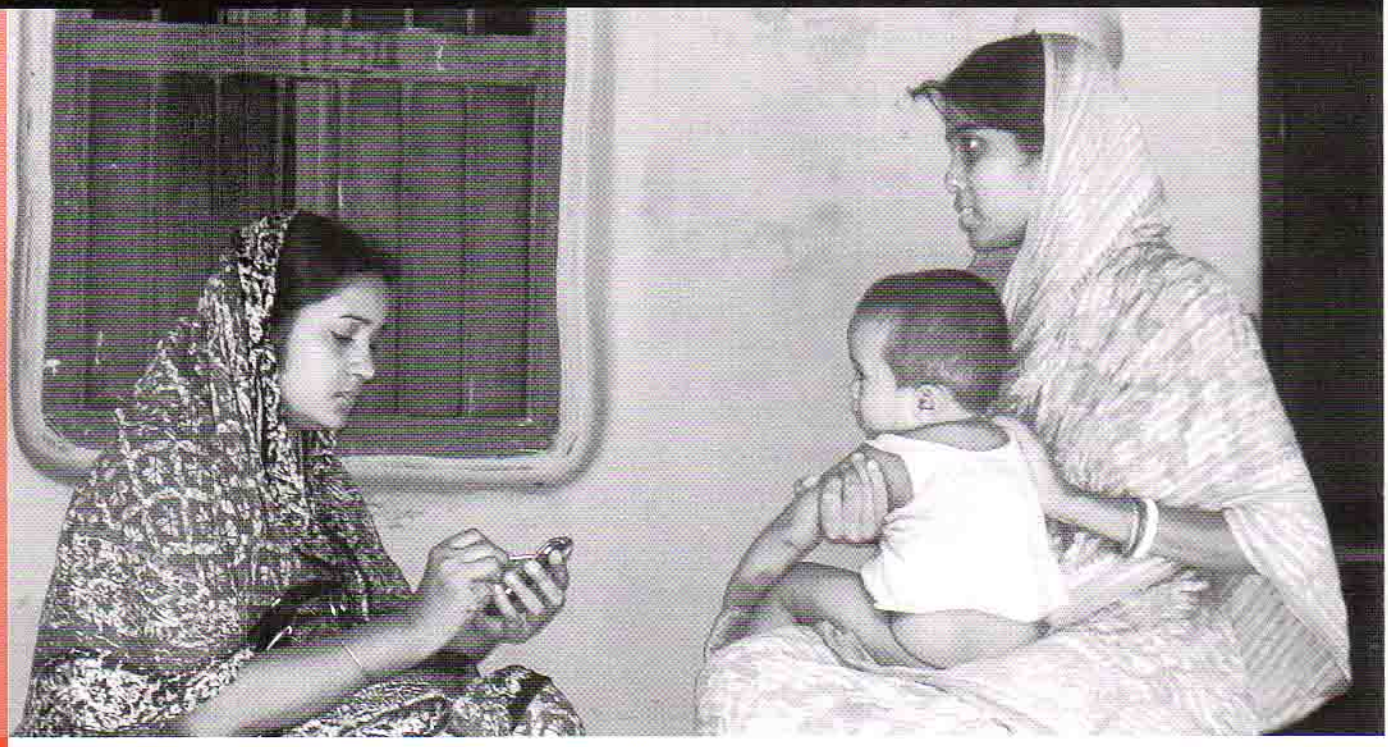
Helen Keller INTERNATIONAL

BANGLADESH



Bulletin No 9 | September 2010

The Food Security and Nutrition Surveillance Project

Round 2: June – August 2010

Preliminary Results

The Food Security and Nutritional Surveillance Project (FSNSP) was setup to continuously provide up to date information on the food security, nutrition and health situation in Bangladesh. This bulletin presents the preliminary findings from the second round of surveillance conducted from June 30 to August 31, 2010. The survey covered 35 districts selected randomly from the five food insecure zones outlined in the 2004 Food security atlas of Bangladesh, a joint publication by the World Food Program (WFP) and Bangladesh Bureau of Statistics (BBS). Thus, the findings provide representative estimates of selected food security and nutrition indicators for these zones. The second round of surveillance was also designed to assess the seasonal changes in these indicators between the first and second surveillance rounds in these zones. The Chittagong Hill Tracts (CHT) are highly food insecure but were not sampled in the first and second rounds and subsequently not included in these estimates.

