brother-In-Law / Sister-In-Law
10 Uncle / Aunt
11 Niece / Nephew
12 Other relative
13 Adopted / Foster/ Stepchild
14 Servant (Live-in)
96 Other (Not related)
98 DK

MODULE ED: EDUCATION								ED								
			For household members age **5 and above**					*For household members age* **5-24** *years*								
ED1. *Line number*	**ED2**. ***Name and age*** ***Copy from HL2 and HL6***. ***Lali et ko ilo kajitok ko ilo HL2 im HL6***		**ED3**. HAS (*name*) EVER ATTENDED SCHOOL OR PRE-SCHOOL**?(ET EO) ENANIN KE KAR JINO JIKUUL?** 1 Yes 2 No↘ Next Line		**ED4A**. WHAT IS THE HIGHEST LEVEL OF SCHOOL (*name*) HAS ATTENDED? **TA LABEL IN JIKUUL EO ILON TATA EAR BED IE?** Level: 0 Preschool 1 Elementary 2 High School 3. Vocational 3 Higher 8 DK *If level=0, skip to ED5.*	**ED4B**. WHAT IS THE HIGHEST GRADE (*name*) COMPLETED AT THIS LEVEL? **KLAAJ TA EO ILON TATA EAR KAMOJE IE?** Grade: 98 DK *If the first grade at this level is not completed, enter "00".* ***Elanne kilaaj eo jinoin ear jab drederlok likit "00".***	**ED5**. DURING THE CURRENT SCHOOL YEAR, THAT IS 2016-2017, DID (*name*) ATTEND SCHOOL OR PRESCHOOL AT ANY TIME**?(ILO YIO IN JIKUUL IN (16-17) (ET EO) EJ KE BED ILO JIKUUL AK KAMINENE?** 1 Yes 2 No ↘ ED7	**ED6**. DURING THIS/THAT SCHOOL YEAR, WHICH LEVEL AND GRADE IS/WAS (*name*) ATTENDING? **(ILO YIO IN JIKUUL IN (ET EO) EJ/EKAR KE BED ILO JIKUUL?** Level: 0 Preschool 1 Elementary 2 High School 3. Vocational 3 Higher 8 DK *If level=0, skip to ED7.*	Grade: 98 DK *If the first grade at this level is not completed, enter "00"* ***Elanne kilaaj eo jinoin ear jab drederlok likit "00".***	**ED7**. DURING THE PREVIOUS SCHOOL YEAR, THAT IS 2015-2016, DID (*name*) ATTEND SCHOOL OR PRESCHOOL AT ANY TIME? **(EJJA ILO YIO IN JIKUUL IN 2015-16, ELON IEN EKAR BED ILO JIKUUL AK KAMINENE?** 1 Yes 2 No ↘ Next Line 8 DK↘ Next Line	**ED8**. DURING THAT PREVIOUS SCHOOL YEAR, WHICH LEVEL AND GRADE DID (*name*) ATTEND**? ILO YIO IN JIKUUL EO LOK, LABEL IM KILAAJ JETE EKAR DRELONE?** Level: 0 Preschool 1 Elementary 2 High School 3. Vocational 3 Higher 8 DK *If level=0, go to next line.*	Grade/**Kilaaj**: 98 DK *If the first grade at this level is not completed, enter "00".* ***Elanne kilaaj jinoin ear jab drederlok likit "00".***
Line	Name	Age	Yes	No	Level	Grade	Yes	No	Level	Grade	Yes	No	DK	Level	Grade
01		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
02		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
03		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
04		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
05		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
06		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
07		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
08		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
09		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
10		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
11		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
12		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
13		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
14		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __
15		__ __	1	2	0 1 2 3 8	__ __	1	2	0 1 2 3 8	__ __	1	2	8	0 1 2 3 8	__ __

HOUSEHOLD CHARACTERISTICS	HC
HC1A. What is the religion of the head of this household? (KABUN TA EO AN EO EJ JEBAN MWIN?)	Catholic 1 Protestant 2 Bahai Faith 3 SDA 4 Mormons 5 Muslim 6 Assembly of God 7 Baptist 8 Jehovahs Witness 9 Pentecostal 10 Other religion (*specify*) 11 _____ No religion 98
HC1B. What is the mother tongue/native language of the head of this household? (TA LUKUN KAJIN EO AN EO EJ JEBAN MWIN?)	*Marshalese* 1 *English* 2 Other language (*specify*) 6 _____
HC1C. To what ethnic group does the head of this household belong? AELON TA EO AN EO EJ JEBAN MWIN?	*marshalese.....1* *Filipino* 2 *Japanese* 3 *Indian* 4 *Korean* 5 Caucasian 6 Fiji 7 Tonga 8 Somoa 9 Nauru 10 Kiribati 11 Other ethnic group (*specify* _____
HC2. How many rooms in this household are used for sleeping? (JETE ROOM KOJERBALE NAN KIKI?)	Number of rooms (WORAN ROOM) __ __
HC3. *Main material of the dwelling floor.* BEDBED IN MWIN EJ KOMMAN JEN TA. Record observation/JE TA EO KWOJ LOE.	Natural floor Earth / Sand 11 Rudimentary floor Wood planks 21 Wood planks with vinyl carpet 22 Finished floor Parquet or polished wood 31 Vinyl or asphalt strips 32 Ceramic tiles 33 Cement 34 Carpet 35 Cement TILES 36 Other (*specify*) 96
HC4. *Main material of the roof.BORWAJ EO AN MWEO EJ KOMAN JEN TA?* Record observation. LALE IM JE UAK KO.	Natural roofing No Roof/EJELOK AN BORWAJ **11** hatch / Palm leaf/AJ AK KIMEJ 12 Rudimentary roofing Canvas/TARPOULINE/KOBBA 21 Wood planks/ALAL 23 Cardboard/BOK KO REKIJNENE 24 Finished roofing Metal / Tin/KIN TIIN KO 31 Wood/KIN RE AK PLEWUUT 32 Calamine / Cement fibre 33 Ceramic tiles/TAEL DREKA **34** Cement/JIMEEN WOT 35 Roofing shingles/ KOMMAN JEN BEDKAT AK BOK KO 36 Other (*specify*)/KAIN KO JET 96

HC5. *Main material of the exterior walls.* ***debin mweo ej komman jen ta?*** Record observation. **lale im je uaak ko**	Natural walls/**alal im plewuut** No walls/**ejelok turin** 11 Pandanus Leaf / Palm / Trunks 12 Dirt/**aj ak kimej in ni ko** 13 Rudimentary walls Plywood/**plawuut** 21 Cardboard/**bok ko rebin** 22 Reused Wood/**alal ko jet** 23 Canvas/**Tarpouline/kobba** 24 Masonite/**tael ko rerabolbol** 25 Dry Wall/**koman jen plawuut ko jet einwot gypsium** 26 Finished walls Cement/**jimeen wot** 31 Stone with lime / cement**jimeen ibben dreka** 32 Bricks/**birok** 33 Cement blocks/**birok ko jet** 34 Wood planks / shingles/**ra ko** 36 Other (*specify*)/**ko jet** 96	
HC6. What type of fuel does your household mainly use for cooking? ***Ta eo kom ej kõjerbal ñan kõmat?***	Electricity/**jarom** 01 Propane Gas)**kaan kijeek ko einwot propane** 02 Solar Energy/**kajur in al** 03 Kerosene/**karijin** 05 Charcoal/**melle** 07 Wood/**mottan alal ko** 08 Coconut Husks/Shells/**lat im bweo** 09 No food cooked in household/**jab komat ilo mweo** 95 Other (*specify*)/**ko jet** 96	01⇒HC8 02⇒HC8 03⇒HC8 95⇒HC8
HC7. In this household, is food cooked on an open fire, an open stove or a closed stove ***lo mwin, komij kõmat lal ke, kõmat ilo stove ko ejelok chimney ak jikin kadriwõjlok baat ko ke,(einwõt stove kerosene) ke, ilo stove ko ewõr aer chimney ak cover?*** *If 'In the house', probe*: Is it done in a separate room used as a kitchen? **ejenolok ke jikin komat eo ilo mweo?**	Open Fire/kijeek lal 1 Open Stove/**jitoop** 3 Closed Stove with Chimney **jitoop ne elon kein kadioj lok baat** **4** Other (*specify*) /**ko jet** 6	1 ⇒HC8 3 ⇒ HC8 4 ⇒HC7B 6-> HC7B
HC7B. Does this (fire/stove) have a chimney, a hood or neither of these? ***Ewõr ke an stove in chimney ak jikin kadriwõjlok baat ko?***	Chimney .....1 Hood.....2 Neither.....3	
HC8. Is the cooking usually done in the house, in a separate building, or outdoors? ***Ekkã an ri-mwin kõmat iloan mwin ke ak ilo juon jikin eo ejjenolok ke ak ilo nabõj?***	In the house/**ilo mweo** .....1 In a separate building/**ejenolok**.....2 Outdoors/**naboj**.....3 Other (*specify*)/**joko jet** 6	2 ⇒HC9 3⇒ HC9
HC8A. Do you have a separate room which is used as a kitchen?**Ejjenolok ke jkin komat eo?**	Yes/**aet**.....1 No/**jab**..... 2	
HC8B. Does any member of this household own: ***Ewõr ke ian ri-mwin ewõr men kein ibbeir:*** A watch? ***watch?*** A bicycle? ***baajkle*** A motorcycle or motor scooter? ***otobai?*** A fishing gear? ***kein eñod ko?*** A car, truck, or van? ***waan ettõr?*** A boat with motor? ***loon ibben engine?*** A sailing canoe? ***Tipñol?*** A paddling canoe? ***kõrkõr?*** A rear-cart? ***driaka?*** Agricultural/farm equipment? ***Kein jerbal ko ilo jikin kallip ak atke kilep ko?***	yes/**aet** 1 no/**jab** 2 A watch?/**waj** A bicycle?/**baajikol** A motorcycle or motor scooter?/**otobai** A fishing gear?/**kein eonod** A car, truck, or van?/**waan ettor?** A boat with motor?**Loon ippen injin lok?** A sailing canoe?/**tipnol?** A paddling canoe?/**korkor?** A rear-cart?**dieka** Agricultural/farm equipment?/**kein jerbal ilo jikin kallip menin edek?**	

HC9. Does any member of your household own: ***Ewôr ke men kein imwin im rej emmôn wôt aer jerbal*** Electricity? A communication antenna**?** A table? A chair**?** A sofa? A bed? A cupboard or cabinet? A radio?**radio nan ronjake** A CB or VHF radio?**kein kenaan** A CD/cassette player?**kein ronjake al ko** A Video or DVD player? **kein alooj pija** A television? **tibi in alooj** A mobile telephone? **teinwa/telpoon ko kwoj itiitak kaki** Landline telephone?**telpoon ko moko** A walkie talkie? **kein kenaan kko jet** A refrigerator? **ice box** A deep freezer? **ice box kein kakojkoj** A gas or electric stove? **jitoop jarom** A desk/laptop computer? **computer** An internet connection? **internot nan tobar ijoko retolok imejatoto** A washing machine**? injin in kwalokwol nuknuk** A sewing machine**? mejin in keke** A microwave oven? **obun/jitoop** A dryer**? kein komere nuknuk** Solar panel/equipment? **kein kejerbal kajoor jen al** An electric generator? ***injin jarom jidik ko***	Yes 1 No 2 Electricity?/jarom 1 2 A communication antenna? 1 2 A table? 1 2 A chair? 1 2 A sofa? 1 2 A bed? 1 2 A cupboard or cabinet? 1 2 A radio? 1 2 A CB or VHF radio? 1 2 A CD/cassette player? 1 2 A Video or DVD player? 1 2 A television? 1 2 A mobile telephone? 1 2 Landline telephone? 1 2 A walkie talkie? 1 2 A refrigerator? 1 2 A deep freezer? 1 2 A gas or electric stove? 1 2 A desk/laptop computer? 1 2 An internet connection? 1 2 A washing machine? 1 2 A sewing machine? 1 2 A microwave oven? 1 2 A dryer? 1 2 Solar panel/equipment? 1 2 An electric generator? 1 2	
HC11. Does any member of this household own: ***Ewôr ke ian ri-mwin ewôr jikin:*** Residential Land**? jikin an jokwe make** Agricultural Land**? jikin an kallip menin eddek** Commercial Land? **jikin an koman/wiakake**	YES 1 No **2** Residential Land? 1 2 Agricultural Land? 1 2 Commercial Land? 1 2	
HC13. Does this household own any livestock, herds, other farm animals, or poultry? ***Ewôr ke nejin ri-mwin menin mour ko einwôt bao ak pig?***	Yes 1 No 2	2⇒HC15
HC14. How many of the following animals does this household have? ***Jete uan menin mour kein ewôr nejimi?*** [A] Ducks?/**dak** [B] Chickens**?bao** [C] Pigs?**piik** [D] Goats?**koat** [E] Other Domesticated Livestock?(Specifcy) **menin mour ko jet** *If none, record "00"/**ne ejelok uaak, likit "00"**. If 95 or more, record "95"./**ne 95 lonlok, likit "95"** If unknown, record "98".**ne kojaje, likit "98"**.*	Ducks ___ ___ Chickens ___ ___ Pigs ___ ___ Goats ___ ___ Other ___ ___ _____	
HC15. Does any member of this household have a bank account? ***Ewôr ke ian ri-mwin ewôr an account ilo bank ko?***	Yes 1 No 2	

