



**Migrant and Seasonal Head Start
Supplement to the National
Agricultural Workers Survey
2015 Report**

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OVERVIEW: The 2015 Report for the Migrant and Seasonal Head Start Supplement to the National Agricultural Worker Survey (NAWS) Report II

Migrant and Seasonal Head Start (MSHS) serves children (age zero through five) of farmworker families. To be eligible for MSHS, the families must have an income at or below the federal poverty level, and the family must earn at least 50% of their income from agricultural jobs. In addition, migrant farmworker families served by the program must have moved for work within the last two years. Currently MSHS serves approximately 35,996 children in 397 centers across 48 states (excepting Alaska and Hawaii). MSHS families have been left out of larger national efforts to study Head Start and limited information is available about them as a population.

In December of 2007, OHS turned to the National Agricultural Workers Survey (NAWS), a relevant Federal resource that collects data annually on farmworker populations, to explore regional population demographics for MSHS-eligible families. In addition to reporting on the demographics of the families, the NAWS team created and piloted a Migrant and Seasonal Head Start Supplement asking about MSHS-eligible families' child care utilization, demographics and history. This report provides the following:

- National and regional estimates of MSHS-eligible children, and trends in the population distribution across regions (using 2009-2011 NAWS data)
- Descriptive information from the NAWS on MSHS-eligible parents and comparison data from slightly higher income families (using 2007-2011 NAWS data)
- Descriptive information from the NAWS MSHS Supplement on childcare and experiences with and barriers to participating in MSHS (using 2008-2011 NAWS data).

Nationally, based on the NAWS numbers, there were approximately 171,339 MSHS eligible children. Regionally, this breaks down as follows: 23,914 in the Northeast/Midwest; 93,648 in California; 13,330 in the Southeast; 19,182 in Florida; 16,788 in the Northwest; and 8,605 in the Southwest. Section III presents detailed and extensive demographics for MSHS-eligible population, including information about household size and composition, parent education, parent legal status, language, work, health status, mental health status, insurance coverage, and utilization of social services. For example, approximately five relatives live within an MSHS-eligible household, including the farmworker responding. Twenty five percent of families have one child; 20% of families have 5 or more children. Finally, Section IV concerning the *MSHS Supplement*, describes families' child care situations and attitudes towards child care decisions, as well as information about awareness of MSHS programs. An example of findings from this section indicates that a majority of MSHS-eligible families use primarily relatives for child care. Also, approximately 38% of MSHS-eligible respondents to the NAWS recall having heard of MSHS.

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I. Executive Summary

Migrant and Seasonal Head Start (MSHS) serves children (age zero to five) of farmworker families. To be eligible for MSHS, the families must have an income at or below the federal poverty level, and the family must earn at least 50% of their income from agricultural jobs. In addition, migrant farmworker families served by the program must have moved for work within the last two years. Currently MSHS serves approximately 35,996 children in 397 centers across 48 states (excepting Alaska and Hawaii). MSHS families have been left out of larger national efforts to study Head Start, and limited information is available about them as a population.

In December of 2007, the Office of Planning, Research and Evaluation turned to the National Agricultural Workers Survey (NAWS) of the Employment and Training Administration of Department of Labor, to provide high quality data on Migrant and Seasonal eligible families. The NAWS team created and piloted an MSHS Supplement asking about families' child care utilization, and reports extensive additional demographic information.

The team determined that only regional and national estimates could be provided from the NAWS with sufficient validity and accuracy. Appendix G of the report provides a detailed discussion of the methodology used to arrive at national and regional estimates of MSHS eligible populations. Nationally, utilizing 2009-2011 data, there are approximately 171,339 MSHS-eligible children. Regionally, this breaks down as follows: approximately 23,914 in the Northeast/Midwest; 93,648 in California; 13,330 in the Southeast; 19,182 in Florida; 16,788 in the Northwest; and 8,605 in the Southwest. Standard errors for these estimates are shown in Table 2 of the report.

Section III of the report presents detailed and extensive demographics on MSHS-eligible families. For example, MSHS-eligible families have an average of 4.3 members in their economic household. Of the MSHS-eligible families, approximately 35 percent reported having more than one child under the age of six in the household. Nine percent of parents in the MSHS-eligible families were born in the U.S.; the vast majority were born in Mexico. The report provides additional information about other adults living in the household, parent education, parent legal status, language, work, health status, mental health status, insurance coverage, and utilization of social services.

The MSHS Supplement portion of the report [Section IV] represents findings from 1,099 NAWS respondents who had children under the age of six, worked more than 50 percent of the time in farm work, and had incomes under 200 percent of the federal poverty level. This section describes families' child care situations and attitudes towards child care decisions. For example, 54% of MSHS-eligible families reported that they utilize their spouse as their primary source of child care; and that their primary reason for doing so is a sense of 'trust' in their care. The report provides additional information

about awareness and perceptions of MSHS programs. For example, only 38% of MSHS-eligible respondents reported that they have heard of MSHS. Those that have heard of MSHS, mostly first heard about the program from families and friends.

This document presents the following:

- The background to establishing the National Agricultural Workers Survey (NAWS) as the source of national and regional estimates of children eligible for Migrant and Seasonal Head Start (MSHS),
- A brief description of the methods for reaching those estimates, and
- The estimates themselves, as well as a selection of descriptive data from the NAWS that is relevant to MSHS-eligible children and their farmworker families.

II. Background and Methods

A. BACKGROUND

Head Start, founded in 1965, is a national comprehensive child development program serving low-income families and their children, from birth to school entry. In 1969, Congress created the Indian and Migrant Programs Division, and in 1984 the Indian and Migrant Programs Division became two separate divisions: the Migrant Programs Branch and the American Indian Programs Branch. For approximately 14 years, Migrant Head Start (MHS) grantees provided comprehensive early childhood education services as well as social services, auxiliary service coordination, and support services to migrant families, defined as those who engaged in agricultural labor and changed residences from one location to another during the previous two years. The MHS classrooms served infants, toddlers, and preschoolers since the program's inception—other Head Start programs only began serving infants and toddlers in 1995 (through the Early Head Start programs).

The 1998 Amendments to the Head Start Act established the eligibility of seasonal farm workers to receive services through migrant program grantees. As a result of these amendments, Head Start began to provide service to both migrant and seasonal farm worker (MSFW) families. Hence, in 1999, MHS grantees were authorized to serve seasonal farm worker families, defined as those who have *not* changed the geographical location of their residences during the preceding two years *and* are employed in the agricultural industry. The program was then renamed the Migrant and Seasonal Head Start (MSHS) program

Currently, MSHS provides early childhood education services to children ages zero to five (See Appendix C for federal definitions of migrant and seasonal farmworkers). For MSHS-eligibility, the children's parents must work more than 50% of the time in agricultural jobs, and the family income must be less than 100% of the federal poverty guidelines. Migrant families must have moved for work within the last two years; seasonal families do not have a moving requirement. The programs serve approximately 35,966 children in 397 centers in 48 states (Head Start Center Locator 2015).

Migrant and seasonal farmworker families are challenged by economic, health, and chaotic environments influenced by unpredictable agricultural work schedules and (for migrants) the need to move regularly for work. A large majority of these farmworkers are recent immigrants, with reduced social supports and limited English speaking abilities. In additions, these families and the MSHS programs have not been included in national efforts to study Head Start programs. Therefore, limited information is available to describe the families and the programs that serve them.

In December of 2007, Congress directed the Office of Head Start (OHS) to establish estimates of the number of MSHS-eligible children in the United States (Section 649 of the Head Start Act, as amended by the Improving Head Start for School Readiness Act of 2007, codified at 42 U.S.C. §9844).

To meet this requirement, OHS turned to the National Agricultural Workers Survey (NAWS), a relevant Federal resource that collects data annually on farmworker populations. The NAWS is a national random sample survey of crop farmworkers in the continental United States (U.S.) that is housed at the Employment and Training Administration (ETA) of the U.S. Department of Labor (DOL). The NAWS, implemented by the contractor JBS International (JBS), uses field survey methods developed and refined for this predominantly migrant and seasonal farmworker population.

An agreement was established in February 2008 between the Office of Planning, Research and Evaluation (OPRE) of the Administration for Children and Families (ACF) and the ETA/DOL. As a result of this agreement, the NAWS team first created and piloted an *MSHS Supplement* asking about families' child care utilization, while refining other elements of the NAWS to allow for more accurate identification of eligibility for MSHS (i.e., isolating variables such as income, work history, and age of family members). During this time, the JBS team, ETA/DOL, OHS and OPRE also reviewed analytic methods to determine the possibility of establishing state, regional and national estimates of MSHS-eligible children with the NAWS data. Based on these analyses, it was determined that only regional and national estimates could be provided from the NAWS with sufficient validity and accuracy.

This report provides the following:

- National and regional estimates of MSHS-eligible children (Section II, Table 2; based on 2009-2011 data), and trends in the population distribution across regions (Section II, Table 4)
- Descriptive information from the NAWS on MSHS-eligible parents and families who have young children whose income comes primarily from farm work (based on 2007-2011 data; Section III), and
- Descriptive information from the NAWS *MSHS Supplement on childcare and experiences with and barriers to participating in MSHS* (based on 2009-2011 data; Section IV).

For Sections II, III and IV, data has been combined to provide a sample large enough to look at differences among groups. Population estimates have been designed based on three-year rolling averages (when looking at the entire population, only three years of data results in sufficient power). The most recent three-year time period is 2009-2011. MSHS parents are a subgroup of the NAWS sampling universe. In order to have

sufficient data to report on characteristics of this group among different variables and across three income groups, five years of data are combined (2007-2011).

The *MSHS Supplement* was first administered for a full year in fiscal year 2009. The sample includes respondents from 2009-2011. The smaller sample of respondents to the *MSHS Supplement* limited the analysis, and information on events that occurred infrequently could not be reported in several cases. These are noted in the tables. More information on these events will be available in future years, after more data is collected.

B. METHODS

This section of the report will review the following:

- Some of the alternative methods and resources considered for addressing the requirements of the Head Start reauthorization.

For a more detailed description of the methods for calculating the estimates in this report, see Appendix G.

Due to the way that the federal government collects farmworker statistics and the multiple definitions of migrant and seasonal farmworkers used in federal programs (see Appendix C), each program serving migrant workers must calculate its own national estimate of its eligible population. For accurate state-level distributions, the task is complicated because migrant farmworkers move about the country and may reside and be served in multiple states. Those researchers attempting to establish the regional- or state-level estimation must follow certain principles in order to achieve equivalent validity and ‘fairness’ of the data. These principles include the following:

- Developing a readily understandable formula for calculating estimates,
- Using the best methods for approximating service population definitions,
- Obtaining the best available data, and
- Ensuring the data used for state estimates are comparable for all states (i.e., from equally reliable and valid sources).

These last two principles are often the most difficult to address because data quality and availability vary across states.

1. Alternative Methods and Resources Considered

The Improving Head Start for School Readiness Act of 2007 (42 U.S.C. §9844) established the requirement for OHS to estimate the number of MSHS-eligible children and to report regularly on progress towards serving those children. The OHS administration was interested in state-level estimates for program monitoring.

One approach to establishing state estimates is a 'bottom-up' approach. This involves working up from the local level to establish immediate numbers, and compiling them across domains to achieve higher-level estimates. One example of this approach for estimating state-level populations of MSHS-eligible children can be found in the Enumeration Profile Studies that were funded by a variety of Federal (e.g., Health Resources and Services Administration (HRSA); Department of Housing and Urban Development) and local resources (e.g., State Office of Rural Health, Georgia). These entities were interested in estimating the farmworker populations specific to a given state. These studies were completed for several states (e.g., California, 2000; Texas, 2000; Washington, 2000; Michigan, 2006; Idaho, 2006; Georgia, 2008; Oregon, 2013) and utilized national datasets, varied local data and local expertise to estimate the number of migrant agricultural workers¹. These resulted in counts that would be difficult to aggregate across counties or to replicate efficiently and validly across states, as availability and quality of data varied markedly from site to site. Problems in local data quality were even more likely for states with smaller and more transient agricultural worker populations. Therefore, this approach does not appear appropriate to estimate the MSHS-eligible population either nationally or for each state.²

In addition, data resources of other Federal offices pursuing services for migrant and seasonal agricultural workers were considered as possible sources for estimating the MSHS-eligible population (see Appendix C for definitions of migrant and seasonal farmworkers within MSHS and across Federal programs).

