Bahamas Living Conditions Survey 2001

Department of Statistics

2004

Nassau, The Bahamas

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Produced by the Department of Statistics

Cover photos (clockwise from left): The Bahamas Tourist Office—Curious faces (Hope Town, Abaco), Typical picket-fenced house (Harbour Island, Eleuthera), Fernandez Bay (Cat Island), Androsia, a type of batik, hung out to dry (Andros); Ministry of Education—Students at lunch vendor, H.O. Nash Junior High School (Nassau, New Providence).

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Abbreviations and Acronyms

BGCSE	The Bahamas General Certificate of Secondary Education
BLCS	Bahamas Living Conditions Survey
BMI	Body Mass Index
CHP	Child Health Passport
COB	College of The Bahamas
CPI	Consumer Price Index
FAO	Food and Agriculture Organization of the United Nations
FHH	Female Headed Household
GCE	General Certificate of Education
GDP	Gross Domestic Product
GOBH	Government of the Commonwealth of The Bahamas
HAZ	Height for Age
HQI	Housing Quality Index
LAC	Latin America and the Caribbean
LPG	Liquefied Petroleum Gas
MHH	Male Headed Household
MOE	Ministry of Education
MOF	Ministry of Finance
MOH	Ministry of Health
NHNS	National Health and Nutrition Survey
NSLP	National School Lunch Programme
PG	Poverty Gap
SES	Socioeconomic Status
SLC	School Leaving Certificate
SPG	Squared Poverty Gap
THE	Total Health Expenditure
UNDP	United Nations Development Programme
WAZ	Weight for Age
WHO	World Health Organization
WHZ	Weight for Height

Key Numerical Codes

Geographical Regions

1 = New Providence and Grand Bahama
2 = Abaco, Andros, and Eleuthera
3 = Exuma and Long Island
4 = Other Family Islands

Consumption Quintiles	Expenditure Ranges (per capita)
1 = lowest (poorest)	$0.00–3,967.99
2 = next to lowest (or poorest)	$3,968.00–5,947.99
3 = middle	$5,948.00–8,523.99
4 = next to highest (or wealthiest)	$8,524.00–13,446.99
5 = highest (wealthiest)	$13,447.00–infinity

Notes to the Tables

Throughout the chapter tables, the abbreviation *N* equals number of observations. Unless otherwise indicated, the numbers in the body of the tables represent percentages of *N*.

CHAPTER 4

Health Status: Socioeconomic Analysis

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The health of any country's population is affected by the socioeconomic status (SES) of its citizens. The Bahamas Living Conditions Survey (BLCS) provided an opportunity to evaluate the causal link between SES and health in the Bahamian context. In addition, the Survey provided a baseline for selected health indicators, while allowing for a comparison with the findings of earlier investigations. It examined the following health-related areas: self-reported health status; child health; nutritional status of children, adolescents, and adults; female-reproductive health; health-services use and expenditure; and health-insurance coverage.

SELF-REPORTED HEALTH STATUS

Whilst self-reporting reveals much about a population's health, it is subject to biases that lead to underreporting; thus, a population's true health status may be clouded by survey respondents' perception and level of well-being. If feasible, health measures that use physical evaluations are preferable and more accurate. Ideally, both measures can be used to enhance understanding of a population's health status. Inferences drawn from findings based on self-reporting should be considered in light of these limitations.

BLCS respondents were asked to report on several aspects of their health status: recent illness, injury or accident, and disability. They were also asked whether they had previously been diagnosed with chronic diabetes and hypertension. Approximately 1 in 10 respondents (13.4%) reported having had an illness or injury during the four-week period preceding the survey (Table 4-1); of these, slightly more than half (53.6%) subsequently visited a health practitioner to treat their condition. The majority of those who did not seek treatment either found it unnecessary (57%) or chose to self-medicate at home (41%).[1] The average length of illness was eight days.

[1] With initial symptoms of illness, self-medication is a common tendency in The Bahamas, where over-the-counter drugs are readily available and "bush" medicine is commonly practiced.

TABLE 4-1 Ill Residents Who Sought Care (%), by Population Characteristic

Population characteristic	Ill residents (%)	*N*	Ill residents who sought care (%)	*N*
Gender				
Male	11.8	3,152	49.2	382
Female	14.9	3,262	56.8	465
Age group (years)				
0–4	23.1	625	69.4	142
5–14	12.2	1,394	51.8	172
15–19	7.6	503	39.1	33
20–34	11.0	1,435	43.7	152
35–54	13.4	1,623	52.8	217
55–64	12.6	389	41.6	47
65 and older	20.3	446	66.2	84
Region				
1	13.4	3,413	53.0	457
2	15.1	1,775	56.4	267
3	10.6	621	61.6	67
4	9.2	605	56.4	56
Quintile				
1	10.7	1,560	49.5	161
2	10.5	1,325	63.1	147
3	14.9	1,247	51.7	178
4	15.0	1,173	52.0	189
5	15.7	1,024	49.9	164
Total	**13.4**	**6,414**	**53.6**	**847**

In terms of gender, fewer males (11.8%) than females (14.9%) reported an illness. Vulnerable or immunocompromised groups—children under 5 years (23.1%) and adults 65 years and older (20.3%)—were more likely to report an illness during the reference period. Reporting of illness was also higher amongst persons from the better-off households; for example, 15.7% of those from the wealthiest quintile (of per-capita consumption expenditure) reported being ill, compared to only 10.8% from the poorest quintile. Higher reporting of illness amongst better-off households is consistent with similar surveys conducted around the world, and is often viewed as representative of reporting bias rather than poorer health status.

Geographically, more residents (15.1%) of the Family Islands of Region 2 (Abaco, Andros, and Eleuthera)—where about 10% of Bahamians live—reported an illness than persons residing in the other three regions (Table 4-1).

Disabilities and Injuries

The Survey sought to determine the prevalence of both physical and mental disabilities in the population (Table 4-2). Approximately 6% of the sample population reported having a physical or mental disability. Of those who had a disability, 68.5% of reported disabilities were related to sight, hearing, or speech; 18.2% to limbs; and 13.3% to mental disabilities.

Males and females were equally likely (6%) to report having a disability. Regardless of the type of physical or mental disability, it generally increased with age. For example, whilst only 3.7% of children under 5 years of age had a disability, 17.6% of the elderly were disabled—a nearly fivefold increase. Mental disabilities were also more common amongst the elderly (2.3%) (Figure 4-1). These findings support conclusions drawn from institutional data, which show that aging is associated with

TABLE 4-2 Proportion of Respondents with a Disability or Injury in Past 12 Months

Population characteristic	Physical or mental disability (%)	Injury (%)	*N*
Gender			
Male	5.8	4.7	3,152
Female	5.7	4.1	3,262
Age group (years)			
0–4	3.7	3.9	625
5–14	4.1	3.2	1,394
15–19	3.8	1.5	503
20–34	5.0	5.7	1,435
35–54	6.0	5.1	1,623
55–64	9.7	3.4	389
65 and older	17.6	5.9	446
Region			
1	5.9	4.7	3,413
2	4.0	2.2	1,775
3	9.5	5.0	621
4	5.1	1.9	605
Quintile			
1	6.3	3.1	1,560
2	6.2	5.1	1,325
3	3.3	2.1	1,247
4	8.5	6.7	1,173
5	4.6	4.6	1,024
Total	**5.7**	**4.4**	**6,414**

disability, which further affects quality of life and may be linked to poverty.

That residents in quintile 4 had the highest proportion of disability (8.5%) requires further investigation. Lowest reporting of disabilities was found in quintiles 3 (3.3%) and 5 (4.6%). Lack of a systematic pattern suggests that living standards bear little relationship to incidence of disability in the population or that the effect is heavily outweighed by other factors, such as age.

Residents of Region 3 (Exuma and Long Island) had the greatest proportion (9.5%) of persons with disabilities overall—both physical (7%) and mental (2.5%)—whilst the lowest proportion was found in Region 2 (Abaco, Andros, and Eleuthera) (4.0%), where the elderly population comprises about 7%.

Respondents were asked whether they had experienced any injury due to an accident at their workplace, gunshot, stabbing, or other external cause during the past 12 months (Table 4-2). Approximately 4% of the population—4.7% of males and 4.1% of females—reported an injury over the reference period. Most incidents occurred at work or school (63%) (Figure 4-2). The proportion of reported injuries was highest amongst the elderly (5.9%), who are more likely to experience falls, and amongst working-age individuals in age groups 20–34 years (5.7%) and 35–54 years (5.1%).

FIGURE 4-1 Prevalence of Disability, by Type and Age Group

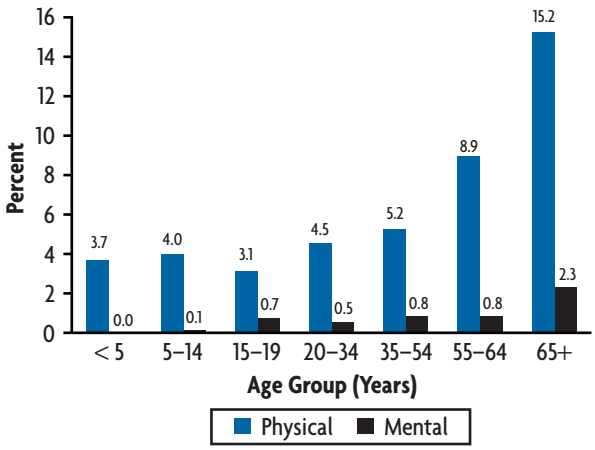
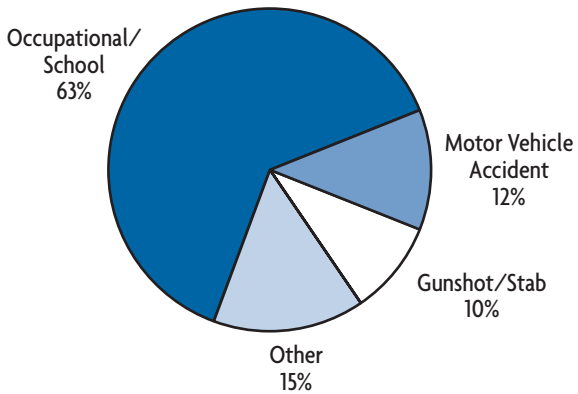


FIGURE 4-2 Distribution of Injuries, by Type (%)



(n = 246)

The highest and lowest occurrences of injuries were found in quintiles 4 (6.7%) and 3 (2.1%), respectively. In terms of region of residence, Bahamians on the most developed islands of New Providence and Grand Bahama (Region 1), as well as Exuma and Long Island (Region 3), had the most injuries.

