Documentation, Codebook, and Frequencies

MEC Laboratory Component: Lead Dust

Survey Years:
2001 to 2002

SAS Export File:
L20_b.XPT

nhanes

NHANES 2001-2002 Data Documentation

Laboratory Assessment: Lab 20 – Lead Dust

Years of Coverage: 2001-2002   **First Published:** June 2006   **Last Revised:** N/A

Component Description

Lead is a known environmental toxin that has been shown to deleteriously affect the nervous, hematopoietic, endocrine, renal, and reproductive systems. In young children, lead exposure is a particular hazard because children more readily absorb lead than do adults, and children's developing nervous systems also make them more susceptible to the effects of lead. Since first measuring blood lead during the 1976–1980 survey, NHANES has been the cornerstone for lead exposure surveillance in the U.S.

In 1999, NHANES began to collect dust samples from the homes of children 1–5 years of age to be tested for the presence of lead. Lead in dust is most often the result of old, peeling, or chipping lead-based paint. As part of the household visit, NHANES interviewers collected separate dust-wipe samples from the floor and window sill of one room in the home. Signing of a special informed consent was required prior to the collection.

Eligible Sample

Eligible survey participants were households with children 1–5 years of age.

Description of Laboratory Methodology

The preparation procedure for dust-wipe sample digestion involves the quantitative transfer of the sample from the container into a beaker, and then the subsequent addition of nitric and hydrochloric acids and hot-plate heating. The procedure is described in the Appendix of the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1). The technique does not involve complete digestion of the sample, but does entail leaching of the lead (Pb) from the collected dust. Recovery of the method is based and evaluated on the results of matrix (wipe) spiked National Institute of Standards and Technology (NIST) quality control samples. The lead content of the digestate is determined by using a PerkinElmer Flame Atomic Absorption Spectrometer (FAAS) Model 5000 or 5100 for all window dust-wipe samples and a PerkinElmer Graphite Furnace Atomic Absorption Spectrometer (GFAAS) Model 5100 for all floor dust-wipe samples. However, a floor dust sample whose value was found to be 5 µg or greater by GFAAS are re-analyzed by FAAS and that value is reported.

Laboratory Quality Control and Monitoring

Additional dust samples (either window sill or floor) were taken in 5% of households as part of the quality control procedures. A field blank was also collected. Results from these quality control measures are not included as part of this data file.

For years 2001-2002, the floor samples (n=60) had a 96.9% (+/-4.9%) recovery at an average spike level of 72.88 (sd 15.69) µg. The window sill samples (n=59) revealed a 96.9% (+/-4.3%) recovery at an average spike level of 70.58 (sd 15.34) µg.

Data Processing and Editing

Detailed specimen collection instructions are discussed in the NHANES Household Interview Procedures Manual, Chapter 7. This chapter specifies the procedure to be used for preparation of the window and floor, specimen collection, labeling, and conditions for specimen transport.

Analytic Notes

This data file includes the laboratory values as well as variables related to characteristics of the room where the samples were taken, and other factors relevant to data collection.

DCDINDEX

The variable identifies the index child designated for dust collection. Descriptive data about the home environment and the dust samples were collected for one child in the household. In homes where more than one child aged 1-5 years resided, the descriptive and laboratory data for the index child were assigned to all other children in the age group.

DCDSTAT

This variable indicates which samples are available. In some households, only a single sample (either window sill or floor) was taken. This variable was derived based on final results from the laboratory.

DCD030

The room where the sample was taken was most often the same room where the child spent most of his or her time in the home. In editing this variable, some responses from the "other" category were re-coded to pre-existing categories, and additional categories were created.

DCD070A

Carpet in room selected for sample. Response categories ordering from the original question were reordered for purposes of clarification and consistency.

It is advised that this data file should be combined with additional years of data because data are available on a small subset of the survey population. This data file was designed to be used primarily at the SP level with other data collected in the MEC. Please note, data were retained for persons who took part in the household interview (including dust collection) but were not examined at the MEC.