The HRSA reports regarding the populations served by migrant and community health centers provide relatively detailed data regarding health service utilization by migrant families. However, these reports are local to the communities in which reporting health centers are placed and were not designed to provide counts of state or national populations. In addition, these reports do not control for duplicate counts (i.e., if a farmworker utilized services at two health centers, or if two services were utilized at one grantee, he or she was counted two times).

The Office of Migrant Education uses an extensive network of migrant education recruiters working in local areas, identifying students that meet the Migrant Education eligibility definition. The numbers of eligible students are identified by local recruiters and aggregated for local school district totals, which in turn are combined to obtain state totals. State reports are then aggregated into a national figure. The Migrant Education program does not serve children younger than three, and their definition of migrant also

¹ Larson, A. C. *Enumeration and Population Estimates*. National Center for Farmworker Health, Inc. Accessed at <http://www.ncfh.org/?pid=23>.

² For a more thorough critique of limitations of the approach used in these reports, see Gabbard (2005) and Phillip Martin's analysis in a 2001 issue of Rural Migration News http://migration.ucdavis.edu/rmn/more.php?id=490_0_3_0.

varies in a few other important ways from MSHS (see Appendix C for definitions across programs). Therefore, Migrant Education data is limited in its usefulness for establishing estimates of young MSHS-eligible children.

2. The National Agricultural Workers Survey

Given limitations of these other resources, OHS turned to the NAWS. The NAWS is an established data collection effort that addresses the farmworker population at the national level. The NAWS began in 1988, and collects demographic, employment and health characteristics of the U.S. crop labor force. Topics covered by the NAWS include farmworker work histories and tasks, as well as health and housing. Reports are released periodically from the survey, and a public-use data set is available. Special reports produced from the NAWS cover various issues including child labor, farmworker health and emergency housing.

The survey is an example of a ‘top-down’ approach to establishing estimates. In ‘top-down’ approaches, representative data is gathered uniformly and can be aggregated at the national level, as well as broken down as appropriate to establish estimates for sub-sections of the population. The NAWS is gathered directly using face-to-face interviews with a representative sample of farmworkers. The Department of Agriculture (USDA), HRSA, and DOL are among the agencies that utilize NAWS data to inform policy, allocation of resources and programmatic practices. See <http://www.doleta.gov/agworker/naws.cfm> for more information about the methods, measures and reports from the NAWS. A detailed description of the NAWS methodology can be found in the NAWS Sampling Methodology Report.³

At OHS’ request, in 2009-2010, JBS reviewed the potential of using the NAWS for calculating state-level estimates of MSHS-eligible children (a small subsample of the entire Migrant and Seasonal Farmworker population), and found that, except for two large states, the estimates at this level were unacceptably error-prone. The NAWS gathers information annually from a relatively small sample of workers, selected proportionally from across the states, to represent the national distribution of workers. Given this broad, yet small, representative sample, the power and accuracy of the MSHS-eligible children estimates at the state-level are sharply limited, even when the data are consolidated over several years. JBS and DOL/ETA strongly recommended that these state-level numbers not be utilized for policy or programmatic purposes. In order to strengthen state-level estimates, the NAWS would need to redesign its sampling approach and primary research questions in order to pursue much more costly sampling that would only begin to approach a valid representation of each state’s

³ Department of Labor, Employment and Training Administration, (October, 2008). *Statistical Methods of the National Agricultural Workers Survey Report*, <http://www.doleta.gov/agworker/naws.cfm>

annual agricultural worker population. Such effort could only be considered with substantial input from other Federal stakeholders that currently utilize the NAWS data.

3. National and Regional Estimates and Trends over Time

JBS then pursued regional estimates of the number of children eligible for MSHS; combining the data into six groupings of states that represent distinct agricultural regions. After assessing this approach carefully, it was decided that these values would also retain some error, but could be considered cautiously in conjunction with other local MSHS data and community reports, to inform policy and practice. Finally, JBS established their approach for identifying a national estimate of MSHS-eligible children, derived from using three years of NAWS data. The sample for the NAWS is specifically gathered to represent the national distribution of workers, and thus the NAWS design results in a relatively valid and reliable estimate of the MSHS-eligible children at the national level. For more detailed review of the methods used, please see Appendix G.

Table 1: Average Number of MSHS-Eligible Children per Farmworker Household, NAWS 2009-2011^a

Group	Number of Observations of All Households	Average Number of MSHS-Eligible Children per Household	Standard Error	Lower 95% Confidence Limit	Upper 95% Confidence Limit
National	5,211	0.12	0.0108	0.10	0.14
Northeast/Midwest	907	0.08	0.0147	0.05	0.11
California	1,954	0.20	0.0244	0.15	0.25
Southeast ^b	615	0.08	0.0321	0.01	0.14
Florida	506	0.17	0.0386	0.08	0.25
Northwest	844	0.09	0.0199	0.05	0.14
Southwest	385	0.08	0.0149	0.05	0.11

^a The estimates were derived from three years of NAWS data combined (2009-2011).

^b The estimate for the Southeast region has a relative standard error between 31 and 50 percent and should be interpreted with caution. See Appendix F for more information of relative standard errors and reliability of estimates.

Table 2: National and Regional^a Estimates of Children Eligible for Migrant and Seasonal Head Start, NAWS 2009-2011

Group	Population of Farmworkers used in Calculations	Population of Migrant and Seasonal Head Start Eligible Children	Lower 95% Confidence Limit	Upper 95% Confidence Limit
National	1,400,000	171,339	141,573	201,104
Northeast/Midwest	304,920	23,914	14,873	32,955
California	470,856	93,648	70,098	117,198
Southeast ^b	168,263	13,330	2,354	24,305
Florida	116,119	19,182	9,841	28,523
Northwest	179,467	16,788	9,333	24,243
Southwest	105,860	8,605	5,235	11,974

^a The regional counts do not include farmworkers from Hawaii and Alaska.

^b The estimate for the Southeast region has a relative standard error between 31 and 50 percent and should be interpreted with caution.

National Trend and Regional Patterns in MSHS-eligible Farmworkers

Table 3 shows the national trend in the **proportion of farmworker households in fiscal years 2002-2011 that were MSHS-eligible**. Since the 2006-2008 fiscal year period, the proportion of MSHS-eligible households increased from five percent to eight percent. Approximately 92 percent of farm worker households in 2009-2011 were not MSHS-eligible.

Table 3: National Estimates of the Proportion of Farmworker Households that were MSHS-eligible Over Time, NAWS 2002-2011

	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011
MSHS-eligible farm worker households in the U.S.	7%	8%	6%	6%	5%	8%	9%	8%

Table 4 represents the distribution of MSHS-eligible farmworker households by region (see Appendix D for a map of the NAWS sampling regions). California has the largest proportion of the MSHS-eligible households, followed by the Northeast/Midwest and Northwest regions with about 12 percent to 20 percent respectively of the MSHS-eligible households. The Florida region had the lowest proportion of MSHS-eligible households. See Table 3.

A statistical test was conducted to determine whether there was a significant difference in the regional proportions of MSHS-eligible households from one three-year time period to the next (e.g., from 2002-2004 to 2003-2005, or from 2003-2005 to 2004-2006, etc.), and also between 2002-2004 and 2009-2011. Results of the test revealed some significant differences in all of the regions shown in Table 3 except for the Southwest:

- In the California region, the proportion of MSHS-eligible significantly grew over time. The proportion of MSHS-eligible households in 2006-2008 (34%) was significantly smaller than the proportion in 2007-2009 (48%), and the proportion of MSHS-eligible households in 2002-2004 (37%) was significantly smaller than the proportion in 2009-2011 (47%);
- In the Florida region, the proportion of MSHS-eligible households fell markedly in one period. In 2006-2008 (18%) was significantly greater than the proportion in 2007-2009 (8%);
- In the Northeast/Midwest region, the proportion of MSHS-eligible households has demonstrated a couple of large dips. The proportion of MSHS-eligible households in 2003-2005 (21%) was significantly greater than the proportion in 2004-2006 (11%), and the proportion in 2005-2007 (17%) was significantly greater than the proportion in 2006-2008 (7%);
- In the Northwest region, the proportion of MSHS-eligible households has varied over time (rising/lowering). In 2005-2007 (20%) was significantly greater than the proportion in 2006-2008 (5%), the proportion in 2006-2008(5%) was significantly smaller than the proportion in 2007-2009 (18%), and the proportion in in 2007-2009 (18%) was significantly greater than the proportion in 2008-2010 (10%);
- In the Southeast region, the proportion of MSHS-eligible households in 2005-2007 (7%) was significantly smaller than the proportion in 2006-2008 (16%).

Table 4: Regional Estimates of the Proportion of Farmworker Households that were MSHS-eligible Over Time, NAWS 2002-2011

Region	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011
California	37%	42%	46%	33%	34%	48%	48%	47%
Florida	3%	2%	7% ^a	9% ^a	18% ^a	8%	5% ^a	b
Northeast/Midwest	20%	21% ^a	11% ^a	17% ^a	7% ^a	15%	23% ^a	15% ^a
Northwest	18%	17%	22%	20%	5%	18%	10% ^a	14% ^a
Southeast	13%	b	7% ^a	7% ^a	16% ^a	b	b	9% ^a
Southwest	9%	13%	7% ^a	13%	20%	b	b	9%

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

4. MSHS Supplement

In addition to establishing national and regional numbers, OHS worked with the NAWS team in 2010 to develop a supplemental questionnaire aimed at families with children under the age of six. This supplement was expected to provide information regarding obstacles and barriers to seeking MSHS service. The supplement included questions about child care utilization, child care preference, knowledge of MSHS, and any perceived obstacles to participating in MSHS. The current list of questions in the *MSHS Supplement* is included in Appendix A.

Table 5 reflects the timing of the data collection for, and number of respondents to, the *MSHS Supplement*. Findings from these years of *MSHS Supplement* data collection are discussed in Section IV.

Table 5: Timing of the MSHS Supplement Data Collection, NAWS 2008-2011

	Timing	Number of Interviews	Number of Migrant and Seasonal Farmworker Families with Children Younger than Six Years of Age	Number of Families with Children Younger than Six, >50% Agricultural Work, and Income Levels below Poverty
Fiscal Year 2009 NAWS MSHS Supplement	October 2008-September 2009	2,219	493	183
Fiscal Year 2010 NAWS MSHS Supplement	October 2009-September 2010	1,472	361	149
Fiscal Year 2011 NAWS MSHS Supplement	October 2010-September 2011	1,520	384	160
Total 2009-2011	October 2008-September 2011	5,211	1,238	492

For this current report, Section III presents demographics based on estimates calculated based on NAWS data collected from MSHS-eligible farmworker respondents during fiscal years **2007-2011**. Section IV presents descriptive results from *MSHS Supplement* collected during fiscal years **2009-2011**.

III. FAMILIES WITH CHILDREN YOUNGER THAN SIX YEARS: DEMOGRAPHICS ON MSHS-ELIGIBLE FAMILIES FROM THE NAWS BY POVERTY STATUS (2007-2011)

During fiscal years 2007-2011, NAWS interviewers contacted over 13,000 agricultural employers to determine eligibility and to obtain cooperation for the survey. For 5,534 of the employers, eligibility could not be determined (41%), 4,291 of the employers were determined to be ineligible (31%), and 3,777 were determined to be eligible (28%). Of the 3,777 agricultural employers determined to be eligible, 67 percent agreed to participate. However, due to logistical issues (i.e., in scheduling interviews before farm work was completed for the season), interviews were completed at 52 percent of the randomly selected eligible employers' sites. At these participating agricultural establishments, interviewers drew a random sample of farmworkers and then administered the questionnaire. The response rate among farmworkers was 92 percent.

Of the total NAWS sample for these years, 740 respondents were determined to be parents working predominantly in agriculture who had children younger than six (consistent with the MSHS-eligible definition). Section III illustrates the characteristics of the households of these parents.. For comparative purposes, the tables present data on income groups:

- Households with an annual income equal to or below 100 percent of the poverty level ($\leq 100\%$), which comprise MSHS-eligible families;
- Households with an income between 101-130 percent of the poverty level (101-130%); and
- Households with an annual income between 131-200 percent of the poverty level (131-200%).

