NUTRITION-RELATED NON-COMMUNICABLE DISEASE (N-RNCD) COUNTRY PROFILES

KENYA

Evidence has been mounting to support the hypothesis that maternal undernutrition, as well as in-utero and infant and young child undernutrition, increase the risk of developing N-RNCDs later in life (Barker, 1992 and Gluckman, 2010). Recent empirical studies have demonstrated that many common manifestations of undernutrition, such as intra-uterine growth restriction (IUGR), low birth weight, and stunting are all significantly associated with later development of hypertension, insulin resistance, and obesity. These conditions lead to N-RNCDs such as Type II diabetes mellitus (diabetes) and cardiovascular disease (CVD). Addressing maternal, infant, and young child undernutrition is therefore not only important to preventing the immediate threats of child morbidity and mortality, but also to reducing the risk of N-RNCDs later in life.

In Kenya, rates of hypertension and overweight are relatively high, and raised cholesterol prevalence is among of the very highest among low income countries (See Table 1). In addition to the data shown in the table, the average body mass index (BMI) among women stayed constant at 22 between 2003 and 2008, but overweight prevalence rose slightly from 23 to 25 percent (2003 and 2008-09 DHS). Prevalence of diabetes varied little from 7 to 8 percent between 1998 and 2008 (Danaei et al, 2011).

Table 1: Estimated Age-Standardized Adult N-RNCD Prevalence, Kenya 2008

	Pre-NCD conditions (% of Adults)				N-RNCDs	
	Hypertension	Raised Glucose levels	Overweight*	Raised Cholesterol	Diabetes (% of Adults)**	CVD (% of Deaths)
Women	43%	8%	25%	27%	8%	-
Total	45%	8%	-	27%	8%	12%

*Source: Alwan, Ala and World Health Organization. (2011). Global status report on noncommunicable diseases 2010. Geneva, Switzerland: World Health Organization. *Overweight Data from DHS 2008-09. **Diabetes Data from Global Burden of Metabolic Risk Factors of Chronic Diseases Database (Danaei et al, 2011).*

Table 2 shows percent of infants who were born low birth weight, children who are stunted, overweight, stunted and overweight, or who are stunted with an overweight mother, and overweight women, broken down by socio-economic characteristics. Of those children who were low birth weight, 90 percent were born after 8 month or full-term pregnancies, meaning the reason for their low weight was not due to length of gestation. Regarding overweight, 5 percent of Kenyan children fall into this category. For comparison, the percentage of children ages 2 to 5 who are considered overweight in the U.S is 11 percent (CDC, 2012). Taking a look at the current nutritional status of children under 5, there is reason to be concerned that obesity and N-RNCDs will continue to rise as this population grows into adulthood.

Table 2: National Survey Indicators on Nutritional Status, by Background Characteristics, Kenya 2008

		% of Children under 5					% of Women 15-49
		Low birth weight	Stunted	Overweight	Stunted and Over-weight (same child)	Stunted child with Overweight Mother	Overweight
Educational attainment of mother	No education	26%	39%	3%	2%	1%	16%
	Primary	16%	38%	4%	3%	5%	21%
	Secondary	14%	27%	**7%**	3%	6%	31%
	Above secondary	14%	19%	**8%**	1%	**8%**	**44%**
Wealth index of family	Poorest	19%	**44%**	4%	3%	2%	9%
	Poorer	18%	39%	4%	2%	3%	13%
	Middle	17%	35%	4%	2%	5%	20%
	Richer	13%	29%	6%	3%	6%	31%
	Richest	17%	25%	6%	2%	**9%**	**41%**
Location of household	Urban	17%	27%	5%	2%	9%	**40%**
	Rural	17%	37%	5%	3%	4%	20%
Total		17%	35%	5%	2%	5%	25%

Definitions: Low Birth Weight (<2500g or classified by mother as small or very small at birth); Stunted (HAZ<-2SD); Child Overweight (WHZ>+2SD); Maternal Overweight (BMI≥25)
Source: DHS 2008-09 data, weighted estimates of percent of all children under 5 or percent of women 15-49.