LBXDFS

Floor sample, lead dust result (μg/sq ft), by GFAAS. All floor dust results are derived from a 1 square foot area, the size of the template used for the sample collection. If a floor sample was collected but the result is missing for LBXDFS, use LBXDFSF. Use LBDDFSLC, the laboratory comment code, to determine values below the limit of detection.

LBXDFSF

Floor sample, lead dust result (μg/sq ft) by FAAS. All floor dust results are derived from a 1 square foot area, the size of the template used for the sample collection. If a floor sample was collected but the result is missing for LBXDFSF, use LBXDFS. Use LBDD3LC, the laboratory comment code, to determine values below the limit of detection.

LBXDDWS

Window sill sample, lead dust result (μg/sq ft). All window sill dust results were calculated based on the measured length and width of the window sill area. Use LBDDWSLC, the laboratory comment code, to determine values below the limit of detection.

References   Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing. Washington, DC: United States Department of Housing and Urban Development; 1995.

Locator Fields

Title: Lead Dust

Contact Number: 1-866-441-NCHS

Years of Content: 2001-2002

First Published: June 2006

Revised: N/A

Access Constraints: None

Use Constraints: None

Geographic Coverage: National

Subject: Lead Dust

Record Source: NHANES 2001-2002

Survey Methodology: NHANES 2001-2002 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 (2001-2002)

Lead Dust (L20_B)
Person Level Data

First Published: June 2006
Last Revised: N/A

SEQN	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Respondent sequence number

English Text: Respondent sequence number.

English Instructions:

DCDINDEX	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Index child for sampling

English Text:

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
1	Index Child	969	969	
2	Other Household Child	361	1330	
.	Missing	0	1330	

DCDSTAT	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Dust sample status

English Text:

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
1	Floor Only	322	322	
2	Window Only	1	323	
3	Floor and Window	934	1257	
.	Missing	73	1330	

DCD030	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Room where samples taken

English Text: Room where samples taken

English Instructions: ENTER LOCATION OF SAMPLE

Code or Value	Description	Count	Cumulative	Skip to Item
2	Living Room/Family Room/Den	1044	1044	
3	Dining Room	16	1060	
4	Kitchen	23	1083	
5	Bedroom	137	1220	
7	Another room	37	1257	
.	Missing	73	1330	

DCD070A	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Room selected was floor carpeted

English Text: Indicates whether floor was carpeted in room-floor sample

English Instructions: ENTER ROOM CARPET CODE: CAPI EDIT: IF "NO CARPET" (CODE 2) IS SELECTED, NO OTHER CODE MAY BE SELECTED.

Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	1060	1060	
2	No	197	1257	
.	Missing	73	1330	

DCQ070B	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Room selected had floor mat

English Text: Indicates whether mat was found in room-floor sample

English Instructions: ENTER ROOM CARPET CODE: CAPI EDIT: IF "NO CARPET" (CODE 2) IS SELECTED, NO OTHER CODE MAY BE SELECTED.

Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	18	18	
2	No	1239	1257	
.	Missing	73	1330	

DCQ070C	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Room selected had area rug

English Text: Indicates whether area rug was found in room-floor sample

English Instructions: ENTER ROOM CARPET CODE: CAPI EDIT: IF "NO CARPET" (CODE 2) IS SELECTED, NO OTHER CODE MAY BE SELECTED.

Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	194	194	
2	No	1063	1257	
.	Missing	73	1330	

DCQ070D	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Room selected had wall-wall carpeting

English Text: If there was wall to wall carpet-floor sample

English Instructions: ENTER ROOM CARPET CODE: CAPI EDIT: IF "NO CARPET" (CODE 2) IS SELECTED, NO OTHER CODE MAY BE SELECTED.

Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	932	932	
2	No	325	1257	
.	Missing	73	1330	

DCQ090	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Carpet pile depth

English Text: Depth of carpeting-floor sample

English Instructions: ENTER CARPET PILE DEPTH:

Code or Value	Description	Count	Cumulative	Skip to Item
1	Low pile	875	875	
2	High pile	133	1008	
3	Not applicable	52	1060	
.	Missing	270	1330	

DCQ160	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Surface condition for floor dust sample

English Text: Surface condition for floor dust sample

English Instructions: CAPI EDIT: IF "NO CARPET" (CODE 2) HAS BEEN SELECTED IN DCD.070, DO NOT ALLOW SELECTION OF "CARPETED" (CODE 3) IN DCQ.160.

Code or Value	Description	Count	Cumulative	Skip to Item
1	Smooth and Cleanable	235	235	
2	Not Smooth and Cleanable	10	245	
3	Carpet	80	325	
.	Missing	1005	1330	

DCQ240	Target			
	B(1 Yrs. to 5 Yrs.)			
Hard Edits	**SAS Label**			
	Window sill finished			

English Text: Window sill finished

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	861	861	
2	No	74	935	
.	Missing	395	1330	

DCQ250	Target			
	B(1 Yrs. to 5 Yrs.)			
Hard Edits	**SAS Label**			
	Surface condition for sill dust sample			

English Text: Surface condition for sill dust sample

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
1	Smooth and Cleanable	851	851	
2	Not Smooth and Cleanable	84	935	
.	Missing	395	1330	

DCQ400	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Room cleanliness

English Text: INTERVIEWER OBSERVATION: ROOM CLEANLINESS

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
1	Dirtier than average	197	197	
2	Average	735	932	
3	Cleaner than average	325	1257	
.	Missing	73	1330	

DCQ410	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Room clutter

English Text: INTERVIEWER OBSERVATION: ROOM CLUTTER

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
1	Very cluttered (nothing in place)	160	160	
2	Average amount of clutter	711	871	
3	Organized (nothing out of place)	386	1257	
.	Missing	73	1330	

LBXDFS	Target			
	B(1 Yrs. to 5 Yrs.)			
Hard Edits	**SAS Label**			
	Floor, GFAAS (ug/sq.ft.)			

English Text: Floor result in micrograms per square feet by graphite furnace atomic absorption spectrophotometric method.

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
0.11 to 4.9	Range of Values	1203	1203	
.	Missing	127	1330	

LBXDFSF	Target			
	B(1 Yrs. to 5 Yrs.)			
Hard Edits	**SAS Label**			
	Floor, FAAS (ug/sq. ft.)			

English Text: Floor result in micrograms per square feet by flame atomic absorption spectrophotometric method.

English Instructions: If the floor sample result by the GFAAS method is >5 then it is measured by the FAAS method. Only the FAAS method result is reported.

Code or Value	Description	Count	Cumulative	Skip to Item
4 to 36.3	Range of Values	53	53	
.	Missing	1277	1330	

LBDDWS	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Window, FAAS (ug/sq. ft.)

English Text: Window result in micrograms per square feet by flame atomic absorption spectrophotometric method.

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
0.49 to 6867.6	Range of Values	935	935	
.	Missing	395	1330	

LBDDFSLC	Target
	B(1 Yrs. to 5 Yrs.)
Hard Edits	**SAS Label**
	Lead dust floor (GFAAS) comment code

English Text:

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
0	At or above limit of detection	1020	1020	
1	Below limit of detection	183	1203	
.	Missing	127	1330	

LBDD3LC	Target			
	B(1 Yrs. to 5 Yrs.)			
Hard Edits	**SAS Label**			
	Lead dust floor (FAAS) comment code			
English Text:				
English Instructions:				

Code or Value	Description	Count	Cumulative	Skip to Item
0	At or above limit of detection	53	53	
1	Below limit of detection	0	53	
.	Missing	1277	1330	

LBDDWSLC	Target			
	B(1 Yrs. to 5 Yrs.)			
Hard Edits	**SAS Label**			
	Lead dust window sill comment code			
English Text:				
English Instructions:				

Code or Value	Description	Count	Cumulative	Skip to Item
0	At or above limit of detection	415	415	
1	Below limit of detection	520	935	
.	Missing	395	1330	