To assign respondents to one of these three groups, NAWS staff drew from survey items on type of work, family composition, and family income. During their NAWS interview, respondents were asked about their individual income, their overall family income (including all sources), and about the amount of their income that comes from agricultural work. The income groups were derived using the report of overall family income. Income was estimated for respondents who reported no U.S. income in the previous calendar year (e.g., for foreign-born newcomers or those declining to respond), using statistical estimation methods.⁴

The tables in Section III provide data on 1,736 NAWS respondents of families with children younger than six, whose work is primarily in agriculture (i.e., partial definition of MSHS-eligible). The report excludes 38 respondents who did not have sufficient data to

⁴ A regression model was calculated using data from respondents that answered the family income question. Then, using the estimated regression coefficients, the income for those who did not respond to the question was calculated.

be assigned to one of the three comparison groups, and a combined total of 194 respondents with young children who either did not have 50 percent or more of income from farm work, or had incomes over 200 percent of poverty. When reporting household characteristics, post-sampling weights were used to account for the differing sampling probabilities for households with one or two farmworker parents.

The sample of 1,736 respondents was distributed across the three income groups as follows:

- 740 respondents who are fully eligible for MSHS, based on the age of their child(ren), their income level (equal to or less than 100% of poverty), and having worked more time in farm work than non-farm work,
- 489 respondents who have a young child and work principally in agriculture but have a household income in the 101-130 percent of poverty range, and
- 507 respondents who work primarily in agriculture and have a young child but are at 131- 200 percent of the poverty level (Table 6).

Table 6: Respondents Working 50% or More in Agriculture and With a Child 6 Years of Age or Younger, NAWS 2007-2011

	Unweighted		At least one child 6 years of age and younger	Worked in agriculture >50% of time
	N	Percent		
≤100% poverty level (MSHS-eligible respondents)	740	43%	Yes	Yes
101-130% poverty level	489	28%	Yes	Yes
131-200% poverty level	507	29%	Yes	Yes
Total	1,736	100%		

Throughout this section, tests for statistically significant associations between categorical variables were conducted using the chi-square test for independence. Results are reported in the accompanying narrative where the test showed a statistically significant relationship at the 0.05 level. Additional detail about the statistical tests used can be found in Appendix E.

Household Composition

Table 7 shows that the majority of farmworker parents of young children interviewed by the NAWS were male. Of the 740 MSHS-eligible farmworker respondents, 44 percent were women. In contrast, of the 507 farmworkers with incomes above 130 percent of the poverty level, 27 percent were women.

Table 7: Gender of Farmworker Interviewed

Gender of farmworker interviewed	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Male	56%	71%	73%
Female	44%	29%	27%
Total	100%	100%	100%

Table N = 1,736. The chi-square test of independence indicated a significant relationship between farmworkers' gender and income group.

The NAWS asks farmworkers to list the relatives in their household who reside together and share expenses (an economic household). There was very little variation across the income levels examined. As seen in Table 8, the average MSHS-eligible household consisted of approximately four relatives (average=4.3), most of them children (average=2.4).

Most households with a child younger than six years of age included two parents (80% to 90%). Only a small number of economic households included the farmworkers' grandchildren, parents, siblings or other relatives.

Table 8: Average Number of Relatives in the Household

Average Number of Relatives Reported in Farmworker Households	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
All Relatives	4.3	4.1	4.1
Spouse	0.8	0.9	0.9
All Children	2.4	2.0	2.1
Children ≤6 Years	1.4	1.2	1.2
Children 6-13 Years	0.7	0.6	0.7
Children 14-17 Years	0.2	0.1	0.2
Grandchildren	- ^a	0	0
Parents of Farmworkers	≤0.1	0	0
Siblings	≤0.1	- ^a	0
Other Relatives	- ^a	0	0

Table N = 1,736

^a Estimates with relative standard errors greater than 50 percent are suppressed.

Table 9 shows the frequencies of the total number of relatives reported in the economic household. MSHS-eligible families most commonly reported three relatives in their

households (31% of MSHS-eligible households). Families with incomes above 130 percent of poverty most commonly reported four to five relatives in their households (62% of households in this income range).

Table 9: Frequency of Number of Relatives Reported in the Household

Number of Relatives in Household	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
2	6%	_ ^b	5% ^a
3	31%	36%	25%
4	18%	26%	31%
5	24%	24%	31%
6 or more	21%	11%	8%
Total	100%	100%	100%

Table N = 1,736. The chi-square test of independence indicated a significant relationship between the number of relatives living in farmworkers' households and income group.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Table 10 shows the distribution of the number of children living in respondents' households.

Table 10: Frequency of Number of Children in the Household

	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
1 child in household	28%	39%	28%
2 children in household	25%	26%	33%
3 children in household	23%	22%	29%
4 children in household	12%	6%	6%
5 or more children in household	8%	3% ^a	1%
Children who do not reside in household	4% ^a	_ ^b	3%
Total	100%	100%	100%

Table N = 1,736. The chi-square test of independence indicated a significant relationship between the number of children living in farmworkers' households and income group.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Tables 11 through 13 show the distribution of respondents' children's ages. Of the MSHS-eligible families, approximately 35 percent reported having more than one child

under the age of six in the household. Among households with incomes between 131-200 percent of poverty, 25 percent reported more than one child under the age of six in the household (Table 11).

Table 11: Frequency of Number of Children under Age 6 in the Household

	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
1 child under age 6 in household	61%	75%	72%
2 children under age 6 in household	29%	20%	23%
3 children under age 6 in household	5%	1% ^a	2% ^a
4 children under age 6 in household	≤1%	_ ^b	_ ^b
Children under age 6 who do not reside in household	4% ^a	_ ^b	3% ^a
Total	100%	100%	100%

Table N = 1,736. The chi-square test of independence indicated a significant relationship between the number of children under age six living in farmworkers' households and income group.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

As seen in Table 12, 48 percent of MSHS-eligible families reported at least one child between six and 13 years of age in their household.

Table 12: Frequency of Number of Children Aged 6-13 in the Household

	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
1 child aged 6-13 in household	27%	26%	33%
2 children aged 6-13 in household	16%	13%	16%
3 children aged 6-13 in household	4%	1% ^a	≤1%
4 children aged 6-13 in household	_ ^b	_ ^b	_ ^b
No children aged 6-13 in household	52%	59%	51%
Total	100%	100%	100%

Table N = 1,736

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Finally, Table 13 shows that approximately 15 percent of MSHS-eligible families report one or more children between the ages of 14 and 17 years as part of their economic household.

Table 13: Frequency of Number of Children Aged 14-17 in Household

Number of Children Aged 14-17	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
1 child aged 14-17 in household	10%	8%	12%
2 children aged 14-17 in household	5%	3% ^a	1% ^a
3 children aged 14-17 in household	≤0.1%	_ ^b	_ ^b
No children aged 14-17 in household	85%	89%	86%
Total	100%	100%	100%

Table N = 1,736

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Besides the members of the economic household, many MSHS-eligible families reported additional individuals who were residing in the household but were independent of the respondent's family income. About 41 percent of MSHS-eligible families had additional individuals residing at their living unit. These families had from one to fifteen (and an average of 3.2) additional economically independent individuals, both relatives and non-relatives, residing in their households. In comparison, families with incomes at the 101-130 percent of poverty level had from one to ten (and an average of 2.4) additional individuals living in their homes and families in the 131-200 percent of poverty income group had from one to eleven (and an average of 2.2) additional individuals residing in their households (Table 14).

Table 14: Average Number of Household Members Not Sharing Expenses

Average Number of Additional People in Household	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Number of additional people living in household	3.2	2.4	2.2
Non-relatives 18 years or older	0.6	0.5 ^a	0.3
Non-relatives 17 years or younger	0.4 ^a	0.8	0.5 ^a
Relatives 18 years or older	1.7	1.3	1.6
Relatives 17 years or younger	1.9	1.6	1.0

Table N = 626 respondents who reported at least one additional individual residing at their living unit.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

Description of Farmworker's Current Home/Dwelling

Farmworkers were asked to describe their current home or dwelling. On average, the living quarters of farmworker families with young children had two or three bedrooms, a kitchen, a bathroom, and one other type of room. As seen in Table 15, an average of 5.5 people sleep in the homes of MSHS-eligible farmworker families compared to 4.9 people for farmworker families with incomes above 130 percent of the poverty level.

Table 15: Average Number of Rooms in Household Dwelling

How many of the following do you have in your current living quarters (dwelling)?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Bedrooms	2.5	2.6	2.7
Bathrooms	1.3	1.4	1.5
Kitchens	1.0	1.0	1.0
Other Rooms	1.2	1.2	1.2
Average number of people sleeping in (all) rooms	5.5	4.9	4.9

Table N = 1,736

Country of Origin/Years in U.S./U.S. Born Children Farmworker

Seventeen percent of farmworker parents with incomes above 130 percent of the poverty level were born in the U.S., while nine percent of the MSHS-eligible families were born in the U.S. For all three income groups, the vast majority of farmworkers born outside the U.S. were born in Mexico. The top three "other" places of birth were: Central America (2%), South America (0.1%), and the Caribbean (0.2%).

Table 16: Birth Place of Farmworker

Place of Birth	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
50 U.S. states	9%	11%	17%
Puerto Rico	_ ^b	_ ^b	_ ^b
Mexico	89%	83%	78%
Other	2%	6% ^a	_ ^b
Total	100%	100%	100%

Table N = 1,736

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Among foreign-born respondents, MSHS-eligible farmworkers had been in the U.S. for an average of 11.7 years and workers with incomes above 130 percent for an average of 14 years (Table 17).

Table 17: Average Number of Years in U.S.

Number of Years in the U.S.	Household Income Level		
	≤100% of poverty level (MSHS-Eligible)	101-130% of poverty level	131-200% of poverty level
0-1 years	3%	_ ^b	_ ^b
2-3 years	5% ^a	4% ^a	3% ^a
4-6 years	10%	18% ^a	14%
7-9 years	20%	14%	19%
10-14 years	33%	32%	22%
15-19 years	15%	14%	19%
20-29 years	13%	17%	19%
30 or more years	1%	_ ^b	4%
Average Number of Years in U.S.	11.7	12.4	14.0

Table N = 1,527 (respondents with missing data or U.S.-born are not included)

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

The number of farmworkers' children born in the U.S. was very similar across income groups, as can be seen in Table 18. In each income group, families averaged between 1 and 2 children born in the U.S.

Table 18: Average Number of Children Born in U.S. Per Household

Average Number of U.S.-Born Children Per Household	Household Income Level		
	≤100% of poverty level (MSHS-Eligible)	101-130% of poverty level	131-200% of poverty level
All children	1.9	1.7	1.9
Children <6 years	1.3	1.2	1.2
Children 6-13 years	0.5	0.5	0.6
Children 14-17 years	0.1	0.1	0.1

Table N = 1,736

Educational Experience of Farmworkers

More than half (57%) of MSHS-eligible farmworkers have six years of education or less, five percent completed the 10th or 11th grade, and 11 percent completed high school. Six percent of the MSHS-eligible group completed at least some post-secondary education. Farmworkers with household incomes in the 131-200 percent of poverty group had the highest number of grade levels completed, with 11 percent completing the 10th or 11th grade, 16 percent completing high school, and eight percent completing at least some post-secondary education (grade 13 or higher). On average, farmworkers in the MSHS-eligible income group completed fewer years of education than did the 131-200 percent of poverty income group (an average of 7.0 grades among the MSHS-eligible group and 8.3 grades among the 131-200 percent of poverty group). See Table 19.

Table 19: Highest Grade Completed by Farmworker

Highest Grade Completed	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
0-6th grade	57%	44%	43%
7th-9th grades	21%	32%	22%
10th-11th grades	5%	4% ^a	11%
12th grade/High School	11%	15%	16%
Post-secondary (grades 13 and higher)	6% ^a	5% ^a	8%
Average Highest Grade Completed	7.0	7.4	8.3

Table N = 1,736

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

Few farmworkers in any of the households reported attending adult education classes or schools in the U.S. Table 21 illustrates this further. English/ESL classes were the most frequently mentioned across all income levels.

Table 21: Adult Education Classes or Schools Farmworkers Attended in the U.S.

Special Classes / Schools Farmworkers Attended in the U.S.	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
English/ESL	14%	23%	22%
Citizenship classes	1% ^a	≤1% ^a	3% ^a
Literacy classes	._ ^b	≤1%	._ ^b
Job training	5%	4% ^a	9%
GED classes	2%	2% ^a	4% ^a
College classes	5% ^a	._ ^b	5% ^a
Adult basic education	≤1% ^a	._ ^b	._ ^b
Migrant Education	._ ^b	._ ^b	._ ^b
Other	._ ^b	1% ^a	2% ^a

Table N = 1,736

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Reportedly, other members of the farmworkers' households also rarely attended adult education classes or schools within the two years prior to the NAWS interview, as shown in Table 22. Head Start classes for children were the most frequently mentioned, with 11 percent of the MSHS-eligible households having at least one member who attended Head Start classes. Experience with MSHS classes was low across all income groups (3%, 3%, and 4% respectively). It is possible that respondents confuse Head Start with Migrant and Seasonal Head Start, particularly as sometimes their operations are in the same location.

