



2012–2014

Behavioral Risk Factor Surveillance System

**Child
Asthma Call-back Survey**

**Analysis Guidance
Supplement**



**National
Asthma
Control
Program**

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Multiple Year (2012–2014)
Behavioral Risk Factor Surveillance System, Child Asthma Call-back Survey (ACBS)
Analysis Guidelines Supplement

The Child Asthma Call-back Survey (ACBS) is used as a follow-up survey to that of the Behavioral Risk Factor Surveillance System (BRFSS), in order to collect data about children who have ever been diagnosed with asthma. For participants to be eligible for the follow-up ACBS, the Random Child Selection and the Childhood Asthma Prevalence Modules must have already been completed on the BRFSS survey. If both a randomly selected child and adult have been diagnosed with asthma in a household, then only one of them is eligible, and would then participate in the respective Asthma Call-back Survey, via a 50/50 split.

An ACBS child state file must have a minimum of 75 completed child records in order to create a reliable single year child weight. For states with sufficient sample sizes (≥ 75), single-year data with weights are available at <https://www.cdc.gov/brfss/acbs/index.htm>. To get a sufficient sample size for analysis, the child ACBS for years 2012 to 2014 have been combined in a data file for public release. The number of responses for each grantee state by survey year is represented in Table A below. Only states with all three years of data (2012, 2013, and 2014) are included in the combined dataset.

The ACBS History and Analysis Guidance documents on the BRFSS ACBS website (<https://www.cdc.gov/brfss/acbs/index.htm>) include information pertinent to the child ACBS. The details highlighted in this supplementary document are included to assist data users in their analysis of the combined 2012–2014 Child ACBS data set.

Important ACBS Considerations

A. Data File and Record Issues

a. Questionnaire Changes in 2012

i. Section 5: Health Care Utilization

1. Recall period for the activity limitation question was changed from 12 months to 30 days. This variable title changed from **ACT_DAYS** to **ACT_DAYS30**.

ii. Section 8: Medications

1. Name for INH_MED #25 changed from Pulmicort Turbuhaler to Pulmicort Flexhaler
2. Three inhaler medication questions (ILP01, ILP02, and ILP07) were **deleted**
 - a. ILP01: “Are there 80, 100, or 200 puffs in the [MEDICINE FROM INH_MEDS SERIES] inhaler that you use?”
 - b. ILP02: “How long have you been taking [MEDICINE FROM INH_MEDS SERIES]? Would you say less than 6 months, 6 months to 1 year, or longer than 1 year?”
 - c. ILP07: “On average, how many puffs do you take each time you use [MEDICINE FROM INH_MEDS SERIES]?”
3. Response categories for inhaler medication question ILP03 were changed
 ILP03: “A spacer is a small attachment for an inhaler that makes it easier to use. Do you use a spacer with [MEDICINE FROM INH_MEDS SERIES]?”
 New categories:
 - (1) YES
 - (2) NO
 - (3) Medication is a dry powder inhaler or disk inhaler not a canister inhaler**
 - (4) Medication has a built-in spacer/does not need a spacer**
 - (7) DON’T KNOW
 - (9) REFUSED
4. Two changes on pills were made
 - a. PILLX was deleted: “How long have you been taking [MEDICATION LISTED IN PILLS_MD]? Would you say less than 6 months, 6 months to 1 year, or longer than 1 year.”
 - b. PILL01 was added: “In the past 3 months, did you take [MEDICATION LISTED IN PILLS_MD] on a regular schedule every day?”
5. Three questions on nebulizers were **added**
 - a. NEB01: “In the past 3 months, did you take [MEDICINE FROM NEB_ID SERIES] when you had an asthma episode or attack?”

