



**2009**

**Behavioral Risk Factor Surveillance System**

**Asthma Call-Back Survey**

**Summary Data Quality Report**



**National  
Asthma  
Control  
Program**

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## 2009 Asthma Call-Back Survey (ACBS) Summary Data Quality Report

### Introduction

Procedures for interview disposition and response rates for the BRFSS Asthma Call-Back Survey (ACBS) follow usual BRFSS procedures; however, some additions and adaptations are required for the call-back survey. Disposition codes, disposition code categories, and response rates are discussed in the sections below. Figure one is a flow chart describing the eligibility paths BRFSS respondents with asthma follow through the ACBS process.

Because asthma characteristics vary by season, a seasonal analysis must take into account any state for which interviewing was not conducted throughout the year. States may have interrupted interviewing due to contract interruptions with their data collection company. In addition, some ACBS interviews are finalized in the first few months of the next calendar year.

Appendix A includes tables showing disposition code categories, response rates and interviews by month for each state participating in the ACBS each year. Appendix B includes formulae for the BRFSS response rates for comparison with formulae for the ACBS rates. More detail on BRFSS response rates and procedures can be found in the BRFSS Data Quality Report Handbook and the BRFSS Summary Data Quality Report for each survey year. Appendix C includes additional instruction on assigning the ACBS specific disposition codes.

### Disposition Codes

The usual BRFSS disposition codes are used for the ACBS. However, a few additional codes are needed to account for situations specific to a call-back survey. In the list below, disposition codes added for the ACBS are underlined and bolded. Detailed descriptions of the ACBS codes can be found in Appendix C.

The ACBS disposition codes are:

I. **Eligible, contacted: complete interview**

- 110 Complete
- 120 Partial complete

II. **Eligible, contacted: refusal or termination**

- 413** Refused to participate in the call-back during the BRFSS interview
- 210** Terminated within the questionnaire during the ACBS interview
- 211** Refused to allow combining ACBS responses with BRFSS responses
- 212** Refused to answer the "ever had asthma" question during the ACBS interview
- 220** Refused to begin the ACBS interview after contacted

**III. Eligible, lost to follow-up because unable to contact or communicate with the BRFSS respondent**

230	Selected respondent never reached or reached but did not begin interview during interviewing period
240	Selected respondent away from residence during the entire interviewing period
250	Language problem after respondent selection
260	Selected respondent physically or mentally unable to complete an interview during the entire interviewing period
270	Hang up or termination before respondent selection
280	Household contact after number of adults recorded but before respondent selection
305	Household members away from residence during entire interviewing period
<b>306</b>	Selected ACBS respondent no longer living in the BRFSS household
310	Hang-up or termination, known household
315	Household contact, eligibility undetermined
320	Language problem
325	Physical or mental impairment
330	Hang-up or termination, unknown if private residence
332	Contact, unknown if private residence
335	Telephone answering device, message confirming private residential status
345	Telephone answering device, unknown if private residence
360	No answer
365	Busy
505	Refusal: hang-up or termination
510	Appointment
515	Language problem
520	Physical or mental impairment
525	Answering machine, message confirming residential status
535	Answering machine, unknown if private residence
550	No answer
555	Busy

**IV. Eligible, lost to follow-up for technical reasons**

340	Telecommunication technological barrier, message confirming private residential status
350	Telecommunication technological barrier, unknown if private residence
355	Telephone number no longer in service or changed
370	On never call list
420	Not a private residence
430	Dedicated fax/data/modem line with no human contact
435	Cellular telephone
440	Fast busy
450	Non-working/disconnected number
530	Technological barrier other than answering machine, message confirming residential status
540	Technological barrier other than answering machine, unknown if private residence
545	Phone number temporarily out of service
575	Circuit busy
560	Fax/data/modem
565	Fast busy
570	Possible non-working number
580	Null attempt

585	Requires supervisor attention
599	Missing disposition code

## V. Ineligible

<b><u>291</u></b>	No parent or legal guardian in the household (child ineligible)
405	Out-of-state
<b><u>410</u></b>	Household, no eligible respondent (respondent does not have asthma)
<b><u>411</u></b>	Selected respondent not eligible for follow-up
<b><u>412</u></b>	Transferred from BRFSS but not attempted (excluded by state)
<b><u>470</u></b>	Misdiagnosed asthma in respondent (2008 and later)
<b><u>480</u></b>	Not recruited for call-back at BRFSS interview (excluded by state)
<b><u>490</u></b>	Random child/adult selection: adult ineligible, child selected
<b><u>491</u></b>	Random child/adult selection: child ineligible, adult selected

### Definitions and Labels for Disposition Code Categories

Because the ACBS is a call-back interview, all those identified with asthma at the BRFSS interview are, with a few notable exceptions, eligible for the call-back survey. The ACBS eligibility flow chart (Figure 1) summarizes how BRFSS respondents are categorized for ACBS response rate calculation.

ACBS interviews are considered complete (COIN) if the respondents finish the entire interview or if they complete through section 8 of the ACBS interview. ACBS interviews are refusals if the respondent refuses participation at either the BRFSS interview or at the time of the ACBS interview. Terminations are interviews that start but are terminated during the interview.

The disposition codes that relate to contact problems or technology issues are considered “eligible, but lost to follow-up.” If they had been contacted, a small proportion of those eligible but lost to follow-up might actually be ineligible. All temporary disposition codes (numbered 500 or higher) that should have been resolved but were not are treated as comparable 400 level codes.

BRFSS respondents with asthma who are considered ineligible for the ACBS include those who are not asked to participate at the time of the BRFSS interview. Each year between 6% and 10% of those technically eligible are not asked to participate in the call-back survey. Respondents might not be asked for several reasons:

- States with split samples may only include respondents in the call-back if they are in specified splits of the BRFSS sample. Counts for states that exclude split-sample respondents are excluded from the following tables and rate calculations.
- The BRFSS respondent may partially complete the BRFSS interview but terminate before the call-back request.
- Specific state BRFSS call-back contracts may limit the number of call-back interviews due to budgetary constraints.
- States may stop conducting call-back interviews during contract negotiations.