MODULE WS: WATER AND SANITATION

WS1. What is the main source of drinking water for members of your household? **Rimwin rej idrak jen ia?**	**PIPED WATER** piped into dwelling.....11 piped into compound, yard or plot.....12 piped to neighbour.....13 public tap / standpipe.....14 tube Well, Borehole.....21 dug well .Protected well 31 .unprotected well 32 .rainwater collection 51 .tanker-truck 61 bottled water 91 other (*specify*) 96	11 ⇨ WS6 12 ⇨ WS6 13 ⇨ WS6 14 ⇨ WS3 21 ⇨ WS3 31 ⇨ WS3 32 ⇨ WS3 51 ⇨ WS3 61 ⇨ WS3 96 ⇨ WS3
WS2. What is the main source of water used by your household for other purposes such as cooking and handwashing? ***Ia eo ekkā an ri-mwin ebbōk aer dren in kōmmane jerbal ko imwin einwōt kōmaat ak kwalkwōl?***	Piped water Piped into dwelling **Pipe lok nan loan mweo** **11** Piped into compound, yard or plot 12 Piped to neighbour 13 Public tap / standpipe 14 Tube Well, Borehole 21 Dug well Protected well 31 Unprotected well 32 Rainwater collection 51 Tanker-truck 61 Other (*specify*) 96	11 ⇨ WS6 12 ⇨ WS6 13 ⇨ WS6
WS3. Where is that water source located? ***Ia eo jikin ebbōk dren in ej bed ie?***	In own dwelling/**mweo** 1 In own yard / plot/**naboj in moko** **2** Elsewhere/**ijoko jet** **3**	1 ⇨ WS6 2 ⇨ WS6
WS4. How long does it take to go there, get water, and come back? ***Ewi aitoken etal nan jikin ebbōk den eo im roltok?***	Number of minutes (jete minutes) ____ __ DK/**jaje** 998	
WS5. Who usually goes to this source to collect the water for your household? ***Wōn eo ekkā an etal im bōktok dren ñan ri-mwin?*** Probe: Is this person under age 15? **dettan edik jen 15 yio?** What sex? **ledrik ak ladrik?**	Adult woman/**kora ro** (age 15+ years) 1 Adult man/ **emaan ro** (age 15+ years) 2 Female child/ **ledik ro lalin 5 yio**(under 15) 3 Male child/**ladik ro lalin 5 yio** (under 15) 4 DK/**jaje** 8	
WS6. Do you do anything to the water to make it safer to drink? ***Elon ke wāwein eo kwōj kōmmane nan dren eo bwe en erreo ñan idaak?***	Yes/**elon** 1 No/**ejelok** 2 DK/**jab jela** 8	2 ⇨ WS8 8 ⇨ WS8
WS7. What do you usually do to make the water safer to drink? ***Ta eo ekkā am kōmmane ñan kōkmanmanlok dren eo bwe en erreo nan idaak?*** Probe: Anything else? ***Ebar ke wōr?*** Record all items mentioned. **je aolepen uaak ko.**	Boil/komate A Add bleach / chlorine/ **kereiki kin jerajko** B Strain it through a cloth/**likliki kin nuknuk** C Use water filter/**kojerbal kein liklik dren ko** (ceramic, sand, composite, etc.) D Solar disinfection/**kojeeke** E Let it stand and settle/**likiti im kottar an jok etton ko ie** F Other (*specify*)/**ebar ke wor** X DK/**ejelok** Z	

WS8. What kind of toilet facility do members of your household usually use? ***Kain imôn bwidrej rôt ri-mwin rej kôjerbale?*** If "flush" or "pour flush", probe: Where does it flush to? **ej toorlok nan ia?** If not possible to determine, ask permission to observe the facility. **Lale elane ejab alikar.**	Flush / Pour flush Flush to piped sewer system/flush 11 Flush to septic tank/ 12 Flush to pit (latrine)**kojerbal ron ko ak em lal ko** 13 Flush to somewhere else/**kotoor nan ijoko jet** 14 Pit latrine/**ron ko kojerbal nan kebojak** Closed Pit/**jikin kebojak ko elon ron ilal** 21 Bucket/**kojerbal bakoj** 41 No facility, Bush, Field/**kojerbal melaaj ko kin an ejelok jikin** 95 Other (*specify*)**ijoko jet** 96	95⇨SI1
WS9. Do you share this facility with others who are not members of your household? ***Komij kojerbale imôn bwidrej in ibben moko jet?***	Yes / aet 1 No/ jab 2	2⇨SI1.
WS10. How many households in total use this toilet facility, including your own household? **jete em ej bar kojerbale mwon bwidrej IN?**	Number of households/**jete oran ri-mwin** (if less than 10) **(EIET LOK UWAN JEN 10 ARMIJ)** Ten or more households 10 (ELON LOK UWAN JEN 10 ARMIJ) DK/**jaje** 98	

HANDWASHING — HW

HW1. We would like to learn about where members of this household wash their hands. Can you please show me where members of your household most often wash their hands? Imaron k jela ia ak tuia armij in mwin rej kwale pâer ie. Komaron ke jouj im kwalok ia ekka aer kwal pâer ie *Record result and observation. Je aolep uaak ko*	**OBSERVED** FIXED FACILITY OBSERVED (SINK / TAP) IN DWELLING/**ILOAN MWEO** 1 IN YARD /PLOT/**NABOJ IN MOKO** 2 MOBILE OBJECT OBSERVED (BUCKET / JUG / KETTLE)/**BAKOJ/TAB** 3 **NOT OBSERVED** NO HANDWASHING PLACE IN DWELLING / YARD / PLOT/**EJELOK JIKIN ILO TURIN MWEO** 4 NO PERMISSION TO SEE/**EJELOK MELIM NAN LALE** 5 OTHER REASON (*specify*)**UN KO JET** _____ 6	4⇨*HW5* 5⇨*HW4* 6⇨*HW5*
HW2. *Observe presence of water at the place for handwashing. Verify by checking the tap/pump, or basin, bucket, water container or similar objects for presence of water.* ***Etale elane ewor dren ilo jikin kwalkol pâ eo.***	WATER IS AVAILABLE/**ELON DREN** 1 WATER IS NOT AVAILABLE/**EJELOK DREN** 2	
HW3. *Is soap or detergent or ash/mud/sand present at the place for handwashing?* ***Elon ke soap ilo jikin kwalkol pâ mweo?***	YES, PRESENT/**AET, EWOR** 1 NO, NOT PRESENT/**EJELOK** 2	1⇨*HW7* 2⇨*HW5*

UF10A. Hello, my name is (***your name***). We are from the Ministry of Health and National Statistical Office, RMI. We are conducting a survey about the situation of children, families and households. I would like to talk to you about (***child's name from UF3***)'s health and well-being. This interview will take about number minutes. All the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know. May I start now? **Iakwe eta in (etam)**. Team in ej itok jen Jikin Ejmuur eo, im Office eo an jikin Bonbon eo. Komij kommane juon jerbal in ekkatak ikkijen ejmuur ko an ajiri ro, bamle ko im jikin jolwe ko barenwot ilo Majuro, Ebeye, im Outer Island ko. Ewor jet kajitok ko ikonaan naaj konono ibbam kaki kon ejmuur ne an (Etan ajiri eo). Emaron bok 5 minit. Aolep melele kein renaaj jet koi m jenaaj lukkun tiljok kaki bwe ren noojak jen ro jet. Botaab ne elon kajiotk ko im kojjab konaan naaj uwaaki, jouj im ba. Kojro maron ke jinoe kio?	**UF10B**. Now I would like to talk to you about (***child's name from UF3***)'s health and well-being in more detail. This interview will take about number minutes. Again, all the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know. May I start now? Inaaj wonmaanlok im jino konono kein kon wewen ejmuur ne an (etan ajiri eo jen UF3). Emaron bok jet minit ko, im ikonaan bar kakemejmej yuk ke melele kein renaaj kanuuj in tiljok im nojak jen ro jet. Ne elon kajitok ko im kojjab konaan uwaaki, jouj im ba. Kojro maron ke jinoe?
YES, PERMISSION IS GIVEN ..... 1 NO, PERMISSION IS NOT GIVEN 2	1⇨*UNDER FIVE'S BACKGROUND Module* 2⇨*UF17*

UF17. *Result of interview for children under 5* *Codes refer to mother/caregiver.* *Discuss any result not completed with Supervisor.*	COMPLETED ..... 01 NOT AT HOME ..... 02 REFUSED ..... 03 PARTLY COMPLETED ..... 04 INCAPACITATED (*specify*) _____ 05 OTHER (*specify*) _____ 96

Module UB: UNDER-FIVE'S BACKGROUND		**UB**
UB4. CHECK THE RESPONDENT'S LINE NUMBER (UF4) AND THE RESPONDENT TO THE HOUSEHOLD QUESTIONNAIRE (HH15): ***Lale line nomba eo an eo ej Uak (UF4)im eo ilo household questionnaire eo (HH15)***	RESPONDENT IS THE SAME, UF4=HL15 1 ELANE EJJELOK OKTAK ILO UWAAK EO ,UF4=HL15 KONAAJ LIKIT NOMBA JUON (1) RESPONDENT IS NOT THE SAME, UF4≠HH15 ....2 ELANE EINJUON UWAAK KO ILO UF4 IM HH15 LIKIT NOMBA RUO (2)	
UB1. On what day, month and year was (***name***) born? ***Raan ta, allon ta, im iio ta (etan ajir) ear lotak ie?*** *Probe:* What is (his/her) birthday? **Ta ien lotak eo an?** *If the mother/caregiver knows the exact date of birth, also record the day; otherwise, circle '98' for day.* ***Elane jinen ajiri eo ak armij eo ej bok eddoin ejela ien lotak eo an, je raan eo; ne enjuon duoluōli 98.*** *Month and year must be recorded.* ***Allon im yio ej aikuij wor.***	DATE OF BIRTH DAY/RAAN EO ..... __ __ DK DAY/IJAJE RAAN EO ..... 98 MONTH /ALLON ..... __ __ YEAR/IIO ..... 2 0 1 __	
UB2. How old is (***name***)? ***Jete an (et eo) yio?*** *Probe:* How old was (***name***) at (his/her) last birthday? ***Jet an (et eo) iio ilo kar ien kemem eo an eliktata?*** *Record age in completed years.* ***Likit yio in lotak eo an.*** *Record '0' if less than 1 year.* ***Likit "0" elane edik jen juon iio.*** *If responses to UB1 and UB2 are inconsistent, probe further and correct.* ***Ne uwak eo ilo UB1 and UB2 rejab jonan wot juon, bar lukkun etale im komman kajimwe.***	AGE (IN COMPLETED YEARS) ..... __ DETTAN ILO JEJJOT IN IIO EO AN	
UB3. How old were you when (name) was born? **Jet am yio ilo tore eo (et eo) ekar lotak?** (if adopted mother) **Jete an jinen (etan ajiri) eo iio ilo ien eo ekar kiotake?**	AGE (IN COMPLETED YEARS) _____ DETTAN ILO JEJJOT IN IIO EO AN	

UB4. Was (name) weighed at birth? ***(ET EO) ear ke boun elkin an lotak?***	YES/AET ..... 1 NO/JAAB ..... 2 DK/EJJAB JELA 8	2↛Go to Module BR ELANE UWAAK EO EJ RUO (2) ETAL WOT NAN Module BR 8↛Go to Module BR
UB5. How much did (name) weigh? ***Kar jete an boun (ET EO)?*** *IF A HEALTH CARD IS AVAILABLE, RECORD WEIGHT FROM CARD.* ***NE ELON AN AJIRI EO YELLOW CARD, RECORD E BOUN EO ILO YELLOW CARD EO.***	FROM CARD ..... 1 (KG) __ . __ __ __ JONAN EDDO EO JEN CARD EO 1 (KG) FROM RECALL ..... 2 (KG) __ . __ __ __ ILO AN ANTOONE JONAN EDDO EO LIKIT 2 (KG) DK/EJJAB JELA 99998	

MODULE BR: BIRTH REGISTRATION

BR1. DOES (*name*) HAVE A BIRTH CERTIFICATE? **ELON KE AN (ET EO) PEPA IN LOTAK?** *If yes, ask:* ***Ne elon, kajitok e:*** MAY I SEE IT? ***IMARON K LALE?***	Yes, seen/aet, kwoj loe ..... 1 Yes, not seen/aet kojjab loe ..... 2 No/jaab ..... 3 DK/ejjab jela 8	1↛Go to Module ECD 1 etal nan Module ECD 2↛Go to Module ECD 2 etal nan module ECD
BR2. HAS (*name*)'S BIRTH BEEN REGISTERED WITH *the civil authorities*? **Emoj ke an delon ak rejejtor iien lotak eo an (et eo) ilo jikin rejejtor ko?**	Yes/aet ..... 1 No/jaab ..... 2 DK/Ejjab jela 8	1↛Go to Module ECD 1 etal nan Module ECD
BR3. DO YOU KNOW HOW TO REGISTER (*name*)'S BIRTH? **KOJELA KE KILEN KOMMAN AN (ETAN AJIRI EO) PEPA IN LOTAK?**	Yes/aet ..... 1 No/jaab 2	

EC. EARLY CHILD DEVELOPMENT

EC1. HOW MANY CHILDREN'S BOOKS OR PICTURE BOOKS DO YOU HAVE FOR (*name*)? ***Ewor jete an (et eo) book ko an ajiri ak book ko elon pija ie?***	None/ejjelok ..... 00 Number of children's books oran book ko an ajiri ..... 0 __ Ten or more books / elon lok jen 10 book 10	
EC2. I AM INTERESTED IN LEARNING ABOUT THE THINGS THAT (*name*) PLAYS WITH WHEN HE/SHE IS AT HOME. **IMARON KE BAR JELA TA KO (ET EO) EJ IKKURE KAKI ILO MWEO.** DOES HE/SHE PLAY WITH: **EJ KE IKKURE KON MEN KEIN:** [A] HOMEMADE TOYS (SUCH AS DOLLS, CARS, OR OTHER TOYS MADE AT HOME)? **KEIN IKKURE KO KOMMAN ILO MWEO.?** [B] TOYS FROM A SHOP OR MANUFACTURED TOYS? **KEIN IKKURE KO JEN MON WIA KO?** [C] HOUSEHOLD OBJECTS (SUCH AS BOWLS OR POTS) OR OBJECTS FOUND OUTSIDE (SUCH AS STICKS, ROCKS, ANIMAL SHELLS OR LEAVES)? **MEN KO IMWEO EINWOT (BOOL KO, IM AINBOT), MEN KO IBELAKIN MWEO EINWOT ALAL KO, DEKA KO, MENIN MOUR KO, AK BŌLŌK KO)?** *If the respondent says "YES" to the categories above, then probe to learn specifically what the child plays with to ascertain the response.* ***Elane uwaak ko rej "aet" nan aolep men kein ilon, innem bar lukkun etale nan am jela ta eo ekka an ajiri eo ikkure kake, nan kommane juon uwaak eo ejejjot.***	Y N DK Homemade toys/ ..... 1 2 8 Kein ikkure ko jej kommani imoko Toys from a shop ..... 1 2 8 Kein ikkure ko jen imon wia ko Household objects or outside objects ..... 1 2 8 men ko ilo mweo im ko ibelakin mweo	

EC3. Sometimes adults taking care of children have to leave the house to go shopping, wash clothes, or for other reasons and have to leave young children. ***Jete ien ro rej lale ajiri ro rej komake ki er im etal nan jikin wia ko,jikin kwalkol ko, im jikin ko jet.***

On how many days in the past week was (*name*): **elon ke ran ilo week ko rej jemlok (et eo) eo ear ke:**

[A] left alone for more than an hour?
Make iaan aetok lok jen 1 awa?