Diabetes and Hypertension

To estimate the prevalence of diabetes and hypertension, BLCS respondents were asked whether they had a history of those conditions or whether a doctor or nurse had ever told them they had these chronic diseases. Notably, it is well documented that reported history of diabetes and hypertension is significantly lower than what actually occurs in a population.

As Table 4-3 shows, prevalence of diabetes was 3.3%, with knowledge of the condition more prevalent amongst females (3.8%) than males (2.7%), a significant difference, proven by chi-square testing ($p = 0.000$). Amongst males, prevalence increased from nearly 1% for those 20–34 years of age to about 17% for those 55–64 years old, and remained at the same level amongst elderly men 65 years and older. Amongst females, prevalence increased from less than 1% (0.1%) for girls under 20 years old, peaking at 19.1% for women 55–64 years old, and then declining to 15.7% amongst elderly women.

National Health and Nutrition Survey (NHNS) (1988–1989) respondents were asked: *"Has a doctor ever told you that you have diabetes?"* Answers showed that prevalence of self-reported diabetes was 3.3% in the 15-to-64 age group, and 14% in the elderly group. Corresponding BLCS rates were 3.8% and 16.4%, respectively. Higher rates may have resulted from changing lifestyle

TABLE 4-3 Self-reported Diabetes and Hypertension and Proportion Treated

	Diabetes				Hypertension			
Population characteristic	**Self-reported diagnosis (%)**	***N***	**Received treatment (%)**	***N***	**Self-reported diagnosis (%)**	***N***	**Received treatment (%)**	***N***
Gender								
Male	2.7	3,152	88.6	94	6.1	3,252	85.2	242
Female	3.8	3,262	90.1	160	12.3	3,262	92.4	479
Age group (years)								
0–4	0.0	625	0.0	0	0.3	625	11.1	2
5–14	0.1	1,394	100.0	1	0.2	1,394	47.6	2
15–19	0.0	503	0.0	0	0.1	503	0.0	1
20–34	1.3	1,435	78.3	18	3.8	1,435	78.3	69
35–54	4.4	1,623	83.2	83	15.8	1,623	88.5	295
55–64	18.2	389	95.5	74	36.0	389	90.8	158
65 and over	16.4	446	95.1	78	44.0	446	99.5	194
Region								
1	3.0	3,413	90.0	101	8.3	3,413	90.2	289
2	5.1	1,775	87.8	89	15.1	1,775	89.4	263
3	5.3	621	88.4	33	14.0	621	94.4	88
4	5.0	605	87.3	31	13.3	605	86.8	81
Quintile								
1	2.2	1,560	95.7	48	6.4	1,560	95.8	137
2	3.1	1,325	92.7	61	7.3	1,325	92.4	129
3	3.9	1,247	86.1	48	9.8	1,247	89.8	148
4	3.1	1,173	96.3	46	9.9	1,173	91.6	142
5	4.2	1,024	81.8	48	13.1	1,024	84.6	155
Total	**3.3**	**6,414**	**89.5**	**254**	**9.3**	**6,414**	**90.1**	**721**

practices and increased obesity—a risk factor for diabetes—in addition to a growing elderly population.

In the BLCS, prevalence of diabetes based on reported history increased as levels of consumption rose between the first (2.3%) and third (3.9%) quintiles, but fluctuated thereafter; a statistical association was not found between the proportion of persons with diabetes and quintile levels. These results may reflect differences in obesity levels across consumption groups.

The highest prevalence of diabetes (about 5%) was found in the Family Islands (Regions 2, 3, and 4), as compared to 3% in the urban areas of Region 1 (New Providence and Grand Bahama). One contributing factor may have been the elevated levels of obesity amongst adults in these regions, as first reported in the NHNS and observed in the present BLCS. In addition, low consumption of complex carbohydrates—including fresh fruits and vegetables, root crops, and legumes—persists.[2]

Nearly 1 out every 10 persons (9.3%) had a self-reported history of hypertension, with rates for females about twice that of males (12.3% versus 6.2%). Like diabetes, reported hypertension increased with age, from about 4% in adults aged 20–34 years, to 44% in the elderly. The proportion of females with a history of hypertension increased from less than 1% (0.2%) in girls under 20 years old to 50.9% in elderly women; that is, 1 out of every 2 women 65 years or older had a reported history of hypertension. Self-reported hypertension amongst males ranged from less than 1% in boys under 20 years old to about 34.5% in elderly men.

NHNS blood-pressure measurements showed that prevalence of hypertension amongst adults aged 15–64 years was 13%,[3] compared to BLCS self-reported results of 11% for the same age group. In addition, the NHNS classified 37.9% of those 65 years or older as hypertensive by blood-pressure measurement, compared to 53.1% who reported hypertension. In the BLCS, 44% of the elderly reported a history of hypertension. In the NHNS, self-reporting was determined by responses to a question similar to that asked in the BLCS: *"Did a doctor ever tell you that you had hypertension?"*

Analysis by quintiles of consumption groups showed the proportion of self-reported hypertension to increase by quintile, rising from 6.4% in the lowest, to 13.1% in the highest. This may reflect a tendency of better-off individuals to seek health care, thus having a greater opportunity for diagnosis.

The highest prevalence of hypertension by reported history was 15.1%, found in Region 2 (Abaco, Andros, and Eleuthera), whilst the lowest was 8.4%, found in Region 1 (New Providence and Grand Bahama).

About 9 out of every 10 persons with a history of diabetes or hypertension subsequently received treatment, and a greater proportion of these persons was 55 years or older. Those most likely to seek treatment lived on islands with greater access to health care (New Providence and Grand Bahama) (90.5%). A greater percentage from Region 3 (Exuma and Long Island) was treated for hypertension (94.4%).

Whilst the proportion of treated persons was high, the extent of compliance with prescribed medications to control the conditions is not known. Consequently, in addition to the need to reduce the percentage of untreated persons, particularly adults 54 years and younger, an aggressive approach is needed to create awareness of the signs and symptoms of diabetes and related complications to improve compliance.

These findings on diabetes and hypertension adequately reflect the current reality in the population. Both diseases present a public-health problem of alarming proportion, which, if ignored, could result in a deficit of human capital and reduced quality of life.

CHILD HEALTH

In terms of childhood illness, BLCS results showed that, in children ages 5 years and younger, respiratory illness is a major concern. During the four weeks prior to the Survey, amongst children in this age group, coughs, colds, and runny noses were the most common illnesses (41.6%), followed by diarrhoea (6.6%) and asthma (2.4%). A greater percentage of girls than boys was reported as having each illness; however, no significant statistical association was found by gender (Table 4-4).

Incidence of diarrhoea amongst children five years of age and younger was 7.8%; only 3 out of every 10 (28.6%) who suffered with the condition were given oral rehydration therapy, the course of treatment recommended by the

[2] This problem is evidenced in the most recent Food and Agriculture Organization (FAO) data on food availability data, as well as in NHNS observations.

[3] NHNS classification for hypertension was systolic ≥160 and/or diastolic ≥95.

TABLE 4-4 Proportion of Children Five Years and Younger with Common Illnesses in Past Four Weeks

Population characteristic	Cough, cold, or runny nose	Asthma	Diarrhoea	*N*
Gender				
Male	42.1	2.3	5.4	319
Female	44.7	3.6	7.3	306
Age group (years)				
0–1	46.9	2.3	9.3	204
2–3	46.4	2.3	5.5	195
4–5	36.8	4.1	3.9	225
Region				
1	43.8	3.2	6.1	353
2	41.6	1.1	6.2	174
3	41.0	0.0	2.2	42
4	34.8	3.4	16.5	55
Quintile				
1	41.4	2.1	7.8	203
2	45.1	7.1	6.2	141
3	45.1	2.6	4.4	130
4	39.5	1.3	6.4	99
5	47.9	0.0	5.7	52
Total	**41.6**	**2.4**	**6.6**	**624**

World Health Organization (WHO). Most of the children affected were in the lowest consumption quintile. Region 4 (Other Family Islands) had the highest incidence (16.5%), whilst Region 3 (Exuma and Long Island) had the lowest (2.2%).

As part of the Expanded Program on Immunization (EPI), children in The Bahamas are immunized against Diphtheria, Pertussis, and Tetanus (DPT), Poliomyelitis (Polio), Haemophilus Influenza Type B (HIB) and Hepatitis B (Hep B) within the first year of life; and Measles, Mumps, and Rubella (MMR) at age 1. DPT and HIB boosters are given at 15 months, whilst Paediatric Diphtheria Tetanus (Paed DT), Polio, and MMR boosters are given at ages 4–5 years.

In accordance with the national immunization schedule, coverage levels for infants and children ages 0–71 months who had received the required three doses of vaccines on schedule were: DPT (88.8%); Polio (87.2%); HIB (71.9%); and Hep B (32.1%).[4] Coverage amongst children 12–71 months who received their first dose of MMR on schedule was 69.1% (Figure 4-3).

Amongst infants 6–11 months, the coverage level was 74% for DPT, Polio, and HIB; and, amongst children 12–23 months, MMR coverage was 74%.

Less than 3% of the children surveyed were not immunized against DPT and Polio. Higher proportions were not immunized for HIB (12.6%), Hep B (48%), and MMR (7.7%) (Figure 4-4).

