

# National Health and Nutrition Examination Survey 2005–2006

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## Documentation, Codebook, and Frequencies

### Blood Pressure

**Examination**

**Survey Years:  
2005 to 2006**

**SAS Transport File:  
BPX\_D.XPT**



November 2007

# NHANES 2005–2006 Data Documentation

## Exam Component: Blood Pressure (BPX\_D)

First Published: November 2007

Last Revised: N/A

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<b>Component Description</b>	Accurate measurement of blood pressure (BP) is a major public health concern; it is essential for hypertension screening, as well as for disease management. Hypertension is a powerful, consistent and independent risk factor for cardiovascular disease and renal disease
<b>Eligible Sample</b>	<p>Heart rate is measured on all children 0-4 years of age; radial pulse is measured on examinees 5 years and older; and blood pressure (BP) is measured on all examinees 8 years and over.</p> <p><b>Exclusion criteria:</b> presence of the following on both arms: rashes, gauze dressings, casts, edema, paralysis, tubes, open sores or wounds, withered arms, a-v shunts, or if blood has been drawn from arm within the last week.</p>
<b>Protocol and Procedure</b>	After resting quietly in a sitting position for 5 minutes and determining the maximum inflation level (MIL), three consecutive blood pressure readings are obtained. If a blood pressure measurement is interrupted or incomplete, a fourth attempt may be made. All BP determinations (systolic and diastolic) are taken in the Mobile Examination Center (MEC)
<b>Quality Assurance &amp; Quality Control</b>	<p>The BP examiners are certified for blood pressure measurement through a training program from <i>Shared Care Research and Education Consulting</i>. Certification is achieved when physician examiners meet all requirements of the training program. The initial training includes:</p> <ul style="list-style-type: none"><li>• didactic instruction about BP measurement and propensity for error;</li><li>• practice listening to systolic and diastolic BP sounds using a standardized audio-video tape presentation;</li><li>• audio-video tape test;</li><li>• written exam;</li><li>• examiner and gold standard instructor simultaneously listening to BP of a minimum of 20 volunteers of all ages through a Y-stethoscope to compare measures; and</li><li>• observation of protocol technique using a checklist.</li></ul>

Certification requires a score of 100 per cent on the audio-video tape test. Correct answers on the audio-video tape test require the examiner's answers and the standardized test answers to be within +/- 2mm mercury (Hg) on 92 per cent of 24 measures (12 systolic, 12 diastolic), and within +/- 4mm Hg on 100 percent of 24 measures (12 systolic, 12 diastolic). For more information on quality assurance and control, see Ostchega et al. (1).

For more details on the QA/QC process for this component, please refer to the Physician Section of the **MEC Operations Manual**.

### **Data Processing and Editing**

The following specifications were programmed in the computer system used to capture the blood pressure data:

- systolic blood pressure and maximum inflation level cannot be greater than 300 mmHg;
- systolic and diastolic blood pressure and maximum inflation level can be even numbers only;
- systolic blood pressure must be greater than diastolic blood pressure;
- if there is no systolic blood pressure, there can be no diastolic blood pressure;
- diastolic blood pressure can be zero

### **Analytic Notes**

Please refer to the Analytic Guidelines for further details on the use of sample weights and other analytic issues. The Analytic Guidelines are available on the NHANES website.

### **References**

1. Ostchega Y, Prineas RJ, Paulose-Ram R, Grim CM, Willard C, Collins C. National Health and Nutrition Examination Survey (NHANES) 1999-2000: Effect of observer training and protocol standardization on reducing blood pressure measurement error. *J Clinical Epidemiology*. 2003 Aug; 56 (8): 768-774

## Locator Record

**Title:** Blood Pressure (BPX\_D)

**Contact Number:** 1-866-441-NCHS

**Years of Content:** 2005–2006

**First Published:** November 2007

**Revised:** N/A

**Access Constraints:** None

**Use Constraints:** None

**Geographic Coverage:** National

**Subject:** The data in this file provide interview questions and blood pressure measurements taken in the mobile examination center by two physicians on sample persons eight years of age and older.

**Record Source:** NHANES 2005–2006

**Survey Methodology:** NHANES 2005–2006 is a stratified multistage probability sample of the civilian non-institutionalized population of the U.S.