BRFSS respondents with asthma who are asked to participate in the ACBS but are later classified as ineligible include:

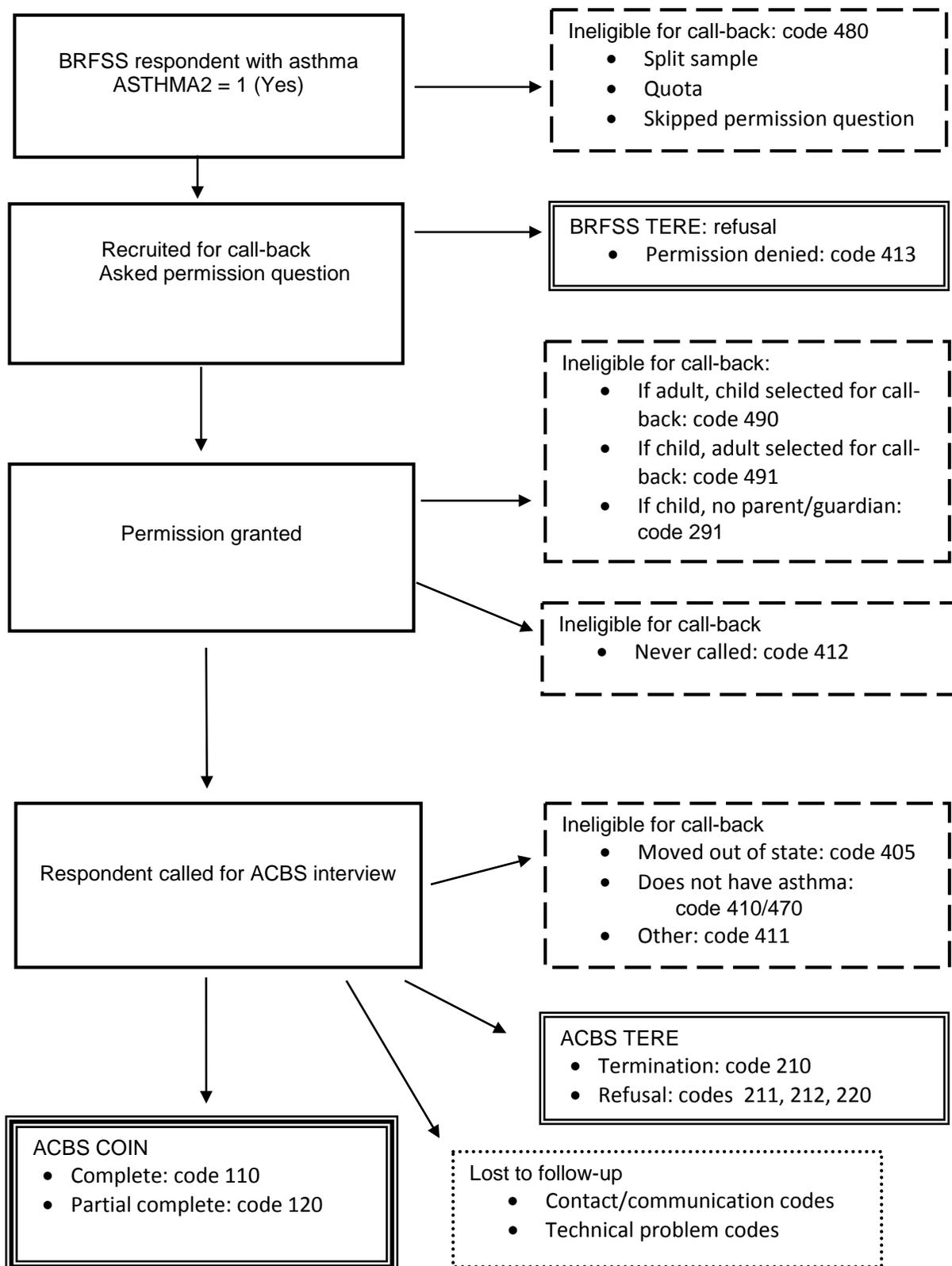
- respondents in households where both the selected adult and selected child in the household have asthma. When both have asthma, only one is eligible for the ACBS.
- respondents who move out-of-state between the BRFSS interview and the ACBS interview

- respondents who indicate, at the time of the ACBS interview, that the reported diagnosis of asthma was an error
- child respondents for whom the adult BRFSS respondent is not the child's parent or guardian
- some respondents in states that have reached a pre-specified quota for ACBS interviews

The following table indicates how disposition codes are grouped into response rate categories shown in the eligibility flow chart (Figure 1):

Category	Disposition Codes	Notes
Eligible COIN Completed interview	110, 120	Through section 8
Eligible TERE Terminations and refusals	<b><u>413</u></b>	At BRFSS interview
Eligible TERE Terminations and refusals	210, <b><u>211</u></b> , <b><u>212</u></b> , 220	At ACBS
Eligible, lost to follow-up Not interviewed	230, 240, 250, 260, 270, 280, 305, <b><u>306</u></b> , 310, 315, 320, 325, 330, 332, 335, 345, 360, 365, 505, 510, 515, 520, 525, 535, 550, 555	Unable to contact or communicate with eligible respondent
Eligible, lost to follow-up Not interviewed	340, 350, 355, 370, 420, 430, 435, 440, 450, 530, 540, 545, 560, 565, 570, 575, 580, 585, 599	Technical problems
Ineligible	<b><u>291</u></b> , <b><u>480</u></b> , <b><u>490</u></b> , <b><u>491</u></b>	At BRFSS interview
Ineligible	405, <b><u>410</u></b> , <b><u>411</u></b> , <b><u>470</u></b>	At ACBS
Ineligible	<b><u>412</u></b>	No ACBS attempt

**Figure 1: ACBS Eligibility Flow Chart:**



## ACBS Response Rates

The ACBS Interview Completion Rate is the proportion of completed interviews among eligible respondents who are actually contacted for and started the ACBS interview. Those who refuse at the initial BRFSS interview (413), those ineligible, and those never contacted are excluded from the denominator. This rate is based on actual contacts with the eligible respondent at the time of the call-back interview. The numerator of the rate includes completed interviews (COIN). The denominator of the rate includes completed interviews (COIN) plus the number contacted later for the ACBS interview who refuse or terminate the interview (disposition codes 210, 211, 212, and 220).