[B] left in the care of another child, that is, someone less than 10 years old, for more than an hour?
Bed ippen bar juon ajiri eo edrik yio eo an jen 10 yio drettan elaplok jen 1 awa?

If 'none' enter' 0'. If 'don't know' enter'8'. ***Elane ejjelok likit '0'. Elane ejaje likit '8'***

Number of days left alone for more than an hour/ .....
__

Oran raan in an make iaan aetoklok jen 1 awa
Number of days left with other child for more than an hour.....
__

oran raan in an juon bar ajiri lale elaplok 1 awa

EC4. *Check AG2: Age of child. Dettan ak iio eo an ajiri eo – iio ke ak allon?*

☐ *Child age 0, 1 or 2 ⇨ Go to Module CD./ajiri eo 0, 1 or 2 etal nan Module CD*

☐ *Child age 3 or 4 ⇨ Continue with EC5./ ajiri eo 3 ak 4 etal nan ECS*

EC5. Has (***name***) ever attended any early childhood education programme, such as kindergarden, headstart programme for children 3-4 years of age, or the ministry of educations WUTMI Parents as Teachers (PAT) programme***? (Et eo) enanin ke kar bad ilo school ak program in katakin ko an ajiri jiddik ro einwot, kindergarten, headstart, ak program eo an PAT (Parents as Teachers) eo im ej bad ilo WUTMI?***

YES/AET .....
1
NO/JAAB
2

2⇨*EC7*
2 etal nan EC7

EC6. Does (he/she) currently attend early childhood education programmes, such as kindergarden, headstart programme for children 3-4 years of age, or the ministry of educations WUTMI Parents as Teachers (PAT) programme? ***(et eo) ej ke bad ilo school ak programme in katakin ko an ajiri jidik ro, einwot, kindergarten, headstart, ak program eo an PAT (Parents as Teachers) eo im ej bad ilo WUTMI?***

YES/AET .....
1
NO/JAAB
2

EC7. In the past 3 days, did you or any household member age 15 or over engage in any of the following activities with (*name*):
Ilo raan ko jilu rej mootlok, kwe ak bar ro jet imweo im 15 aer iio ak rittolok, renanin ke kar kommani wewen kein ibben (et eo)

If yes, ask:
Who engaged in this activity with (*name*)?
Elane aet, kajitok:won eo ekar kommani wewen kein ibben (et eo)?

Circle all that apply./Doluli aolep wewen ko ekar kommani ibben (et eo)

	Mother	Father	Other	No one
[A] Read books to or looked at picture books with (*name*)? Riit book ko ilo aerro jimor (et eo) kalimjek pija ko ilo book eo — Read books / Riit book	A	B	X	Y
[B] Told stories to (*name*)? Inon ak bwebwenato nane — Told stories/ bwebwenato nane	A	B	X	Y
[C] Sang songs to (*name*) or with (*name*), including lullabies? Al in ajiri ko nan (et eo) ak al ibben (et eo). — Sang songs / Al al ko	A	B	X	Y
[D] Took (*name*) outside the home, compound, yard or enclosure?/ Bok (et eo) nan namojen mweo ak ijoko jet ibelaakin mweo. — Took outside / Boke nan ijoko naboj	A	B	X	Y
[E] Played with (*name*)? Ikkure ibben (et eo) — Played with/ ikkure ibben	A	B	X	Y
[F] Named, counted, or drew things to or with (*name*)? Konono kon et ko , bonbon, jotojottak men ko nane ak kommani men kein ibben (et eo) — Named/counted/ konono kon et ko an bonbon ko	A	B	X	Y

EC8. I would like to ask you some questions about the health and development of (*name*). Children do not all develop and learn at the same rate. For example, some walk earlier than others. These questions are related to several aspects of (*name*)'s development. **Kio inaaj kajitok ikkijen ejmuur im an (et eo) an eddoklok.** aolep ajiri ro ejjab jokkin wot juon aer eddeklok im aer ekatak, nan waanjonak, jet remaron mokaj aer etetal jen jet. kajitok kein rej kwalok jokjok ak wewen an (et eo) eddeklok. Can (*name*) identify or name at least ten letters of the alphabet? (et eo) emaron ke kwalok im ba etan 10 leta ko.	Yes/yes ..... 1 No/jaab ..... 2 DK/ijaje 8	
EC9. Can (*name*) read at least four simple, popular words? **(et eo) eamron ke riit emen (4) naan jiddik ko im ekka ad kojerbali.**	Yes/aet..... 1 No/jaab ..... 2 DK/ijaje 8	
EC10. Does (*name*) know the name and recognize the symbol of all numbers from 1 to 10? **(et eo) ejela ke etan im ejela ke kajjen aolep nomba ko jen 1 nan 10**?	Yes/aet..... 1 No/jaab ..... 2 DK/ijaje 8	
EC11. Can (*name*) pick up a small object with two fingers, like a stick or a rock from the ground? **(et eo) emaron ke kotaki men eo reddik kon ruo addi ko, einwot alal ak deka ko jen lal.**	Yes/aet..... 1 No/jaab ..... 2 DK/ijaje 8	
EC12. Is (*name*) sometimes too sick to play? Elon ke jet ien ko (et eo) elukkun naninmij nan ikkure?	Yes/aet..... 1 No/jaab ..... 2 DK/ijaje 8	
EC13. Does (*name*) follow simple directions on how to do something correctly? (et eo) ej ke jimwe an kommani im loor wewen komelel ko lilok nane.	Yes/aet/..... 1 No/jaab ..... 2 DK/ijaje 8	
EC14. When given something to do, is (*name*) able to do it independently? (et eo) ej ka make kommani men ko lilok bwe en kommani?	Yes/aet..... 1 No/jaab ..... 2 DK/ijaje 8	
EC15. Does (*name*) get along well with other children? **(et eo) ej ke kobalok ibben ajiri ro jet.**	Yes/aet..... 1 No/jaab ..... 2 DK/ijaje 8	
EC16. Does (*name*) kick, bite, or hit other children or adults? **(et eo) ej ke kommani men kein, kick, ikkij, ak denloke ajiri im ritto ro jimor**?	Yes/aet..... 1 No/jaab ..... 2 DK/ijaje 8	
EC17. Does (*name*) get distracted easily? **ebidodo ke an (et eo) ilbok ak bok kolmenlojen eo an.**	Yes/aet..... 1 No/jaab ..... 2 DK/ijaje 8	

MODULE CD: CHILD DISCIPLINE / KAJE KO NAN AJIRI EO

UCD1. *Check UB2: Child's age?* **Lale UB2:** IIO EO AN AJIR EO?	AGE 0 ..... 1 AGE 1, 2, 3 OR 4 2	1⇨*Go to Module UCF.*
UCD2. Adults use certain ways to teach children the right behavior or to address a behavior problem. I will read various methods that are used. Please tell me if you or any other adult in your household has used this method with *(**name**)* in the past month. Ro reritto rej kommani jet wewen ko nan katakin im kaje ajiro ro nan aer ukot mwil ko rejjab jimwe im ajiri eo ej kommani. Inaaj riiti waj wewen ko jej kojerbali. Elane kwe ak ro bar imweo rekar kojerbali wewen kein ilo allon eo lok nan (et eo) [A] Took away privileges, forbade something *(**name**)* liked or did not allow (him/her) to leave the house./ kabojerak an (et eo) kommani men ko ekonaan ak jab kotlok an (et eo) diwoj jen imweo. [B] Explained why *(**name**)*'s behavior was wrong./ komeleleiki wewen an (et eo) jab eman milin. [C] Shook (him/her)./ Idikdiki [D] Shouted, yelled at or screamed at (him/her)./Lamoj nane ak burone. [E] Gave (him/her) something else to do./ Lelok jet men nan an kommani. [F] Spanked, hit or slapped (him/her) on the bottom with bare hand./ dente, ak jebtake kabin. [G] Hit (him/her) on the bottom or elsewhere on the body with something like a belt, hairbrush, stick or other hard object./ ***denloke kabin ak ijoko jet enbwinin kon kańor, koom buraj, alal ak men ko im reben ak kijnene*** [H] Called (him/her) dumb, lazy or another name like that./ Kabbwebweiki, ba nane ke eleje im jeronlok bar jet men eierlok wot. [I] Hit or slapped (him/her) on the face, head or ears. Dente ak jebtake turin mejen, boran ak lojelňin [J] Hit or slapped (him/her) on the hand, arm, or leg. Dente ak jebtake ion pein ak neen [K] BEAT (HIM/HER) UP, THAT IS HIT HIM/HER OVER AND OVER AS HARD AS ONE COULD. DENTE AK MANE ELAP JEN JONAN	YES NO TOOK AWAY PRIVILEGES ..... 1 2 BOKE KONAAN AJ JIMWE KO AN EXPLAINED WRONG BEHAVIOR..... 1 2 KOMLELEKI KON MANIT EO EJAB JIMWE SHOOK HIM/HER ..... 1 2 IDIKDIKI SHOUTED, YELLED, SCREAMED ..... 1 2 LAMOJ AK BURONE GAVE SOMETHING ELSE TO DO ..... 1 2 LELOK JET MEN NAN AN KOMMANI SPANKED, HIT, SLAPPED ON BOTTOM WITH BARE HAND ..... 1 2 DENETE, JEBTAKE KABIN. HIT WITH BELT, HAIRBRUSH, STICK OR OTHER HARD OBJECT ..... 1 2 DENETE KON KANOR, BIRAJ IN BAR, ALAL AK MEN KO REBEN AK REKIJNENE CALLED DUMB, LAZY OR ANOTHER NAME ..... 1 2 HIT / SLAPPED ON THE FACE, HEAD OR EARS ..... 1 2 DENETE, JEBTAKE MEJEN, BORAN IM LOJILININ HIT / SLAPPED ON HAND, ARM OR LEG ..... 1 2 DENTE, JEBTAKE IION PEIN, PEIN AK NEEN. BEAT UP, HIT OVER AND OVER AS HARD AS ONE COULD..... 1 2 DENTE ELON ALLEN AK MANE ELAP JAN JONAN	
UCD3. DO YOU BELIEVE THAT IN ORDER TO BRING UP, RAISE, OR EDUCATE A CHILD PROPERLY, THE CHILD NEEDS TO BE PHYSICALLY PUNISHED? KOJ TOMAK K, ILO AN JUON AJIRI WONLONTAK,RITTOLOK KON KATAK KO REJEJOT IM JIMWE, AJIRI EO EJ AIKUIJ KAJE?	YES/AET ..... 1 NO/JAAB ..... 2 DK / NO OPINION..... 8 IJAJE/ EJJELOK UWAAK	