Table 22: Household Educational Experience in the U.S. in the Previous Two Years

Special Classes Attended in the U.S., Within the Last Two Years, by Household Members (Excluding the Farmworker)	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Adult education	5%	2% ^a	2% ^a
Job training	._ ^b	._ ^b	._ ^b
GED classes	1% ^a	._ ^b	._ ^b
Migrant Education	._ ^b	._ ^b	._ ^b
Head Start	11%	6%	9%
Migrant Head Start	3%	3%	4% ^a

Special Classes Attended in the U.S., Within the Last Two Years, by Household Members (Excluding the Farmworker)	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Other	4%	≤1% ^a	_ ^b

Table N = 1,726, there are missing values for 10 respondents.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Farmworker Language Skills

Spanish is the dominant language for the majority of farmworker parents across all three income levels. Fifteen percent of farmworkers with incomes above 130 percent of the poverty level reported English as their dominant language compared to nine percent of MSHS-eligible farmworkers. Of the MSHS-eligible farmworkers, one percent reported speaking a language other than English or Spanish. See Table 23 for further detail.

Table 23: Dominant Language of Farmworker

Dominant Language of Farmworker	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
English	9%	9% ^a	15%
Spanish	88%	90%	84%
Indigenous ^c	2% ^a	_ ^b	≤1% ^a
Creole	_ ^b	_ ^b	_ ^b
Other ^d	_ ^b	_ ^b	_ ^b
Total	100%	100%	100%

Table N = 1,733, there are missing values for 3 respondents.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

^c Indigenous languages include Aguacateca, Akateko, Amuzgo, Chinanteco, Ixil, Kanjobal, Mam, Maya, Mixtec, Nahuatl, Otomi, Tarasco, Tlapaneco, Triqui, Zapotec, and Zoque.

^d Various other languages were mentioned, but were reported by too few respondents to support statistical analysis on their own. "Other" languages included Amharic, Cambodian, Creole, Ewe, French, German, Illocano, Khmer, Karen, Mandarin, Moldavan, Punjabi, Russian, Tagalog, Thai, and Vietnamese.

Tables 24 and 25 provide information on respondents' ability to speak and read English. When describing their ability to speak English, 46 percent of farm workers in the MSHS-eligible group responded with "not at all", as did 31 percent of farm workers in the 101-130 percent of poverty group and 26 percent of those in the 131-200 percent of poverty group. Less than a quarter of MSHS-eligible farm workers (22%) compared to 36

percent of farmworkers with incomes above 130 percent of poverty said they could speak English at least “somewhat” (Table 24).

When asked to describe their English reading skills, more than eight in ten of the MSHS-eligible group responded with “not at all” or “a little” (81%) and 19 percent responded with “somewhat” or “well”. In comparison, 69 percent of workers in the 131-200 percent of poverty group responded with “not at all” or “a little” and 30 percent responded with “somewhat” or “well” (Table 25).

Table 24: Farmworkers’ Ability to Speak English

How well do you speak English?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Not at all	46%	31%	26%
A little	31%	43%	39%
Somewhat	7%	12%	16%
Well	15%	13%	20%
Total	100%	100%	100%

Table N = 1,729, there are missing values for 7 respondents. The chi-square test of independence indicated a significant relationship between English speaking ability and income group.

Table 25: Farmworkers’ Ability to Read English

How well do you read English?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Not at all	59%	42%	35%
A little	22%	38%	34%
Somewhat	4%	8%	12%
Well	15%	13%	18%
Total	100%	100%	100%

Table N = 1,725, there are missing values for 11 respondents. The chi-square test of independence indicated a significant relationship between English reading ability and income group.

Farmworkers who reported being Spanish-speakers were asked to indicate how well they spoke and read Spanish. Table 26 shows that the vast majority reported that they spoke Spanish ‘well’ (95-97%). Farmworkers were less likely to report an ability to read Spanish “well” (70%), as shown in Table 27.

Table 26: Farmworkers' Ability to Speak Spanish

How well do you speak Spanish?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Not at all	_b	_b	_b
A little	_b	_b	3% ^a
Somewhat	4% ^a	_b	2% ^a
Well	96%	97%	95%
Total	100%	100%	100%

Table N = 1,629 farmworkers who reported they speak Spanish.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Table 27: Farmworkers' Ability to Read Spanish

How well do you read Spanish?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Not at all	2% ^a	_b	1% ^a
A little	7%	5% ^a	6%
Somewhat	20%	14%	15%
Well	70%	80%	77%
Total	100%	100%	100%

Table N = 1,625 farmworkers who reported they speak Spanish.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Farmworker Employment and Income

The vast majority of farmworkers in all three income groups reported only one farm work employer in the previous 12 months, as illustrated in Table 28.

Table 28: Number of Farm Work Employers

Number of Farm Work Employers in the Last 12 Months	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
1 employer	72%	83%	91%
2 employers	19%	12%	7%
3 or more employers	9%	5%	2% ^a
Total	100%	100%	100%

Table N = 1,736. The chi-square test of independence indicated a significant relationship between the number of farm work employers in the last 12 months and income group.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

Given the nature of migrant farm work (traveling for different jobs), it might be expected that migrant workers would report more farm work employers in a 12-month period. Yet, as indicated in Table 28 above, more than seven in 10 MSHS-eligible farmworkers reported having only one farm work employer over the last 12 months. A possible reason why may be that they were contracting with a crew leader and traveling to multiple farms to work, but counting this as one job. The NAWS data contradicts this hypothesis, however; among MSHS-eligible farmworkers who reported having one farm work employer, only 16 percent were working for a farm labor contractor (84% were employed directly by the grower). In contrast, 45 percent of MSHS-eligible farmworkers who had three or more farm work employers reported working for a farm labor contractor.

Social Services Used by Farmworker Household

Table 29 shows the frequency of households using public services or receiving public benefits over the previous two years. The services most frequently reported across all income levels were Medicaid, WIC and food stamps. Among MSHS-eligible families, 82 percent utilized Medicaid, 70 percent utilized WIC, and 35 percent utilized food stamp programs. Most farmworker households reported very little experience with social services in general. For example, disability insurance, social security, welfare, disaster relief, low income housing, legal services and TANF were used by less than 10 percent of parent households in any income level.

Table 29: Services Used In the Last Two Years

Within the last two years, has anyone in your household received benefits from or used the services of any of the following social programs?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Food Stamps	35%	23%	10%
Disability Insurance	3% ^a	1%	2% ^a
Unemployment Insurance	13%	9%	17%
Social Security	_ ^b	_ ^b	_ ^b
Low income housing	2% ^a	2% ^a	_ ^b
Public health clinic	8%	6%	9%
Medicaid	82%	85%	66%
WIC	70%	62%	63%
Disaster relief	_ ^b	_ ^b	_ ^b
Legal services	_ ^b	_ ^b	_ ^b
Other	4%	2% ^a	7%
TANF	_ ^b	≤1%	_ ^b
General assistance/welfare	_ ^b	_ ^b	_ ^b

Table N = 1,736

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Health Issues and Health Care Access

When asked about their general health, 70 to 85 percent of farmworkers across all income levels reported that their health was “good” to “excellent”. Fifteen percent of MSHS-eligible farmworkers reported “fair” or “poor” health (Table 30). When asked whether they had any physical or mental or emotional problems that limit their farm work, nearly all farm workers in each of the income groups responded with “no”.

Table 30: General Health

General Health	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Excellent	17%	12% ^a	27%
Good	68%	58%	54%
Fair/Poor	15%	30%	19%
Total	100%	100%	100%

Table N = 764. Question was asked in fiscal years 2009-2010 only.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

Few farm workers missed any days of farm work in the previous 12 months because of work-related illness or injury. Between five and 15 percent of farm workers reported that they performed farm work for one to 10 days while injured or ill because of a work-related illness or injury, and about three to six percent of farmworkers reported they did farm work for 11 or more days while injured or ill because of a work-related illness or injury (Table 31).

Table 31: Days Worked While Injured or Ill in the Past 12 Months

Days did farm work while injured or ill because of work-related illness or injury	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
None	89%	90%	79%
1-10 days	5% ^a	6% ^a	15% ^a
11 or more days	6%	3% ^a	6% ^a

Table N = 764. Question was asked in fiscal years 2009-2010 only.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

The NAWS asked farmworkers to list any health issue(s) that have been diagnosed by a medical professional. Variations in health issues across income groups may reflect the basic incidence of health problems, and might also indicate the opportunity to be diagnosed by a health-care professional.

Few health issues were reported by enough respondents to allow specific reporting here (Table 32). However, 14 percent of the MSHS-eligible farmworkers reported at least one diagnosed health issue. The health issues most frequently reported by workers in this income group included high blood pressure (5%) and asthma (4%). A small number of MSHS-eligible farmworkers (3%) reported various other types of health issues, including high cholesterol, allergies, alcoholism, kidney stones, abdominal hernia, low blood pressure, pneumonia, and thyroid disease.

Table 32: Personal Health Issues

Have you ever, in your whole life, been told by a doctor or nurse that you have the following ...?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Reported at least one health issue	14%	13%	15%
Asthma	4%	_ ^b	2% ^a
Diabetes	_ ^b	_ ^b	3%
High blood pressure	5%	3% ^a	7%
Tuberculosis	_ ^b	_ ^b	_ ^b
Heart disease	_ ^b	_ ^b	_ ^b
Urinary tract infections	_ ^b	2% ^a	4%
Other	3% ^a	3%	2% ^a

Table N = 1,736

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Farmworkers identified the type of barriers they encountered when seeking health care in the U.S. The barrier most frequently cited across all income groups was the expense of health care (37% of the MSHS-eligible group, 47% of farmworkers with household income in the 101-130 percent of poverty group, and 28% of farmworkers with household income above 130 percent of poverty). Few other barriers were identified by enough respondents to allow specific reporting here. A small percentage of farmworkers reported not needing health care (3% of the MSHS-eligible group and 5% of farmworkers in the 101-130 percent of poverty group).

The NAWS included supplemental questions on moods to understand depressive symptoms among farmworkers. Across most symptoms, a higher proportion of MSHS-eligible farmworkers reported depressive symptoms than did farmworkers in the other two income groups (Table 33). For example, 11 percent of MSHS-eligible farmworkers reported not enjoying life compared to three percent of farmworkers in the 101-130 percent of poverty group and two percent of workers with household incomes above 130 percent of poverty. The responses to questions on moods were further analyzed and collectively used to construct a measure of elevated depressive symptoms⁵. Using

⁵ The measure of elevated depressive symptoms was derived from the 10-item version of the Center for Epidemiologic Studies Depression (CES-D) scale. Farmworkers were asked to report whether they experienced 10 different symptoms (enjoyed life, happy, everything was an effort, restless in sleep, lonely, people were unfriendly, sad, people disliked them, could not get going, and depressed). If they experienced a particular symptom, they were asked how many days in the past seven days they experienced the symptom for most of the day. Number of days the farmworker reported experiencing a symptom was coded as a categorical variable—value range from 1 to 3 as follows: 5 days or more coded as 3; 3 or 4 days coded as 2; 1 or 2 days coded as 1. Positive items were reverse coded (e.g., enjoyed life, happy). The final score was obtained by summing across the 10 items. Higher scores indicated more

this measure, about 10 percent of MSHS-eligible farmworkers were identified as having elevated depressive symptoms. While this was higher than the approximately three to four percent of farmworkers with higher household incomes identified as having elevated depressive symptoms, a chi-square test of independence indicated no relationship between elevated depressive symptoms and income group. The proportion of MSHS-eligible farmworkers with elevated depressive symptoms was similar to the overall adult population in the United States. The Center for Disease Control and Prevention published estimates that 10 percent of adults in the U.S. have depression⁶.