The ACBS Cooperation Rate is the proportion of completed interviews among all eligible respondents who are recruited and actually contacted for the ACBS interview. Eligible respondents who refuse the call-back at the time of the BRFSS interview are included. Non-contacts are excluded from the denominator, but contacts with communication problems specific to the respondent with asthma are included. The numerator of the rate includes completed interviews (COIN). The denominator of the rate includes completed interviews (COIN) plus refusals and terminations (TERE) plus the number of non-interviews that involved language problems with the respondent with asthma (250) or physical/mental impairment of the respondent with asthma (260). A Cooperation Rate below 65 percent may indicate some problem with interviewing techniques

The Refusal Rate is the percentage of all eligible respondents that refuse to be interviewed or terminate an interview early in the questionnaire. The numerator includes terminations and refusals (TERE). The denominator is the same as for the CASRO rate (below). The denominator includes completed interviews (COIN), terminations and refusals (TERE), and a proportion of those eligible but lost to follow-up. The proportion represents an estimate of the number of those lost to follow-up who would be expected to remain eligible if they had been contacted. The proportion of cases lost to follow-up that are estimated to be eligible is the same as the proportion of cases not lost to follow-up that are eligible. A Refusal Rate above 35 percent indicates some problem with interviewing techniques.

The Council of American Survey Research Organizations (CASRO) rate is a measure of respondent cooperation and is generally defined as the proportion of all eligible respondents in the sample for whom an interview has been completed. The numerator of the CASRO rate includes completed interviews (COIN). The denominator includes completed interviews (COIN), terminations and refusals (TERE), and a proportion of those eligible, but lost to follow-up. The proportion represents an estimate of the number of those lost to follow-up who would be expected to remain eligible if they had been contacted. The proportion of cases lost to follow-up that are estimated to be eligible is the same as the proportion of cases not lost to follow-up that are eligible. A CASRO rate below 40% should be cause for a review of data collection practices that could impact it, especially sample management and interviewer recruitment, retention, training, supervision, and monitoring.

Response rate formulae for the ACBS are specified below. Response rate tables for the ACBS, including response rates for each state participating in the ACBS, can be found in Appendix A. Response rate formulae for the BRFSS can be found in Appendix B

## Response Rate Formulae for the ACBS

### ACBS Interview Completion Rate:

$$\frac{110 + 120}{110 + 120 + 210 + \underline{211} + \underline{212} + 220}$$

### ACBS Cooperation Rate:

$$\frac{110 + 120}{110 + 120 + 210 + \underline{211} + \underline{212} + 220 + \underline{413} + 250 + 260}$$

### ACBS CASRO Rate:

$$\frac{110 + 120}{[110 + 120 + 210 + \underline{211} + \underline{212} + 220 + \underline{413}] + P * [\text{Eligible lost}]}$$

### ACBS Refusal Rate:

$$\frac{210 + \underline{211} + \underline{212} + 220 + \underline{413}}{[110 + 120 + 210 + \underline{211} + \underline{212} + 220 + \underline{413}] + P * [\text{Eligible lost}]}$$

Where:

P (Proportion) = (COIN + ACBS TERE) / (COIN + ACBS TERE + ACBS Ineligible)

P = [(110+120) + (210+211+212+220)] / [(110+120) + (210+211+212+220) + (405+410+411+470)]

Eligible lost = 230, 240, 250, 260, 270, 280, 305, **306**, 310, 315, 320, 325, 330, 332, 335, 345, 360, 365, 370, 505, 510, 515, 520, 525, 535, 550, 555, 340, 350, 355, 370, 420, 430, 435, 440, 450, 530, 540, 545, 560, 565, 570, 575, 580, 585, 599