UCF. Child Functioning		
UCF1. *Check UB2: Child's age?*	AGE 0 OR 1 ..... 1 AGE 2, 3 OR 4 2	1⇨ *Go to Module BD*
UCF4. I would like to ask you some questions about difficulties your child may have. Imaron ke kajitok jet kajitok ko ikijen aban ko ippen ajiri eo. Does (***name***) wear glasses? (et eo) ej ke kojerbal mej bilo ko?	YES/AET ..... 1 NO/JAAB 2	
UCF5. Does (***name***) use a hearing aid? **(et eo) ej ke kojerbale kein jiban ronjake ko**?	YES/AET ..... 1 NO/JAAB 2	
UCF6. Does (***name***) use any equipment or receive assistance for walking? **(et eo) ej ke kojerbale men ko nan jibane etetal**.	YES/AET ..... 1 NO/JAAB 2	
UCF7. In the following questions, I will ask you to answer by selecting one of four possible answers. For each question, would you say that (***name***) has: 1) no difficulty, 2) some difficulty, 3) a lot of difficulty, or 4) that (he/she) cannot at all. **Ilo kajitok kein kio, imaron ke kajitok waj ippam bwe kon uaki ilo am kalet juon ian uak kein. 1) Ejelok aban, 2) ewor jidik aban, 3) elap an lon aban, 4) ejab maron nan jidik.** *Repeat the categories during the individual questions whenever the respondent does not use an answer category:* Remember the four possible answers: Would you say that (***name***) has: 1) no difficulty, 2) some difficulty, 3) a lot of difficulty, or 4) that (he/she) cannot at all?		
UCF8. *Check UCF4: Child wears glasses? Lale UCF4:* ***Ajiri eo ej ke kojerbal mejen riit ko?***	YES/AET, UCF4=1 ..... 1 NO/JAB, UCF4=2 2	1⇨*UCF7A* 2⇨*UCF7B*
UCF8A. When wearing (his/her) glasses, does (***name***) have difficulty seeing? **Ne ej kojerbal mej ko, (et eo) emman ke an reimaanlok ak kojerbale?**	NO DIFFICULTY/***EJELOK ABAN*** ..... 1 SOME DIFFICULTY/**JIDIK** ABAN ..... 2 A LOT OF DIFFICULTY/**ELAP AN ABAN** ..... 3 CANNOT SEE AT ALL/**EJJAB LOLOKIJEN KAKE** 4	
UCF9. *Check UCF3: Child uses a hearing aid?* ***Ej ke kojerbal kein jiban ronjake ko?***	YES/**AET**, UCF3=1 ..... 1 NO/**JAB**, UCF3=2 2	1⇨*UCF9A* 2⇨*UCF9B*
UCF9A. When using (his/her) hearing aid(s), does (***name***) have difficulty hearing sounds like peoples' voices or music**? Ilo an kojerba lkein ronjake eo, (et eo) emman ke an ron ainikien armij ak al ko?**	NO DIFFICULTY/**EJELOK ABAN** ..... 1 SOME DIFFICULTY/**JIDIK ABAN** ..... 2 A LOT OF DIFFICULTY/**ELAP AN ABAN** ..... 3 CANNOT HEAR AT ALL/**EJAB MARON RONJAKE** 4	
UCF10. *Check UCF4: Child uses equipment or receives assistance for walking?****Ajiri eo ej kojerbal ke kein jiban etetal im makutktu ko?***	YES/**AET**, UCF4=1 ..... 1 NO/**JAB**, UCF4=2 2	1⇨*UCF10A* 2⇨*UCF11*
UCF10A. Without (his/her) equipment or assistance, does (***name***) have difficulty walking? **Ewor ke aban ilo an emakutkut ak etetal ilo an jab kojerbal kein jiban etetal kein**?	SOME DIFFICULTY/**JIDIK ABAN** ..... 2 A LOT OF DIFFICULTY/**ELAP AN ABAN** ..... 3 CANNOT WALK AT ALL/**EJAB MARON NAN JIDIK** 4	
UCF10B. With (his/her) equipment or assistance, does (***name***) have difficulty walking? (**Ilo an kojerbal kein jiban etetal kein, ewor ke an ban ilo an emakutkut**?	NO DIFFICULT/**EJELOK ABAN** ..... 1 SOME DIFFICULTY/**EWOR AN ABAN** ..... 2 A LOT OF DIFFICULTY/**EBIN AN EMAKUTKUT** ..... 3 CANNOT WALK AT ALL/**EBAN EMAKUTKUT** 4	1⇨*UCF12* 2⇨*UCF12* 3⇨*UCF12* 4⇨*UCF12*
UCF11. Compared with children of the same age, does (***name***) have difficulty walking? **Keidi ippen ajiri ro jet jonan yio ko aer wot juon, (et eo) ewor kea ban ilo an emakutkut?**	NO DIFFICULTY/**EJELOK AN ABAN** ..... 1 SOME DIFFICULTY/**EWOR ABAN** ..... 2 A LOT OF DIFFICULTY/**EBIN AN EMAKUTKUT** ..... 3 CANNOT WALK AT ALL/**EJAJE EMAKUTKUT** 4	

UCF12. Compared with children of the same age, does (***name***) have difficulty picking up small objects with (his/her) hand? **Keidi nan ajiri ro jet jonan dettaer wot juon, elon ke an (et eo) aban ak ebin ke an jibwe im kotaki jen lal jet men ko redrik kin pein?**	NO DIFFICULTY/**EJELOK ABAN** ..... 1 SOME DIFFICULTY/**EWOR ABAN** ..... 2 A LOT OF DIFFICULTY/**ELAP AN BIN/ABAN** ..... 3 CANNOT PICK UP AT ALL/**EBAN JIBWE/KOTAKE** 4	
UCF13. Does (***name***) have difficulty understanding you**? (Et eo) ej melele ke kin ta eo kwoj ba nane ilo am konono?**	NO DIFFICULTY/**JEJELOK ABAN** ..... 1 SOME DIFFICULTY/**JIDIK ABAN** ..... 2 A LOT OF DIFFICULTY/**ELAP AN ABAN** ..... 3 CANNOT UNDERSTAND AT ALL/**EJAB MELELE** 4	
UCF14. When (***name***) speaks, do you have difficulty understanding (him/her)**? Ne (et eo) ej konono, emelele ke am ronjake ta eo ej ba**?	NO DIFFICULTY/**EJELOK ABAN** ..... 1 SOME DIFFICULTY/**JIDIK ABAN** ..... 2 A LOT OF DIFFICULTY/**ELAP AN ABAN** ..... 3 CANNOT BE UNDERSTOOD AT ALL/EJJAB MELELE 4	
UCF15. Compared with children of the same age, does (***name***) have difficulty learning things? **Keidi ippen ajiri ro dettan wot e, (et eo) ebin ke an ekatak jet kol ak men kaal?**	NO DIFFICULTY/**EJELOK ABAN** ..... 1 SOME DIFFICULTY/**WOR JIDIK ABAN** ..... 2 A LOT OF DIFFICULTY/**ELAP AN LON ABAN** ..... 3 CANNOT LEARN THINGS AT ALL/**EJAB MARON** 4	
UCF16. Compared with children of the same age, does (***name***) have difficulty playing? **Keidi ippen ajiri ro dettan wot e, (et eo) ewor ke aban ilo an ikure?**	NO DIFFICULTY/**EJELOK ABAN** ..... 1 SOME DIFFICULTY/**EBWE AN ABAN AN IKURE** ..... 2 A LOT OF DIFFICULTY/**EBIN AN IKURRE** ..... 3 CANNOT PLAY AT ALL/**EJAJE KUKKURE** 4	
UCF17. The next question has five different options for answers. I am going to read these to you after the question. **Kajitok in tok juon ewor 5 kilen am naj uake im naj kwaloki mojin wot riiti waj kajitok in.** Compared with children of the same age, how much does (***name***) kick, bite or hit other children or adults? **Keidi ippen ajiri jet dettaer wot juon, ewi jonan an (et eo) irre einwot juuji, kuji, ak denloke ajiri ro jet ak ritto ro?** Would you say: not at all, less, the same, more or a lot more?	NOT AT ALL/**EJJAB NAN JIDIK** ..... 1 LESS/EDRIKLOK ..... 2 THE SAME/**JONAN EO WOT** ..... 3 MORE/**ELAPLOK AN IRRE** ..... 4 A LOT MORE/**ELUKUN TAR JEN JONAN AN IRRE** 5	

MODULE BD: BREASTFEEDING AND DIETARY INTAKE

BD2. Has (***name***) ever been breastfed? **(Et eo) enanin ke kar ninnin ippam?**	YES/**AET** ..... 1 NO/**JAB** ..... 2 DK/**JAB JELA/EJELOK UAAK** 8	2⇨*BD4* 8⇨*BD4*
BD3. Is (***name***) still being breastfed? **Kwōj kaninnin wōt ke (ET EO) ilo ittum?**	YES/**AET** ..... 1 NO/**JAB** ..... 2 DK/**JAB JELA AK EJELOK UAAK** 8	2⇨*BD4* 8⇨*BD4*
BD3A. How many times did you breastfeed last night between sunset and sunrise **Jete allen am kar kaninin ajiri eo ibbam jen jota tok nan ke ejibon?** *If unknown, record '99'.* ***Ne ejab alikar uaak eo je nomba kein "99"***	NUMBER OF NIGHTTIME FEEDINGS **JETE ALEN AM KANINNIN ILO JUON BON**	
BD3B. How many times did you breastfeed yesterday during the daylight hours? **Jete allen am kar kaninnini ajiri eo ibbam inne jen ke ej jibon nan ke ej bon ?** *If unknown, record '99'.* ***Ne uaak eo ejjab alikkar likit nomba kein "99"***	NUMBER OF DAYLIGHT FEEDINGS **Jete alen am kaninnin ilo juon raan likio**	

BD4. Yesterday, during the day or night, did (***name***) drink anything from a bottle with a nipple? **(ET EO) ear ke idaak jabrewōt jen bato eo ewōr boran ilo raan eo inne ak jotenin inne?**	YES/**AET** ..... 1 NO/**AET** ..... 2 DK/**EJAJE UAAK EO** 8			
BD5. Did (***name***) drink Oral Rehydration Salts, ORS, yesterday, during the day or night? **(Et eo) ekar ke idraak ORS (ak uno eo nan bobrae an jab mora enbwinid ilo ien ad bidodo) in bon ke ak ilo raan**	YES/**AET** ..... 1 NO/**JAB** ..... 2 DK/**EJAJE UAAK EO** 8			
BD6. Did (***name***) drink or eat vitamin or mineral supplements or any medicines yesterday, during the day or night? **(Et eo) ekar ke idaak uno einwot vitamin, mineral, ak uno ko jet inn eke bon?**	YES/**AET** ..... 1 NO/**JAB** ..... 2 DK/**EJAJE UAAK EO** 8			
BD7. Now I would like to ask you about all other liquids that (***name***) may have had yesterday during the day or the night**. Ij kio iten kajitok ippam kain dren rot ko (et eo) ear ilimi ak idraak aolepen inne kab bon.** Please include liquids consumed outside of your home. **Ekoba ne ear idaak ijoko jet ijelokin mweo.** Did (***name***) drink (***name of item***) yesterday during the day or the night**: (Et eo) ekar ke idaak (etan dren eo) inne ke bon.**				
		YES	NO	DK
[A] Plain water? **Aeboj wot?**	PLAIN WATER	1	2	8
[B] Juice or juice drinks? **Dren in leen wojke ko**?	JUICE OR JUICE DRINKS	1	2	8
[C] Clear broth/clear soup**? Drenin soup ?**	CLEAR BROTH	1	2	8
[D] Infant formula, such as Similac, Bonna, Bonamil, Morinaga BF, Enfamil**. Milk ko nimen ninnin einwot Enfamil, morinaga, similac im ko jet?**	INFANT FORMULA	1	2➢ *BD7[E]*	8➢ *BD7[E]*
[D1] How many times did (***name***) drink infant formula? **Jete alen an (et eo) idraak milk ko nimen ninnin?** *If 7 or more times, record '7'.* ***Jimjoun ak lonlok, je "7"*** *If unknown, record '8'.* ***Ne ejab alikar, je "8"***	NUMBER OF TIMES DRANK INFANT FORMULA ..... **JETE ALEN AN AJIRI EO IDRAAK MILK KO NIMEN NINNIN**			
[E] Milk from animals, such as fresh, tinned, or powdered milk? (Not sweetened condensed milk) **Milk kuwat ak milk bouta ak milk dren ko jet?**	MILK	1	2➢ *BD7[F]*	8➢ *BD7[F]*
[E1] How many times did (***name***) drink milk? **Jete alen an (et eo) eo idraak milk?** *If 7 or more times, record '7'.* **Jimmjuon ak lonlok, je nomba "7"** *If unknown, record '8'.* ***Ne ejab alikar, je "8"***	NUMBER OF TIMES DRANK MILK ..... **JETE ALEN AN KAR IDAAK MILK**			
[F] Tea or Coffee? **Tea ak Kobe?**	TEA OR COFFEE/**TEA IM KOBE**? 1 2 8			
[G] Sugar sweetened beverages such as carbonated soft drinks? **Ak dren ko jet retinal einwot cola?**	SUGAR SWEETENED BEVERAGES 1 2 8 **DREN KO JET MME RETONAL**			
[X] Any other liquids? **Bar kain dren ko jet?**	OTHER LIQUIDS/**DREN KO JET**	1	2➢ *BD8*	8➢ *BD8*
[X1] *Record all other liquids mentioned.* **Bar je kain dren ko jet.**	(*Specify*)/**kalikar dren rot** _____			

BD8. Now I would like to ask you about <u>everything</u> that (***name***) ate yesterday during the day or the night. Please include foods consumed outside of your home.

- Think about when (***name***) woke up yesterday. Did (he/she) eat anything at that time?
  If 'Yes' ask: Please tell me everything (***name***) ate at that time. *Probe:* Anything else?
  Record answers using the food groups below.
- What did (***name***) do after that? Did (he/she) eat anything at that time?
  Repeat this string of questions, recording in the food groups, until the respondent tells you that the child went to sleep until the next morning.

Imaron ke bar kajitõk ñe ebar wõr kain moña ko (ET EO) ear buki inne, jen jiboñ ñan boñ.
Komaron ke kobaik mona ko ear buki moko jet.
-Ke ekar rujtok inne ekar ke mona ien ne? Ne "aet", komaron ke letok ta ear mona?. Bar lale: ebar lon k?
Je aolep uak ilo group in mona kein ilal.
Ta eo (et eo) ear komane elikin? Ekar k bar mona ien ne?
Elije kajitok kane im je uak ko ilo group in mona kane, nan ne jenen eba waj k ajiri eo ekiki.