- b. NEB02: “In the past 3 months, did you take [MEDICINE FROM NEB_ID SERIES] on a regular schedule everyday?”
- c. NEB03: “How many times per day or per week do you use [MEDICINE FROM NEB_ID SERIES]?”

b. Questionnaire Changes in 2013

i. Section 8: Medications

1. Inhaler medications Brethaire (INH_MEDS #10), Intal (INH_MEDS #18), and Tilade (INH_MEDS #29) were **deleted**, since discontinued
2. Inhaler medications Alvesco (INH_MEDS #43) and Dulera (INH_MEDS #44) were **added**
3. Nebulizer medications Combivent Inhalation Solution (NEB_MEDS #17) and Perforomist/Formoterol (NEB_MEDS #18) were **added**

B. Limitations of Data

- a. To analyze variables that have changed during the combined dataset years, it is necessary to recalculate the variable to reflect the changes. For 2013 medication changes, please contact the Asthma and Climate Health Branch for detailed instructions (asthmacallbackinfo@cdc.gov).

b. Subset to single-year data

Subsetting the 2012-2014 multiple year dataset by year is not recommended. The 2012–2014 multiple years dataset was created based on 3 years of the BRFSS estimated ever-diagnosed asthma population. The final weight was computed based on 3 years of the asthma population combined. The estimates from this dataset should reflect mid-point estimates for a period of 2012 to 2014. Final weight (**_CHILDWT_M_YEARS**) was not designed to subset the dataset by individual years.

C. Estimation procedures for statistical analysis

a. Record Weights

- i. The unweighted data represent the number of actual responses. The final child weight for multiple combined years 2012–2014 ACBS dataset is **_CHILDWT_M_YEARS**.

b. Calculated Variables

- i. The data for BRFSS variables are included with the Child ACBS dataset. A new variable for child race (**CHILD_RACE_M_YEARS**) has been calculated for the combined child dataset to account for differences in the race variable between individual years. A new variable for age (**CHILD_AGE_YEAR**) with imputed missing values has also been created for the combined dataset to address variable differences in child age between individual years. For reported child age, please use **MNTHDIFF** (child age in months).

c. Variances

- i. The Child ACBS uses a complex survey design, and therefore statistical software such as SAS, SUDAAN, Epi Info, SPSS and STATA, or other analytical packages must be used that can account for complex sample designs. Accordingly, the statistical code must specify “with replacement” (**WR**) and include stratum variable (**_STSTR**), primary sampling unit (**_PSU**), sample design survey year (**SURVEY_YEAR**), and record weight (**_CHILDWT_M_YEARS**). See sample code in Section D.

D. Sample code

```

/* SUDAAN Code for 3 Age Group */
PROC CROSSTAB DATA=ACBS_CHILD_12_14 DESIGN=WR;
  NEST SURVEY_YEAR _STSTR _PSU / NOSORTCK MISSUNIT PSULEV=3;
  WEIGHT _CHILDWT_M_YEARS;
  CLASS CAGE3CAT MGT_CLAS_CAT;
  TABLES CAGE3CAT*MGT_CLAS_CAT;
  TEST CHISQ;
OUTPUT / TABLECELL=DEFAULT FILENAME=CAGE3CAT_GROUP REPLACE;
RUN;

```

```

/* SAS Code for 3 age Group */
PROC SURVEYFREQ DATA =ACBS_CHILD_12_14 NOMCAR;
  STRATA SURVEY_YEAR _STSTR ;
  CLUSTER _PSU ;
  WEIGHT _CHILDWT_M_YEARS;
  TABLES CAGE3CAT * MGT_CLAS_CAT / ROW CL CHISQ ;
Run;

```

Table A. Child Asthma Call-back Sample Size by Year and State*

State	2012	2013	2014	Sample size
Connecticut	81	84	53	218
Hawaii	82	62	40	184
Kansas	98	136	54	288
Louisiana	57	26	18	101
Maine	55	42	42	139
Maryland	98	69	101	268
Massachusetts	53	16	17	86
Michigan	147	140	91	378
Mississippi	86	79	45	210
Missouri	53	47	41	141
Montana	65	81	42	188
Nebraska	170	93	129	392
New Hampshire	67	49	36	152
New Jersey	133	85	157	375
New Mexico	79	70	49	198
New York	55	37	24	116
Ohio	90	61	57	208
Oklahoma	50	65	52	167
Oregon	37	23	33	93
Pennsylvania	185	74	77	336
Rhode Island	35	41	39	115
Texas	92	91	118	301
Utah	128	144	174	446
Washington	88	80	66	234
West Virginia	35	63	47	145
Wisconsin	47	52	35	134
Total	2,166	1,810	1,637	5,613

*Only the states having records for all three years (2012, 2013, and 2014) are included in the data set.