## **Appendix A:**

### **List of Tables in the 2009 BRFSS ACBS Summary Data Quality Report**

Table 1.1 2009 ACBS Disposition Categories by State: Adults

Table 1.2 2009 ACBS Disposition Categories by State: Children

Table 2.1 2009 ACBS Response Rates by State: Adults

Table 2.2 2009 ACBS Response Rates by State: Children

Table 3.1 2009 ACBS Completed Interviews by State and Month: Adults

Table 3.2 2009 ACBS Completed Interviews by State and Month: Children

Table 1.1 ACBS 2009 Disposition Categories by State: Adults

STATE	BRFSS asthma respondent	Ineligible		Recruited for call-back				Ineligible		Total called	Eligible				Ineligible
		Not recruited		Refused BRFSS TERE		Agreed		Child selected	Never called		COIN	ACBS TERE	Lost to follow-up		
												Contact	Technical		
ARIZONA	780	388	49.7%	99	12.7%	293	37.6%	10	24	259	166	68	15	10	0
CALIFORNIA	2,399	541	22.6%	779	32.5%	1,079	45.0%	0	52	1,027	707	108	27	145	40
CONNECTICUT	868	47	5.4%	198	22.8%	623	71.8%	30	4	589	355	135	70	29	0
DISTRICT OF COLUMBIA	576	63	10.9%	139	24.1%	374	64.9%	13	3	358	206	101	44	7	0
FLORIDA*	1,483	129	8.7%	277	18.7%	1,077	72.6%	0	0	1,077	588	41	404	42	2
GEORGIA	639	64	10.0%	125	19.6%	450	70.4%	17	0	433	259	18	135	21	0
HAWAII	1,024	68	6.6%	334	32.6%	622	60.7%	37	4	581	414	22	99	7	39
ILLINOIS	727	32	4.4%	169	23.2%	526	72.4%	22	110	394	280	14	85	7	8
INDIANA	1,193	138	11.6%	263	22.0%	792	66.4%	29	5	758	523	63	150	16	6
IOWA	609	42	6.9%	93	15.3%	474	77.8%	7	1	466	339	29	78	7	13
KANSAS	2,093	156	7.5%	326	15.6%	1,611	77.0%	52	7	1,552	1136	25	382	9	0
LOUISIANA	951	62	6.5%	252	26.5%	637	67.0%	17	66	554	285	31	174	55	9
MAINE*	566	28	4.9%	110	19.4%	428	75.6%	14	1	413	319	34	54	1	5
MARYLAND	1,114	71	6.4%	237	21.3%	806	72.4%	46	4	756	389	203	114	50	0
MASSACHUSETTS*	903	100	11.1%	156	17.3%	647	71.7%	35	34	578	317	15	230	16	0
MICHIGAN	1,352	76	5.6%	385	28.5%	891	65.9%	38	1	852	669	47	122	4	10
MONTANA	945	48	5.1%	246	26.0%	651	68.9%	16	2	633	445	43	125	8	12
NEBRASKA	1,605	91	5.7%	406	25.3%	1,108	69.0%	34	4	1,070	754	69	210	9	28
NEVADA*	513	40	7.8%	131	25.5%	342	66.7%	0	59	283	178	7	85	13	0
NEW HAMPSHIRE*	882	35	4.0%	240	27.2%	607	68.8%	0	1	606	350	177	47	32	0
NEW JERSEY	1,487	122	8.2%	295	19.8%	1,070	72.0%	51	1	1,018	508	32	454	22	2
NEW MEXICO*	785	74	9.4%	221	28.2%	490	62.4%	26	38	426	302	14	92	11	7
NEW YORK	959	65	6.8%	190	19.8%	704	73.4%	24	1	679	438	74	153	6	8
NORTH DAKOTA	520	32	6.2%	134	25.8%	354	68.1%	9	5	340	253	32	47	4	4
OHIO	1,294	417	32.2%	183	14.1%	694	53.6%	31	0	663	387	87	157	26	6
OKLAHOMA	1,115	49	4.4%	298	26.7%	768	68.9%	14	64	690	392	40	197	44	17
OREGON	670	43	6.4%	73	10.9%	554	82.7%	23	61	470	224	2	240	4	0
RHODE ISLAND	999	40	4.0%	234	23.4%	725	72.6%	32	4	689	403	174	90	22	0
TEXAS	1,497	131	8.8%	292	19.5%	1,074	71.7%	38	6	1,030	691	114	198	19	8
UTAH	1,329	59	4.4%	314	23.6%	956	71.9%	29	13	914	662	44	172	12	24
VERMONT	918	65	7.1%	189	20.6%	664	72.3%	33	12	619	469	42	98	4	6
VIRGINIA	635	40	6.3%	136	21.4%	459	72.3%	18	0	441	258	19	143	19	2
WASHINGTON*	3,064	158	5.2%	368	12.0%	2,538	82.8%	138	1,381	1,019	769	23	157	53	17
WEST VIRGINIA	577	5	0.9%	88	15.3%	484	83.9%	17	3	464	319	9	108	12	16
WISCONSIN	555	57	10.3%	79	14.2%	419	75.5%	7	10	402	289	15	79	16	3
PUERTO RICO	614	15	2.4%	64	10.4%	535	87.1%	32	6	497	360	10	88	30	9
<b>36 AREA TOTAL</b>	<b>38,240</b>	<b>3,591</b>	<b>9.4%</b>	<b>8,123</b>	<b>21.2%</b>	<b>26,526</b>	<b>69.4%</b>	<b>939</b>	<b>1,987</b>	<b>23,600</b>	<b>15,403</b>	<b>1,981</b>	<b>5,123</b>	<b>792</b>	<b>301</b>

Table 1.2 ACBS 2009 Disposition Categories by State: Children

STATE	BRFSS asthma respondent	Ineligible Not recruited		Recruited for call-back				Ineligible		Total called	Eligible				Ineligible
				Refused BRFSS TERE		Agreed		Adult selected <sup>1</sup>	Never called		COIN	ACBS TERE	Lost to follow-up		
													Contact	Technical	
ARIZONA*	99	0	0.0%	25	25.3%	74	74.7%	8	14	52	25	18	4	3	2
CONNECTICUT	284	0	0.0%	64	22.5%	220	77.5%	31	5	184	97	44	31	12	0
DISTRICT OF COLUMBIA*	133	8	6.0%	26	19.5%	99	74.4%	14	7	78	29	35	11	3	0
GEORGIA	245	3	1.2%	38	15.5%	204	83.3%	12	1	191	103	8	74	5	1
HAWAII	368	38	10.3%	92	25.0%	238	64.7%	50	4	184	116	1	54	1	12
ILLINOIS	226	18	8.0%	32	14.2%	176	77.9%	16	36	124	77	4	36	4	3
INDIANA	347	47	13.5%	73	21.0%	227	65.4%	45	0	182	107	25	42	8	0
IOWA*	119	9	7.6%	18	15.1%	92	77.3%	12	1	79	63	2	12	1	1
KANSAS	657	75	11.4%	61	9.3%	521	79.3%	79	28	414	279	7	121	7	0
LOUISIANA	344	48	14.0%	70	20.3%	226	65.7%	34	14	178	88	8	59	19	1
MAINE**	156	15	9.6%	23	14.7%	118	75.6%	17	0	101	81	8	12	0	0
MARYLAND	410	0	0.0%	64	15.6%	346	84.4%	50	13	283	134	73	69	7	0
MASSACHUSETTS**	241	2	0.8%	33	13.7%	206	85.5%	36	11	159	94	3	56	6	0
MICHIGAN	300	4	1.3%	81	27.0%	215	71.7%	30	0	185	133	7	30	3	3
MONTANA	206	26	12.6%	48	23.3%	132	64.1%	24	2	106	75	4	25	0	2
NEBRASKA	355	25	7.0%	75	21.1%	255	71.8%	32	3	220	154	14	42	3	7
NEW JERSEY	577	13	2.3%	88	15.3%	476	82.5%	64	2	410	190	8	194	15	3
NEW MEXICO* **	207	25	12.1%	44	21.3%	138	66.7%	21	11	106	68	5	32	0	1
NEW YORK	267	19	7.1%	46	17.2%	202	75.7%	34	4	164	92	14	54	2	2
NORTH DAKOTA*	129	13	10.1%	24	18.6%	92	71.3%	17	1	74	54	3	17	0	0
OHIO	227	0	0.0%	44	19.4%	183	80.6%	26	0	157	78	21	54	3	1
OKLAHOMA* **	144	16	11.1%	23	16.0%	105	72.9%	16	2	87	36	3	35	11	2
OREGON* **	133	1	0.8%	12	9.0%	120	90.2%	2	19	99	49	0	49	1	0
RHODE ISLAND	290	2	0.7%	64	22.1%	224	77.2%	42	8	174	79	50	29	16	0
TEXAS	492	73	14.8%	67	13.6%	352	71.5%	46	4	302	169	49	68	11	5
UTAH	458	39	8.5%	105	22.9%	314	68.6%	53	13	248	168	17	55	3	4
VERMONT	253	30	11.9%	38	15.0%	185	73.1%	28	1	156	121	9	18	3	5
VIRGINIA*	187	1	0.5%	26	13.9%	160	85.6%	21	1	138	72	7	53	6	0
WASHINGTON	629	11	1.7%	75	11.9%	543	86.3%	0	60	483	304	27	92	37	23
WEST VIRGINIA*	143	14	9.8%	8	5.6%	121	84.6%	20	1	100	71	5	21	2	1
WISCONSIN*	104	15	14.4%	16	15.4%	73	70.2%	11	3	59	35	5	15	2	2
PUERTO RICO	256	33	12.9%	12	4.7%	211	82.4%	38	5	168	102	3	29	28	6
32 AREA TOTAL	8,986	623	6.9%	1,515	16.9%	6,848	76.2%	929	274	5,645	3,343	487	1,493	222	87
22 WEIGHTED AREA TOTAL	7,588	521	6.9%	1,293	17.0%	5,774	76.1%	787	214	4,773	2,841	404	1,244	193	78