Immunization coverage (for DPT, Polio, and HIB) was generally higher amongst children from progressively better-off households, but sample sizes were smaller in the upper two quintiles (Table 4-5).

Amongst the four regions, Exuma and Long Island had the highest reported coverage levels for DPT (93%) and Polio (97.5%). Both Exuma and Long Island and Other Family Islands had the highest coverage for MMR (76%), whilst New Providence and Grand Bahama had the highest for HIB (74.9%) and Hep B (35.7%) (Table 4-5).

The immunization or vaccination card, used to verify a child's immunization status, is a requirement for school enrolment. The Child Health Passport (CHP), currently used in place of the original immunization card, was

[4] The Hep B vaccine, as part of the pentavalent vaccine, was introduced to the public sector in July 2001, which explains its low coverage level at the time of the BLCS.

FIGURE 4-3 Vaccination Coverage Amongst Children 0–71 Months, by Vaccine

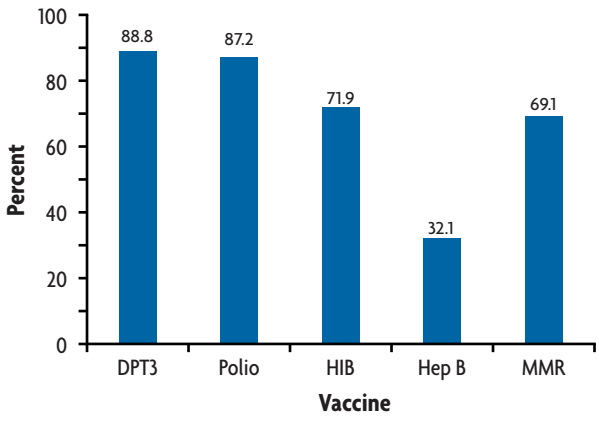
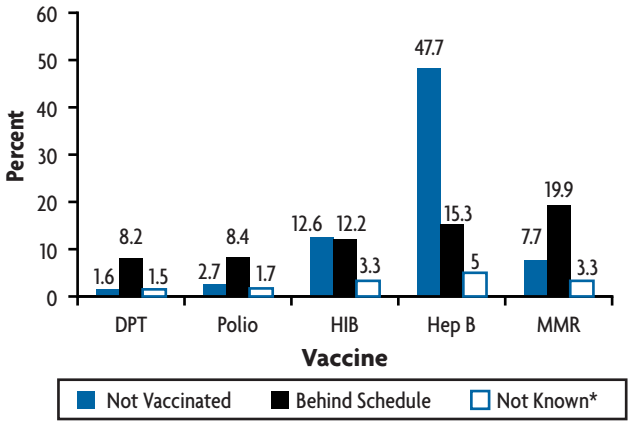


FIGURE 4-4 Children 0–71 Months Not Vaccinated or Behind Schedule



*While most of these children were vaccinated, a card was not produced to verify dosage.

presented for about 88% of children who participated in the BLCS. Nurse enumerators then reviewed the card and determined coverage levels. The CHP may have presented some limitations during data collection, as it was not designed to capture new vaccines added to the national immunization schedule.

In evaluating the immunization status of infants and children 0–5 years, coverage levels reported for children under 1 year were slightly lower than national figures (Table 4-6A). However, through defaulter tracing and immunization outreach, coverage levels usually increased by age 2, as reflected in Survey findings. Potential factors contributing to low coverage levels included small or non-representative sample sizes for children under 2 years. In addition, CHPs may not have been up to date; moreover, children may not have been due their third dose at the

TABLE 4-5 Immunization Coverage Amongst Children 0–71 Months

Population characteristic	DPT (%)	*N*	Polio (%)	*N*	HIB (%)	*N*	Hep B (%)	*N*	MMR[1] (%)	*N*
Gender										
Male	89.0	304	86.1	302	68.5	300	30.2	296	69.3	259
Female	88.6	297	88.4	297	75.5	291	34.0	295	69.0	248
Age (months)										
0–5	63.0	34	57.6	33	66.3	34	50.6	34	n.a.	n.a.
6–11	74.2	58	74.2	58	74.1	57	36.9	58	n.a.	n.a.
12–23	89.5	91	86.2	91	77.2	89	34.9	91	73.6[2]	90
24–71	93.1	418	92.0	417	70.8	411	29.0	408		—[2]
Region										
1	90.2	343	88.4	343	74.9	340	35.7	342	69.6	284
2	76.0	166	75.1	164	48.5	161	8.0	159	62.6	144
3	93.0	42	97.5	42	56.1	42	7.1	42	75.5	37
4	87.4	49	87.4	49	63.2	47	8.2	47	76.5	42
Quintile										
1	86.9	192	84.4	192	62.9	185	26.4	190	66.1	161
2	89.1	135	86.8	135	69.7	134	31.0	134	71.8	109
3	91.0	127	88.1	126	77.7	126	27.5	124	67.5	109
4	92.1	96	93.1	95	80.4	95	46.0	94	71.5	84
5	83.7	51	84.4	51	74.8	51	35.7	49	71.4	44
Total	**88.8**	**601**	**87.2**	**599**	**71.9**	**591**	**32.1**	**591**	**69.1**	**507**

[1] Children ages 12–71 months.

[2] MMR age groups differed for older children: 24–47 mo. coverage = 93.0% (n = 196); 48–71 mo. coverage = 44.4% (n = 221).

n.a. = not applicable.

TABLE 4-6A National Immunization Coverage Levels, 1997–2000

	Coverage level			
Vaccine type	1997	1998	1999	2000
DPT	87	89	84	99
Polio	86	88	84	92
HIB	n.a	n.a	77	92
Hep B	n.a	n.a	n.a	n.a.
MMR	94	92	87	94

n.a. = not applicable.

time of the Survey because of defaulting. Additional contributing factors were the recent introduction of HIB and Hep B into the national immunization schedule.[5]

National figures for the 1997–2000 period show that, amongst vaccine-preventable diseases, there were no reported cases of DPT, whooping cough, polio, tetanus neonatorum, or mumps. In 1997 and 1998, respectively, one case of measles and four cases of congenital rubella were reported. Since introduction of the HIB vaccination in 1999, the number of reported cases declined from six that year to none in 2000. In 2000, national vaccination coverage was reported at 99% for DPT; 92% for Polio and HIB; and 94% for MMR (Tables 4-6A and B).

[5] HIB was introduced into the schedule in 1999, and Hep B was included in 2001; however, at the time the BLCS was conducted, the third dose of Hep B was not administered routinely to infants under age 1 by all private doctors.

TABLE 4-6B Vaccine-preventable Cases Reported, 1997–2000

Disease	1997	1998	1999	2000
Diphtheria	0	0	0	0
Whooping cough	0	0	0	0
Poliomyelitis	0	0	0	0
Tetanus neonatorum	0	0	0	0
Measles	1	0	0	0
Mumps	0	0	0	0
Congenital rubella syndrome	0	4	0	0
Rubella (German measles)	19	2	0	0
Hep B	156	215	208	353
HIB	7	0	6	0

NUTRITIONAL STATUS OF CHILDREN

The nutritional status of children 2–10 years was assessed, using the anthropometric measurements of weight and height compared with WHO reference standards (Z-scores). The three indices examined were Weight for Age (WAZ), Height for Age (HAZ), and Weight for Height (WHZ). WAZ compares a child's weight with the WHO reference standard weight for a child of the same age. WAZ is the easiest indicator to measure, and therefore the most common measure of nutritional well-being.

HAZ compares a child's height with the WHO reference standard height for a child of the same age. In children older than 3 years, HAZ is a proxy for the cumulative environmental conditions—past influences—of the period of earlier growth, principal amongst which is the effect of poor nutrition (a clear indicator of stunted growth). In children younger than 3 years, HAZ is a proxy for past and current influences on nutritional status, as well as future growth failure and resulting associated risk; it is also a stronger predictor of mortality in children of this age. WHZ compares a child's weight with the WHO reference standard weight for a child of the same height. It is used to assess wasting, is the most sensitive measure of the three used, and is a proxy for current nutritional status. Across a population, it is generally expected that 2.3% of children will be undernourished (Z-score of −2.00), whilst 2.3% will be overnourished (Z-score of +2.00).

Prevalence of Undernutrition

As shown in Table 4-7, 11% of Bahamian children had low HAZ, whilst 6% had low WHZ. The indicators stunting (low HAZ) and wasting (low WHZ) were at least three times greater than what is normally expected, with Region 1 indicating the highest prevalence. These levels suggest the population may have pockets of endemic undernutrition. This extreme situation is difficult to assess in this type of survey and requires surveillance and clinic-based data. The proportion of children with low weight for age (WAZ) (3.3%) was within normal levels (Table 4-7).

Stunting is slightly more prevalent amongst boys (11%) than girls (10%), and both percentages are unacceptably high. Using the other two indicators—WHZ and WAZ—percentages were significantly lower, with 8% of boys and

TABLE 4-7 Low and High Z-scores for Children 2–10 Years of Age*

	HAZ-score (%)		WAZ-score (%)		WHZ-score (%)		
Population characteristic	**<−2.0**	**>2.0**	**<−2.0**	**>2.0**	**<−2.0**	**>2.0**	***N***
Gender							
Male	11.2	6.7	4.2	7.4	7.6	13.0	492
Female	9.9	6.2	1.7	8.2	4.4	15.8	332
Region							
1	11.2	6.4	3.4	7.6	6.9	14.3	437
2	9.4	8.2	2.9	9.2	4.5	10.4	212
3	7.9	0.0	3.3	5.6	3.3	19.7	87
4	4.4	9.5	1.1	7.5	1.4	13.3	88
Quintile							
1	9.8	7.2	3.3	5.8	6.5	8.8	273
2	11.4	4.4	1.8	7.6	4.8	18.0	181
3	9.0	8.8	3.6	11.4	6.7	13.1	175
4	13.5	5.2	4.2	5.2	5.2	17.3	130
5	11.3	6.2	4.2	10.2	11.1	17.8	65
Total	**10.7**	**6.5**	**3.3**	**7.7**	**6.4**	**14.0**	**824**

* Low Z-scores = < − 2.0; high Z-scores = >2.0.