Table 33: Elevated Depressive Symptoms

	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Elevated depressive symptoms	10% ^a	3% ^a	4% ^a
Did not feel they enjoyed life	11%	3% ^a	2% ^a
Did not feel happy	1% ^a	- ^b	1% ^a
Felt everything they did was an effort	21%	12% ^a	21%
Felt restless in sleep	15%	11% ^a	23%
Felt lonely	14%	2% ^a	7%
Felt people were unfriendly	8% ^a	4% ^a	10%
Felt sad	23%	25% ^a	15%
Felt people dislike them	8% ^a	6% ^a	8%
Felt they could not get going	12% ^a	7% ^a	7%
Felt depressed	13% ^a	8% ^a	8%

Table N = 764. Question was asked in fiscal years 2009-2010 only.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

The NAWS also included a question designed to assess how difficult it was for farmworkers to be separated from their family. The majority of MSHS-eligible farmworkers reported they were not separated from family (51%). Farmworkers who were separated from their families most frequently reported that the separation was “very difficult” (Table 34).

depressive symptoms. Farmworkers with a CES-D score of 10 or more were classified as having elevated depressive symptoms.

⁶ Center for Disease Control. (April, 2011). *An estimated 1 in 10 U.S. adults report depression*. Retrieved July 28, 2012 from <http://www.cdc.gov/features/dsdepression/>.

Table 34: Difficulty Being Away from Family

How difficult is it for you to be separated from your family?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Not at all difficult	6% ^a	- ^b	7% ^a
Somewhat (more or less) difficult	8%	20% ^a	5% ^a
Very difficult	35% ^a	29%	12% ^a
Not separated from family	51%	50% ^a	76%

Table N = 764. Question was asked in fiscal years 2009-2010 only.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Health Insurance

About 24 percent of MSHS-eligible farmworkers reported they had health insurance coverage. This contrasted with the 44 percent of farmworkers with household income above 130 percent of poverty that reported having health insurance. Almost all the children of farmworkers had health insurance coverage (Table 35).

Table 35: Health Insurance Coverage

In the USA, who currently has health insurance?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Farmworker (N =1,735)	24%	24%	44%
Spouse (N=1,573)	29%	28%	46%
Children (N = 1,725)			
All children have it	85%	87%	88%
Only some children have it	5%	4%	4% ^a

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

Among farmworkers who have health insurance, about 23 percent of the MSHS-eligible farmworkers reported their *employer* paid for their health insurance, and more than two-thirds (67%) reported that the *government* paid for their health insurance. The majority of MSHS-eligible farmworkers also reported that the *government* paid for their children's and their spouse's health insurance. Table 36 offers further information on the sources of health insurance.

Table 36: Source of Health Insurance^c

Who pays for:	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
The FARMWORKER'S health insurance? (N=527 ^c)			
Farmworker pays	9%	16%	19%
Spouse	_ ^b	_ ^b	4% ^a
Employer	23%	42%	56%
Spouse's Employer	1%	_ ^b	11%
Government	67%	48%	23%
Other	_ ^b	_ ^b	_ ^b
The SPOUSE'S health insurance? (N=555 ^c)			
Farmworker pays	6% ^a	11%	21%
Spouse	2% ^a	6% ^a	7%
Employer	9%	11%	35%
Spouse's Employer	11%	13%	25%
Government	74%	66%	30%
Other	_ ^b	_ ^b	_ ^b
The CHILDREN'S health insurance? (N=1, 548 ^c)			
Farmworker pays	1% ^a	1% ^a	8%
Spouse	_ ^b	_ ^b	3% ^a
Employer	1% ^a	3% ^a	8%
Spouse's Employer	_ ^b	1% ^a	7%
Government	97%	96%	76%
Other	_ ^b	≤1% ^a	3% ^a

Numbers may not add to 100% due to multiple payers.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

^c This table presents data on health insurance coverage for those farmworkers who reported that they, their spouse, and/or their children had some form of health insurance (as illustrated in Table 35). This includes 527 farmworkers across the three income groups who reported that they, themselves, had health insurance, 555 farmworkers across the three income groups who reported that their spouse had health insurance, and 1,548 farmworkers across the three income groups who reported that some or all of their children have health insurance.

The majority of farmworkers reported that their employers provided insurance or paid for health care if they were injured at work or got sick as the result of their work. Sixty-five percent of MSHS-eligible farmworkers, 86 percent of workers in the 101-130 percent of poverty group and 89 percent of farmworkers in the 131-200 percent of poverty group

said they had employer-provided health care coverage for work-related illness or injury (Table 37).

Table 37: Health Care Coverage for Work Related Injury or Illness

If you are injured at work or get sick as a result of your work, does your employer provide insurance or pay for your health care?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
No	19% ^a	5%	4%
Yes	65%	86%	89%
Don't Know	16%	10%	7%
Total	100%	100%	100%

Table N = 1,736

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

Approximately two-thirds (66%) of MSHS-eligible farmworkers indicated they were covered by workers' compensation insurance and 19 percent did not know if they were covered, as illustrated in Table 38.

Table 38: Workers' Compensation Coverage for Work Related Injury or Illness

If you are injured at work or get sick as a result of your work, do you get any payment while you are recuperating?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
No	15%	10%	11%
Yes	66%	77%	79%
Don't Know	19%	13%	9%
Total	100%	100%	100%

Table N = 1,736. The chi-square test of independence indicated a significant relationship between reported Workers' Compensation coverage and income group.

Pesticide Use

Farmworkers tend to report that work that involves pesticide application is often a better paying, technically skilled job⁷. Therefore, it is not surprising that a larger proportion of farmworker parents with incomes above 130 percent of the poverty level had recent experience using pesticides on the job than did farmworker parents in the MSHS-eligible group (24% and 10% respectively). See Table 39 for further illustration.

⁷ Kandel, W.A. and Donato, K.M. (2009). Does Unauthorized Status Reduce Exposure to Pesticides? Evidence From the National Agricultural Workers Survey. *Work and Occupations*, 36, 367-399.

Table 39: Pesticide Use at Work

In the last 12 months, have you loaded, mixed or applied pesticides?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
No	90%	88%	76%
Yes	10%	12%	24%
Total	100%	100%	100%

Table N = 1,733. The chi-square test of independence indicated a significant relationship between pesticide use at work and income group.

Farmworker Childcare

The MSHS-eligible households most often reported that a spouse or other family member took care of their children while they were at work (74%). However, in 43 percent of MSHS-eligible households, children also spent time with a neighbor/babysitter/MSHS daycare or Head Start program. For each income category, at least some families reported that children have stayed home alone, at least sometimes, while the farmworker was at work. See Table 40 for further detail. Additional questions about childcare utilization were asked in the *MSHS Supplement*, which is discussed in Section IV.

Table 40: Child Location While Parent Works

During the past 12 months, where have your children 12 and under been while you work in U.S.A. farm work?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
They have stayed home alone, at least sometimes	1% ^a	1% ^a	3%
With me in the fields	– ^b	– ^b	≤1%
Other childcare	– ^b	≤1% ^a	≤1%
With my spouse or other family	74%	72%	69%
Neighbor/babysitter, Migrant Head Start, daycare, Head Start	43%	39%	44%

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

IV. RESPONSES TO THE NAWS MSHS SUPPLEMENT– October 2008- June 2011

The *MSHS Supplement* has only been established for three years, starting in October 2008. The responses to the *MSHS Supplement* are reported for nine data collection cycles, much less than represented in the previous tables of the general NAWS data, which incorporated 15 data collection cycles. In the nine cycles from October 2008 through June 2011, 24 percent of those interviewed by the NAWS (1,234 of the 5,211

interviewed farmworkers) had children under the age of six and provided responses to the *MSHS Supplement*.

The interview teams continue to refine questions in order to facilitate valid responses on the *MSHS Supplement*. One area remains challenging (and has been found to be similarly challenging across other MSHS and Head Start studies). Families have difficulty specifying whether their children were attending MSHS or some other child care setting. In some cases, they were unable to distinguish the local Head Start from MSHS (which may be offered in the same location). In other cases, the specific title Migrant and Seasonal Head Start was not recognized by participants who identified the centers for their children by their Spanish eponyms such as “Escuelita,” “Centro Migrante,” “Guardería para campesinos,” and others. When respondents were not specific about the name of their child care center, they were provided with the specific address of the local MSHS and shown the center on a map.

Across the U.S. for 2008-2011, the states with the largest number of interview supplements completed were California (539 families), Florida (104 families) and Washington (99 families). See Table 41 for further delineation of the number of interview supplements completed.

Table 41: Farmworkers Completing the MSHS Supplement (from October 2008 to June 2011)

State	Respondents
Arkansas	22
Arizona	23
California	539
Colorado	9
Connecticut	- ^a
Delaware	- ^a
Florida	104
Georgia	9
Iowa	9
Idaho	53
Illinois	14
Indiana	13
Kansas	6
Kentucky	7
Louisiana	5
Michigan	61
North Carolina	29
New Jersey	- ^a
New Mexico	- ^a

State	Respondents
New York	28
Ohio	13
Oregon	66
Pennsylvania	30
South Carolina	19
Texas	47
Virginia	6
Washington	99
Wisconsin	12
Total	1,234

^a Estimates are suppressed because the frequency of respondents is fewer than four.

The report on the MSHS supplement continues to present information on the MSHS-eligible families, and families with similar characteristics (children younger than six, primarily agricultural workers) with household incomes between 100 to 200 percent of the poverty level. The responses of farmworker families with household incomes above 130 percent of the poverty level were considered in comparison to those of the MSHS-eligible families. Post-sampling weights were used to account for the differing sampling probabilities for households with one or two farmworker parents.

Of the 1,234 respondents to the *MSHS Supplement*, 1,215 had sufficient information on income and employment history to establish whether they were eligible for MSHS. When possible, for respondents who did not respond to the U.S. family income question (such as newly arrived immigrants), income was estimated statistically.⁸ Nineteen respondents had insufficient information to estimate a family income. Of the 1,215 respondents for whom sufficient information was available to determine eligibility for MSHS, 67 did not work more than 50 percent in farm work, and 49 had household incomes greater than 200 percent of poverty. They, therefore, could not be included in the groups reported here. Thus, the following estimates are derived from 1,099 NAWS respondents who had children under the age of six, worked more than 50 percent of the time in farm work, and had incomes under 200 percent of the federal poverty level.

Across all eligibility criteria (i.e., percentage of agricultural work, income level and type of work) 481 of the 1,099 respondents (44%) were MSHS-eligible, having incomes equal to or less than 100 percent of poverty. The other 618 respondents were not MSHS eligible because they had incomes above the federal poverty level. As in the previous section, for comparison purposes, these respondents are separated into two groups: those with incomes from 101-130 percent of the federal poverty level and those with 131-200 percent of the poverty level. See Table 42 for further illustration.

⁸ A regression formula was calculated using data from those respondents who reported their income. Then, using regression coefficients and other data, the income was calculated for those who did not directly respond to the family income question.

Table 42: Respondents Meeting the MSHS Eligibility Criteria

	Unweighted	
	Number	Percent
≤100% poverty level (MSHS-eligible)	481	44%
101-130% poverty level	354	32%
131-200% poverty level	264	24%
Total	1,099	100%

For the MSHS-eligible group, 42 percent of the respondents to the MSHS Supplement were female. This contrasts with the two higher income groups, in which 30-31 percent of the respondents were females, as seen in Table 43.

Table 43: Gender of Farmworker Respondents to the MSHS Supplement

Gender	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Male	58%	70%	69%
Female	42%	30%	31%

Table N = 1,099. The chi-square test of independence indicated a significant relationship between farmworkers' gender and income group.

The following section examines the responses to the *MSHS Supplement* and covers current childcare arrangements, familiarity with MSHS, and barriers to participating in MSHS. For most tables, the first column indicates estimates for the MSHS-eligible subsample.

The first question in the *MSHS Supplement* asks about current childcare arrangements. Respondents were allowed to select as many options as applied. The most common response was that a spouse looked after the children (54%, 58% and 44% respectively across income groups); 'other relative' was the second most frequent response across groups. See Table 44 for the weighted frequencies.

Table 44: Current Childcare Arrangements

Now that you are working here in (name of locality), how have you arranged for your child(-ren) to be taken care of while you work (FW)?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
MSHS	5%	4%	4% ^a
Head Start	1% ^a	-. ^b	-. ^b
Spouse	54%	58%	44%
Child(ren)'s older sibling	3% ^a	≤1% ^a	4% ^a
Other relatives	28%	21%	27%
Friends/Neighbors	10%	3% ^a	2% ^a
Daycare/ Center/ Babysitter	14%	29% ^a	34%
Preschool/Pre K/ Kindergarten/School	-. ^b	2%	6% ^a
Take them to the field	-. ^b	-. ^b	0%
Other ^c	0%	-. ^b	-. ^b

Table N = 1,099

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

^c Various other types of childcare arrangements were mentioned, but were reported by too few respondents to support statistical analysis on their own. These "Other" responses included "going to the mother's school", "wife takes child to school", and "going to wife's work."