The districts sampled for each food insecure zone as defined by the Food security atlas of Bangladesh are:

Northwest (NW): Dinajpur, Lalmonirhat, Nilphamari, Panchaghar, Rangpur, & Thakurgaon

Drought Prone (DR): Naogaon, Chapai Nawabganj, Rajshahi, & Joypurhat

Northern Chars (NC): Bogra, Gaibandha, Kurigram, Sirajganj, & Jamalpur

Haor Basin (HB): Kishoreganj, Mymensingh, Netrokona, Habiganj, Sunamganj, Sylhet, & Brahmanbaria

Coastal Belt (CB): Chandpur, Chattagong, Laxshmipur, Noakhali, Barguna, Barisal, Bhola, Patuakhali, Bagerhat, Khulna, Satkhira, Madaripur, & Shariatpur

The second round of surveillance covered 6,150 households in 315 mauza of Bangladesh. Anthropometry measurements were taken on 6,150 children under five years of age and their mothers. Paired with these second round results is a subsample of 6,300 households with 7,252 children drawn from the same food insecure districts/zones during the first round of surveillance which took place in January through April 2010.

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Full details of the sampling structure and the methodology used in calculating these indicators for this surveillance system can be found in the FSNSP – Round 1 and Round 2 reports, which are currently in preparation and will be released shortly.

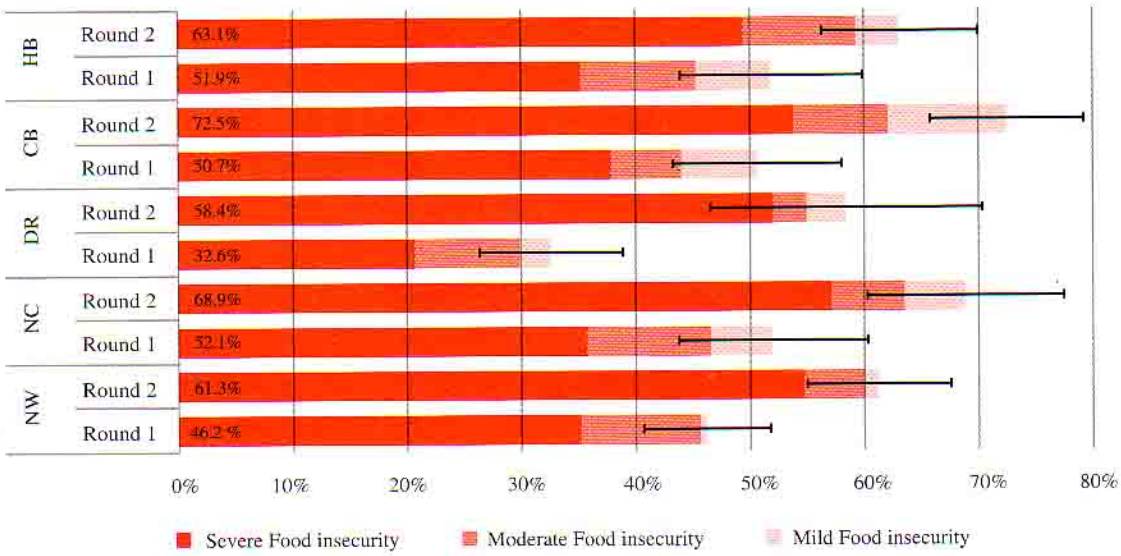
The results in this bulletin are presented in the form of bar graphs or tables. In the graphs presented, the name of each zone is abbreviated (as given in the parenthesis above) and the data corresponding to first and second survey rounds are given as Round 1 and Round 2 respectively. Percentages given within the bars of each graph are for the overall prevalence estimates for that particular indicator (regardless of severity), and the error bars indicate the corresponding 95% confidence interval.

Food Security Across Zones

Food security status was measured using a modified version of the Household Food Insecurity Assessment Survey (HFIAS) module developed by the Food and Nutrition Technical Assistance (FANTA) project.

The first round of surveillance occurred right after the Aman (winter) harvest season, the period when food insecurity is generally lowest in Bangladesh. In contrast, the second round occurred during the rainy season, a period between crops when much of the arable land of Bangladesh is inundated with water and food insecurity is much higher. As expected, food insecurity increased between the two rounds. As shown in figure 1, the prevalence of food insecurity in all zones was higher during the second round of surveillance than it was during the first round. In all zones, except for the Haor Basin, this change was statistically significant. The magnitude of change between surveillance rounds was largest in the Drought Prone and Coastal Belt zones. Though the Drought Prone zone had a far lower prevalence of food insecurity during the first round of FSNSP, the prevalence in this area was similar to that of the other zones during the second round of data collection.