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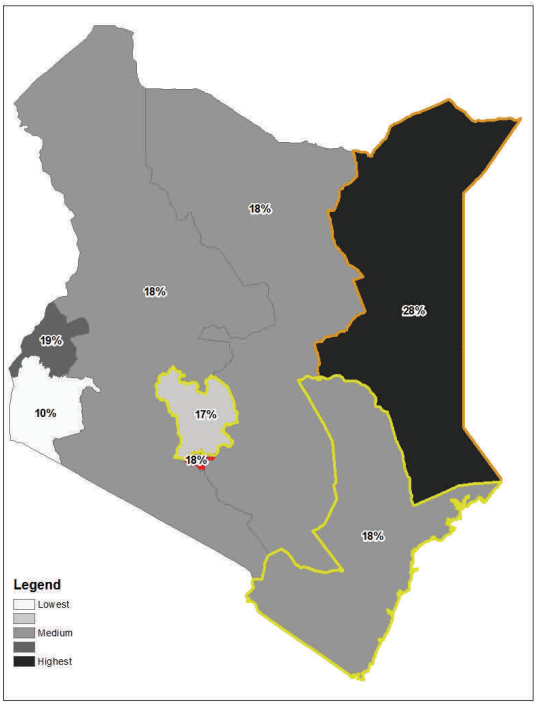
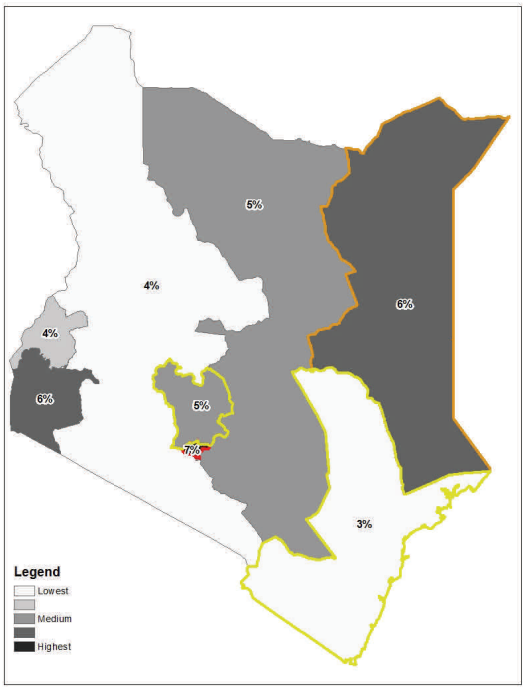
Percentage of children who are born low birth weight (<2500g)

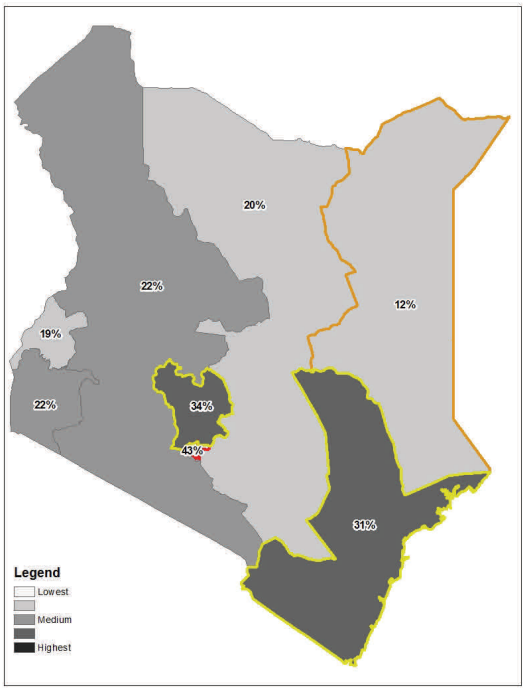




Source: DHS 2008-09 data, weighted estimates of percent of all children under 5 or women 15-49.

Looking further at Table 2, prevalence of overweight children, overweight women, and stunted child– overweight mother pairs trended closely with maternal education and household wealth in Kenya. The latter two were also higher in urban households. Conversely, women with no education had nearly twice the levels of low birth weight and stunting than those with secondary education or higher (4.6 percent of mothers had higher than secondary education). Stunting is also a significant issue among poor households. There is very little variation by economic status in the prevalence of low birth weight babies and children who are both stunted and overweight.

Percentage of women who are overweight (BMI≥25)



Percentage of children who are overweight (WHZ>+2SD)

National level estimates do not adequately illustrate the wide sub-population variations that exist. These maps show the rates at the regional level. Nairobi (red border) is one of the 3 highest burden regions for each of the mapped indicators. The Northeast region (orange border) is among the 3 highest burden regions for its high prevalence of low birth weight and overweight children. The Central and Coast regions (yellow borders) have the second and third highest prevalence of overweight women.

This descriptive analysis begins to explore where future risks may lie for N-RNCDs in Kenya, identifying where undernutrition programs may need to be tailored or targeted to better avoid later life health conditions. Here child and maternal overweight overlay stunting as significant nutritional conditions. More in-depth analysis is needed to understand the determinants and dynamics influencing these relationships. SPRING is currently working to develop more evidence on why certain subpopulations are more at risk and how this information can be used to adjust nutrition programs.

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