For each food group not mentioned after completing the above ask: Just to make sure, did (***name***) eat (***food group items***) yesterday during the day or the night. **(Et eo) ekar ek mona (mona kein) inne ak bon?**		YES	NO	DK
[A] Yogurt made from animal milk**? Ekar ke mona, mona ko koman jen milk in menin mour ko einwot Yogurt.** *Note that liquid/drinking yogurt should be captured in BD7.* ***Yogurt ko jej maron ilimi renaj laajrak ilo BD7***	YOGURT	1	2➢ *BD8[B]*	8➢ *BD8[B]*
[B] Any baby food, such as insert brand name of commercially fortified baby food, e.g. Cerelac, Gerber, Hero or Nestum**? Ekar ke mona mona ko kijen ajiri/ ninnin einwot baby food ko komani tok jen likin majol in?**	FORTIFIED BABY FOOD **MONA KO KIJEN NINNIN JEN LIKIN MAJOL IN**	1	2	8
[B1] How many times did (***name***) eat fortified baby food? **Jete alen an kar mona mona kein kijen ajiri/ ninnin?** *If 7 or more times, record '7'.* ***Jimjuon alen im lonlok, je nomba in "7"*** *If unknown, record '8'.* **Ne ejab alikar, je "8".**	NUMBER OF TIMES ATE FORTIFIED BABY FOOD ..... **JETE ALEN AN MONA MEN KEIN KIJEN NINNIN/AJIRI**			
[C] Bread, rice, noodles, porridge, or other foods made from grains? **Bilawe ak rice ak utoñ ak moña ko jet kõmman jen grain?**	FOODS MADE FROM GRAINS/ **MONA KO KOMMAN JEN GRAIN**	1	2	8
[D] Pumpkin, carrots, squash, or sweet potatoes that are yellow or orange inside? **Baanke ak carrot ak pitato toñal ko im eialo ak oran lowaer?**	PUMPKIN, CARROTS, SQUASH, ETC. **PAANKE, KERRET**	1	2	8
[E] White potatoes, white yams, taro, cassava, turnip, cocoyam, or any other foods made from roots? **Pitato, iaam, iaraj ak moña ko im jej totaki?**	FOODS MADE FROM ROOTS **MONA KO EINWOT IARAJ, IAAM,PITETO**	1	2	8
[F] Any dark green, leafy vegetables, such as chinese cabbage, local green leafy varieties, spinach, water spinach, brocolli, beet greens, arugula, collard greens, kale, mustard greens, dark lettuce greens? **Jabrewõt kain bolok ko im eddro aer color green?**	DARK GREEN, LEAFY VEGETABLES/ **BOLOK IN MENIN EDDEK KO JEJ KANI ME EDDO AET GREEN**	1	2	8
[G] Ripe mangoes, ripe papayas, pandanas passion fruit, peaches, persimmon, tree tomato? **Mango, papaya, keinabu ak bob emmer?**	RIPE MANGO, RIPE PAPAYA/ **Mango, papaya, keinabu ak bob emmer?**	1	2	8
[H] Any other fruits or vegetables, such as: *apple, avocado, banana, blackberry, coconut flesh, watermelon, grapes, guava, honeydew melon, jackfruit, lemon, litchi, orange, plum, pineapple, blueberry, cherries, cranberry, dates, figs, grapefruit, pomelo, prune, raspberry, sapodilla, soursop, starfruit, strawberry, tamarind, tangerine, Summer squash, green beans, cauliflower, cabbage, onion, bitter melon, fresh corn, eggplant, okra, radish, beets, asparagus, green pepper, jicama, leek, light green lettuces, Fresh peas, snow peas, snap peas, mushrooms, zucchini* **Ak leen wojke ak kein ekkan ko jet?einwot apple, banana, plum, orange, watormelan, guava, im ko jet?**	OTHER FRUITS OR VEGETABLES/**FRUITS KO JET**	1	2	8
[I] Liver, kidney, heart or other organ meats? **Aj, deke in jibke ak kidney, menono ak part in ko jet?**	ORGAN MEATS/ PART KO **JET AN MENIN MOUR KO**	1	2	8
[J] Any other meat, such as beef, pork, lamb, goat, chicken, duck or sausages made from these meats? **Jabrewõt kain kanniõk ko einwõt kanniõk in kao, piik, laam, goat, bao ak dak?**	OTHER MEATS/**KANIEK KO JET EINWOT BAO, PIG, DAAK**	1	2	8
[K] Eggs? **Leb?**	EGGS/**LEP**	1	2	8
[L] Fish or shellfish either fresh, canned, or dried? **Ek kããl ak mõrã?**	FRESH OR DRIED FISH **EK KEEL AK ATITIT/MORA**	1	2	8

[M] Beans, peas, lentils or nuts, including any foods made from these such as hummus, tofu and tempeh? **Moña ko kõmman jen bean, pea, bean aetok ak nut ko?**	FOODS MADE FROM BEANS, PEAS, NUTS, ETC.	1	2	8	
[N] Cheese or other food made from animal milk? (NOT including butter, ice cream, condensed milk, cream or sour cream) **Cheese, yogurt ak jet bar kain men ko kõmman jen milk?**	CHEESE OR OTHER FOOD MADE FROM MILK	1	2	8	
[O] Any oil, fats, or butter, or foods made with any of these including cream and sour cream. **Oil, kirij, ak bõta ak moña ko rej kõmman jen men kein.**	OILS, FATS OR BUTTER				
[P] Any sugary foods such as chocolates, sweets, candies, pastries, cakes or biscuits? (Including condensed milk and ice cream). **Mona ko jet retinal einwot chocolate, cakes, cookies, ice kuriim im ko jet?**	SUGARY FOODS/ **MONA KO RETONAL**				
[X] Other solid, semi-solid, or soft food**? Mona ko jet rebidodo im ko jet rej jab kanuij in bin nan kani.**	OTHER SOLID, SEMI-SOLID, OR SOFT FOOD	1	2➢ *BD9*	8➢ *BD9*	
[X1] *Record all other solid, semi-solid, or soft food that do not fit food groups above.* ***Moña ko jet im remaroñ eppen ak ko rejjab lukun pen?***	(*Specify*)**lukun kalikare** _____				
BD9. How many times did (***name***) eat any solid, semi-solid or soft foods yesterday during the day or night? ***Ewõr jete katõn an (ET EO JEN 542) kar moña moña ko reppen, rejjab lukun eppen, ak ko rebiroro ilo aolepen raan eo inne jen jibuñ ñan jota***	NUMBER OF TIMES/**JETE ALEN** ..... — DK/**EJAB JELA UAAK EO** 8				
BD10. WHAT DO YOU THINK ABOUT HAND WASHING WITH SOAP? **KOLAK BAJ LALE EMMAN KE AM KARREOIKI PEID KIN DREN IM SOAP?** **(CAREGIVER)**	Good/**Emman**.....1 Not good/**Ejab emman**.....2 DK/**Ejab jela**.....3				
BD11. AT WHAT TIMES DO YOU NORMALLY WASH YOUR HANDS WITH SOAP? **NEET EKKA AM KWALE PEUM KIN SOAP?** (CIRCLE THE RESPONSES SPOKEN) **DOULULI UAAK EO**	Yes/Aet No/Jab Before eating/**mokta jen mona** 1 2 After using the toilet/**mojen koherbal mon kepojak eo** 1 2 Every time / regularly/**aolep ien** 1 2 Before cooking food/**mokta jen koman mona** 1 2 When I have diarrhea/**ne ij naninmij in ilok loje** 1 2 After working/**mojin jerbal** 1 2 When my hands look dirty/**ne peiu ej etoon** 1 2 After handling animals/**elkin jebjeb menin mour ko** 1 2 Don't know/**ejaje** 1 2 Other (*specify*) /ebar wor ke.....				

Module CH. Child Health		
CH1. Did (NAME) receive a vitamin A dose within the last six months? **(ET EO) ear ke ebbōk unokan Vitamin A ilo 6 allon ko rej jemloklok?** *Show common types of ampules / capsules / syrups* ***(kwalok jekjekin uno kein)***	Yes/**Aet** ..... **1** No/**Jab** ..... 2 DK/**Jab jela** 8	
CH2. In the last seven days, did (NAME) take iron pills, or iron syrup (like this/any of these)? **Ilo raan ko 7 ko rej jemlok, (ET EO) ear ke ebbōk iron pill ak syrup einwōt kein walok ijin?** *Show common types of ampules / capsules / syrups/**kwalok jekjekin uno kein***	Yes/**Aet** ..... 1 No/**Jab** ..... 2 DK/**jab jela** 8	
CH3. Has (NAME) taken any drug for intestinal worms (deworming) in the last six months? **(ET EO) ear ke idaak unokan maj ko ilo loje ilo alloñ ko 6 rej jemlok?** Show common types of pills	Yes/Aet ..... 1 No/Jab ..... 2 DK/Jab jela 8	
CH4. In the last two weeks, has (***name***) had diarrhoea? **(ET EO) enañin ke biroro ak ilok lojen ilo week ko ruo rej jemlok?**	YES/AET ..... 1 NO/JAB ..... 2 DK/JAB JELA 8	2⇨*CH10* 8⇨*CH10*
CH5. I would like to know how much (***name***) was given to drink during the diarrhoea. This includes breastmilk, Oral Rehydration Salts, ORS and other liquids given with medicine. During the time (***name***) had diarrhoea, was (he/she) given less than usual to drink, about the same amount, or more than usual? *If 'less', probe*: Was (he/she) given much less than usual to drink, or somewhat less? **Imaron k jela ewi jonan am lelok den in draak nan (etan) ilo ien an ilok loje. Einwot ilo kaninin ak ORS ak dren ko ewor uno ie? Ilo ien eo ear ilok lojen, edrik an draak jen mokta ke, eja jonan eo wot ke, ak elaplok jen mokta?** **Ne "edrik" bar etale; Edriklok an draak dren jen mokta, ak enwot edriklok.**	MUCH LESS/EJAB LAP ..... 1 SOMEWHAT LESS/EDIK ..... 2 ABOUT THE SAME/EBWE ..... 3 MORE/ELAPLOK ..... 4 NOTHING TO DRINK/EJELOK ..... 5 DK/JAB JELA 8	
CH6. During the time (*name*) had diarrhoea, was (he/she) given less than usual to eat, about the same amount, more than usual, or nothing to eat? *If 'less', probe:* Was (he/she) given much less than usual to eat or somewhat less? **Ilo ien eo (ET EO) ear ilok lojen ak biroro, ewi joñan kar lelok kijen: eddiklok jen joñan eo ekkā am kijoñ naajdiki ke, ejja joñan eo ekkā am kijoñ naajdiki ke, elaplok jen joñan eo ekkā am kijoñ naajdiki ke, ejelok moña en lelok nañe?** **ELAÑE EDDIKLOK, ETALE: Elap an dik jen joñan eo ekkā am naajdiki ke, ebwe an dik?**	MUCH LESS/EDIK ..... 1 SOMEWHAT LESS/JIDIK ..... 2 ABOUT THE SAME/EBWE ..... 3 MORE/ELAPLOK ..... 4 STOPPED FOOD/DRIKE MONA ..... 5 NEVER GAVE FOOD/EAR JAB MONA ..... 7 DK/JAB JELA 8	

CH7. Did you seek any advice or treatment for the diarrhoea from any source? **EWÕR KE JIKIN EN KWAR KABBOK JIBAÑ AK UNOKAN BIRORO IE?**	YES/AET ..... 1 NO/JAB..... 2 DK/JAB JELA 8	2⇨*CH9* 8⇨*CH9*
CH8. Where did you seek advice or treatment? *Probe:* Anywhere else? **Ia eo kwar kabbok jibañ ak uno ie?** **Ebar ke wõr jikin?** *Circle all providers mentioned, but do not prompt with any suggestions.* ***Doululi uaak eo*** *Probe to identify each type of provider.* *If unable to determine if public or private sector, write the name of the place and then temporarily record 'X' until you learn the appropriate category for the response.* ***Elane ejab alikar etan jikin ak ia eo, ekwe je etan ijo ak bujon eo*** (*Name of place*) **Etan jikin eo**	GOV'T MEDICAL FACILITY MAJURO HOSPITAL.. A EBEYE HOSPITAL B OUTER ISLAND HEALTH CENTER/ DISPENSARY C MOBILE CLINIC D PRIVATE MEDICAL FACILITY . . . E SHOP F LOCAL HEALER G OTHER _____ X (SPECIFY)	
CH9. During the time (*name*) had diarrhoea, was (he/she) given: **Ewõr ke ian dren ak uno kein elãājrak ijin ilal kar lelok ñan ajiri eo ilo tõre eo ear jino an ilok lojen ak biroro** [A] A fluid made from a special packet called insert local name for ORS packet solution? **Uno bouta ilo package im kwõj iiõke ibben dren ñan jibañ bõbrae an mõrã enbwinin (ORS)?** [B] A pre-packaged ORS fluid called insert local name for pre-packaged ORS fluid? **Uno dren eo im edredrelok iiõke ñan bõbrae an mõrã enbwinin (einwõt electro-lite, ORS)?** [C] A government recommended homemade fluid? **Iiõk ko im letok jen Kien eo im komaroñ kõmmane imweo im ej jibañ bõbrae an mõrã enbwinnin?** [D] Zinc supplementation?	Y N DK FLUID FROM ORS PACKET..... 1 2 8 PRE-PACKAGED ORS FLUID..... 1 2 8 GOVERNMENT RECOMMENDED HOMEMADE FLUID ..... 1 2 8 ZINC 1 2 8	
CH10. At any time in the last two weeks, has (name) been ill with a fever? ***(ET EO) EAR KE NAÑINMEJ KIN FEVER ILO JABREWÕT IEN ILOAN WEEK KO RUO REJ JEMLOK?***	YES/AET ..... 1 NO/JAB..... 2 DK/JAB JELA 8	
CH11. At any time in the last two weeks, has (name) had an illness with a cough? ***(ET EO) EAR KE NAÑINMEJ IN POKPOK ILO JABREWÕT IEN ILOAN WEEK KO RUO REJ JEMLOK?***	YES/AET ..... 1 NO/JAB..... 2 DK/JAB JELA 8	
CH12. At any time in the last two weeks, has (name) had fast, short, rapid breaths or difficulty breathing? ***ILO IEN AN (ET EO) EAR BÕK NAÑINMEJ IN POKPOK, EMAKIJKIJ IM KADU JETÑAK IN AN MENONO KE, E BON AN MENONO KE?***	YES/AET ..... 1 NO/JAB..... 2 DK/JAB JELA 8	2⇨*CH14* 8⇨*CH14*
CH13. Was the fast or difficult breathing due to a problem in the chest or a blocked or runny nose? ***ILO AN EMAKIJKIJJ IM KADU JETÑAK IN AN MENONO, EJ ITOK JEN PROBLEM IN OB KE JEN AN BON IM TOR BOTIN?***	PROBLEM IN CHEST ONLY/JORREN ILO UPON..... 1 BLOCKED OR RUNNY NOSE ONLY/EBON AK IUR BOTIN ..... 2 BOTH/AOLEP MEN KEIN ..... 3 OTHER (SPECIFY)/KO JET..... 6 DK/JAB JELA 8	