Figure 1: Food insecurity among households with children under 5 in BD



Child Malnutrition Indicators Across Zones

Childhood malnutrition was estimated using anthropomorphic measurements of children under the age of five years; these results were standardized through the use of the 2006 WHO reference values.

FSNSP provides two estimates of the prevalence of global acute malnutrition, one based on weight-for-height z-scores (wasting) and the other based on mid upper arm circumference (MUAC) z-scores, which are depicted in figures 2 and 3 below. The zone wise point estimates derived from these two measures were nearly identical in the first two rounds of surveillance. As indicated by both measures, global acute malnutrition was higher during the second round of surveillance than the first round for all the food-insecure zones. In all zones except the Northwest, this difference was statistically significant. The greatest change in wasting prevalence occurred in the Drought Prone zone, the same area with the largest increase in food insecurity prevalence between the two rounds of data collection. The majority of wasting among children in both rounds was moderate in all zones.

There was less change in the estimates of child underweight and stunting between the first two rounds, as is shown in Figures 4 and 5 below. Like global acute malnutrition, prevalence of child underweight was also higher in round 2 compared to round 1 in all zones, but the change was only significant in the Coastal Belt, Drought Prone and Northern Char areas. The magnitude of change for underweight was greatest in the Drought Prone zone. The prevalence of stunting decreased slightly in all zones between the two surveillance rounds, although none was significant.

Figure 2: Child Wasting (WHZ)

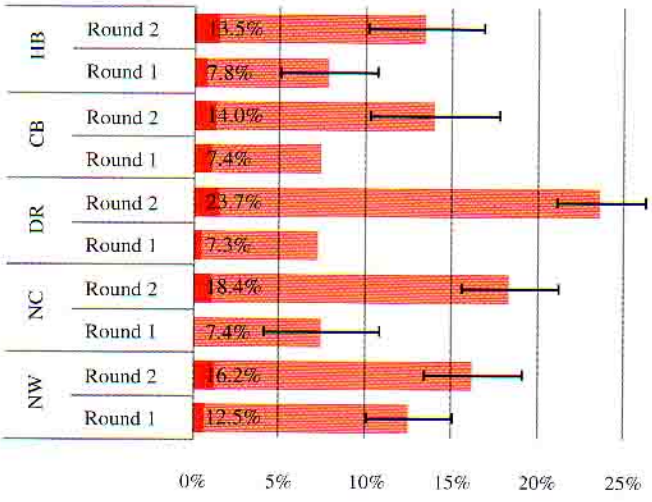
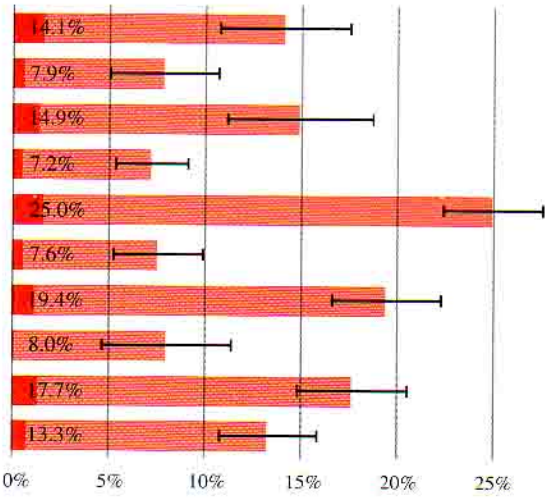
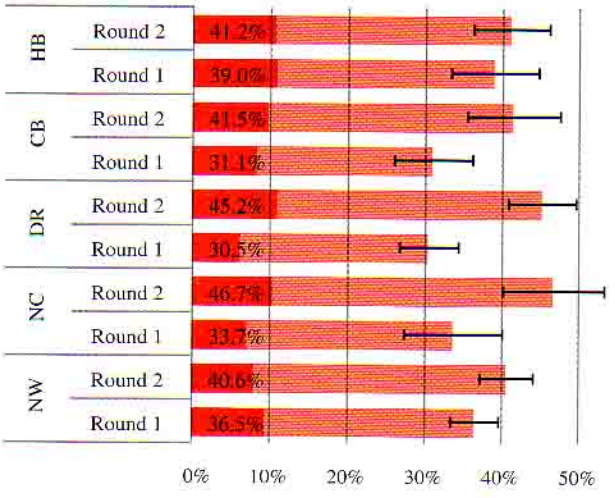