4% of girls having low WHZ; 4% of boys had low WAZ, whilst the percentage of girls with low WAZ (2%) was in keeping with the expected proportion (Table 4-7).

The highest rate of stunting was found amongst the youngest population, with proportions declining as children grew older. The HAZ-score indicated that 15% of children 2–4 years of age were at significant risk of stunting; that proportion was more than halved (7%) in children 7–10 years of age. These results show a reverse of the pattern usually found in populations with a certain level of food deprivation; they may suggest an error in either data collection or measurement or reflect a current or emerging economic situation that is acutely depressed. In any event, these results warrant further investigation by the social agencies of the various ministries and the local, national, and international institutions involved.

The overall trend of low WHZ-scores (wasting), which reflect current nutritional status, showed that the potential for undernourishment increased as children grew older. This was evident in the increase from 4% in children 2–4 years to 8% in children 7–10 years, a proportion triple that of what is expected by global standards. This pattern deviates from what is typically found in other surveys. In the BLCS, the higher prevalence of wasting amongst older children reflects similar results from two previous surveys, and may indicate that, within households, the nutritional status of younger children is a priority.

Both WHZ- and HAZ-scores showed the highest prevalence of undernutrition on the urbanized islands of Region 1 (New Providence and Grand Bahama) and the lowest on the less developed Family Islands of Region 4 (Other Family Islands). In both developing and developed countries, this pattern suggests that, for individual households, the economic and social safety net (e.g., land for farming or extended family) is less secure in urban areas during periods of economic stress.

Prevalence of Overweight Children

The WHZ-score, the indicator used to determine underweight children, was also used to assess the extent of overweight children. Overall, 14% of the total sample of 2–10 year-olds was overweight, indicating the emergence of chronic overnutrition. As Table 4-7 shows, the proportion of children considered clinically obese was six times more than what was expected. The likelihood that these children will become overweight adults has daunting consequences for the long-term public health of the country.

As observed in the wider population, more girls than boys (16% versus 13%) were overweight; amongst all children, weight increased with age. Of those in age group 2–4 years, 11% registered above normal weight, compared to the 2.3% referenced as normal; the prevalence of excessive weight for height further increased to 16% amongst children 7–10 years.

Overall, 14% of children 2–10 years were overweight and 6% underweight. Both scenarios underscore the need to identify environmental risk factors—household food insecurity and poor nutritional practices—in this subgroup to determine the causal relation (which is beyond the scope of this study). According to WHO standards, only 5% of a sample should be outside normal ranges.

For the most part, WHZ increased with higher per-capita, household-consumption expenditure. Regions 2 (Abaco, Andros, and Eleuthera) and 4 (Other Family Islands) had the lowest prevalence of overweight children (10.4% and 13.3%, respectively), whilst Region 3 (Exuma and Long Island) reported the highest, with 20%.

NUTRITIONAL STATUS OF ADOLESCENTS

Adolescence, a period characterized by rapid physical growth and social adjustment, makes the adolescent child susceptible to environmental factors, particularly those related to food and nutrition. Amidst the concern of sexual maturation and the milieu of social development and adjustment problems is the disorder of obesity, which is common in adolescents generally. The Body Mass Index (BMI) is a simple and reliable index of weight for height commonly used to classify underweight, overweight, and obesity; the BMI provides useful, crude data on the aforementioned measurements within the population.

The BMI for age and gender was determined for adolescents 11–20 years of age, using reference standards from the Centers for Disease Control. BMI categories used were: underweight (5th percentile); normal weight; at risk of overweight (85th percentile); and overweight (95th percentile). As shown in Table 4-8, of all youth measured, 59% were reported to have normal weight, 14% were at risk of becoming overweight, and approximately 9% were

TABLE 4-8 Body Mass Indices for Adolescents, Ages 11–20 Years

	BMI (%)						
Population characteristic	**Underweight**	**Normal**	**At risk for overweight**	**Overweight**	**Total**	***N***	**Mean BMI**
Gender							
Male	20.0	56.8	14.8	8.4	100.0	483	21.4
Female	16.8	61.0	12.9	9.4	100.0	444	21.5
Age group (years)							
11–15	15.2	60.8	16.5	7.4	100.0	549	19.7
16–20	22.7	56.2	10.2	10.9	100.0	378	23.8
Region							
1	18.9	57.8	14.3	8.9	100.0	489	21.5
2	13.8	66.8	9.1	10.2	100.0	244	21.4
3	14.0	57.7	18.1	10.3	100.0	88	21.5
4	22.2	62.1	13.9	1.8	100.0	103	20.1
Quintile							
1	15.8	62.8	13.7	7.8	100.0	247	21.0
2	15.6	66.1	12.4	5.9	100.0	230	20.8
3	17.7	55.8	14.9	11.6	100.0	218	22.2
4	23.3	52.8	14.3	9.6	100.0	162	21.5
5	22.4	54.1	13.9	9.6	100.0	70	22.0
Total	**18.4**	**58.9**	**13.8**	**8.9**	**100.0**	**927**	**21.4**

overweight for their age. Notably, 18% of these adolescents were underweight at the time of the Survey.

Age group and gender trends revealed more overweight females than males, specifically amongst those 16–20 years (13%). Young people living on more urbanized islands were more likely to have normal weight than those residing in less developed regions.

With regard to the relationship between BMI and socioeconomic status, more children and teenagers who were underweight for their age and gender were from higher-consumption households (quintiles 4 and 5), which contradicts results found in similar surveys. However, this finding could reflect concern for physical appearance, a common phenomenon in populations of wealth and affluence.

More boys than girls were classified as underweight. Overall, the highest prevalence of underweight youth was observed in the less developed islands of Region 4 (Other Family Islands) (Table 4-8).

NUTRITIONAL STATUS OF ADULTS

Evidence is convincing that mortality rates increase as excessive weight increases, as measured by the BMI. Moreover, as the BMI increases, the proportion of people with one or more co-morbid conditions also increases. In this regard, assessing the nutritional status of the adult population is particularly important to understanding its relationship to disease and death, health effects, and the human development index.

The nutritional status of adults 21–60 years of age was assessed based on weights and heights taken during the BLCS. General BMI rankings are:[6] normal weight for height, underweight for height, and overweight for height. The latter is further subdivided into three classes of obesity. WHO-accepted cutoffs for BMI are: $<$18.5 (underweight), 18.5–24.9 (normal), $\geq$25–29.9 (pre-obesity or overweight), 30–34.9 (obesity class I), 35–39.9 (obesity class II), and 40+ (obesity class III).

As Table 4-9 indicates, the mean BMI was 28 for adults; 34.4% of adults were overweight, a further 30.9% were obese, and about 2% were underweight. When the figures were combined, the percentage of overweight or obese adults was 65%, approximately two-thirds of this population. The 1988–1989 NHNS showed that, in adults 15–64 years of age, this prevalence was 49%.

It can reasonably be concluded that The Bahamas, like many other high-income countries, is experiencing an obesity epidemic. Within the adult population, females had a significantly higher prevalence of obesity (37%) than did males (24%) (Table 4-9). Female obesity was highest in Region 4 (Other Family Islands), the most underdeveloped area; there, overweight (35%) and obese (49%) females comprised 84% of the Region's female population, a grave revelation (Tables 4-10 and 4-11).

As shown in Table 4-10, the youngest group of males was the healthiest group in terms of weight. On average, one out of every two men 21–30 years of age (49.5%) was of normal weight. About 62% of men were too heavy for their height, whilst 69% of women had a BMI of 25 or more (Table 4-11). These results clearly show that a high proportion of Bahamian adults is at risk for developing one or more co-morbidities of the chronic, non-communicable diseases.

Amongst all persons, the combination of being overweight and obese increased with age. Obesity was most notable in the age groups between 31–50 years (about 35%), as well as in the 51–60 age group (33%), whilst young adults in the 21–30 age group were predominantly the healthiest in terms of weight (Table 4-9).

As an indirect measure of socioeconomic status, obesity is more common amongst middle-aged women in low-income countries. In high-income countries, it is more prevalent amongst middle-aged people, as well as younger adults and children, and tends to be associated with lower socioeconomic status. The highest prevalence of overweight persons was found in quintile 5 (38%) and decreased steadily in lower-consumption households. With regard to obesity, however, the wealthiest households had the smallest proportion of obese persons (27%), whilst quintile 2 had the highest (35%), an expected result for high-income populations (Table 4-9).

Overall, the highest prevalence of overweight and obese persons was found in Region 3 (Exuma and Long Island). Gender differences, noted in Table 4-10, show that those two islands have the highest percentage of obese men

[6] BMI, the international standard for determining weight range, is calculated by weight in kilograms (kg), divided by height in meters (m) squared (kg/m^2).