Fifteen percent of the MSHS-eligible group reported using more than one childcare option, while 85 percent indicated that they use only one childcare option. For those MSHS-eligible households using a single source of childcare currently, 76 percent indicated that the single source was a spouse, sibling, or other relative. See Table 45 for further illustration of this topic.

Table 45: For Those with Only One Childcare Source: What Do They Use?

Now that you are working here in (name of locality), how have you arranged for your child(-ren) to be taken care of while you work (FW)?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
MSHS	2% ^a	1% ^a	_ ^b
Head Start	_ ^b	_ ^b	_ ^b
Spouse	52%	55%	40%
Child(ren)'s older sibling	1%	_ ^b	2% ^a
Other relatives	23%	15%	20%
Friends/Neighbors	10%	2% ^a	2% ^a
Daycare/ Center/ Babysitter	12%	27% ^a	33%
Preschool/Pre K/ Kindergarten/School	_ ^b	_ ^b	_ ^b
Take them to the field	_ ^b	0%	0%
Other	0%	0%	0%

Table N = 874 respondents with only one childcare source.

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Only fifteen percent of respondents noted more than one source of care. Whenever respondents indicated more than one type of care, they were asked to indicate which of those sources was used most frequently. For MSHS-eligible households using multiple childcare sources, 54 percent indicated that a spouse or relative was the most frequent source of childcare and daycare/center/babysitter was the second most common primary source of childcare (21%).

For households above 130 percent of the poverty level using multiple childcare sources, a spouse was the most common primary source of childcare (33%), and relatives were a close second (22%). See Table 46 for further delineation.

Table 46: For those with Multiple Childcare Sources: Type of Childcare Used Most Often

Which type of childcare mentioned do you use most often?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
MSHS	17% ^a	14% ^a	_ ^b
Head Start	_ ^b	_ ^b	_ ^b
Spouse	25%	51%	33% ^a
Child(ren)'s older sibling	0%	_ ^b	_ ^b

Which type of childcare mentioned do you use most often?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Other relatives	29%	21%	22% ^a
Friends/Neighbors	_ ^b	_ ^b	_ ^b
Daycare/ Center/ Babysitter	21% ^a	11% ^a	21% ^a
Preschool/Pre K/ Kindergarten/School	_ ^b	_ ^b	_ ^b
Other ^c	_ ^b	0%	_ ^b

Table N = 175

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

^c Respondents who chose the 'Other' category provided no specific responses.

Respondents were asked to identify all of the reasons they selected the type of childcare they used most often. This is illustrated in Table 47. The most common reason mentioned by households across all income levels was “trust”, followed by the convenience of hours and locations. Five percent of MSHS-eligible families reported that one of their reasons for their childcare preferences was “prepares child for school”.

Table 47: Reason for Selecting Type of Childcare Used

Why do you use this type the most while doing farm work?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Trust	77%	90%	77%
Flexible/Convenient hours	37%	46%	38%
Convenient location	42%	39%	37%
Culturally compatible (same language, food, staff, etc.)	14% ^a	8%	17%
Prepares child for school (e.g., English)	5%	7%	5% ^a
Affordable	_ ^b	_ ^b	_ ^b
Spouse Not Working	4% ^a	4% ^a	_ ^b
Child health issues	_ ^b	0%	_ ^b
Don't know (e.g., spouse decides)	12%	10% ^a	8%
Other ^c	_ ^b	_ ^b	5% ^a

Table N = 1,049

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

^c Various other reasons for the type of childcare used were mentioned, but were reported by too few respondents to support statistical analysis on their own. These “Other” responses included “child is too young”, “both parents work”, “father helps”, “neighbor takes child to school”, “wife will work for three more

years,” “parent’s decision”, “hard to get daycare”, “no other option”, and “have not been admitted to MSHS”.

Farmworker families who did not mention MSHS as one of their childcare sources were then asked whether they had heard of the program. Their responses are represented in Table 48. Less than half of the families in each of the income groups reported having heard of MSHS (38%, 35% and 47% respectively). In other words, 62 percent of MSHS-eligible families had never heard of Migrant and Seasonal Head Start. Among those who had heard of MSHS, the majority noted that they had never used the program (76% of families in the MSHS-eligible group, 82% of families in the 101-130 percent of poverty group, and 89% of families in the 131-200 percent of poverty group).

Table 48: Awareness and Use of MSHS

	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Farmworker family has heard of MSHS (N=1,148)	38%	35%	47%
[If heard of it] Have/has your child(ren) ever used MSHS? (N=477)			
No	76%	82%	89%
Yes, now, in this location	6% ^a	1% ^a	– ^b
Yes, not now, but within the last 12 months	13% ^a	2% ^a	– ^b
Yes, but more than 12 months ago	4%	15%	8%
Total	100%	100%	100%

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

Farmworker families who had heard of MSHS, but had not used it, were asked to identify reasons why they did not use MSHS at their current location. The most common reason across all income levels was that the family preferred their own childcare arrangements (47-57% of each income group). Twenty-nine percent of households above 130 percent of the poverty level noted that they had applied to the program, but did not qualify. All responses are illustrated in Table 49.

Table 49: Barriers to participating in MSHS

Why are you (or your spouse) not using MSHS at this location?	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Prefer own childcare arrangements	57%	54%	47%
No MSHS in this area	_b	_b	_b
MSHS not open entire season	_b	_b	_b
Inconvenient hours	_b	3% ^a	6% ^a
MSHS full (applied, but no openings)	_b	3% ^a	_b
Applied, but not accepted	9%	11%	29%
Does not serve correct age group (infants/older children)	9% ^a	24%	11% ^a
Do not like it	_b	_b	1% ^a
In school	_b	_b	_b
Parent's decision	_b	_b	_b
Spouse not working	3% ^a	_b	_b
Bus stop is too far/Need transportation/Too far	_b	_b	_b
Other ^c	5% ^a	_b	_b

^a Estimates with relative standard errors between 31 and 50 percent should be interpreted with caution.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

^c Various other reasons for not using MSHS were mentioned, but were reported by too few respondents to support statistical analysis on their own. These "Other" responses included "no information", "no need for MSHS", "social worker referred to another center", "they prefer people who are legal", "too many questions when applying", "government sent them home if child gets sick", "want to keep kids together", and "worried kids will get beat up".

Farmworker families who reported that they had used, or were currently using, MSHS services were asked how they had heard about MSHS. Their answers are outlined in Table 50. The most common way families reported hearing about MSHS was through a relative or friend (43% to 61% across the three income groups). Approximately nine percent of MSHS-eligible households were contacted by a MSHS recruiter compared to 20 percent of households with incomes at 101-130% of the poverty level. Nine percent of MSHS-eligible households indicated seeing a flyer that provided MSHS information.

Table 50: Source of Information about MSHS (Among Families That Have Used MSHS)^a

How did you learn about MSHS? (N=104)	Household Income Level		
	≤100% of poverty level (MSHS-eligible)	101-130% of poverty level	131-200% of poverty level
Previous MSHS referred us	_b	_b	_b
Recruiter from MSHS contacted us	9%	20%	_b
Social Worker (agency, clinic, etc.) referred me (spouse)	23%	_b	_b
Saw a flyer with MSHS information	9%	_b	_b
A relative/friend told us about it	46%	61%	43%
School	_b	_b	_b
Other ^c	_b	_b	0%
Total	100%	100%	100%

Table N = 100

^a Data reported is for the first child in the MSHS supplement grid.

^b Estimates with relative standard errors greater than 50 percent are suppressed.

^c Other sources of information about MSHS were mentioned, but were reported by too few respondents to support statistical analysis on their own. These "Other" responses included "Fresno" and "asked around."

Appendix A: MSHS Supplement Questions for NAWS (February 2008-Present)

[REV. Oct 1, 2010]

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[ASK ONLY TO RESPONDENTS WHO - IN FAMILY GRID- HAVE CHILDREN UNDER 6 YEARS OLD WHO HAVE BEEN OR ARE CURRENTLY IN THE U.S.A.]					
<p>Now I'd like to ask you some questions about child care. There are many places and persons that take care of children while parents work. Parents use childcare or a neighbor's home; other times the kids stay at home with their mother, siblings or other relatives...</p>					
<p>HS1. ...Now that you're working here in [NAME OF LOCALITY], how have you arranged for your child (-dren) to be taken care of while you work (FW)? Please tell me all the types of child care arrangements you have used [IF ONLY ONE RESPONSE, PROBE FOR MORE. CHECK ALL THAT APPLY]</p> <p><input type="checkbox"/> a. MSHS <input type="checkbox"/> b. Spouse <input type="checkbox"/> c. Child(-ren)'s older sibling(s). Age(s)?: _____ <input type="checkbox"/> d. Other relatives (not spouse or child(-dren)'s older siblings) <input type="checkbox"/> e. Out of home (DAYCARE / CENTER / BABYSITTER) <input type="checkbox"/> f. Friends / Neighbors <input type="checkbox"/> g. Take them to the field (FW) <input type="checkbox"/> z. Other (specify): _____</p>			<p>[IF MSHS ("a") WAS NOT MENTIONED IN "HS1", ASK HS4]: ... HS4. ...Have you ever heard of MSHS?</p> <p><input type="checkbox"/> 0 NO [EXPLAIN MSHS. MENTION LOCAL MSHS NAMES, IF STILL "NO," SKIP TO "A15" NEXT SECTION] <input type="checkbox"/> 1 YES</p> <p>HS5. Has/Have your child(-dren) ever used MSHS? (When?)</p> <p><input type="checkbox"/> 0 NO [ASK ONLY "HS6"] <input type="checkbox"/> 1 YES. NOW, IN THIS LOCATION [SKIP TO "HS7"] <input type="checkbox"/> 2 YES. NOT NOW, BUT WITHIN THE LAST 12 MONTHS. [ASK HS6 AND HS7] <input type="checkbox"/> 3 YES. BUT, MORE THAN 12 MONTHS [ASK ONLY "HS6"]</p>		
<p>HS2. [IF MORE THAN ONE ANSWER IN HS1, ASK]: Which one do you use most often during an average work week (FW)? [ENTER LETTER CODE IN HS1]:</p> <p>_____</p>			<p>HS6. Why aren't you (or your spouse) using MSHS at this location? [CHECK ALL THAT APPLY]</p> <p><input type="checkbox"/> a. Prefer own child care arrangements <input type="checkbox"/> b. No MSHS in this area <input type="checkbox"/> c. MSHS not open entire season (FOR FW) <input type="checkbox"/> d. Inconvenient hours <input type="checkbox"/> e. MSHS full (applied, but no openings) <input type="checkbox"/> f. Applied, but did not qualify <input type="checkbox"/> g. Does not serve infants / older children <input type="checkbox"/> h. Do not like it. Specify: _____ <input type="checkbox"/> i. Do not qualify. (Specify) Why?: _____ <input type="checkbox"/> z. Other (specify): _____</p>		
<p>HS3. [ASK ALL] Why do you use this type (the most) while doing FW? [CHECK ALL THAT APPLY]</p> <p><input type="checkbox"/> a. Trust <input type="checkbox"/> b. Flexible / Convenient hours <input type="checkbox"/> c. Convenient location <input type="checkbox"/> d. Culturally compatible (same language, food, staff, etc.) <input type="checkbox"/> e. Prepares child for school (e.g., English) <input type="checkbox"/> f. Don't know (e.g., spouse decides) <input type="checkbox"/> z. Other (specify): _____</p>					
HS7. [ASK QUESTIONS IN REFERENCE TO CHILDREN WHO USE/ USED MSHS IN THE LAST 12 MONTHS]					
a	b	c	d	e	f
CHILD(-REN) WHO USE/USED MSHS [ENTER NAMES]	DATE LAST USED MSHS? (MONTH/YEAR)	LOCATION (CITY/STATE)?	NAME OF CENTER?	HOW DID YOU LEARN ABOUT MSHS? [ENTER CODE]	[INTERVIEWER: CHECK IF CENTER IN "d" is in MSHS LIST]
1	START: / _____ END: / _____	CITY: _____ STATE: _____			<input type="checkbox"/> 0 NO <input type="checkbox"/> 1 YES
2	START: / _____ END: / _____	CITY: _____ STATE: _____			<input type="checkbox"/> 0 NO <input type="checkbox"/> 1 YES
CODES FOR "e":					
<p>1 = PREVIOUS MSHS REFERRED US 2 = RECRUITER FROM MSHS CONTACTED US 3 = SOCIAL WORKER (AGENCY, CLINIC, ETC.) REFERRED ME (SPOUSE)</p>			<p>4 = SAW A FLYER WITH MSHS INFORMATION 5 = A RELATIVE/FRIEND TOLD US ABOUT IT 6 = OTHER: _____</p>		

Appendix B: Instructions for NAWS Interviewers for MSHS Supplement

(To be used as a reference after individual and group training for NAWS Interviewers)

This section includes questions that only apply to participants who report having children younger than six years of age in the Household Grid (in the first section of the NAWS questionnaire). The purpose of these questions is to determine the number of children that participate in (and qualify for) the Migrant and Seasonal Head Start (MSHS) program.