CH14. The last time (name) passed stools, what was done to dispose of the stools? ***Eliktata in an kar kepojak (bijok)ewi wawein am kar jolok bwidrej eo an?***	CHILD USED TOILET / **LATRINE/MON KEPOJAK EO** ..... 01 PUT / RINSED INTO TOILET OR LATRINE/**JAUNI ILO MON KEPOJAK EO**..... 02 PUT / RINSED INTO DRAIN OR DITCH..... 03 THROWN INTO GARBAGE (SOLID WASTE)**JOLOK ILO NIEN KOPEJ KO** ..... 04 BURIED/KALBINI ..... 05 LEFT IN THE OPEN/**KOJERBAL IJOKO REJERWAWA**..... 06 PUT/RINSED IN THE OCEAN.....97 OTHER (SPECIFY)/**WEWEIN KO JE**T..... 96 DK/**JAB JELA** 98	

ANTHROPOMETRY MODULE INFORMATION PANEL **AN**	
AN1. *Cluster number:* ___ ___ ___	**AN2**. *Household number:* ___ ___
AN3. *Child's name and line number:* NAME/**ETAM** _____ ___ ___	**AN4**. *Child's age from UB2:* AGE/**YIO** (IN COMPLETED YEARS) ..... __
AN5. *Mother's / Caregiver's name and line number:* **Etan jinen/rikokajiriri eo** NAME/**ETAM** ___ ___	**AN6**. *Interviewer's name and number:* NAME/**ETAM** ___ ___ ___

ANTHROPOMETRY		
AN7. *Measurer's name and number:*	NAME ___ ___ ___	
AN8. Child Weight **Eddo in ajiri eo** *Record the result as read out by the Measurer:* ***Je jona eddo eo*** *Read the record back to the Measurer and also ensure that he/she verifies your record.*	KILOGRAMS (KG)/**EDDO IN**..... ___ ___ . ___ CHILD NOT PRESENT/**EJAKO AJIRI EO**..... 99.3 CHILD REFUSED/**MAKOKO IN PAUN**..... 99.4 RESPONDENT REFUSED ..... 99.5 OTHER (*specify*) _____ 99.6	99.3⇨*AN13* 99.4⇨*AN10* 99.5⇨*AN10* 99.6⇨*AN10*
AN9. *Was the child undressed to the minimum?****Ajiri eo ekar ke utikik nuknuk ko an ilo ien an paun?***	YES/**AET** ..... 1 NO, THE CHILD COULD NOT BE UNDRESSED TO THE MINIMUM/**JAB KONAAN** 2	
AN10. *Check AN4: Child's age?* ***Dettan ajiri eo?***	AGE/**YIO** 0 OR 1 ..... 1 AGE/**YIO** 2, 3 OR 4 2	1⇨*AN11A* 2⇨*AN11B*
AN11A. Child Height/Length. **Aetokan ajiri eo?** *The child is less than 2 years old and should be measured lying down. Record the result as read out by the Measurer:* ***Jone aetokan ilo an babu elane ajiri eo edik jen 2 yio dettan*** *Read the record back to the Measurer and also ensure that he/she verifies your record.****Kwalok jonan aetokan ajiri eo nan rijeje eoim bwe en bar kamole aetokan*** **AN11B**. *The child is at least 2 years old and should be measured standing up. Record the result as read out by the Measurer:* ***Ajiri eo en jutak ilo am jone aetokan elane 2 an yio im lonlok*** *Read the record back to the Measurer and also ensure that he/she verifies your record****. Kwalok jonan aetokan ajiri eo bwe rijeje eo en jeiki im kamole***	LENGTH / HEIGHT (CM) ..... ___ ___ ___ . ___ CHILD REFUSED..... 999.4 RESPONDENT REFUSED ..... 999.5 OTHER (*specify*) _____ 999.6	999.4⇨*AN13* 999.5⇨*AN13* 999.6⇨*AN13*
AN12. *How was the child actually measured? Lying down or standing up*? **Ewi wewein an kar ajiri eo jonok? Babu ke jutak?**	LYING DOWN/**BABU** ..... 1 STANDING UP/**JUTAK** 2	

AN13. Child MUAC *Record the result as read out by the Measurer:* *Read the record back to the Measurer and also ensure that he/she verifies your record.* ***Kwalok jonan bwe rijeje eo ej jeiki ilo an rijonjon eo lale im kamole***	MUAC (MILLIMETERS) ___ ___ ___ . ___ CHILD NOT PRESENT/**EJAKO** ..... 999.3 CHILD REFUSED/**EMAKOKO** ..... 999.4 RESPONDENT REFUSED/**JINEN EJAB KONAN** .. 999.5 OTHER (*specify*) 999.6	999.3⇨*AN13* 999.4⇨*AN10* 999.5⇨*AN10* 999.6⇨*AN10*
AN14. Access the child for bilateral oedema. **Etale im lale ebboj ke enbwinin ajiri eo.** Does the child have bilateral oedema? **Ebboj ke enbwinin ajiri eo?**	YES/AET ..... 1 NO/JAB 2	
AN15. *Today's date: Day/**raan** / Month/**allon** / Year/**yio**:* ___ ___ /___ ___ / 2 0 1 ___		
AN16. *Is there another child under age 5 in the household who has not yet been measured?* ***Ebar work e ajiri imwin yio eo an edik jen 5 yio ak ejanin jone aetokan?***	YES/**AET** ..... 1 NO/**JAB** 2	1⇨*Next Child*
AN17. *Thank the respondent for his/her cooperation and inform your Supervisor that the Measurer and you have completed all the measurements in this household.* ***Lelok kamolol nan armij eo im kenanik jupervijor eo am ke emoj an dedelok jerbal on jonok eo***		

UF11. *Record the time.* ***Je awa eo***	HOURS AND MINUTES ..... __ __ : __ __

UF16.

Check columns HL10 and HL20 in LIST OF HOUSEHOLD MEMBERS, HOUSEHOLD QUESTIONNAIRE: Is the respondent the mother or caregiver of another child age 0-4 living in this household? ***Armij eo kwar kajitikini ilo mweo ejjinen ajiri eo ke ta rikokajiriri eo***

☐ *Yes/Aet ⇨ Go to UF17 on the UNDER-FIVE INFORMATION PANEL and circle '01'. Then go to the next QUESTIONNAIRE FOR CHILDREN UNDER FIVE to be administered to the same respondent.*
☐ *No/jab ⇨ Go to UF17 on the UNDER-FIVE INFORMATION PANEL and circle '01'. Then end the interview with this respondent by thanking her/him for her/his cooperation. Check to see if there are other questionnaires to be administered in this household.*

QUESTIONNAIRE FOR MOTHERS OF CHILDREN 0-59 MONTHS OF AGE
Republic of the Marshall Islands National Nutrition Survey 2017

WOMAN'S INFORMATION PANEL
WM

WM1. *Cluster number:* ___ ___ ___	WM2. *Household number:* ___ ___
WM3. *Woman's name and line number: (* NAME _____ ___ ___	WM4. *Team Leader's name and number:* NAME _____ ___ ___ ___
WM5. *Interviewer's name and number:* NAME _____ ___ ___ ___	WM6. *Day / Month / Year of interview: (raan/allon/iio)* ___ ___ / ___ ___ / 2 0 1 ___

		WM7. *Record the time:* HOURS : MINUTES
WM8. *Check completed questionnaires in this household: Have you or another member of your team interviewed this respondent for another questionnaire?*	YES, INTERVIEWED ALREADY ..... 1 NO, FIRST INTERVIEW 2	1⊘*WM9B* 2⊘*WM9A*

WM9A. Hello, my name is (*your name*). We are from National Statistical Office. We are conducting a survey about the situation of children, families and households. I would like to talk to you about your health and other topics. This interview usually takes about number minutes. We are also interviewing mothers about their children. All the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know. May I start now?	WM9B. Now I would like to talk to you about your health and other topics in more detail. This interview will take about number minutes. Again, all the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know. May I start now?
YES, PERMISSION IS GIVEN ..... 1 NO, PERMISSION IS NOT GIVEN 2	1⊘*WOMAN'S BACKGROUND Module* 2⊘*WM17*

WM17. *Result of woman's interview.* *Discuss any result not completed with Supervisor.*	COMPLETED ..... 01 NOT AT HOME ..... 02 REFUSED ..... 03 PARTLY COMPLETED ..... 04 INCAPACITATED (*specify*) _____ 05 OTHER (*specify*) _____ 96

MODULE WB: WOMAN'S BACKGROUND (KADKADIN KORA EO)

WB1. How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)? Ewi aetokan am kar jokwe ak bed? *Je etan jikin eo:*(_____) If less than one year, record '00' years. Ne edrik jen juon yio, likit "00"	YEARS(YIO)..... ALWAYS.....95 (AOLEP IEN) VISITOR.....96 (RI-LOTOK)	95 ⊘WB3 96 ⊘WB3
WB2.Just before you moved here, in what island/atoll and islet did you usually reside? ***Mokta jen am kar jokwe ijin, ia eo ekka am kar jokwe ak bed ie?*** Write the name of the atoll/islands and islet. (**je etan ene ak aeto eo**) (Specify) _____	DIFFERENT ATOLL/ISLAND ..... SAME ATOLL, DIFFERENT ZONE .....94 SAME ATOLL, DIFFERENT ISLET.....95 OVERSEAS 96	

WB3. In what month and year were you born? ***Alloñ im yio ta eo kwar lotak*** ie?	MONTH . . . . . . DON'T KNOW MONTH . . . . . 98 YEAR . . . . . . DON'T KNOW YEAR 9998	
WB4. How old were you at your last birthday? ***Jete am yio ilo kar birthday eo eliktata?***	AGE IN COMPLETED YEARS	
WB. Have you ever attended school? **Konañin ke kar bed ilo jikuul?**	YES (aet) . . . . . 1 NO (jab) 2	
WB5. What is the highest level of school you attended: elementary, secondary, or higher? ***ta lebal eo ilontata kwar bed ie, elmentore, secondore, ak labell ko ilonlok?***	ELEMENTARY . . . . . 01 HIGH SCHOOL . . . . . 02 VOCATIONAL . . . . . 03 SOME COLLEGE . . . . . 04 ASSOCIATE DEGREE . . . . . 05 BACHELOR'S DEGREE . . . . . 06 MASTER'S DEGREE . . . . . 07 PROFESSIONAL DEGREE . . . . . 08 DOCTORATE DEGREE . . . . . 09. DON'T KNOW 98	
WB6. What is the highest (grade/year) you completed at that level? ***ta labell eo ilontata(kilaaj/yio) kwar kamoje?***	GRADE/YEAR (class jete im yio ta)	
WB7. Check WB5 for highest level of school attendance. ***lale WB5 im lale labell in jikuul eo ilontata ear bed ie.***	Elementary……1 High School or higher……2	1→WB8 2→MA1
WB8. Now I would like you to read this sentence to me. ***KIO KOMARON K RITI TOK NAAN KEIN.*** *Show sentence on the card to the respondent.If respondent cannot read whole sentence, probe: Can you read part of the sentence to me?* ***Komaroñ ke riiti tok jet ak jidik in wōt naan kein?***	CANNOT READ AT ALL (*EJAB MARON RIIT*) 1 ABLE TO READ ONLY PARTS OF SENTENCE (*MARON RIITI WOT JET IAN JEJE KEIN*) 2 ABLE TO READ WHOLE SENTENCE (*MARON RIITI AOLPEN JEJE KEIN*) 3 NO SENTENCE IN REQUIRED LANGUAGE (specify) 5 BLIND/VISUALLY IMPAIRED (*EBILO IM EJJAB EMMAN AN RIIT*)…… .6 TH	
WB9 Have you even participated in a literacy program or any other program that involves learning to read or write (not including elementary school)? Konañin ke kar bōk konam ak bed ilo pirokiraam ñan bukot jelalokjen ak prokiraam ko jet im rej katakin kilen riit im jeje jimor (ijelokin elementary jikuul)?	YES (*AET*) . . . . . 1 NO (*JAAB*) 2	

Module MA. Marital Status

MA1. What is your marital status? **konanin ke mare? jebel? emour ke leo ippam?**	Never married– 1 common/Currently married – 2 Separated – 3 Divorced – 4 Widowed – 5 Cohabitating – 6	1→MA3 5→MA7
MA2. How old is your (husband/partner)? Jete an leo belele/mōttam yio? Probe: How old was your (husband/partner) on his last birthday?	AGE IN YEARS (*DRETTAN*) __ __ DK 98	
MA3. Is the father of your child living with you now or is he staying elsewhere? **jemen ajiri ne nejim ej ke jokwe ippam kio ke bar juon jikin?**	Living with her (*jokwe ippen*) – 1 Staying elsewhere(*ejab jokwe ippen*) – 2	1→MA6 2→MA4
MA4. If he lives elsewhere, where does the father of the child reside? **ne ejab jokwe ippam, ej jokwe itu ia?**	Abroad(*likin majol*) – 1 On another atoll(*aelon ko jet*)– 2 In same atoll but different town(*eniin wot?*)– 3 In hometown(*moko mon*)– 4 Other (specify:_____) – 88	
MA5. Why do you live separately from the father of the child? ***etke ejenolok jikin amiro joke jen jeman?***	Work opportunitiy – 1 Education opportunity – 2 Separated/Divorced/Never married– 3 Other (specify:_____) – 88	
MA6. Record the father's name and line number from the household questionnaire.(*je etan jemen jen household form ne*) If Father does not live in household, record '00'. ***ne jeman ejab joke mwin likit '"0"***	Name(etan) _____ line number(nomba in id) __ __	