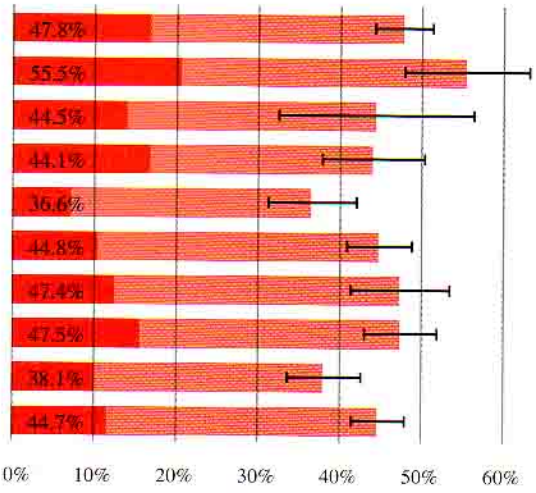
Figure 3: Child Wasting (MUAC z-score)



Figur 4: Child Underweight



Figur 5: Child Stunting



Maternal Malnutrition Indicators Across Zonesacross Zones

Maternal malnutrition was estimated using anthropomorphic measurements of mothers with children under the age of 5 years. Different cut-offs for BMI are used to ascertain both under nutrition and overweight. Mid-upper arm circumference (MUAC) is an alternate measure for under nutrition.

Estimates of maternal under nutrition based on low BMI scores increased between rounds in four out of the five zones, but only the change in the Drought prone zone was statistically significant. Estimates of maternal under nutrition based on MUAC measurements did not change significantly between rounds in all the zones, and the trend was mixed, with some zones showing slight increase and others showing slight decrease in prevalence. Both measures indicate that maternal under nutrition fell in the northwest zone, in contrast to the pattern in the other zones.

In line with the slight increases in maternal malnutrition between the two rounds, maternal overweight fell in all zones but the Northwest. None of these changes was statistically significant. The change in prevalence of overweight among mothers was greatest in the Coastal Belt and Drought Prone zones, similar to the change found in other indicators for these areas.