Table 2.1 ACBS 2009 Response Rates by State: Adults

STATE	Completion Rate	Cooperation Rate	Refusal Rate	CASRO Rate
ARIZONA	70.9%	49.3%	46.7%	46.4%
CALIFORNIA	86.8%	44.3%	50.5%	40.2%
CONNECTICUT	72.5%	51.4%	42.3%	45.1%
DISTRICT OF COLUMBIA	67.1%	46.0%	48.3%	41.5%
FLORIDA	93.5%	64.9%	23.6%	43.5%
GEORGIA	93.5%	64.4%	25.6%	46.4%
HAWAII	95.0%	53.7%	41.1%	47.7%
ILLINOIS	95.2%	60.3%	33.1%	50.7%
INDIANA	89.3%	60.7%	32.2%	51.6%
IOWA	92.1%	73.5%	22.5%	62.4%
KANSAS	97.9%	76.3%	18.7%	60.5%
LOUISIANA	90.2%	50.1%	35.8%	36.1%
MAINE	90.4%	68.0%	27.8%	61.7%
MARYLAND	65.7%	46.9%	44.3%	39.2%
MASSACHUSETTS	95.5%	65.0%	23.3%	43.2%
MICHIGAN	93.4%	60.5%	35.3%	54.6%
MONTANA	91.2%	60.5%	33.5%	51.5%
NEBRASKA	91.6%	61.2%	33.0%	52.3%
NEVADA	96.2%	56.3%	33.3%	43.0%
NEW HAMPSHIRE	66.4%	45.5%	49.3%	41.4%
NEW JERSEY	94.1%	60.8%	25.0%	38.8%
NEW MEXICO	95.6%	55.9%	36.9%	47.4%
NEW YORK	85.6%	61.6%	30.8%	51.0%
NORTH DAKOTA	88.8%	59.7%	35.4%	53.9%
OHIO	81.7%	58.9%	32.2%	46.2%
OKLAHOMA	90.7%	53.7%	35.1%	40.8%
OREGON	99.1%	74.9%	13.8%	41.3%
RHODE ISLAND	69.8%	49.6%	44.2%	43.7%
TEXAS	85.8%	62.4%	31.0%	52.7%
UTAH	93.8%	64.8%	29.9%	55.3%
VERMONT	91.8%	66.2%	28.9%	58.6%
VIRGINIA	93.1%	62.5%	27.0%	45.0%
WASHINGTON	97.1%	65.8%	28.6%	56.3%
WEST VIRGINIA	97.3%	76.1%	18.3%	60.1%
WISCONSIN	95.1%	75.3%	19.7%	60.6%
PUERTO RICO	97.3%	83.0%	13.5%	65.6%
<b>36 AREA TOTAL</b>	<b>88.6%</b>	<b>60.2%</b>	<b>32.3%</b>	<b>49.2%</b>
<b>Median</b>	<b>92.0%</b>	<b>60.8%</b>	<b>32.2%</b>	<b>47.5%</b>

Table 2.2 ACBS 2009 Response Rates by State: Children

STATE	Completion Rate	Cooperation Rate	Refusal Rate	CASRO Rate
ARIZONA*	58.1%	36.2%	57.6%	33.5%
CONNECTICUT	68.8%	46.9%	43.6%	39.1%
DISTRICT OF COLUMBIA*	45.3%	32.2%	58.7%	27.9%
GEORGIA	92.8%	69.1%	20.2%	45.3%
HAWAII	99.2%	55.5%	35.9%	44.8%
ILLINOIS	95.1%	68.1%	23.8%	50.8%
INDIANA	81.1%	52.2%	38.4%	42.0%
IOWA*	96.9%	75.9%	20.9%	65.8%
KANSAS	97.6%	79.9%	14.3%	58.7%
LOUISIANA	91.7%	53.0%	32.1%	36.2%
MAINE	91.0%	72.3%	25.0%	65.3%
MARYLAND	64.7%	49.5%	39.5%	38.6%
MASSACHUSETTS	96.9%	72.3%	18.8%	49.0%
MICHIGAN	95.0%	60.2%	34.7%	52.5%
MONTANA	94.9%	59.1%	34.4%	49.5%
NEBRASKA	91.7%	62.9%	31.1%	53.8%
NEW JERSEY	96.0%	66.4%	19.5%	38.6%
NEW MEXICO*	93.2%	57.6%	33.0%	45.8%
NEW YORK	86.8%	60.5%	29.0%	44.5%
NORTH DAKOTA*	94.7%	66.7%	27.6%	55.1%
OHIO	78.8%	54.6%	32.6%	39.1%
OKLAHOMA*	92.3%	58.1%	24.6%	34.0%
OREGON*	100.0%	80.3%	10.8%	44.1%
RHODE ISLAND	61.2%	40.5%	47.9%	33.2%
TEXAS	77.5%	59.3%	32.0%	46.7%
UTAH	90.8%	57.9%	35.2%	48.5%
VERMONT	93.1%	72.0%	25.0%	64.3%
VIRGINIA*	91.1%	68.6%	20.1%	43.9%
WASHINGTON	91.8%	74.5%	19.4%	57.7%
WEST VIRGINIA*	93.4%	84.5%	12.2%	66.5%
WISCONSIN*	87.5%	62.5%	29.1%	48.5%
PUERTO RICO	98.3%	81.2%	12.7%	54.6%
32 AREA TOTAL	87.3%	62.4%	28.5%	47.6%
32 AREA MEDIAN	92.1%	61.5%	29.0%	46.2%
22 WEIGHTED AREA TOTAL	87.6%	62.5%	28.6%	47.8%
22 WEIGHTED AREA MEDIAN	91.8%	60.4%	31.6%	47.6%