MA7. In what month and year did you enter the union with your (husband/partner)? ***Allon im yio ta eo kwar jino am jokwe ak bed im jokwe ibben leo peleem kein kajoun?***	DATE OF (FIRST) MARRIAGE MONTH __ __ DK MONTH 98 YEAR __ __ __ __ DK YEAR 9998	
Module CM. Fertility/Birth History		
CM1. Now I would like to ask about all the births you have had during your life. How many children have you given birth to? ***Kiõ imaron k kajitõkin yok kin jet kajitõk ko ikijen aolep ajiri ro nejim. Jej kenono kin aolep ajiri ro me lukkun nejim im jab ajiri ro kwar kakaajririki er.*** This module and the birth history should only include children born alive. Any stillbirths should not be included in response to any question. *(kajitok wot ikijien ajiri ro remour im ejab ro emoj aer jako ak mij)*	Number of live births _____ (Jete nejim ajiri emour?)	
CM2. Are you pregnant now? Kwõj bõroro ak nañinmej ke kiiõ?	YES 1 NO 2 UNSURE 3	1→CM3 2→MN1 3→MN1
CM3. How many weeks or months pregnant are you? Jete am alloñ kiiõ? RECORD NUMBER OF COMPLETED WEEKS OR MONTHS Only.	Weeks (wiik)..... MONTHS (allon)	
Module MN. Maternal and Newborn Health		
This module is to be completed for each child under 2 years of age. Mothers with more than one child under 2 years of age should be asked to complete a separate module for each child. Check the household list (HL5 and HL6) for all children under 2 years of age in the household. The child's date of birth should be after (month), 2015. If the child is born on the same month as today in 2015, they should be included in this module.		
MN1. Do you have a child/children under 2 years of age? **Elon ke nejim ajiri yio eo an ele ilalin 2?** Copy name and child's number from the household list. **Je etan kab nomba eo an ajiri eo jen list in eo ilo Household form e**o)	YES ..... 1 NO ..... 2 Name Child's number _____	1→MN2. 2→Check against HL5 and HL6 in theHousehold Questionnaire. If child is older than 23 months, proceed to Module AN1.
MN1a. Is (name) an adopted child?	YES ..... 1 NO 2	1→MN14
MN2. Did you see anyone for antenatal care during your pregnancy with (name)? Ewõr ke en kwar lolok ak takto ippen ke kwar buroro kin _____ (etan ajiri eo)?	YES ..... 1 NO 2	2→MN7
MN3. Whom did you see? Probe: Anyone else? Wõn eo kwar lolok ak takto ippen? Ebar ke wõr? *Probe for the type of person seen and circle all answers given.(kajitikini won im title rot eo an armij eo ear takto ippen)*	HEALTH PROFESSIONAL DOCTOR(*TAKTO)* ..... A NURSE / MIDWIFE..... B HEALTH ASSITANCE/PERSONNEL..... C OTHER PERSON TRADITIONAL BIRTH ATTENDANT(*RIKEMOUR IN AELON KEIN RO*) ..... F LOCAL HEALER..... G OTHER (specify) X	
MN4. Where did you receive prenatal care for this pregnancy Ia eo kwar takto in kurae ie ilo ien eo kwar bõroro ? Anywhere else? ebar ke wor? Probe to identify types of sources and circle the appropriate codes. ***Kajitokini elane ekar takto ijoko jet ijelokin hospital eo.*** If unable to determine if facility is public or private, write the name of the place. Je etan ijo ear takto ie)	YOUR HOME(MWEO) . . . A OTHER HOME (MON BAR JET ARMIJ). . . B GOV'T MEDICAL FACILITY MAJURO HOSPITAL C EBEYE HOSPITAL D OUTER ISLAND HEALTH CENTER/ DISPENSARY E PRIVATE . . . . . F OTHER _____ X (SPECIFY)	
MN5. How many weeks or months pregnant were you when you first received antenatal care for this pregnancy? Jete am alloñ ke kwar jino takto in kurae ke kwar Bororo? Record the answer as stated by respondent. (Je uaak eo einwot an kora eo ba)	WEEKS (WIIK) ..... 1 MONTHS (ALLON)..... 2 DK(EJAB JELA)..... 998	

MN6. How many times did you receive antenatal care during this pregnancy? Jete allen am takto in kurae ke kwar Bororo ak ilo kar ien bõroro in? Probe to identify the number of times antenatal care was received. If a range is given, record the minimum number of times antenatal care received. **En lukun alikar jete katton an kar takto in kurae**	NUMBER OF TIMES(JETE ALEN)..... __ __ DK(EJAB KEMEMEJ)..... 98	
MN7. During this pregnancy, were you given or did you buy any vitamin or mineral tablets or syrup? ***Ilo am kar Bororo takto ro rar lewaj ke kwar wia nimom uno in vitamin, minerals ak uno ko naetaer OON***? SHOW TABLETS/SYRUP(kwaloki bwe rijerbal ro ren lali)	YES(aet) . . . . . 1 NO(jab) . . . . . 2 DON'T KNOW(ejaje) 8	1→MN8 2→MN10 8→MN10
MN8. If yes, what type of vitamin or mineral tablets or syrup did you take? Tick all that apply. (Ne ear wor nimom uno, kain rot ian uno kein ijin?	Iron – 1 Iron/folic acid tablet – 2 Folic acids – 3 Mixed vitamin/mineral with iron – 5 Other (specify:_____) – 88	
MN9. During the whole pregnancy, for how many days did you take the tablets or syrup? *(Ilo aolepen tõre in bõroro eo, jete raan in am kar bõk uno kein?)* IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.*(Elane ejab alikar innem je oran raan in an kar idaak uno kein)*	☐☐ days Don't know / not answered – 77	
MN10. DURING THIS PREGNANCY, DID YOU TAKE ANY DRUG FOR INTESTINAL WORMS? (*ILO TÕRE IN BÕRORO IN, EWÕR KE UNO IN MAJ EN KWAR IDAAK?*)	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
MN11. Who assisted with the delivery of (name)? Wõn eo ear jibañ keotake (ET EO)? Probe: Anyone else? Ebar ke wõr? Ta kadkadin armij eo ear jiban kolotak eok. Probe for the type of person assisting and circle all answers given.	HEALTH PROFESSIONAL DOCTOR ..... A NURSE / MIDWIFE..... B HEALTH ASSITANT/PERSONNEL..... C OTHER PERSON TRADITIONAL BIRTH ATTENDANT ..... F LOCAL HEALER..... G OTHER (specify) _____ X NO ONE Y	
MN12. Where did you give birth to (name_____)? Ia eo im kwar keotake (ET EO) ie? Probe to identify the type of place. If unable to determine whether public or private, write the name of the place and then temporarily record '96' until you learn the appropriate category for the response.(Je etan jikin eo kwar kolotak ie) Etan jikin eo (Name of place)	YOUR HOME . . . A OTHER HOME . . . B GOV'T MEDICAL FACILITY MAJURO HOSPITAL.. C EBEYE HOSPITAL D OUTER ISLAND HEALTH CENTER/ DISPENSARY E PRIVATE . . . . . F OTHER _____ X (SPECIFY)	
MN13. Was (name) delivered by caesarean section? Rar ke mwijiti lojem im kwalok ninnin eo nejim? (Et eo_____)?	YES ..... 1 NO 2	
MN14. Was (name) weighed at birth? (Et eo_____) ear ke boun elkin an lotak?	YES ..... 1 NO ..... 2 DK 8	2⇒MN15 8⇒MN15
MN15. How much did (name) weigh? Ewi joñan eddro eo an (Et eo_____) If a card is available, record weight from card. *(lale eddo eo an ajiri eo ilo yellow card eo an)*	FROM CARD (LALE YELLOW CARD) ..... 1 (KG) __ . __ __ __ FROM RECALL..... 2 (KG) __ . __ __ __ DK..... 99998	

MN16. Did you ever breastfeed (name)? Konañin ke kar kaninnini (Et eo_____)?	YES ..... 1 NO 2	2⇘MN18.
MN17. How long after birth did you first put (name) to the breast? Ewi toan jen ien lotak eo im kwar jino am kaninnin (ET EO) ilo ittum? If less than 1 hour, record '00' hours.(dik jen 1 awa) If less than 24 hours, record hours. (iloan 24 awa) Otherwise, record days. (ne ejab ekwe jete raan innem ejino ninnin)	IMMEDIATELY..... 000 HOURS..... 1 __ __ DAYS ..... 2 __ __ DK / DON'T REMEMBER..... 998	
MN18. In the first three days after delivery, was (name) given anything to drink other than breast milk? Ilo raan ko jilu elkin an lotak, ekar ke idak milk ak dren ko jet ijelokin milk in ittumt ñan (ET EO_____)?	YES ..... 1 NO 2	1⇘MN19 2⊙AN1
MN19. In the first three days after delivery, what was (name) given to drink? Dren rōt eo (ET EO) ear idaak ilo raan ko jilu imaan elkin an kar lotak? Probe: Anything else? Ebar ke wōr? 'Not given anything to drink' is not a valid response and response category Y cannot be circled. (*jab doululi uaak eo elane ninnin eo ejelok men en ear idaak ilo raan ko jilu imaan elkin an kar lotak)*	MILK (OTHER THAN BREAST MILK)..... A (MILK KO JET IJELOKIN DRENIN ITTUM) PLAIN WATER..... B (AEBOJ SUGAR OR GLUCOSE WATER ..... C (DEN KO RETONAL) GRIPE WATER..... D SUGAR-SALT-WATER SOLUTION..... E FRUIT JUICE..... F INFANT FORMULA ..... G TEA / INFUSIONS / TRADITIONAL HERBAL PREPARATIONS ..... H HONEY..... I PRESCRIBED MEDICINE..... J OTHER (specify) _____ X NOT GIVEN ANYTHING TO DRINK Y	

Modulde DD. Maternal Minimum Dietary DIversity

Yesterday during the day or at night, did you eat or drink:

Code	Food Category	Consumed
DD1	**Any foods made from grains, like:** *Porridge, bread, rice, pasta/noodles or other foods made from grains* ***(kwar ke mona inne ak bon mona kein einwot jokkop in rice, pilawe, rice, ramen ak mona jet nan kokajuur enbwinid****)*	___ yes (1) ___ no (0)
DD2	**Any vegetables or roots that are orange- coloured inside, like:** *Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside (* ***kwar ke mona men kein inne ak bon einwot paanke, carrot, potato tonal ako ko jet elap an yellow ak orange kilier)***	___ yes (1) ___ no (0)
DD3	**Any white roots and tubers or plantains, such as:** *White potatoes, white yams, turnip, manioc/cassava/yucca, cocoyam, taro or any other foods made from white-fleshed roots or tubers, or plantains****(kwar ke mon men kein jota ak bon einwot iaaraj, potato ne emouj loan yam, cassava ako mona kane einlok wot iaraj?***	___ yes (1) ___ no (0)
DD4	**Any dark green leafy vegetables, such as:** *Chinese cabbage, local green leafy varieties, spinach, water spinach, Broccoli, Beet greens, Arugula, collard greens, Kale, Mustard greens, or dark lettuce(* ***kwar ke mona men kein einwot broccoli, bulokin cabbage ako ko jet elap an maroro bolok ko bolokier?***	___ yes (1) ___ no (0)
DD5	**Any fruits that are dark yellow or orange inside, like:** *Ripe mango, ripe papaya, apricots, cantaloupe, passion fruit, peaches, persimmon, tree tomato(* ***kwar ke mona men kein einwot mango emmed, papaya, cantaloupe, peaches ko remmed im kalo)***	___ yes (1) ___ no (0)