TABLE 4-9 Body Mass Indices for All Persons, Ages 21–60 Years

Population characteristic	BMI (%) Underweight (<18.5)	Normal weight (18.5–24.9)	Overweight (25.0–29.9)	Obese (30+)	Total	*N*	Mean BMI
Age group (years)							
21–30	3.8	45.2	27.7	23.3	100.0	712	26.6
31–40	1.0	28.7	34.7	35.6	100.0	747	28.5
41–50	0.8	23.0	41.0	35.2	100.0	475	28.9
51–60	0.3	23.4	43.2	33.1	100.0	235	28.7
Region							
1	1.8	33.2	34.4	30.6	100.0	1,248	27.9
2	2.4	27.1	37.5	32.9	100.0	523	28.3
3	1.0	33.8	30.5	34.6	100.0	188	27.8
4	1.4	35.2	29.6	33.8	100.0	209	27.6
Quintile							
1	3.4	35.3	30.4	30.9	100.0	380	28.2
2	1.6	31.7	31.5	35.2	100.0	416	28.4
3	2.2	31.0	33.6	33.1	100.0	449	28.1
4	2.0	31.5	36.5	30.0	100.0	445	27.7
5	0.7	34.4	37.8	27.0	100.0	481	27.4
Total	**1.9**	**32.8**	**34.4**	**30.9**	**100.0**	**2,169**	**27.9**

TABLE 4-10 Body Mass Indices of Males, Ages 21–60 Years

Population characteristic	BMI (%) Underweight (>18.5)	Normal	Overweight (18.5–24.9)	Obese (25.0–29.9)	Total (30+)	*N*	Mean BMI
Age group (years)							
21–30	5.1	49.5	27.3	18.1	100.0	344	25.7
31–40	0.3	31.6	42.0	26.2	100.0	373	27.3
41–50	0.9	25.4	42.1	31.6	100.0	244	28.3
51–60	0.6	29.1	49.7	20.6	100.0	110	27.5
Region							
1	2.1	35.7	37.9	24.3	100.0	583	27.0
2	2.5	34.1	41.5	21.9	100.0	270	27.2
3	1.0	39.3	31.3	28.4	100.0	99	26.9
4	2.4	49.4	25.6	22.6	100.0	119	25.9
Quintile							
1	3.7	45.1	32.0	19.2	100.0	176	26.3
2	3.2	39.2	36.5	21.1	100.0	213	26.2
3	1.8	35.7	38.4	24.1	100.0	220	27.2
4	2.1	33.6	38.7	25.7	100.0	211	27.2
5	0.9	31.4	40.3	27.5	100.0	253	27.6
Total	**2.1**	**36.1**	**37.6**	**24.1**	**100.0**	**1,071**	**27.0**

TABLE 4-11 Body Mass Indices of Females, Ages 21–60 Years

Population characteristic	BMI (%)				Total	*N*	Mean BMI
	Underweight (<18.5)	Normal (18.5–24.9)	Overweight (25.0–29.9)	Obese (30+)			
Age group (years)							
21–30	2.6	41.5	28.1	27.8	100.0	368	27.4
31–40	1.7	26.1	28.0	44.3	100.0	374	29.5
41–50	0.8	20.7	39.8	38.8	100.0	231	29.4
51–60	0.0	19.3	38.4	42.4	100.0	125	29.6
Region							
1	1.6	31.1	31.3	36.0	100.0	665	28.6
2	2.4	19.7	33.3	44.6	100.0	253	29.4
3	1.1	27.7	29.6	41.6	100.0	89	28.7
4	0.0	16.3	35.0	48.8	100.0	90	30.0
Quintile							
1	3.3	27.9	29.2	39.7	100.0	204	29.7
2	0.0	24.5	26.6	48.9	100.0	203	30.4
3	2.6	27.0	29.5	41.0	100.0	229	29.0
4	2.0	29.6	34.6	33.7	100.0	234	28.1
5	0.5	37.6	35.3	26.6	100.0	228	27.3
Total	**1.7**	**29.8**	**31.5**	**37.1**	**100.0**	**1,098**	**28.7**

(28%). The greatest proportion of obese women was found on Other Family Islands (Region 4), where 47% had a BMI of 30 or more (Table 4-11). Overall, New Providence and Grand Bahama had the lowest prevalence of obesity amongst island regions (Table 4-9). It follows that overweight persons and obesity present a significant public-health problem, especially in the less developed Family Islands (Region 4) and poorest segments of the population.

BREASTFEEDING

Results on breastfeeding show that approximately 74% of all children 24 months and younger had been breastfed (Table 4-12).[7] More boys (79%) than girls (69.6%) had been breastfed. The lowest prevalence of recorded breastfeeding was for infants 7–12 months (69.1%), which was lower than that for children 13–24 months (74.6%). This unexpected finding may be a factor of memory and the accuracy of recall by mothers of older children. As expected, the highest prevalence of breastfeeding (76%) was amongst children 0–6 months of age.

The highest prevalence of breastfeeding (94%) was found in the median quintile, whilst the lowest was found in quintile 4 (63%). Mothers residing in the more developed islands of Region 1 (New Providence and Grand Bahama) and 2 (Abaco, Andros, and Eleuthera) were most likely to breastfeed their infants. Amongst those households, approximately 74% of children were breastfed. These results show that breastfeeding is more prevalent in urban areas than rural ones, which is not typically found. However, this result can be attributed to the National Breastfeeding Campaign. Initiated eight years prior to the BLCS, the Campaign has influenced Regions 1 and 2 more than 3 and 4 because of the way in which resources have been concentrated.

According to lactation management research, the optimal length of time recommended for exclusive breastfeed-

[7] Children's ages were classified as 0–6 months, 7–12 months, and 13–24 months.

TABLE 4-12 Breastfeeding Incidence and Median Months of Exclusive Breastfeeding*

Population characteristic	% breastfed	*N*	Median months of exclusive breastfeeding	*N*
Gender				
Male	79.0	86	2	57
Female	69.6	115	2	68
Age (months)				
0–6	76.3	50	1	35
7–12	69.1	51	1	31
13–24	74.6	100	3	59
Mother's education completed				
Secondary school	70.2	150	2	91
College/university	82.2	28	3	20
Region				
1	74.2	126	2	81
2	72.6	49	3	29
3	57.3	7	3	4
4	62.6	18	3	10
Quintile				
1	68.3	62	2	32
2	70.7	50	2	30
3	93.6	41	2	33
4	62.5	29	1	19
5	72.5	19	3	11
Total	**73.7**	**201**	**2**	**125**

* Note: Breastfeeding sample was for children 24 months or younger; exclusive breastfeeding was for those 6 months or younger.

ing is six months. This is important to prevent incidence of diarrhoeal diseases, which can increase infant morbidity and mortality. A pertinent indicator of the benefits of breastfeeding is the duration of exclusive breastfeeding.[8] Infants 6 months of age and younger were exclusively breastfed for a median of 2 months. For the purpose of comparison with the NHNS of 1988–1989, the level of breastfeeding of children 12 months of age and younger was assessed. BLCS results showed that 7% of children were exclusively breastfed for 4 months, compared to 2% of children in the NHNS, a marked improvement in prevalence rate for exclusive breastfeeding.

With regard to exclusive breastfeeding by region, Region 1 mothers exclusively breastfed their babies for an average of 2 months. Sample sizes for the other regions were too small to make comparisons.

FEMALE REPRODUCTIVE HEALTH

Approximately 61.9% of females 10–49 years of age reported being pregnant at least once, with a proportional range from 6% in adolescent girls 10–19 years of age to 91.8% in women 40–49 years. The average number of reported pregnancies increased from less than one for girls 10–19 years to three for women 40–49 years.

In each age group, those least able to afford it became pregnant, as the highest proportion of women who were ever pregnant was found in the lowest quintile. Amongst

[8] The term *exclusive breastfeeding* is defined as an infant being solely breastfed or fed expressed breast milk via the spoon-and-cup method; and given no bottle (even if it contains expressed breast milk), water, formula, or baby food.

TABLE 4-13 Percentage of Females, 10–49 Years of Age, Who Have Ever Been Pregnant

	10–19 yrs.		20–29 yrs.		30–39 yrs.		40–49 yrs.	
Population characteristic	**%**	***N***	**%**	***N***	**%**	***N***	**%**	***N***
Education								
Primary or lower	5.1	85	100	10	95.4	27	93.9	62
1–3 grades of higher secondary	1.6	153	76.7	19	95.7	32	78.5	26
4–5 grades of higher secondary	5.0	113	79.9	54	93.2	53	100	32
Higher secondary or technical/vocational	19.3	84	73.8	240	87.1	231	95.4	143
Jr. college, community college, or college/univ.	0.0	23	47.1	75	80.5	96	85.9	76
Region								
1	5.6	249	67.9	265	86.7	251	91.9	188
2	8.4	129	79.7	92	90.2	111	92.2	83
3	8.2	37	63.3	22	82.7	35	95.5	42
4	4.9	44	80.4	25	86.4	45	84.2	30
Quintile								
1	9.2	125	80.8	95	92.7	89	98.7	55
2	8.8	109	78.5	92	91.5	85	96.4	65
3	3.5	104	76.1	82	93.2	99	95.2	71
4	5.2	85	56.8	71	85.0	99	95.6	75
5	0.0	37	48.5	64	73.0	70	80.0	78
Total	**6.0**	**460**	**68.9**	**404**	**87.0**	**442**	**91.8**	**344**

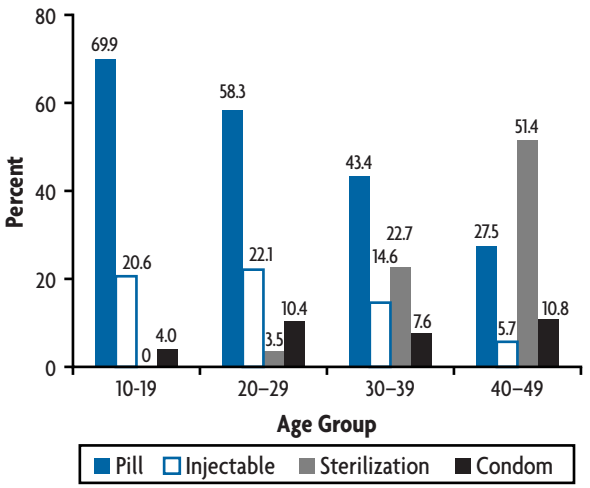
age groups, a greater proportion residing in Family Islands reported pregnancies (Table 4-13).

About 67% of all females had had at least one gynaecological examination. Amongst women 20–49 years of age, more than 80% across all quintile levels had been examined.

Level of contraceptive use to avoid pregnancy was 5.6% for girls 10–19 years of age, 57% for women 30–39 years, declining to 33% for women 40 years and older (some of whom may have no longer needed contraception because of hysterectomies or menopause). Women who had had at least one live birth were more likely to use contraceptive methods than those who had had no deliveries.

The birth control pill was the most popular contraceptive method used amongst all females (47%), followed by female sterilization (19.7%), which was used primarily by older women. Other methods included injectables (16.1%), condoms (9.1%), and other modern

FIGURE 4-5 Common Contraceptive Methods Women Used, by Age and Type



methods (6.5%) (Figure 4-5). This pattern was comparable by quintile.