\* Child data for Arizona, the District of Columbia, Iowa, New Mexico, North Dakota, Oklahoma, Oregon, Virginia, West Virginia, and Wisconsin, are not included in the file because there were too few records (<75) to produce reliable weights.

Table 3.1 2009 ACBS Completed Interviews by State and Month: Adults

STATE	2009												2010			Total
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
ARIZONA	.	.	.	.	.	.	20	28	19	40	53	6	.	.	.	166
CALIFORNIA	.	16	86	88	78	64	54	74	62	75	65	45	.	.	.	707
CONNECTICUT	20	32	38	15	25	33	25	23	15	38	48	43	.	.	.	355
DISTRICT OF COLUMBIA	.	1	45	9	28	15	19	13	19	16	25	16	.	.	.	206
FLORIDA	20	77	99	52	46	47	41	40	45	54	41	24	2	.	.	588
GEORGIA	7	39	27	21	34	20	19	13	23	20	23	13	.	.	.	259
HAWAII	.	.	21	99	40	28	25	33	24	28	17	79	20	.	.	414
ILLINOIS	.	.	.	.	.	.	.	74	25	43	73	57	8	.	.	280
INDIANA	41	47	29	34	47	49	39	52	60	53	32	38	2	.	.	523
IOWA	.	31	32	65	22	8	17	30	37	27	31	31	8	.	.	339
KANSAS	82	107	99	92	73	88	88	123	97	104	97	76	8	.	2	1,136
LOUISIANA	.	.	18	15	9	32	31	43	35	9	33	14	24	22	.	285
MAINE	28	29	30	24	23	26	33	27	25	34	22	17	1	.	.	319
MARYLAND	21	52	53	21	30	25	27	26	22	32	47	33	.	.	.	389
MASSACHUSETTS	7	41	43	35	19	25	23	24	37	32	25	6	.	.	.	317
MICHIGAN	.	47	67	73	67	62	59	80	35	41	66	54	18	.	.	669
MONTANA	.	30	48	33	37	48	43	35	30	30	62	43	6	.	.	445
NEBRASKA	.	39	79	67	47	84	73	48	73	66	115	50	13	.	.	754
NEVADA	.	13	13	13	13	9	16	20	19	17	23	.	22	.	.	178
NEW HAMPSHIRE	10	68	31	17	21	17	39	37	29	27	30	24	.	.	.	350
NEW JERSEY	.	65	63	40	46	45	54	42	53	46	27	25	2	.	.	508
NEW MEXICO	.	18	32	34	24	28	5	15	29	33	24	30	29	1	.	302
NEW YORK	29	61	42	26	35	38	34	33	35	55	24	26	.	.	.	438
NORTH DAKOTA	23	27	26	18	22	25	17	18	11	18	23	24	1	.	.	253
OHIO	.	47	46	2	38	33	11	13	93	45	27	31	1	.	.	387
OKLAHOMA	.	42	48	.	33	31	35	20	36	38	11	54	13	31	.	392
OREGON	.	.	.	14	15	29	9	15	25	42	57	17	1	.	.	224
RHODE ISLAND	11	47	56	31	24	43	34	34	26	42	29	26	.	.	.	403
TEXAS	53	50	52	54	64	81	59	65	54	58	51	47	3	.	.	691
UTAH	.	41	71	67	89	61	67	43	56	31	35	30	66	5	.	662
VERMONT	34	69	48	35	34	29	35	26	25	50	39	43	2	.	.	469
VIRGINIA	.	54	17	22	31	16	18	16	21	18	24	20	1	.	.	258
WASHINGTON	56	72	126	41	55	68	42	82	68	34	48	55	22	.	.	769
WEST VIRGINIA	.	34	25	22	23	25	30	22	22	23	33	26	34	.	.	319
WISCONSIN	.	.	60	30	25	38	26	25	26	20	12	14	12	1	.	289
PUERTO RICO	.	.	10	91	.	.	76	70	17	27	47	22	.	.	.	360
36 AREA TOTAL	442	1,296	1,580	1,300	1,217	1,270	1,243	1,382	1,328	1,366	1,439	1,159	319	60	2	15,403