Note: The questions in this section were first asked as a trial or “pilot” in Cycle 60 (February 2008) and have been slightly modified for Cycle 62 (October 2008).

- 1) Before conducting the interviews, you should (memorize) familiarize yourself with the introductory dialogue for the interviewee/participants, the questions, the **MSHS** description, and the instructions to the questions, especially those that require you to “skip” to other questions.
- 2) The first thing you need to do to begin this section on **MSHS** is review the Family Grid to verify the number of children that the interviewee/participant has stated.
 - a) If the interviewee/participant mentioned having children, asked the interviewee/participant:
“... before we continue, I would like to confirm that I did the previous questions correctly, you told me that you have (number of children younger than 6 years old in the Household Grid).
 - b) If the interviewee/participant does not confirm the number of children who are younger than 6 years old in the Household Grid, make the necessary corrections.
 - c) If the interviewee/participant does not have children who are younger than 6 years old, simply ask:
“I don’t know if I wrote this down correctly, I would like to verify if you have children younger than 6 years old, “Do you have children younger than 6 years old?”
If the answer is different than what is documented in the Household Grid, make the necessary changes.

3) **Introducing the Section.**

“Now, I will ask you some questions about childcare. There are many places and people... “

The purpose of the introduction is to encourage the participant to respond with more than one option (choice) of answers for child care (e.g. neighbors, child care/day care centers, parents, relatives, etc.) Once again, remind the interviewee/participant that the questions in this section refer only to children younger than 6 years old.

HS1. “Now that you are working here in [Name of locality – city, region, or state]...” The purpose is to know **all** of the types of arrangements that the interviewee/participant has for child care **while they are doing farm work (FW)**. If it is necessary, probe to obtain more than one answer/response, emphasizing the place and (during) the type of farm work (FW).

Note: it is important that this question is asked of all participants who qualify for Question **HS1**. If the answer/response does not exactly correspond to one of the options, check “**z**” and write in their answer/response. If the participant answers MSHS, ask if all the children (if more than one in the Household Grid) attend MSHS. If not all children attend MSHS, use a different MSHS section page for those who do not attend MSHS.

HS2. “Which one do you use most often during an average work week (FW)?”

Remember that you should only ask this question if there is more than one answer/response for **HS1**. Write down the response using the “letter” that corresponds to **HS1**.

HS3. “Why do you use this type of care...?” It is important that this question is asked to all who responded to **HS1**. If the interviewee/participant responded to more than one response/option in **HS1**, and responded to **HS2**, refer to the answers in **HS2** and ask: “**Why did you use more than one type of care?**” If they only had one answer for **HS1**, ask: “**Why did you use this type of care?**”

HS4. “Have you ever heard of MSHS?” The purpose is to find out if the interviewee/participant has any knowledge of the MSHS program. The MSHS program can be known by another name that is more colloquial (e.g. “the little school”, “Migrant Daycare”, “Center for Migrant Children”, etc.) ask if they know what MSHS is and if necessary, explain to them that MSHS is a program recognized in Spanish as “The Head Start Program for Migrant and Seasonal workers”. Include that it is a free child care program for agricultural workers’ children who are younger than 5 years old.

Note: if you then describe the MSHS program to the interviewee/participant and the answer/response continues to be “**NO**”, finish this section and continue with the other questions in the following pages.

HS5. “Has/Have your child(-ren) ever used MSHS?” If the answer/response is “**NO**”, continue to the next question: “**HS6**”

Pay attention to each of the instructions listed for each of the options when the answer/response is “**YES**” (there are 3 options). If the answer/response is “**YES**”, ask when and where did they participate in the MSHS program and only check the option that corresponds to the answers.

HS6. “Why aren’t you using MSHS at this location?” Only ask this question based on the answer/response to the previous question. Only ask this if they responded “**NO**” in “**HS6**” (child or children of the interviewee/participant is not using MSHS at this location, region, or area in the last 12 months of this interview). If you have doubts about checking a response option, or if the answer/response does not exactly correspond with the options listed, check “**Other**”, and write down the answer. It is important for the NAWS to

document all of the other options given as answers that are used by the interviewers. For example, if the answer is “**I don’t qualify**” or “**We don’t qualify**”, **DO NOT** simply check the option “**f**” (“**I applied but we don’t qualify**”) because this option is for when the interviewee/participant applied for the program, but was not accepted. Remember that the answer/response “**did not qualify or not qualified**” could simply be the interviewee/participant’s opinion (s/he thinks that they don’t qualify), therefore, a clarifying answer is necessary, ask “**why don’t you qualify?**”. If they did not apply to participate in MSHS, check “**i**” and ask and write down why they don’t qualify.

HS7. “ASK THESE QUESTIONS IN REFERENCE TO CHILDREN WHO USE/USED MSHS IN THE LAST 12 MONTHS”. In this grid, there are slots to include two (2) children that are participating in MSHS (slots 1 and 2). If there are more children, use another blank page(s) of the questionnaire(s).

Note: If there is more than one child and only one child attends MSHS, use other page(s) for each of the children.

“a.” “Child(-ren) who used MSHS (Enter name on grid).” Simply write in the name (if more than one attends MSHS, use the second slot) of the child in MSHS.

Note: Confirm that you are writing the same child(-ren) name(s) that you wrote down in the “Family Grid”.

“b.” “Date last used MSHS? (Month/Year)”. Ask: **When did (name of child in “a”) begin attending MSHS?”** It is necessary to probe for month and year (write down the answer/response). Then ask: “**And when did (name of child in “a”) stop attending the MSHS program?”**. Ask for the month and year. If at the time of the interview, the child is still attending/participating the MSHS program, write down the date of the interview as the final date.

“c.” “Location”. Ask: “**And where was (is) the MSHS Center that your child went to? Please tell me the City and State.**”

“d.” Name of the MSHS Center. Ask: “**What is the name of the MSHS Center?”**. If the interviewee/participant only remembers part of the Center’s name, write it down exactly how the interviewee/participant states it. If the interviewee/participant does not remember the name, write down “does not remember”.

“e.” “HOW DID YOU LEARN ABOUT THE MSHS PROGRAM (CENTER)?”. Simply ask the question and write down the code that is the closest to the answer/response. The codes are found at the bottom of the grid (CODES FOR “e”). If none of the codes correspond to the answer, write down “6” and write down the answer/response exactly how the interviewee/participant stated it.

“f.” **[VERIFY IF THE CENTER IS ON THE MSHS LIST].** Do not read this question to interviewee/participant. This is only for the Interviewer. Refer to the list of MSHS Centers/Programs (you received this list from JBS/NAWS) to verify the name and/or place of the MSHS Center that the interviewee/participant mentioned is the same as the one on the list. Simply check “NO” or “YES”.

Note: If you have doubts about the verification, write down your comments.

- 6. JBS/NAWS SUPPORT.** If you have any doubt or problem in documenting this section, you could and should be immediately clarified by calling the JBS/NAWS office in Burlingame, California.

Appendix C: Migrant and Seasonal Head Start Eligibility Requirements

Component	Universe/Legislation	ACF Operational Definition*	NAWS Operational Definition
Child	Children under the age of school attendance		Dependent child under the age of six residing in the U.S. or its territories
Poverty	Low-income family means a family whose total annual income before taxes is equal to, or less than, the income guidelines. The poverty line shall be determined by the http://edocket.access.gpo.gov/cfr_2007/octqtr/pdf/45cfr1305.2.pdf	90 percent of the children enrolled are from low income families. "Low-income" is defined as 100% of the federal poverty level as specified by DHHS.	100% of DHHS Poverty Level. Thresholds account for size of family. Current definitions are from http://aspe.hhs.gov/POVERTY/figures-fed-reg.shtml Thresholds applied to NAWS family income categories (see below).
Farmworker	Engaging in agricultural work that involves the production and harvesting of tree and field crops http://edocket.access.gpo.gov/cfr_2007/octqtr/pdf/45cfr1305.2.pdf	Production and harvesting of tree and field crops include preparing the soil, planting, cultivating, picking, packing, canning and processing. Agricultural work that supports the crop production, such as irrigation, crop protection and operation of farm machinery are also included. Production and harvesting of greenhouse and nursery products may also be included.	Field work in Crop Production (NAICS 111) and (Support Activities for Crop Production [NAICS 1151] crop agriculture). The NAWS samples NAICS 111 and 1151 employers and all sample members perform qualifying field work. Definitions of NAICS available at http://www.census.gov/epcd/naics/NAICS11.HTM#N111
Income Primarily derived from	Whose family income comes primarily from agricultural work http://edocket.access.gpo.gov/cfr_2007/octqtr/pdf/45cfr1305.2.pdf	During the time the family receives MSHS services, the family must derive 51% of income or more from agricultural work. [New immigrants' income is based on U.S. earnings to date]	a) Farmworker worked more than 50 percent time in farm work during the past year. (fwweeks>=nfweeks). b) Family income based on question G03. If income data were missing/not stated or the individual had not worked in the previous year, family income was imputed. Sample members assigned midpoint of income category for poverty calculations. (E.g., ≤\$500 assigned as \$250)
Migrant	(A) with respect to services for migrant	Same as legislation	Current definition: Has migrated within the last

	farmworkers, a Head Start program that serves families who are engaged in agricultural labor and who have changed their residence from one geographic location to another in the preceding 2-year period; http://www.aed.org/Publications/loader.cfm?url=/commonspot/security/getfile.cfm&pageid=2688		12 months or entered the country within the last two years. Additional questions for OMB clearance will probe moving between 13-24 months past. Current definition may understate migrants until data from additional questions is available.
Seasonal	(B) with respect to services for seasonal farmworkers, a Head Start program that serves families who are engaged primarily in seasonal agricultural labor and who have not changed their residence to another geographic location in the preceding 2-year period. http://www.aed.org/Publications/loader.cfm?url=/commonspot/security/getfile.cfm&pageid=2688	Same as legislation	If otherwise eligible, but not migrant. Current definition may overstate seasonal workers until data from additional questions is available.
Migrant Education Eligibility:	The term "migrant" refers to a person who, within the past <u>36 months</u> , has moved across school district boundaries with the intent to obtain seasonal or temporary employment in agriculture, <u>fishing, dairy or food processing</u> work. Children ages three to 17 years of age.		
Migrant Health Clinic Eligibility (HRSA)	To be eligible for services, an individual must have been <u>principally</u> employed in agriculture for the previous <u>24 months</u> . Agricultural work is defined as farming in all its branches, which includes NAICS codes 111 (crop production), 112 (animal production and aquaculture), 1151 (support activities for crop production), and 1152 (support activities for animal production). A migrant worker must establish a temporary abode while pursuing agricultural work.		

*Memorandum, Division of Program Operations, October 5, 2001, Log no # MPSB-IM-01-1005. Text in [brackets] represents agreements from January 2009 discussions.