Figure 6: Low MUAC

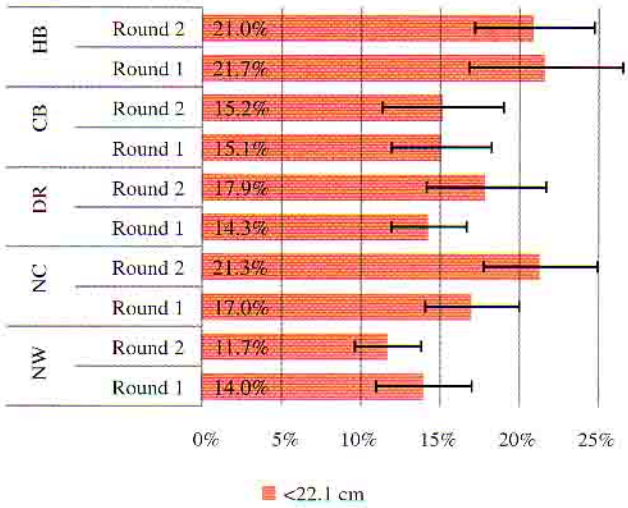


Figure 7: Low BMI

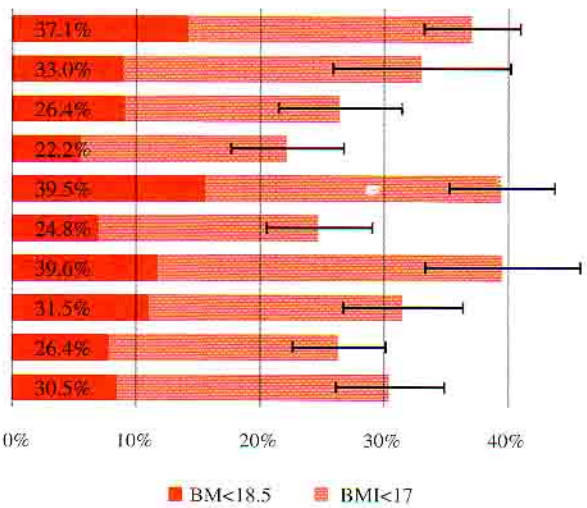
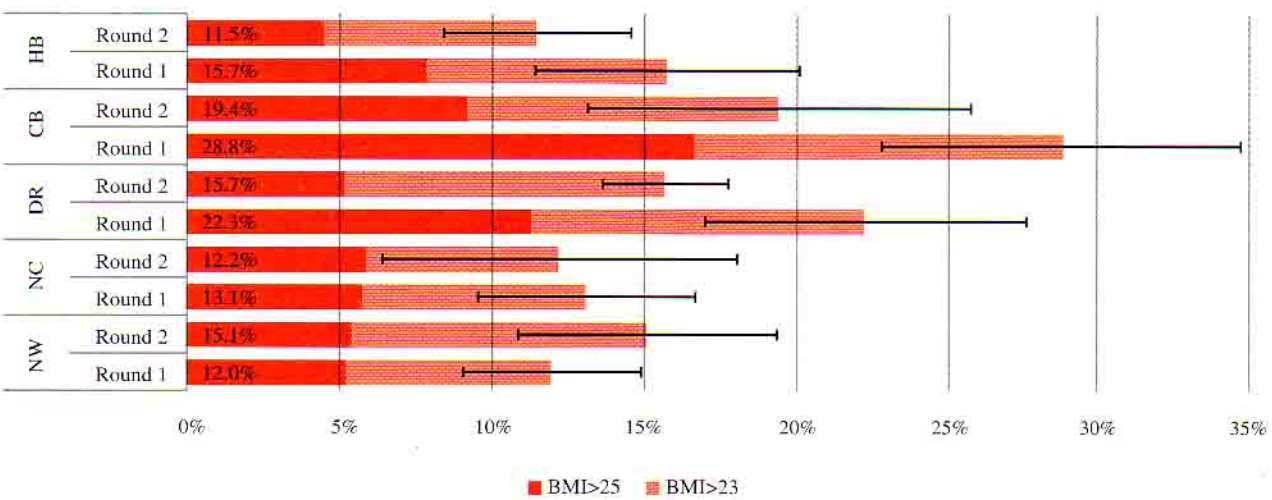


Figure 8: High BMI



Changes in Infant and Young Child Feeding Practices Across Zones

Except for the indicators on pre-lacteal feeding and on introduction to complementary foods, the indicators of infant and young child feeding practices were estimated using methodology from the World Health Organization manual, *Indicators for assessing infant and young child feeding practices. Part 2: Measurement,* published in 2010. The results, as presented in the table below, give the overall prevalence point estimate and the confidence interval for each of the selected indicator for all the food insecure zones combined per round of surveillance. Note that none of these estimates represent Bangladesh as a whole. The table also gives the age range over which each indicator was calculated.

Infant and young child feeding practices, as measured by these indicators, were largely the same during the two rounds of data collection. In early infancy the proportion of children being fed a prelactal feed increased slightly and the proportion being predominantly breastfed fell. The prevalence of bottle feeding also fell slightly. However, neither of these changes was significant.

The two indicators for complementary feeding, minimum dietary diversity and consumption of iron rich foods, rose sharply and significantly between rounds. Until another round of data collection is complete, it is not possible to ascertain if these changes are seasonal changes or trends towards improved diversity of complementary foods given to children.

Indicator (age-range in months)	Round 1	Round 2	Indicator (age-range in months)	Round 1	Round 2
Child ever breastfed (0-23)	99.9% (0.998-1.001)	100.0% (0.999-1.000)	Continued Breastfeeding at one year (12-15)	98.0% (0.968-0.992)	98.8% (0.975-1.001)
Early Initiation (0-23)	40.4% (0.369-0.440)	38.3% (0.346-0.420)	Continued Breastfeeding at two years (20-23)	90.2% (0.856-0.948)	93.7% (0.886-0.987)
Given a prelacteal feed (0 -23)	51.3% (0.571-0.555)	58.0% (0.530-0.631)	Introduction to complementary foods (6-8)	84.3% (0.790-0.897)	87.7% (0.817-0.938)
Exclusive Breastfeeding (0-5)	51.5% (0.453-0.578)	49.6% (0.390-0.601)	Age appropriate breastfeeding (0-23)	82.7% (0.805-0.849)	87.9% (0.483-0.914)
Predominate breastfeeding (0-5)	60.8% (0.540-0.675)	43.4% (0.425-0.642)	Minimum dietary diversity (6-23)	37.8% (0.341-0.416)	45.4% (0.400-0.508)
Bottle feeding (0-23)	13.4% (0.108-0.160)	9.2% (0.064-0.120)	Consumption of iron rich foods (6-23)	43.6% (0.406-0.467)	54.2% (0.475-0.609)

Changes in Child Morbidity

Child morbidity was estimated by asking the mothers of children under five years if their child had been sick in the last 15 days with any of four common illnesses (diarrhea, fever, cough/cold and difficulty breathing).