HEALTH-SERVICES USE AND EXPENDITURE

The Government attempts to make health-care services available to all residents of the Bahamas by subsidizing costs for certain population groups, and deferring or waiving costs in cases of demonstrated lack of ability to pay. Because of this policy, infants, children under 19 years (students only), civil servants, pregnant women, the physically disabled, the elderly (pensioners), and holders of the social-services medical card are exempt from facility fees, including medicines.

Over the past five years, health services accounted for about 15% of the national budget. In fiscal year (FY) 2001–2002, about 69% of the health budget was apportioned to the delivery of health care, with institutions receiving the majority of the share. Given the Government's mandate to ensure the availability of accessible and affordable health care for all persons living in The Bahamas, the BLCS sought to determine whether inequities existed in the level of facility use.

Outpatient Visits

In the four-week period immediately preceding the Survey, approximately 1 in 10 persons (12.9%) visited a health practitioner for outpatient care. More females (15.3%) than males (10.4%) made visits. This finding is not surprising, as pregnant females are more likely to report illness and visit health facilities. The very young (18.7%) and the elderly (24.6%) represented the highest proportion of visits (Table 4-14).

The percentage of persons seeking outpatient care rose with consumption levels, from 8% in the lowest quintile to about 20% in the highest (Table 4-14).

TABLE 4-14 Outpatients (during Past Four Weeks) and Inpatients (during Past 12 Months)

		Inpatient admissions		
Population characteristic	**Outpatient visits**	**Total**	**Average length of stay**	***N***
Gender				
Male	10.4	3.8	8.8	3,152
Female	15.3	7.1	6.5	3,262
Age group (years)				
0–4	18.7	4.1	4.0	625
5–14	9.9	2.1	12.5	1,394
15–19	5.7	3.3	6.9	503
20–34	11.6	7.7	4.7	1,435
35–54	13.9	6.0	6.8	1,623
55–64	14.5	6.2	6.6	389
65+	24.6	11.5	15.7	446
Region				
1	12.4	5.4	6.9	3,413
2	16.6	5.8	9.1	1,725
3	13.9	6.4	6.7	621
4	13.7	5.5	10.6	605
Quintile				
1	8.1	5.1	7.8	1,560
2	9.9	5.4	8.3	1,325
3	13.2	5.2	6.4	1,247
4	13.5	4.4	5.9	1,173
5	19.6	7.1	5.9	1,024
Total	**12.9**	**5.5**	**7.2**	**6,414**

TABLE 4-15 Outpatient Visits to Health Facilities in Past Four Weeks, by Facility and Sector

	Public			Private					
Characteristic	**Total**	**Hospital**	**Clinic**	**Total**	**Hospital**	**Clinic**	**Professional**	**Foreign medical**	***N***
Gender									
Males	66.7	27.7	39.0	31.0	3.0	23.8	4.2	2.3	566
Females	57.8	19.0	38.8	39.9	2.6	33.0	4.2	2.4	797
Age group									
0–4	63.5	19.2	44.3	35.8	3.7	32.1	0.0	0.6	142
5–14	63.8	17.5	46.3	33.7	1.7	27.9	4.0	2.6	173
15–19	56.1	15.5	40.6	43.9	0.0	39.9	4.0	0.0	41
20–34	46.8	15.1	31.7	50.6	3.9	39.7	7.0	2.5	269
35–54	59.9	30.9	29.1	37.9	1.8	30.3	5.8	2.1	411
55–64	74.0	35.2	38.8	24.2	3.6	18.8	1.8	1.8	112
65+	77.3	17.9	59.4	18.2	4.9	11.7	1.6	4.5	215
Region									
1	51.3	33.3	18.0	47.9	3.7	40.2	4.0	0.8	646
2	70.6	12.0	58.6	27.1	1.7	20.4	5.0	2.3	482
3	86.7	11.5	75.2	9.5	1.9	7.6	0.0	3.8	108
4	70.4	16.4	54.1	15.4	1.7	11.1	2.6	14.2	127
Quintile									
1	91.1	24.2	66.9	8.9	0.6	4.2	4.1	0.0	180
2	83.8	38.6	45.3	14.1	1.9	11.5	0.7	2.0	282
3	67.7	22.2	45.5	30.7	2.6	24.4	3.8	1.6	263
4	47.7	13.0	34.7	50.4	2.4	43.7	4.3	2.0	275
5	34.5	14.9	19.6	60.4	5.3	48.0	7.1	5.1	342
Total	**61.5**	**22.7**	**38.8**	**36.2**	**2.9**	**29.1**	**4.2**	**2.3**	**1,363**

Table 4-15 shows that as consumption quintiles increased, visits to public health facilities decreased while those to private practitioners increased. About 62% was made to public-health facilities, 36.2% to private practitioners, and 2.3% to health facilities abroad. On most islands outside of New Providence and Grand Bahama (Region 1), health care is largely limited to Government clinics. The data shows greater usage on Family Islands (Regions 2, 3, and 4), where 70–87% of medical visits were made to public-health facilities, especially clinics. Residents in Region 1 used public-health facilities the least and made the highest proportion of visits to private practitioners (47.9%). This finding is predictable, given that most private-health facilities are found on New Providence and Grand Bahama. Despite comparatively limited availability of private-health facilities on the Family Islands, about 10–27% of those residents chose private facilities for outpatient care, either locally or on other islands. The proportion of outpatient visits to foreign medical facilities was modest in most areas.

Medicine

As Table 4-16A illustrates, respondents who were outpatients tended to buy their medicine from both public and private facilities,[9] although they spent more at the latter over the reference period (past four weeks). When expenditure at public- and private-health facilities was combined, results showed that, on average, about $4 was spent on medicine, with females spending more than males ($4.61 versus $3.91).

[9] Expenditure on medicine is at an individual level, inclusive of those who did not pay, including Government-subsidized groups.

TABLE 4-16A Average Expenditure on Outpatient and Inpatient Care

Population characteristic	Outpatient ($)						Inpatient (all sectors) (B$)	*N*
	Public	Private	Foreign	Public	Medicine private	Both		
Gender								
Male	2.14	6.30	0.82	0.50	3.42	3.91	22.98	3,061
Female	0.77	11.67	0.34	0.66	3.95	4.61	33.56	3,175
Age group (years)								
0–4	0.11	5.73	0.08	0.19	2.31	2.50	15.24	611
5–14	0.08	2.92	0.04	0.29	1.69	1.98	12.52	1,350
15–19	0.49	9.52	0.00	0.25	2.17	2.42	18.44	489
20–34	0.93	10.26	0.03	0.20	2.10	2.30	23.94	1,403
35–54	3.58	11.19	1.08	1.10	4.45	5.56	47.37	1,573
55–64	2.83	7.45	0.87	1.67	12.11	13.78	41.27	380
65 or older	1.33	25.84	4.43	1.19	12.38	13.57	49.15	431
Region								
1	1.39	9.54	0.36	0.55	3.66	4.20	25.89	3,306
2	1.81	7.65	0.27	0.56	4.96	5.52	41.76	1,721
3	1.24	2.06	2.60	2.29	0.72	3.01	49.25	616
4	1.37	4.49	7.44	0.56	2.37	2.93	40.66	594
Quintile								
1	0.30	0.39	0.00	0.25	0.61	0.86	5.47	1,553
2	0.92	2.21	0.07	1.12	1.29	2.41	11.16	1,316
3	0.89	4.75	0.05	0.39	2.89	3.28	15.59	1,220
4	0.73	7.05	0.57	0.27	3.31	3.58	38.70	1,144
5	4.35	31.18	2.19	0.88	10.50	11.39	72.04	1,004
Gini coefficient	0.9935	0.9806	0.9988	0.9933	0.9628	0.9573	0.9889	6,236
Total	**1.43**	**9.06**	**0.57**	**0.58**	**3.69**	**4.27**	**28.41**	**6,236**

In terms of age group, adults aged 55–64 years incurred the highest average cost for medicine ($13.78), most of which was spent at private facilities. Persons under 35 years had the lowest cost (less than $3.00). Low expenditure amongst infants and children reflect, in part, the Government's policy to subsidize their health-care costs in the public sector.

Average spending increased by quintile when expenditures at public and private facilities were combined. On average, individuals in the highest quintile paid 13 times more for medicines to treat various health conditions ($11.39) than those in the lowest quintile ($0.86). This may be related to the tendency of better-off persons to buy medicines at private, rather than public, facilities.

Medicinal expenditure ranged from about $3.00 to $6.00 in the island regions, with residents of Region 2 (Abaco, Andros and Eleuthera) paying the most for medicines ($5.52), as compared to persons in the remaining Family Islands of Regions 3 and 4, who spent about $3.00.

Expenditure

As Table 4-16A shows, the average expenditure for outpatient care (during the four-week period preceding the survey) at public, private, and foreign facilities was $1.43, $9.06, and $0.57, respectively. Expenses were averaged for all costs associated with outpatient visits—excluding medicines, transportation, and insurance-reimbursed costs. Per-capita spending on overall outpatient care was

$11.07, averaging $12.78 for females and $9.26 for males.

On average, males spent more on outpatient care at public health facilities and overseas, whilst females spent more at local private facilities. The average health-care cost at public facilities was $2.14 for males and $0.77 for females. At private facilities, average expenditure was $6.30 for males and $11.67 for females.

Amongst those who sought outpatient care in the public sector, expenditures decreased with age amongst adults in the 35 years and older age groups. Average expenses decreased from $3.58 (for adults aged 35–54 years) to $1.33 (those 65 years or older). For children and young adults, the average cost of public-health care was less than $1.00. For private costs, average expenses increased from $2.92 for children aged 5–14 years to $11.19 for adults aged 35–54 years. Overall, the highest average, private-care cost was found amongst the elderly ($25.84), whilst the lowest was amongst children 5–14 years. Amongst residents who traveled abroad for outpatient care, the elderly incurred the highest average cost ($4.43).