Table 3.2 2009 ACBS Completed Interviews by State and Month: Children

STATE	2009												2010				Total
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
ARIZONA*	.	.	.	.	.	.	1	2	3	8	9	2	.	.	.	.	25
CONNECTICUT	.	9	14	6	5	6	7	8	7	8	17	10	.	.	.	.	97
DISTRICT OF COLUMBIA*	.	.	5	1	6	2	1	2	3	3	3	3	.	.	.	.	29
GEORGIA	.	7	26	16	11	10	6	5	10	5	2	4	1	.	.	.	103
HAWAII	.	.	7	19	15	9	9	5	.	7	8	27	10	.	.	.	116
ILLINOIS	.	.	.	.	.	.	.	18	17	9	26	7	.	.	.	.	77
INDIANA	5	11	7	10	13	8	14	9	7	8	9	6	.	.	.	.	107
IOWA*	.	6	8	8	6	1	1	6	3	6	7	9	2	.	.	.	63
KANSAS	16	27	47	13	17	10	12	34	25	23	28	26	.	.	.	1	279
LOUISIANA	.	.	11	3	3	6	7	15	15	3	9	8	3	5	.	.	88
MAINE	4	9	6	5	5	5	12	6	10	7	8	4	.	.	.	.	81
MARYLAND	2	19	12	7	14	16	12	14	6	11	9	12	.	.	.	.	134
MASSACHUSETTS	.	18	12	5	7	10	9	9	8	7	6	3	.	.	.	.	94
MICHIGAN	.	7	18	18	19	8	10	12	10	6	7	14	4	.	.	.	133
MONTANA	.	6	8	8	4	6	5	6	7	3	13	7	2	.	.	.	75
NEBRASKA	.	8	22	13	8	16	12	4	13	20	19	15	4	.	.	.	154
NEW JERSEY	.	12	42	13	17	18	11	15	21	14	13	13	1	.	.	.	190
NEW MEXICO*	.	.	9	4	11	7	2	7	4	7	8	4	5	.	.	.	68
NEW YORK	5	10	8	6	7	9	7	8	10	4	10	8	.	.	.	.	92
NORTH DAKOTA*	4	3	6	8	8	2	3	4	3	4	5	4	.	.	.	.	54
OHIO	.	8	14	2	4	7	1	5	17	1	9	9	1	.	.	.	78
OKLAHOMA*	.	1	4	2	4	2	4	1	2	2	1	4	2	7	.	.	36
OREGON*	.	.	.	.	2	3	2	2	5	6	19	10	.	.	.	.	49
RHODE ISLAND	.	17	8	8	8	6	6	5	4	7	7	3	.	.	.	.	79
TEXAS	13	12	17	17	25	15	17	13	11	14	7	8	.	.	.	.	169
UTAH	.	.	22	15	24	24	25	14	7	7	10	12	8	.	.	.	168
VERMONT	4	14	11	12	10	9	6	14	8	15	4	13	1	.	.	.	121
VIRGINIA*	.	6	20	3	2	11	7	5	4	8	4	2	.	.	.	.	72
WASHINGTON	21	45	22	26	28	26	9	26	22	33	31	15	.	.	.	.	304
WEST VIRGINIA*	.	9	10	10	3	5	3	5	5	6	5	4	6	.	.	.	71
WISCONSIN*	.	.	5	3	4	5	7	2	2	3	1	2	.	.	1	.	35
PUERTO RICO	.	.	.	.	.	.	.	.	.	22	75	5	.	.	.	.	102
32 AREA TOTAL	74	264	401	261	290	262	228	281	269	287	389	273	50	12	1	1	3,343
22 WEIGHTED AREA TOTAL	70	239	334	222	244	224	197	245	235	234	327	229	35	5	0	1	2,841

\* Child data for Arizona, the District of Columbia, Iowa, New Mexico, North Dakota, Oklahoma, Oregon, Virginia, West Virginia, and Wisconsin are not included in the file because there were too few records (<75) to produce reliable weights.

## Appendix B: BRFSS Response Rate Formulae

### BRFSS CASRO Response Rate Formula

Completes = Completed or Partially Completed Interviews

$$\text{Completes} = (110+120+(210 \times .32))$$

Eligible=All respondents with known eligibility status categorized as eligible

$$\text{Eligible} = (110+120+210+220+230+240+250+260+270+280)$$

Ineligible= All respondents with known eligibility status categorized as ineligible

$$\text{Ineligible} = (405+410+420+430+435+440+450)$$

Unknown=All respondents with unknown eligibility status

$$\text{Unknown} = (305+310+315+320+325+330+332+335+340+345+350+355+360+365+370)$$

UNKNDNOM=Unknown respondents added to the denominator

$$\text{UNKNDNOM} = (\text{Eligible}/(\text{Eligible} + \text{Ineligible})) \times \text{Unknown}$$

$$\text{CASRO} = (\text{Completes} / (\text{Eligible} + \text{UNKNDNOM}))$$

### BRFSS Overall Response Rate Formula

Completes = Completed or Partially Completed Interviews

$$\text{Completes} = (110+120+(210 \times .32))$$

$$\text{Break-offs and Refusals} = ((210 \times .68)+220)$$

$$\text{Known Households} = (230+240+250+260+270+280+305+310+315+335)$$

$$\text{Ineligible Households} = 410$$

$$\text{All Likely Households} = (345+350+320+325+330+332+340+370+355)$$

$$\text{Households} = (\text{Known Households} + \text{Ineligible Households} + \text{Completes} + \text{Break-offs and Refusals} + (.90 \times \text{All Likely Households}))$$

$$\text{Eligible Households} = (.98 \times \text{Households})$$

$$\text{Overall Response Rate} = (\text{Completes}/\text{Eligible Households})$$

### BRFSS Cooperation Rate Formula

Completes = Completed or Partially Completed Interviews

$$\text{Completes} = (110+120+(210 \times .32))$$

$$\text{Break-offs and Refusals} = ((210 \times .68)+220)$$

$$\text{Cooperation Rate} = (\text{Completes}/(\text{Completes} + \text{Break-offs and Refusals} + 250 + 260))$$

## Appendix C: Instructions for Assigning Additional ACBS Disposition Codes

Following are descriptions of the ACBS disposition codes adapted from standard BRFSS disposition codes and the ACBS disposition codes added to the standard set of BRFSS disposition codes. For detailed definitions for the standard BRFSS disposition codes see the Data Quality Handbook for each survey year (

### I. Eligible, contacted: complete interview

- 110 Complete  
*Definition:* Respondent completes the ACBS interview through the last question.
- 120 Partial complete  
*Definition:* Respondent completes the ACBS interview at least through Section 8 (medications).