**Medium:** NHANES Web site; SAS transport files

**National Health and Nutrition Examination Survey  
Codebook for Data Production (2005-2006)**

**Examination Component:  
Blood Pressure (BPX\_D)**

November 2007



<b>SEQN</b>	<b>Target</b>
	B(0 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Respondent sequence number
<b>English Text:</b> Respondent sequence number.	
<b>English Instructions:</b>	

<b>PEASCST1</b>	<b>Target</b>
	B(0 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Blood Pressure Status
<b>English Text:</b> Blood Pressure Status	
<b>English Instructions:</b>	

Code or Value	Description	Count	Cumulative	Skip to Item
1	Complete	9512	9512	
2	Partial	101	9613	
3	Not done	337	9950	
.	Missing	0	9950	

<b>PEASCTM1</b>	<b>Target</b>			
	B(0 Yrs. to 150 Yrs.)			
<b>Hard Edits</b>	<b>SAS Label</b>			
	Blood Pressure Time in Seconds			
<b>English Text:</b> Blood Pressure Time in Seconds				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
2 to 2679	Range of Values	9641	9641	
.	Missing	309	9950	

<b>PEASCCT1</b>	<b>Target</b>			
	B(0 Yrs. to 150 Yrs.)			
<b>Hard Edits</b>	<b>SAS Label</b>			
	Blood Pressure Comment			
<b>English Text:</b> Blood Pressure Comment				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Safety exclusion	4	4	
2	SP refusal	104	108	
3	No time	2	110	
4	Physical limitation	34	144	
5	Communication problem	5	149	
7	SP ill/emergency	10	159	
14	Interrupted	2	161	
56	Came late/left early	142	303	
84	SP with child	3	306	
99	Other, specify	132	438	
.	Missing	9512	9950	

<b>BPXCHR</b>		<b>Target</b>		
		B(0 Yrs. to 7 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		60 sec HR (30 sec HR * 2)		
<b>English Text:</b> 60 sec HR (30 sec HR * 2)				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
0 to 288	Range of Values	2168	2168	
.	Missing	7782	9950	

<b>BPQ150A</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Had food in the past 30 minutes?		
<b>English Text:</b> Have you had any of the following in the past 30 minutes?: Food				
<b>English Instructions:</b> Check each that applies				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Yes	2167	2167	
2	No	5288	7455	
.	Missing	2495	9950	



<b>BPQ150B</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Had alcohol in the past 30 minutes?		
<b>English Text:</b> Have you had any of the following in the past 30 minutes?: Alcohol				
<b>English Instructions:</b> Check each that applies				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Yes	4	4	
2	No	7451	7455	
.	Missing	2495	9950	

<b>BPQ150C</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Had coffee in the past 30 minutes?		
<b>English Text:</b> Have you had any of the following in the past 30 minutes?: Coffee				
<b>English Instructions:</b> Check each that applies				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Yes	27	27	
2	No	7428	7455	
.	Missing	2495	9950	

<b>BPQ150D</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Had cigarettes in the past 30 minutes?		
<b>English Text:</b> Have you had any of the following in the past 30 minutes?: Cigarettes				
<b>English Instructions:</b> Check each that applies				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Yes	90	90	
2	No	7365	7455	
.	Missing	2495	9950	

<b>BPAARM</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Arm selected:		
<b>English Text:</b> Arm selected:				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Right	7356	7356	
2	Left	37	7393	
8	Could not obtain	62	7455	
.	Missing	2495	9950	

<b>BPACSZ</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Coded cuff size		
<b>English Text:</b> Cuff size (cm) (width X length)				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Infant (6X12)	1	1	
2	Child (9X17)	457	458	
3	Adult (12X22)	2793	3251	
4	Large (15X32)	3291	6542	
5	Thigh (18X35)	846	7388	
.	Missing	2562	9950	

<b>BPXPLS</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		60 sec. pulse (30 sec. pulse * 2):		
<b>English Text:</b> 60 sec. pulse (30 sec. pulse * 2):				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
40 to 220	Range of Values	7441	7441	
.	Missing	2509	9950	

<b>BPXDB</b>	<b>Target</b>			
	B(12 Yrs. to 49 Yrs.)			
<b>Hard Edits</b>	<b>SAS Label</b>			
	# of dropped beats in 30 seconds			
<b>English Text:</b> # of dropped beats in 30 seconds				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1 to 18	Range of Values	55	55	
.	Missing	9895	9950	

<b>BPXPULS</b>	<b>Target</b>			
	B(0 Yrs. to 150 Yrs.)			
<b>Hard Edits</b>	<b>SAS Label</b>			
	Pulse regular or irregular?			
<b>English Text:</b> Pulse regular or irregular?				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Regular	9230	9230	
2	Irregular	208	9438	
.	Missing	512	9950	

<b>BPXPTY</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Pulse type:		
<b>English Text:</b> Pulse type:				
<b>English Instructions:</b>				
Code or Value	Description	Count	Cumulative	Skip to Item
1	Radial	7444	7444	
2	Brachial	5	7449	
8	Could not obtain	0	7449	
.	Missing	2501	9950	