Across all sectors, health expenditure increased as quintiles rose. Results using the Gini coefficient to measure inequality showed statistical differences by consumption quintile (the measure was greater than 0.95 in each sector).

Mean expenditure on public-health care, by region, was about $2 or less. Residents of Region 1 (New Providence and Grand Bahama), where most private health-care facilities are found, had the highest private health-care expenditure ($9.54). Persons living in Region 4 (Other Family Islands), who had to travel longer distances for

TABLE 4-16B Average Annual Health Expenditure and Percentage Distribution, by Expenditure Type

Population characteristic	Average annual expenditure (B$)	Distribution (%)						
		Outpatient					Inpatient (all sectors)	*N*
		Public	Private	Foreign	Medicine	Total		
Gender								
Male	252.40	8.10	24.90	1.40	54.20	88.70	11.30	3,156
Female	363.20	5.40	29.20	0.60	51.20	86.30	13.70	3,269
Age Group (years)								
0–4	148.20	1.50	37.90	0.40	55.10	94.90	5.10	626
5–14	158.60	0.90	36.60	0.40	54.10	92.10	7.90	1,396
15–19	174.40	9.70	30.40	0.00	41.60	81.80	18.20	503
20–34	234.40	8.30	30.60	0.20	42.00	81.10	18.90	1,436
35–54	493.60	8.20	25.20	1.20	51.10	85.70	14.30	1,625
55–64	445.80	7.00	18.20	0.60	65.70	91.50	8.50	391
65 or older	743.60	6.00	12.70	3.40	71.10	93.20	6.80	448
Region								
1	238.20	5.40	28.70	0.60	53.20	87.80	12.20	3,367
2	238.30	13.50	21.50	1.10	49.60	85.70	14.30	1,745
3	164.20	22.30	12.00	2.50	42.90	79.70	20.30	620
4	249.60	4.40	18.20	10.80	43.90	77.20	22.80	599
Quintile								
1	25.50	11.00	7.90	0.00	59.90	78.80	21.20	1,560
2	83.60	11.80	14.60	0.40	55.60	82.40	17.60	1,325
3	139.50	5.70	26.10	0.10	58.50	90.40	9.60	1,248
4	189.50	4.70	30.40	0.70	51.10	86.90	13.10	1,177
5	747.80	5.20	34.20	1.80	47.80	89.00	11.00	1,021
Total	**309.20**	**6.50**	**27.50**	**0.90**	**52.40**	**87.20**	**12.80**	**6,425**

hospital services, had the highest average expenditure for outpatient care abroad ($7.44).

Table 4-16B shows that the share of Total Health Expenditure (THE) increased between the lowest and middle consumption quintiles (78.8% and 90.4%, respectively) and fluctuated in the highest ones. Share of public-sector expenditure decreased as consumption levels increased (from 11% in the lowest consumption quintile to about 5% in the upper quintiles). This finding corresponds with the earlier observation that visits to the public-health sector decrease with increased levels of well-being. Conversely, the share of private-sector (and foreign facility) expenditure increased as consumption levels rose (from 7.9% in the lowest quintile to 34.2% in the highest); this represented a fourfold increase, indicating that, with higher levels of affluence, a greater portion of THE is spent on private care. The expenditure share on medicines was highest amongst persons in the lowest consumption quintile and decreased between the middle and highest quintiles.

Inpatient Admissions and Expenditure

During the 12 months preceding the BLCS, 5.5% of all respondents were admitted to a health facility for inpatient care: 4% at public facilities and 1.5% at local private or foreign ones. In all facilities combined, female admissions were nearly twice as high as that of males (7.1% compared to 3.8%). Adults 65 years and older (11.5%), followed by those 20–34 years (7.7%), were more likely than other groups to be admitted for medical care (Table 4-15). The difference between consumption quintiles was only 3% (4–7%) and only 1% (5–6%) across the island regions.

Average Length of Stay

Whilst some Government-owned clinics have accommodations for overnight medical stay, most persons requiring extended medical care are retained in a hospital. As shown in Table 4-14, the average length of stay in health-care institutions over the reference period (last 12 months) was 7 nights. Even though fewer males than females were admitted to health-care facilities, they were retained longer (9 versus 7 nights). The reasons may be that males are more likely to suffer from externally caused, acute illnesses and be diagnosed at a more advanced stage of illness. The elderly and children 5–14 years had the longest average periods of stay (16 nights and 13 nights, respectively), whilst children under 5 years were retained for the shortest period of time (4 nights).

Generally, as quintiles increased, the average number of nights spent in a health facility decreased. Whilst respondents in the lower two quintiles spent an average of about 8 nights, this decreased to about 6 nights in the higher quintiles. Whilst it is possible that persons in a lower socioeconomic level may have more severe illness, resulting from deprivation of certain services, it is also possible that these results may reflect who is paying the bills (i.e., Government, persons paying out of pocket, or a third party).

On average, respondents from the more remote islands of Region 4 (Other Family Islands) had the longest stay (11 nights), followed by those from Region 2 (Abaco, Andros, and Eleuthera) (9 nights). In Regions 1 and 3, respondents were retained for an average of about 7 nights. This finding may reflect the need for more diagnostic services for persons referred to hospitals in New Providence or Grand Bahama from the other islands, or simply that only the more serious cases are referred.

Expenditure

Table 4-16A, which summarizes the average expenditure amongst those admitted to a health facility over the 12-month period prior to the Survey, shows expenditure, which covered all payments associated with inpatient visits (including medicines), but excluded transportation, room and board, and insurance-reimbursed costs.

Combined per-capita expenditure for inpatient care (public, private, and foreign) was $28.41. Average expenditure on inpatient health care was lower amongst males than females ($23.00 versus $33.56). By age group, the elderly incurred the highest average cost ($49.15), whilst children 5–14 years had the lowest ($12.52). Average cost increased with age between the 5–14 and 35–54 age groups. Expenses for adults 55–64 were lower ($41.27) but rose again for those 65 and older.[10]

Average expenditure on health care over the past 12 months increased steadily by quintile, from $5.47 at the lowest quintile to $72.04 at the highest—roughly a thirteen-fold increase. This finding most likely reflects the preference for private services as socioeconomic status (SES) increases. However, as shown in Table 4-16B, the share of THE on inpatient care (including medicine) dif-

[10] These results are interesting, considering that the Government heavily subsidizes care to the elderly.

fered by quintile. It was highest in the lowest quintile (21.2%), which was about twice that of the middle and highest quintiles. This latter finding clearly indicates the SES/health cycle: How poor health can negatively affect SES and how poverty can lead to poor health.

Amongst island regions, average expenditure was highest on Family Islands, where average cost ranged between $40 and $49 for inpatient care. It was lowest for Region 1 residents, who spent an average of $25.89 (Table 4-16A).

Whilst expenditure rose by quintile, the share of THE on outpatient care was lowest amongst children and the elderly, both subsidized by Government. The poor allocated the greatest proportion of their THE share to inpatient care. Medicines comprised the greatest share of THE.

Overall, the average annual expenditure on health care per person was $309.20 ($252.40 amongst males and $363.20 amongst females). Generally, expenses increased with age (with the exception of adults 55 to 64 years). By consumption quintile, persons in the lowest quintile spent an average of $25.50 annually, compared to $747.80 for those in the highest quintile. Regional comparisons showed that Region 3 (Exuma and Long Island) had the lowest annual cost ($164.20), whilst Region 4 (Other Family Islands) had the highest ($249.60) (Table 4-16B).

HEALTH INSURANCE COVERAGE

The principal avenues by which health care is financed are:

- *Government*. Approximately 15% of the nation's budget is allocated to health (MOF 2004).
- *Private health insurance*. About $102 million was spent in 2001.
- *User fees at both public and private facilities*. Total out-of-pocket expenditure was $309 per capita over the last 12 months.
- *Social health insurance*. Through the National Insurance Board (industrial injury component).
- *External sources*. Such sources are limited because of the country's economic profile (MOH 2004, p. 77).

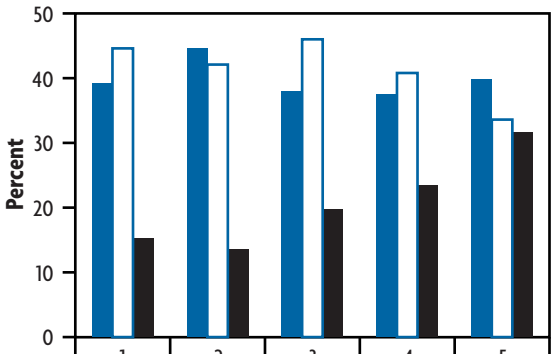
Survey results revealed that 51.4% of respondents reported having some form of health insurance, leaving others to cover health-care expenses out of pocket or with Government assistance. In terms of gender, coverage levels did not differ significantly between males (50.7%) and females (52.2%). The age groups with the least coverage were those most likely to seek care: the elderly (34.7%) and children under 5 years (42.8%). Both groups are more vulnerable to illness than others, and additionally, the cost of insurance for the elderly is prohibitive. Coverage for employable persons (ages 20–64) ranged from 50%–59%.

Individuals from better-off households (higher consumption quintiles) had higher levels of coverage. For example, only 20.1% of those in the poorest quintile had coverage, compared to 76% in the wealthiest quintile. In addition to differences in level of insurance coverage, scope of coverage differed. Higher-income persons were more likely to have comprehensive health-insurance packages, whilst lower-income persons, who purchased lower-priced premiums, faced higher deductibles (MOH 2003).