### II. Eligible, contacted: refusal

- 210 Terminated within the questionnaire during the ACBS interview  
*Definition:* If the respondent is contacted for the ACBS and terminates after the interview begins (section 3) but before completing section 8, then record is considered incomplete and is assigned disposition code 210.
- 211 Refused to allow combining ACBS responses with BRFSS responses  
*Definition:* Some states require that the respondent provide active approval to combine their responses from the initial BRFSS interview with their responses from the ACBS interview. This approval may be requested at either the initial BRFSS interview or at the beginning of the ACBS interview. If the respondent does not approve combining data from the two interviews, the record is assigned disposition code 211.
- 212 Refused to answer the “ever had asthma” question during the ACBS interview  
*Definition:* The selected respondent is contacted for the ACBS interview but refuses to answer the initial asthma question. If the respondent answers "don't know" or "refused" to the ACBS question EVER-ASTH (2.1) “Have you ever been told by a doctor or other health professional that (you have/sample child has) asthma?”, then the record is assigned code 212.
- 220 Refused to begin the ACBS interview after contacted  
*Definition:* If the selected respondent is contacted for the ACBS interview but refuses to begin the interview, then the record is assigned code 220.
- 413 Refused to participate in the call-back during the BRFSS interview  
*Definition:* During the BRFSS interview, respondents who indicate they have ever been told by a doctor that they have asthma are asked if they will participate in an additional survey at a later date. Some state Institutional Review Boards (IRBs) require that the content of the additional survey (asthma) be disclosed; other state IRBs require that the specific content not be disclosed. Some states have multiple call-back surveys in the field and do not specify the content of any of the call-back interviews. If a respondent refuses to participate in the call-back survey, that record is assigned disposition code 413.

### III. Eligible, lost to follow-up because unable to contact or communicate with the BRFSS respondent

- 306 Selected ACBS respondent no longer living in the BRFSS household

*Definition:* The BRFSS respondent with asthma left the BRFSS household between the BRFSS interview and the ACBS interview. If the selected respondent (from the BRFSS) no longer lives in the BRFSS household but did live in the household during the BRFSS interview, then attempts should be made to obtain new contact information for the selected respondent, and the follow-up should be conducted using the new telephone number. If this is not possible or the household refuses to provide new contact information, then the record is assigned disposition code 306.

Refer to the Data Quality Handbook for each survey year for the definitions of all other codes in this category ([http://www.cdc.gov/brfss/technical\\_infodata/surveydata.htm](http://www.cdc.gov/brfss/technical_infodata/surveydata.htm)).

#### IV. Eligible, lost to follow-up for technical reasons

Refer to the Data Quality Handbook for each survey year for the definitions of all codes in this category ([http://www.cdc.gov/brfss/technical\\_infodata/surveydata.htm](http://www.cdc.gov/brfss/technical_infodata/surveydata.htm)).

#### V. Ineligible

**291** No parent or legal guardian in the household (child ineligible)

*Definition:* This code applies only to the child ACBS interview. The child selected during the BRFSS interview is eligible for the ACBS (the BRFSS respondent indicated that the selected child has an asthma diagnosis). However, ACBS child protocol requires that the BRFSS respondent must be the parent or guardian of the child to provide proxy responses for the child or to approve transfer to a more knowledgeable proxy respondent. If the BRFSS respondent is not the parent or guardian of the selected child with asthma, the child is ineligible for the ACBS. The child record is assigned disposition code 291.

405 Out-of-state

*Definition:* The BRFSS question that determines eligibility for the ACBS is “Have you ever been told by a doctor, nurse, or other health professional that (you have/the sample child has) asthma?” Respondents who answer “yes” are eligible for the ACBS. If the respondent is a state resident at the time of the BRFSS interview, but moves to an out-of-state residence between the BRFSS interview and the ACBS interview, then the respondent is no longer eligible for the ACBS, and the record is assigned disposition code 405.

**410** Household, no eligible respondent (respondent does not have asthma)

*Definition:* The BRFSS question that determines eligibility for the ACBS is “Have you ever been told by a doctor, nurse, or other health professional that (you have/the sample child has) asthma?” Respondents who answer “yes” are eligible for the ACBS. If the respondent informs the ACBS interviewer that the recorded response from the BRFSS interview was in error and terminates the call, then the respondent is not eligible for the ACBS, and the record is assigned disposition code 410.

**411** Selected respondent not eligible for follow-up

*Definition:* If the respondent disagrees with the recorded response to the asthma question from the BRFSS interview and answers “no” to the ACBS question EVER-ASTH (2.1) “Have you ever been told by a doctor or other health professional that (you have/the sample child has) asthma?”, then the respondent is not eligible for the ACBS, and the record is assigned disposition code 411.

**412** Transferred from BRFSS but not attempted (excluded by state)

*Definition:* The BRFSS question that determines eligibility for the ACBS is “Have you ever been told by a doctor, nurse, or other health professional that (you have/the sample child has) asthma?” Respondents who answer “yes” are eligible for the ACBS. Eligible respondents are then asked for permission to call back. Those that agree should be called for the

ACBS interview. However, if a respondent eligible to be called is transferred from BRFSS to the ACBS but never called, then the record is assigned disposition code 412.

**470** Misdiagnosed asthma in respondent (2008 and later)

*Definition:* The BRFSS question that determines eligibility for the ACBS is “Have you ever been told by a doctor, nurse, or other health professional that (you have/the sample child has) asthma?” Respondents who answer “yes” are eligible for the ACBS. However, the initial diagnosis could have been in error and changed. This misdiagnosis is not captured by the BRFSS or ACBS. If the respondent informs the interviewer of the misdiagnosis, the respondent is not eligible for the ACBS, and the record is assigned disposition code 470.

**480** Not recruited for call-back at BRFSS interview (excluded by state)

*Definition:* The BRFSS question that determines eligibility for the ACBS is “Have you ever been told by a doctor, nurse, or other health professional that (you have/the sample child has) asthma?” Respondents who answer “yes” are eligible for the ACBS. Eligible respondents are then asked for permission to call back. Those who agree should be called for the ACBS interview. However, if a respondent eligible to be called is not transferred from BRFSS to the ACBS and is never called, then the record is assigned disposition code 480.

**490** Random child/adult selection: adult ineligible, child selected

*Definition:* If both the BRFSS respondent and the randomly selected child in the household have asthma and the BRFSS respondent agrees to the call-back interview, one or the other is randomly selected to be eligible for the call-back. If the child is selected, the adult is ineligible, and the adult record is assigned disposition code 490.

**491** Random child/adult selection: child ineligible, adult selected

*Definition:* If both the BRFSS respondent and the randomly selected child in the household have asthma and the BRFSS respondent agrees to the call-back interview, one or the other is randomly selected to be eligible for the call-back. If the adult is selected, the child is ineligible, and the child record is assigned disposition code 491.