As was seen in the results from the first round of surveillance, the symptoms children suffered from most frequently were cold/cough and fever. Between rounds one and two, the proportion of children who had suffered from cough/cold decreased in four out of five zones, but only the difference in the Hoar Basin zone was significant. In contrast, the proportion of children who had suffered from fever rose in all zones, but the only zone where the change was not significant was the Hoar Basin. The largest change in the proportion of children who suffered from fever occurred in the Drought Prone zone.

In contrast to cough/cold and fever, fewer children suffered from diarrhea and difficulty breathing. The estimate of the proportion of children who suffered from diarrhea had increased in all zones from round one to round two, however only the difference in the Hoar Basin zone was statistically significant. This may have contributed to the increased prevalence of global acute malnutrition observed between the two rounds of surveillance. The proportion of children suffering from difficulty breathing increased greatly in three zones and decreased slightly in the other two. Only the change in the Northwest zone was statistically significant.

Figure 9: Fever

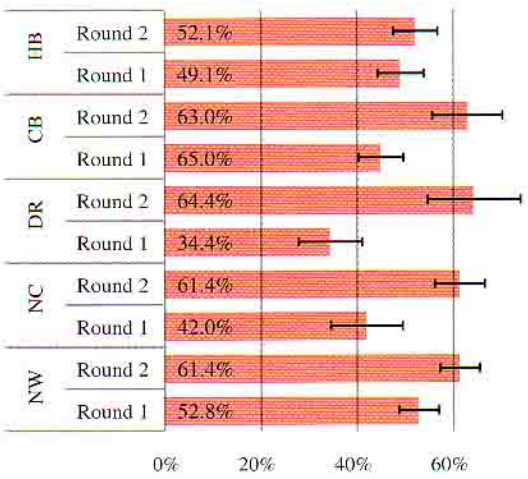


Figure 10: Cough/cold

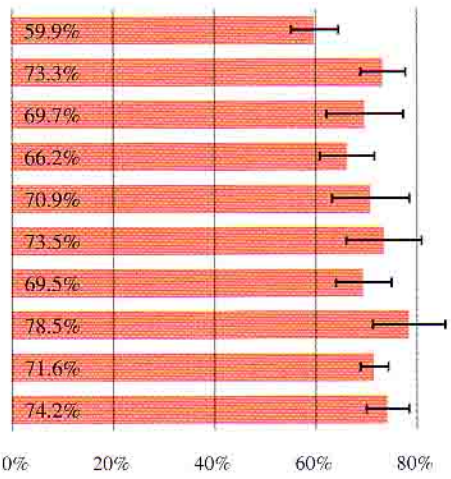


Figure 11: Diarrhea

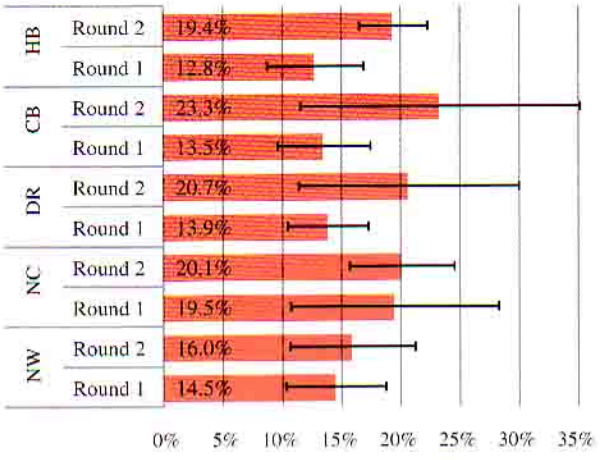
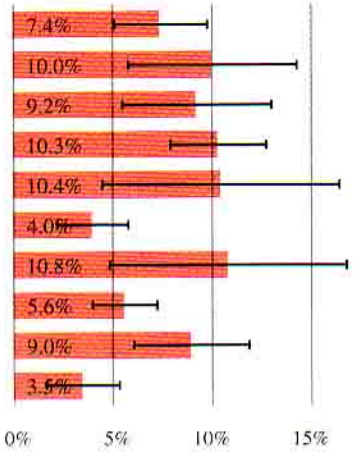


Figure 12: Difficulty Breathing



For additional information on the results of the second round of the FSNSP, please contact:

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