TABLE 4-17 Proportion of Respondents with Medical and Dental Coverage

Population characteristic	Medical (%)	Dental (%)	*N*
Gender			
Male	48.9	4.5	3,148
Female	50.3	4.7	3,259
Age group (years)			
0–4	41.8	2.4	624
5–14	50.8	5.0	1,392
15–19	49.8	3.4	503
20–34	48.1	3.4	1,433
35–54	56.5	6.9	1,622
55–64	49.2	4.7	389
65+	33.8	2.4	444
Region			
1	52.1	4.6	3,407
2	36.6	2.4	1,774
3	30.1	3.0	621
4	36.8	12.6	605
Quintile			
1	18.7	1.3	1,560
2	38.7	1.5	1,325
3	51.6	4.5	1,247
4	62.3	6.5	1,171
5	75.1	8.4	1,023
Total	**49.6**	**4.6**	**6,407**

FIGURE 4-6 Medical Insurance Payers



	1	2	3	4	5
Self	39.2	44.6	38.0	37.5	39.8
Family	44.6	42.1	46.0	40.8	33.6
Employer	15.2	13.5	19.7	23.4	31.6

Quintile

TABLE 4-18 Average Medical Insurance Payments

Population characteristic	Medical insurance ($)	*N*
Gender		
Male	61.6	1,354
Female	60.6	1,446
Age group		
0–4	9.8	234
5–14	10.1	640
15–19	27.9	219
20–34	70.9	614
35–54	100.6	819
55–64	106.8	172
65 and older	97	102
Region		
1	60.0	1,748
2	74.2	641
3	68.5	184
4	56.7	227
Quintile		
1	29.5	272
2	40.2	488
3	49.1	593
4	62.7	668
5	85.4	734
Total	**61.1**	**2,800**

Results also showed that family members were the primary sources of obtaining both medical (40.8%) and dental (44.2%) insurance coverage. However, as consumption quintiles increased, the level of coverage by employers increased, whilst coverage by family members decreased (Figure 4-6).

Residents of the most developed islands of New Providence and Grand Bahama (Region 1) had the highest coverage level (54%), whilst residents of Exuma and Long Island (Region 3) had the lowest (30.8%).

Further analysis revealed that a much greater proportion of respondents had medical (50%), as opposed to dental (5%), insurance, possibly because of the lower priority given to oral health care and the more affordable, out-of-pocket cost of dental care. Males and females had comparable levels of medical (50%) and dental (5%) coverage.

On a monthly basis, respondents paid an average of nearly three times as much for medical insurance ($61.1) as for dental coverage ($21.20). Table 4-18 provides details on medical insurance payments (dental-insurance payments are excluded because of small sample sizes in most subgroups). Predictably, payments increased with levels of consumption. Residents of Region 2 (Abaco, Andros, and Eleuthera) had the highest average cost for medical insurance ($74), whilst the Family Islands of Region 3 (Exuma and Long Island) had the lowest ($57).

Total outpatient expenditure on visits to health facilities (over the past four weeks) was estimated at about $2 million amongst persons with private insurance and about $1 million amongst those without coverage. Total inpatient expenditure was higher, at about $6 million amongst those insured and $3 million for the uninsured (MOH 2003). This finding raises the question: Do those with - insurance make more use of the service or are pricing and billing differences based on whether an individual has coverage?

CONCLUSIONS AND POLICY RECOMMENDATIONS

The Survey findings described above reveal the need for comprehensive, intersectoral interventions to improve the

overall health status of Bahamians of all ages. Various initiatives are recommended for consideration at the policy or program level. Some of the more critical ones are summarized below.

Self-reported Health Status

Accidents and Workplace Injuries

The proportion of injuries due to violence and preventable accidents is of increasing concern to health-care practitioners and the general public. (About 20% of reported accidents and workplace injuries resulted from gunshots or stabbing and motor vehicle accidents.) As reflected in both national morbidity and mortality statistics, such injuries affect productivity levels and result in temporary or permanent disability, or even death. Given that the leading causes of mortality are external, it is important to understand and prevent the occurrence of such events through evidence-based interventions.

In the BLCS, most injuries reported occurred at the workplace or school. This highlights the need to strengthen and implement national occupational health-safety initiatives that are intersectoral—including labour, education, and other social agencies. Appropriate linkages must be forged to ensure that safety measures are in place in the workplace and school environments.

Chronic Non-Communicable Disease

With regard to chronic non-communicable diseases—the chief contributors to morbidity and mortality in the population—The Bahamas has characteristics similar to those of industrialized countries. Its profile of hypertension and diabetes, particularly the greater prevalence of the latter in the Family Islands, is of concern, and efforts to control these diseases must be strengthened.

A related factor may be food availability,[11] which, according to FAO data, has increased in recent years. For example, the WHO-recommended, daily-caloric availability per capita is 2,250 for a population the size of the Bahamas. In 2001, 2,777 total calories were available in the population, compared with 2,500 in 1999 and 2,498 in 1992. Another contributing factor is the shift in quality of dietary intake toward increasingly higher percentages of refined carbohydrates and high-fat foods. Combined with a sedentary lifestyle, this factor exacerbates the problem of obesity—a risk factor for diabetes, hypertension, and other chronic diseases.

These realities require a comprehensive response involving all levels of Bahamian society—national, community, and individual—so that people will be empowered to take greater responsibility for their health. To this end, the following recommendations are proposed:

- Adoption of the National Food and Nutrition Policy. This Policy defines the direction of such initiatives as national dietary guidelines, food standards, regulatory measures, education, promotion of best nutrition practices, and institutional strengthening for the prevention of obesity and chronic non-communicable diseases.
- Increased health education and promotion and community awareness-raising of associated risk factors.
- Targeted research on the relationship between non-communicable diseases and socioeconomic status and region of residence.

Child Health

Immunization

The current instrument used to record vaccinations is inadequate, and should be revised to address such limitations as the inclusion of new vaccines. Moreover, an immunization database should be established to capture vaccination information on each child. This would allow for detection of defaulters and early follow-up, and would improve coverage rates.

Respiratory Illness

In view of the high incidence of upper-respiratory illnesses, compared to that of asthma and diarrhoea (Table 4-4), it is recommended that further research be conducted to determine contributing factors so that preventive measures can be taken.

Nutrition

Children: Ages 2–10 Years

Although prevalence of undernutrition in this age group is low by World Health Classification standards (less than 20%), the low HAZ-score in this Survey for children 2–4 years of age (15%) is cause for concern. This is especially true for children 3 years and younger, as this measurement

[11] In The Bahamas, food availability is a proxy for consumption, as no portion of imported foods is exported, but is consumed by the population and its visitors.

is a most sensitive predictor of mortality in this age group. Further investigation should be conducted to determine the extent to which this problem exists so that appropriate intervention strategies may be implemented, if and where necessary, to prevent exacerbating the problem.

Although wasting is not a significant public-health problem, targeted health- and social-sector programs are needed for children 7–10 years of age (the group with the highest prevalence rate). The health sector should monitor this group closely to ensure intervention response and control of the condition.

Survey results indicate that, for this age group, being overweight is a nutritional problem of sufficient public-health magnitude to warrant immediate action to abate a future crisis. Response to the current situation must be multifaceted and multisectoral. Prevention should be the primary focus of targeted interventions.

Adolescents: Ages 11–20 Years

As with younger children, prevention, containment, and reduction are a top priority. Survey results showed that children living in households with overweight adults were four times more likely to be overweight, or at risk of becoming overweight than those not living with overweight adults. This shows that obesity is a familial problem related to household consumption patterns, as well as genetic traits. Thus, it is recommended that:

- Prevention programs be family-oriented.
- Targeted programs meet the needs and expectations of adolescents. In addition, underweight adolescents (18%) should be followed closely, and contributing environmental factors should be identified as an early warning of household food insecurity (especially in the urban areas, taking note of the implication of nationality).

Adults: Ages 21–60 Years

Every avenue must be explored to empower adults to take better care of their health. This includes making healthy food choices, increasing physical exercise and limiting lifestyle practices that negatively affect health and well-being. Adults 21–60 years of age comprise the majority of human capital in the Bahamian workforce. This group is critical to the country's economic and social development, underscoring the need for it to maintain good health. The prevention approach to the overweight and obesity issue is needed amongst younger adults to delay the onset of chronic non-communicable diseases. It is recommended that:

- Partnerships and linkages be forged with all segments of society to enable a synergistic effect and minimize the burden in terms of human and financial capital expenditure, as proposed in the National Food and Nutrition Policy.
- Gender-specific programs and components on chronic non-communicable disease be strengthened and integrated into all other health programs. Nationwide health education and promotion strategies must continue to be developed to empower individuals to take greater responsibility for their health care.

Breastfeeding

Populations with a high prevalence of breastfeeding are characterized by reduced incidence of childhood disease, particularly diarrhoea and upper-respiratory infections; subsequently, such a reduction lowers morbidity and mortality rates of children under 2 years. Since inception of the National Breastfeeding Campaign more than a decade ago, incidences of childhood diseases, including gastroenteritis, have been significantly reduced and, by extension, infant mortality rates have declined. The Campaign has also succeeded in increasing breastfeeding prevalence amongst lactating women, particularly in Regions 1 and 2, where Campaign efforts were more concentrated. The same effect on breastfeeding was not observed in Regions 3 and 4. These factors indicate the need to target health-promotion efforts evenly across all regions. Additionally, there is a need for the Government to approve the National Breastfeeding Policy, (currently in draft form), which will mobilize all necessary resources to create a baby-friendly environment.

Female Reproductive Health

Based on the Survey results, it is recommended that promotion of health education be increased throughout The Bahamas to raise awareness of the importance of family planning.

Health Services Use, Expenditure, and Insurance

Survey results showed that, as wealth increased, a shift occurred in the use of health-care facilities. With increasing

consumption levels, the proportion of visits to public-health facilities decreased, whilst those to private facilities increased, indicating that private providers were the preferred choice. Clearly, public-health care is affordable; however, users tend to choose other alternatives as their socioeconomic capacity—and thus their health-care options—increases.

Given the rising costs of private coverage and many persons not being able to afford private coverage, the Blue Ribbon Commission was formed to investigate the feasibility of forming a national health insurance system to ensure equity of access to all. The Commission recommended that a compulsory social health insurance be introduced as the principal method of financing health care for The Bahamas (MOH 2004, p. ix).

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