DD6	**Any other fruits**: *Apple, avocado, banana, blackberry, coconut flesh, watermelon, grapes, guava, honeydew melon, jackfruit, lemon, litchi, orange, plum, pineapple, blueberry, cherries, cranberry, dates, figs, grapefruit, pomelo, prune, raspberry, sapodilla, soursop, starfruit, strawberry, tamarind, tangerine (**kwar ke bareinwot mona men kein einwot apple, banana, lemon, lime, pineapples, strawberry, em fruits ko jet)***	___ yes (1) ___ no (0)
DD7	**Any other vegetables**: *Summer squash, green beans, cauliflower, cabbage, onion, bitter melon, fresh corn, eggplant, okra, radish, beets, asparagus, green pepper, jicama, leek, light green lettuces, Fresh peas, snow peas, snap peas, mushrooms, zucchini(**kwar ke mona vegetables kein einwot squash, green beans, cauliflower, cabbage, onion, radish, im ko einlok wot kein?,***	___ yes (1) ___ no (0)
DD8	**Any meat made from animal organs, such as:** *Liver, kidney, heart or other organ meats or blood-based foods, including from wild game(**kwar mona ke kaniek ko komman jen part ko an menin mour ko einwot aj, deka in jibke ko menono k, ako part ko jet)***	___ yes (1) ___ no (0)
DD9	***Any meat:*** *Beef, pork, lamb, goat, rabbit, wild game meat, chicken, duck, other birds(**Kwar mone men kein inne ak jota einwot kaniek in beef, pork, lamp ak sheep kobao, dak ak bao ko jet)***	___ yes (1) ___ no (0)
DD10	**Any eggs** ***(kwar ke mona men kein inne ak boneinwot lep ak men ko jet walok jen bao)*** *Eggs from poultry or any other bird*	___ yes (1) ___ no (0)
DD11	**Any fish or seafood, whether fresh or dried** ***(kwar ke mona men kein einwot eek ako mona ko jet walok jen lojet, remoaron mora ak tutu)*** *Fresh, frozen, canned or dried fish, shellfish or seafood*	___ yes (1) ___ no (0)
DD12	**Any beans or peas or lentils such as:** ***(kwar ke mona men kein inne ak jota einwot beans, peas, ako ko eierlok wot)*** *Mature beans or peas (fresh or dried seed), lentils or bean/ pea products, including hummus, tofu and tempeh*	___ yes (1) ___ no (0)
DD13	**Any nuts or seeds, like:** **(kwar ke mona men kein einwot peanut, ako nut ko jet eierlok wot)** *Any tree nut, groundnut/peanut, or certain seeds or nut/seed "butters" or pastes*	___ yes (1) ___ no (0)
DD14	**Any milk or milk products, such as:** *Fresh milk, reconstituted powdered milk, evaporated milk or ultra high temperature (boxed) milk, cheese, yoghurt or other milk products, but NOT including butter, ice cream, condensed milk, cream or sour cream**(kwar ke idaak den kein inne ak jota einwot carnation milk, fresh milk, mona cheese, yogurt ako ko jet komman jen milk)***	___ yes (1) ___ no (0)
DD15	**Any insects or other small protein foods, including:** *Insects, insect larvae/grubs, insect eggs and land and sea snails(**kwar ke nemak ak mona men kein inne tok nan bon einwot lipen lon ko, kinal ko, snail ako keo jet eierlok wot kein)***	___ yes (1) ___ no (0)
DD16	**Any red palm oil (kwar ke mona kain en emoj komman im kere kin red palm oil inne tok nan bon?)**	___ yes (1) ___ no (0)
DD17	**Any oils and fats** *Oil, fats or butter added to food or used for cooking, including extracted oils from nuts, fruits and seeds, and all animal fat(**kwar ke mona kain mona rot ne emoj kere kin butter ako oil kan rej komat mona kaki inne tok nan bon)***	___ yes (1) ___ no (0)
DD18	**Any savoury and fried snacks, such as:** *Crisps and chips, fried dough,puffs, samosas, corn tortilla chips, cassava chips, other fried snacks(**kwar ke mon kain en an chip kane einwot potato chip, ma chip em kain kan jet eierlok wot)***	___ yes (1) ___ no (0)
DD19	**Any sweets, such as:** *Sugary foods, such as chocolates, candies, sweetened condensed milk, cookies/sweet biscuits and cakes, sweet pastries or ice cream (**kwar ke mona men rot en etonal einwot ice cream, chocolate, candies, cookies ak ko jet eierlok wot**)*	___ yes (1) ___ no (0)
DD20	**Any sugar-sweetened beverages, like:** *Sweetened fruit juices and "juice drinks", soft drinks/fizzy drinks, chocolate drinks, malt drinks, yoghurt drinks, sweet tea or coffee with sugar(**Elon ke dren tonal kwar idraak inne tok nan bon einwot cola, juice chocolate milkcoffee im dren ko jet retonal)***	___ yes (1) ___ no (0)
DD21	**Any condiments and seasonings, such as:** *Ingredients used in small quantities for flavour, such as chilies, spices, herbs, fish powder, tomato paste, flavour cubes or seeds (**Elon ke mona rot en raar kereiki kin kein kere mona einwot chillies, tomato paste, spices ak kere ko rebwil inne tok nan bon)***	___ yes (1) ___ no (0)
DD22	**Any other beverages** *Tea or coffee if not sweetened, clear broth, all types of alcohol.* ***(Elon ke bar jet kain dren kwar idaak jen inne tok nan bon einwot arkool, (aolep kain arkool) tea ak coffeeim ko jet)***	___ yes (1) ___ no (0)

Household Food Insecurity Access Scale	
1. In the past four weeks, did you worry that your household would not have enough food? (*iumin wiik ko emen rej mootlok, ewor ke am kar ekkol ke emaron kar etal im jabwe mona ilo mweo*)	0 = No (skip to Q2) 1=Yes
1a. How often did this happen? (*Ewi ikutkut in an walok jekjek in ilo mweo*)	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)
2. In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources? (*Iumin wiik ko emen rej mootlok, ewor ke iami ilo mwiin ekar jab maron mona men ko rekonaan kani kin an jabwe ak ejelok kein bukitok ak wiakitok)*	0 = No (skip to Q3) 1=Yes
2a. How often did this happen? **(** *Ewi ikutkut in an walok wewein in)*	1 = Rarely (once or twice in the past four weeks) (*Ejeja-1 ak 2 alen iumin 4 wiik*) 2 = Sometimes (three to ten times in the past four weeks) (*Jet ien-3-10 alen iiumin 4 wiik*) 3 = Often (more than ten times in the past four weeks) (*ekutkut- elon lok jen 10 alen iumin 4 wiik)*
3. In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources? (*Iumin wiik ko emen rej mootlok kwe ako ro jet imwiin kar ke mona im ajeej bwe aolep ren bwe im wor kijeer kin an dik mon aim aban tok)*	0 = No (skip to Q4) 1 = Yes
3a. How often did this happen? (*Ewi emakijkij an walok wewein in)*	1 = Rarely (once or twice in the past four weeks) (*Ejeja an walok, einwot 1 ak 2 kattok ilo 4 wiik*) 2 = Sometimes (three to ten times in the past four weeks) (*Jet ien—3 lok nan 10 alen ilo wiik ko emen)* 3 = Often (more than ten times in the past four weeks) (*Ekutkut—10 katto iumin 4 wiik ko remootlok)*
4. In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food? (*Elon ke mona en kwe ak ro jet ilo mweo kom ar mona jet men ko komij jab konaan kani ak kin an ilem aban tok iumin wiik kko emen remoot lok)*	0 = No (skip to Q5) 1 = Yes
4a. How often did this happen? (*Ewi emakijkij in an walok wewein in*)	1 = Rarely (once or twice in the past four weeks) (*Ejeja, 1 ak 2 alen ilo wiik ko 4 rej bedolok*) 2 = Sometimes (three to ten times in the past four weeks) (*Jet ien- 3—10 alen ilo wiik ko 4 rej mootlok)* 3 = Often (more than ten times in the past four weeks) (*Emakijkij- elon lok jen 10 alen ilo wiik ko 4 rej mootlok*)
5. In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food? *(Ewor ke ien kwe ak ro jet ilo mweo komij mona edik jen jonan kinke ejabwe im di kilo wiik ko emen rej mootlok*)	0 = No (skip to Q6) 1 = Yes
5a. How often did this happen? (*Ewi emakijkij in an walok jekjek in)*	1 = Rarely (once or twice in the past four weeks) (*Ejeja, 1 ak 2 alen ilo wiik ko 4 rej bedolok*) 2 = Sometimes (three to ten times in the past four weeks) (*Jet ien- 3—10 alen ilo wiik ko 4 rej mootlok)* 3 = Often (more than ten times in the past four weeks) (*Emakijkij- elon lok jen 10 alen ilo wiik ko 4 rej mootlok*)
6. In the past four weeks, did you or any other household member have to eat fewer meals in a day because there was not enough food? (*Ewor ke ien iumin wiik ko emen imaanlok kwe ak ro jet ilo mweo kom kar mona 1 ak 2 katton wot ilo 1 raan kin wot an ilem jabe mona)*	0 = No (skip to Q7) 1 = Yes

6a. How often did this happen? (*Ewi emakijkij in an walok jekjek in*)	1 = Rarely (once or twice in the past four weeks) (*Ejeja, 1 ak 2 alen ilo wiik ko 4 rej bedolok*) 2 = Sometimes (three to ten times in the past four weeks) (*Jet ien- 3—10 alen ilo wiik ko 4 rej mootlok)* 3 = Often (more than ten times in the past four weeks) (*Emakijkij- elon lok jen 10 alen ilo wiik ko 4 rej mootlok*)
7. In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food? (*Ilo wiik ko emen imaanlok, ekar ke ilem ejelok mona mwin kin wot an ilem ejelok kein kapok ak wia mona)*	0 = No (skip to Q8) 1 = Yes
7a. How often did this happen? *(Ewi emakijkij in an walok jekjek in)*	1 = Rarely (once or twice in the past four weeks) (*Ejeja, 1 ak 2 alen ilo wiik ko 4 rej bedolok*) 2 = Sometimes (three to ten times in the past four weeks) (*Jet ien- 3—10 alen ilo wiik ko 4 rej mootlok)* 3 = Often (more than ten times in the past four weeks) (*Emakijkij- elon lok jen 10 alen ilo wiik ko 4 rej mootlok*)
8. In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food? (*Iumin wiik ko emen imaanlok, elon iami imwiin ekar kiki ak ejab mat kin wot an jabwe mona nan aolep)*	0 = No (skip to Q9) 1 = Yes
8a. How often did this happen? *(Ewi ikutkut in an walok jekjek in)*	1 = Rarely (once or twice in the past four weeks) (*Ejeja, 1 ak 2 alen ilo wiik ko 4 rej bedolok*) 2 = Sometimes (three to ten times in the past four weeks) (*Jet ien- 3—10 alen ilo wiik ko 4 rej mootlok)*3 = Often (more than ten times in the past four weeks) (*Emakijkij- elon lok jen 10 alen ilo wiik ko 4 rej mootlok*)
9. In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food? *(Elon ke ien kwe ak ro jet imweo komij jab mona ilo likieo in juon raan im juon bon kin wot an jab bwe mona imweo, ilo wiik ko 4 imaanlok)*	0 = No (questionnaire is finished) 1 = Yes
9a. How often did this happen? *(Ewi ikutkut in an walok jekjek in)*	1 = Rarely (once or twice in the past four weeks) (*Ejeja, 1 ak 2 alen ilo wiik ko 4 rej bedolok*) 2 = Sometimes (three to ten times in the past four weeks) (*Jet ien- 3—10 alen ilo wiik ko 4 rej mootlok)*3 = Often (more than ten times in the past four weeks)) (*Emakijkij- elon lok jen 10 alen ilo wiik ko 4 rej mootlok*)

Module AN: Mother's Anthropometric Measurements

AN1	Weight (*Eddo in*)	Kg
AN2	Height (*Aetokan*)	Cm
AN3	Were there any difficulties (body defects) measuring height or weight? (*Elon ke jabdewot aban ak mojno ilo enbwin ilo am pouni im jone aetokan*)	Yes – 1 No – 2

WM16. *Check columns HL7B and HL15 in LIST OF HOUSEHOLD MEMBERS, HOUSEHOLD QUESTIONNAIRE:*
Is the respondent the mother or caregiver of any child age 0-4 living in this household?(Etale elane kora eo kwoj kajitikini ej jinen ak juon eo ej lale kajiririki juon ajiri eo me dettan ej 0—4 yio)

☐ *Yes* ⇨ *Go to WM17 in WOMAN'S INFORMATION PANEL and circle '01'. Then go to the QUESTIONNAIRE FOR CHILDREN UNDER FIVE for that child and start the interview with this respondent.*

(Footnotes)

1. Household food security measured by the Household Food Insecurity Access Scale for all households with a child under 2 years of age.
2. Weight and height/length measurements were successfully completed for 99.9 and 99.5 percent of children under age 5, respectively
3. Infants receiving breast milk, and not receiving any other fluids or foods, with the exception of ORS, vitamins, mineral supplements and medicines
4. Infants receiving breast milk as the predominant source of nourishment during the previous day with water based drinks and fruit juice allowed but no milk, infant formula or solid, semi-solid or soft foods.
5. Children 0-5 months of age receive exclusive breastfeeding during the previous day and children 6-23 months of age receive breastmilk as well as solid, semi-solid or soft foods in the previous day.
6. Proportion of breastfed and non-breastfed children 6-23 months of age who received solid, semi-solid, or soft foods or milk feeds for non-breastfed children the minimum number of times or more.
7. The indicator is based on consumption of any amount of food from at least 4 out of the 7 following food groups: 1) grains, roots and tubers, 2) legumes and nuts, 3) dairy products (milk, yogurt, cheese), 4) flesh foods (meat, fish, poultry and liver/ organ meats), 5) eggs, 6) vitamin-A rich fruits and vegetables, and 7) other fruits and vegetables
8. WHO classification for non-pregnant adults 18 years of age and older and applies to caregivers 15-49 years of age with a child under 5 years of age
9. Short stature measured in caregivers 15-49 years of age with a child under 5 years of age as height < 145cm and borderline short stature as height <150 cm
10. Women minimum dietary diversity based on consumption of caregivers with a child under 5 years of any amount of food from at least 5 out of the 10 following food groups: 1) grains, white roots and tubers, and plantain, 2) pulses (beans, peas and lentils), 3) Nuts and seeds, 4) dairy, 5) meat, poultry and fish, 6) eggs, 7) dark green leafy vegetables, 8) other vitamin A rich fruits and vegetables, 9) other vegetables, 10) other fruits

11. Education indicators, wherever applicable, are based on information on reported school attendance (at any time during the school year), as a proxy for enrolment and apply for children in households with a child under 5 years.

12. Coates J, Swindale A, Bilinsky P. Household Food Insecurity Access Scale (HFIAS) for Measurement of Household Food Access: Indicator Guide (v. 3). Washington, DC: FANTA/AED, 2007.

13. FAO and FHI 360. Minimum Dietary Diversity for Women: A Guide for Measurement. Rome: FAO, 2016.

14. Infant and young child feeding: Model chapter for textbooks for medical students and allied health professionals:

15. Indicators for assessing infant and young child feeding practices. Geneva: World Health Organization, 2009.

16. WHO Multicentre Growth Reference Study Group. WHO Child Growth Standards: Length/height-for-age, weight-for-age, weight- for-length, weight-for-height and body mass index-for-age: Methods and development. Geneva: World Health Organization, 2006.

17. WHO. Global database on body mass index. Geneva: World Health Organization, 2000

18. Food groups used for assessment of this indicator are 1) Grains, roots and tubers, 2) legumes and nuts, 3) dairy products (milk, yogurt, cheese), 4) flesh foods (meat, fish, poultry and liver/organ meats), 5) eggs, 6) vitamin-A rich fruits and vegetables, and 7) other fruits and vegetables.

19. Some indicators are constructed by using questions in several modules in the ICHNS 2017 questionnaires. In such cases, only the module(s) which contains most of the necessary information is indicated.

20. Sustainable Development Goals (MDG) indicators, effective 1 January 2016 - https://unstats.un.org/sdgs/indicators/indicators-list/, accessed 31 October 2017

Republic of the
Marshall Islands

ICHNS

Integrated Child Health and Nutrition Survey

2017

Monitoring the situation of CHILDREN and WOMEN

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