<b>BPXML1</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
70.0000 to 300.0000		MIL: maximum inflation levels (mm Hg)		
<b>English Text:</b> MIL: maximum inflation levels (mm Hg)				
<b>English Instructions:</b>				
Code or Value	Description	Count	Cumulative	Skip to Item
110 to 290	Range of Values	7377	7377	
888	Could not obtain	0	7377	
.	Missing	2573	9950	

<b>BPXSY1</b>	<b>Target</b>			
	B(8 Yrs. to 150 Yrs.)			
<b>Hard Edits</b>	<b>SAS Label</b>			
	Systolic: Blood pres (1st rdg) mm Hg			
<b>English Text:</b> Systolic: Blood pressure (first reading) mm Hg				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
74 to 270	Range of Values	6668	6668	
.	Missing	3282	9950	

<b>BPXDI1</b>	<b>Target</b>			
	B(8 Yrs. to 150 Yrs.)			
<b>Hard Edits</b>	<b>SAS Label</b>			
	Diastolic: Blood pres (1st rdg) mm Hg			
<b>English Text:</b> Diastolic: Blood pressure (first reading) mm Hg				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
0 to 124	Range of Values	6668	6668	
.	Missing	3282	9950	

<b>BPAEN1</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Enhancement used first reading		
<b>English Text:</b> Enhancement used first reading				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Yes	0	0	
2	No	7388	7388	
8	Could not obtain	0	7388	
.	Missing	2562	9950	

<b>BPXSY2</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Systolic: Blood pres (2nd rdg) mm Hg		
<b>English Text:</b> Systolic: Blood pressure (second reading) mm Hg				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
72 to 232	Range of Values	6265	6265	
.	Missing	3685	9950	

<b>BPXDI2</b>	<b>Target</b>			
	B(8 Yrs. to 150 Yrs.)			
<b>Hard Edits</b>	<b>SAS Label</b>			
	Diastolic: Blood pres (2nd rdg) mm Hg			
<b>English Text:</b> Diastolic: Blood pressure (second reading) mm Hg				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
0 to 124	Range of Values	6265	6265	
.	Missing	3685	9950	

<b>BPAEN2</b>	<b>Target</b>			
	B(8 Yrs. to 150 Yrs.)			
<b>Hard Edits</b>	<b>SAS Label</b>			
	Enhancement used second reading			
<b>English Text:</b> Enhancement used second reading				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Yes	138	138	
2	No	7246	7384	
8	Could not obtain	0	7384	
.	Missing	2566	9950	



<b>BPXSY3</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Systolic: Blood pres (3rd rdg) mm Hg		
<b>English Text:</b> Systolic: Blood pressure (third reading) mm Hg				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
78 to 234	Range of Values	6091	6091	
.	Missing	3859	9950	

<b>BPXDI3</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Diastolic: Blood pres (3rd rdg) mm Hg		
<b>English Text:</b> Diastolic: Blood pressure (third reading) mm Hg				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
0 to 122	Range of Values	6091	6091	
.	Missing	3859	9950	

<b>BPAEN3</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Enhancement used third reading		
<b>English Text:</b> Enhancement used third reading				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Yes	137	137	
2	No	7247	7384	
8	Could not obtain	0	7384	
.	Missing	2566	9950	

<b>BPXSY4</b>		<b>Target</b>		
		B(8 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>		<b>SAS Label</b>		
		Systolic: Blood pres (4th rdg) mm Hg		
<b>English Text:</b> Systolic: Blood pressure (fourth reading if necessary) mm Hg				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
76 to 222	Range of Values	1179	1179	
.	Missing	8771	9950	

<b>BPXDI4</b>	<b>Target</b>			
	B(8 Yrs. to 150 Yrs.)			
<b>Hard Edits</b>	<b>SAS Label</b>			
	Diastolic: Blood pres (4th rdg) mm Hg			
<b>English Text:</b> Diastolic: Blood pressure (fourth reading if necessary) mm Hg				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
0 to 124	Range of Values	1179	1179	
.	Missing	8771	9950	

<b>BPAEN4</b>	<b>Target</b>			
	B(8 Yrs. to 150 Yrs.)			
<b>Hard Edits</b>	<b>SAS Label</b>			
	Enhancement used fourth reading			
<b>English Text:</b> Enhancement used fourth reading				
<b>English Instructions:</b>				
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Cumulative</b>	<b>Skip to Item</b>
1	Yes	112	112	
2	No	2086	2198	
8	Could not obtain	0	2198	
.	Missing	7752	9950	