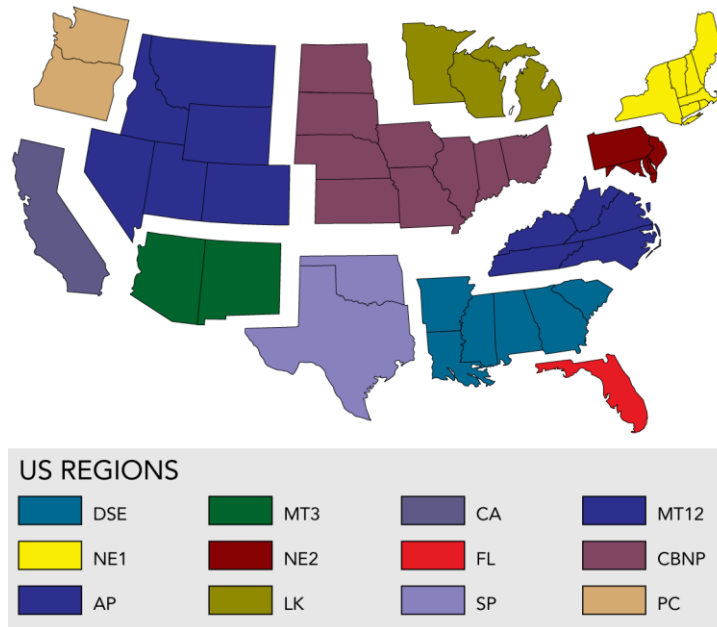
Appendix D: Regional Definitions

Analysis Region	NAWS Region	State
California	California	California
Florida	Florida	Florida
Northeast/Midwest	Northeast I	Connecticut
	Northeast I	Maine
	Northeast I	Massachusetts
	Northeast I	New Hampshire
	Northeast I	New York
	Northeast I	Rhode Island
	Northeast I	Virginia
	Northeast II	Delaware
	Northeast II	Maryland
	Northeast II	New Jersey
	Northeast II	Pennsylvania
	Cornbelt and Northern Plains	Illinois
	Cornbelt and Northern Plains	Indiana
	Cornbelt and Northern Plains	Iowa
	Cornbelt and Northern Plains	Kansas
	Cornbelt and Northern Plains	Missouri
	Cornbelt and Northern Plains	Nebraska
	Cornbelt and Northern Plains	North Dakota
	Cornbelt and Northern Plains	Ohio
	Cornbelt and Northern Plains	South Dakota
	Lake	Michigan
	Lake	Minnesota
Lake	Wisconsin	
Northwest	Mountain I and II	Colorado
	Mountain I and II	Idaho
	Mountain I and II	Montana
	Mountain I and II	Nevada
	Mountain I and II	Utah
	Mountain I and II	Wyoming
	Pacific	Oregon
	Pacific	Washington
Southeast	Appalachia I and II	Kentucky
	Appalachia I and II	North Carolina
	Appalachia I and II	Tennessee
	Appalachia I and II	Vermont

Analysis Region	NAWS Region	State
	Appalachia I and II	West Virginia
	Delta and Southeast	Alabama
	Delta and Southeast	Arkansas
	Delta and Southeast	Georgia
	Delta and Southeast	Louisiana
	Delta and Southeast	Mississippi
	Delta and Southeast	South Carolina
Southwest	Mountain III	Arizona
	Mountain III	New Mexico
	Southern Plains	Oklahoma
	Southern Plains	Texas
Not included		Hawaii
		Alaska

Exhibit 1

US REGIONS



U.S. Department of Health and Human Services, Health Resources and Services Administration. Bureau of Primary Health Care. (2000). *Migrant and Seasonal Farmworker Enumeration Profiles Study: Texas*, by Alice Larson (Vashon Island, WA).

U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Primary Health Care. (2000). *Migrant and Seasonal Farmworker Enumeration Profiles Study: Washington*, by Alice Larson (Vashon Island, WA).

U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Primary Health Care. (2000). *Migrant and Seasonal Farmworker Enumeration Profiles Study: California*, by Alice Larson (Vashon Island, WA).

<http://www.bphc.hrsa.gov/migrant/enumeration/final-tx.pdf> (accessed August 30, (e.g., California, 2000; Texas, 2000; Washington, 2000; Michigan, 2006; Idaho, 2006; Georgia, 2008) and utilize national data, local data and local expertise to estimate the number of migrant agricultural workers (Larson, 2000; 2000; 2000; 2006; 2006; 2008).

Appendix E: Tests for Statistical Significance

Throughout this report, the chi-square test was used to test for statistical significance. The test for statistically significant differences in the regional proportions of MSHS-eligible farmworkers for each pair of consecutive two-year time periods outlined in Table 3 was conducted using the Pearson chi-square test. The null hypothesis is that there is no difference between the regional proportions of MSHS-eligible farmworkers from one two-year period to the next. Thus, for a Pearson chi-square test resulting in a p-value of less than 0.05, the null hypothesis would be rejected and it would be concluded that the proportions for the two consecutive two-year time periods being compared are significantly different.

For the remainder of the report, tests for statistically significant relationships between categorical variables were conducted using the Rao-Scott chi-square test, a design-adjusted version of the Pearson chi-square test for independence. Rao-Scott chi-square tests resulting in p-values of less than 0.05 indicated a significant association between the two variables being cross-tabulated.

Appendix F: Reliability of Estimates

Survey results are estimates of population values and always contain some error because they are based on samples. One tool for assessing the reliability, or precision, of survey estimates is the relative standard error (RSE) of an estimate. Estimates with large RSEs are considered less reliable than estimates with small RSEs. Relative standard error is calculated by dividing the standard error of the estimate by the estimate itself, then multiplying that result by 100. Relative standard error is expressed as a percent of the estimate.⁹ For example, if the estimate of female farmworkers is 23 percent and the standard error of the estimate is 1 percent, the RSE of the estimate = $(1/23) * 100$, or 4 percent.

For the purpose of reporting data, the NAWS has adopted the following data suppression rules:

- Estimates with RSE's greater than 30 percent but no more than 50 percent are published but should be used with caution.
- Estimates with fewer than four responses or RSE's greater than 50 percent are considered statistically unreliable and are suppressed.

⁹ Wisconsin Department of Health Services. (December, 2014). *Behavioral Risk Factor Survey Relative Standard Error*. Retrieved March 18, 2015 from <https://www.dhs.wisconsin.gov/wish/brfs/rse.htm>.

Appendix G Estimation Methods for Regional and National Estimates of Population

The method used for the estimates of the number of MSHS-eligible children reported in this brief adapts the original method developed by Martin for the 1998 report on the Migrant and Seasonal Head Start population (Descriptive Study of Children and Families Served by Migrant and Seasonal Head Start, 1998). Like the original method, this method uses a three-step process. The first step is to calculate a size measure for the national and regional farmworker populations. The second step is to identify data on the farmworker population eligible for MSHS and the average number of MSHS-eligible children per family. The third step is to estimate the distribution of MSHS-eligible children across the regions.

a. Calculating the size of the farmworker population: Converging the data

Due to the migratory and seasonal nature of farm work, and variations in agencies' approaches to defining and measuring the population, there is no existing single data source that provides a reliable national estimate of the total farmworker population. Neither the U.S. Census, nor the American Community Survey, nor the Current Population Survey produces numbers that adequately reflect the population as a whole. The U.S. Department of Agriculture (USDA) has some information on farm labor employment and farm labor expenditures. However, none of the USDA data provide an unduplicated population count.

One of the issues in constructing any estimate of MSHS-eligible children and farmworkers is that each of the available data sources for estimating the national population has its strengths and weaknesses.¹⁰ For example, the quarterly USDA Farm Labor Survey (FLS) is considered a conservative estimate of the farmworker population since it tends to underestimate contract workers, as a result of asking farmers to estimate their contractors' workforce. Beginning in 2012, the FLS stopped providing estimates of contract workers. Given variations, a good practice for establishing the overall size of the farmworker population is to examine multiple data sources and identify the range in which likely farm labor population estimates fall by constructing upper and lower bounds and looking for consistency across data sources.

There are several data sources that can be considered in combination to establish an estimate of the farmworker population. One possible source for estimating the population size relies on the Census of Agriculture. For MSHS, the method is similar to the method used by ETA for the National Farmworker Jobs Program (NFJP), but is

¹⁰ Steirman, A., Kissam, E., & Nakamoto, J. (1998). Head Start Migrant Programs. Aguirre International, San Mateo, CA. Washington, DC: Administration on Children, Youth and Families, U.S. Department of Health and Human Services.

extended further to achieve a national population estimate based on Census of Agriculture data on hired and contracted labor expenditures. National and state estimates of labor expenditures are divided by national and regional average wages obtained from the USDA FLS data to turn expenditures into hours worked. ETA stops at this step, but it is possible to use NAWS data to provide estimates of days and hours worked, thereby turning aggregate hours worked into a population estimate.

There are other possible sources for providing a population estimate. The USDA publishes information on the number of workers employed for more than 150 days and the number who worked less than 150 days. These numbers may double count farmworkers who have more than one farm employer. These figures provide information on only one part of the farm labor market, since farmers do not report on workers employed by farm labor contractors. Another possible source is the Bureau of Labor Statistics' Quarterly Census of Employment and Wages, which reports on workers participating in the Unemployment Insurance System. These figures can be used to obtain accurate farmworker counts, but only in the four states that have universal unemployment coverage for farmworkers, markedly limiting this data.

In developing the estimate for MSHS-eligible children, JBS worked with DOL/ETA to apply the best methods to the best data. DOL/ETA and JBS used several methods and data sources to construct estimates of the U.S. crop worker population, and current multiple estimates from independent data sources converged on a *population of 1,400,000 crop workers*.¹¹

b. Regional Estimation Methods

The Office of Head Start desired regional breakdowns of the MSHS population, so JBS first used DOL/ETA estimation methods to establish an estimate for the overall population of farmworkers for each region. This is one of the most rigorous methods for establishing a regional count. JBS began by following the procedures, outlined by the NFJP, of converting USDA expenditure data to regional shares expressed in hours.^{12,13} This provided full-time equivalent (FTE)-based estimates per region and not population counts. Turning hours into persons requires a process using NAWS regional data on average hours worked per day and days worked per year to convert hours into number of persons.

Total weeks worked per region = Total hours worked / Average hours per week

¹¹ Martin, P. (2009). *AgJOBS: Provisions, Eligibility*. Rural Migration News, July 2009, Vol. 15, No. 3.

¹² The NFJP formula then applies eligibility factors to these estimates to arrive at estimates of the state shares of the NFJP eligible population.

¹³ Job Training Partnership Act: Migrant and Seasonal Farmworker Programs; Final Allocation Formula, 63 Fed. Reg. 70795 (May 19, 1999).

$$\text{Farmworkers per region} = \frac{\text{Total weeks worked in farmwork}}{\text{Average weeks worked per farmworker}}$$

These estimates form the regional farmworker populations represented in Table 2. The regional estimates presented are an approximation of the size of the farmworker population. They represent an unduplicated count; the sum of the regional estimates equals the national total. This method does not allow interstate migrants to be counted in multiple locations, and it does not include migrants who may temporarily reside in states where they do not work.

c. Average number of children per MSHS-eligible farmworker

After estimating the size of the farmworker population, the next step is to use the NAWS data to identify the proportion of the farmworker population that is eligible for MSHS and then calculate the average number of children per eligible farmworker.

JBS operationalized ACF's definition of MSHS-eligible children (Appendix A) using data available in the NAWS. The basics of the definition are that, to be MSHS-eligible, a NAWS respondent's household has to have:

- One or more children under the age of six;
- Income below 100 percent of the federal poverty level for their household size; and
- More than 50% of income derived from eligible agricultural work.

By the MSHS definition of eligible types of agricultural work, all respondents on the NAWS work with acceptable types of farmwork (i.e., working on agricultural crop activities). Poverty status for NAWS respondents was determined by comparing the federal poverty guidelines with the NAWS income categories using their midpoint. Income was imputed for households that either did not answer the income question or were not in the U.S. labor force for the calendar year before they were interviewed.

JBS calculated the average number of MSHS-eligible children per qualifying worker nationally. These numbers were weighted using a factor that accounted for possible double counting of children with two farmworker parents responding to the NAWS, and were averaged over the 5,211 farmworkers sampled during **fiscal years 2009-2011** (a three-year rolling estimate). To produce regional estimates with acceptable error rates, the NAWS data was aggregated into six larger state groupings that represent distinct agricultural regions. See Appendix D for regional definitions. This combination produced the average MSHS-eligible children per farmworker per region. Table 1 shows the results of these calculations.

National and Regional Estimates

The third and final step in estimating the numbers of MSHS-eligible children was to combine the population estimates and the national and regional factors containing the average MSHS-eligible children per farmworker using the following formula:

MSHS-eligible children nationally = Farmworker population X National average MSHS-eligible children per worker¹⁴

MSHS-eligible children regionally=Regional farmworker population X Regional average MSHS-eligible children per worker

The results of these calculations provide the estimates for the MSHS-eligible population in each geographic region. See Table 2.

¹⁴ The number of children per farmworker accounts for the double-counting of children with two farmworker parents.