

Environmental Health Assessment of Tribal Child Care Centers in the Pacific Northwest

June 5, 2017

Supporting Statement B

Collection of Information Using Statistical Methods

OMB Control No. NEW

Project Officer

Matthew R. Ellis, MPH, REHS
Lieutenant Commander, United States Public Health Service
Institutional Environmental Health Officer
Indian Health Service Portland Area
1414 NW Northrup Street, Suite 800
Portland, OR 97209
Office: 503.414.7788
Matthew.Ellis@ihs.gov

Table of Contents

B.1. Respondent Universe and Sampling Methods.....	3
B.2. Procedures for the Collection of Information.....	3
B.3. Methods to Maximize Response Rates and Deal with Nonresponse.....	9
B.4. Tests of Procedures or Methods to be Undertaken.....	10
B.5. Individuals Consulted on Statistical Aspects and Individuals Collecting and Analyzing Data.....	10

B.1. Respondent Universe and Sampling Methods

The respondents will be directors (or their designated tribal representatives) of up to 37 child care centers currently receiving environmental health services by both the Portland Area Indian Health Service (IHS) and the Northwest Washington Indian Health Board (NWIHB). Participation is expected to be very high (95% or greater) and the respondent refusal rate is expected to be minimal because IHS and NWIHB already provide environmental health services to these centers on a regular basis. The centers will be geographically located in the Pacific Northwest. Child care centers fit into standard industrial code (SIC) 8351. Respondents will also include professional applicators who apply pesticides at these centers.

B.2. Procedures for the Collection of Information

All samples collected during this survey are convenience samples. Quantitative and qualitative data will not be used to draw statistically significant conclusions across all tribal child care centers in the Pacific Northwest. The survey will serve as a snapshot of current and potential status relative to contamination and pests at tribal child care centers. The 37 child care centers that were selected are the ones that are currently receiving environmental health services by either the Portland Area IHS or the Northwest Washington Indian Health Board (NWIHB). The universe of centers includes all preschool and head starts that receive environmental health services from IHS and NWIHB. Excluded from the survey are home-based child care providers.

Field data collection will be conducted by IHS or NWIHB field staff, all of whom are either registered environmental health specialists or healthy homes specialists. Three of these officers will be certified as lead-based paint risk assessors through Washington State. In addition to these basic experience qualifications, a supplementary, survey-specific, hands-on training will be provided in dust and soil sampling techniques from the Environmental Protection Agency (EPA) Region 10's Office of Environmental Assessment. This training will include mock sampling. Field staff will be trained as a group to ensure consistency in data collection.

Each center in the sample will be sent a letter and factsheet from IHS and EPA project officers. The letter will introduce the survey, explain the need for it, indicate the importance and advantages of participation, briefly outline the data collection procedures, and advise the visit by IHS and NWIHB field staff in the near future. This letter will reduce the time required for the field staff to explain the survey during their first visit with the respondent. In addition, the field staff will confirm the data collection visit with the respondent a day or two before the scheduled appointment. These efforts will improve communication and commitment between field staff and the respondent, and help to ensure the respondent is ready for the data collection. This will reduce the extra burden associated with waiting for the field team and/or rescheduling the data collection. If the respondent refuses to participate in the data collection or breaks the data collection off before completion, the interviewer will complete a Refusal to Participate Form, and the child care center director (or designee) or appropriate tribal representative, will sign.

During the site visit a questionnaire (see Appendix A in Supporting Statement A) will be administered to the child care center director. The questionnaire will elicit information from the center director (or designee) needed to: 1) perform data analysis for lead, allergen, pesticide

levels, and polychlorinated biphenyls (PCBs) by population group, 2) assess potential exposures from contaminants found in the center and 3) provide appropriate targeted outreach. Information will be collected about age and renovation history of the building; center cleaning and maintenance activities; the children's age; type of heating and other ventilation; the presence of pests; and the use of pesticides. A telephone questionnaire to pesticide applicators will elicit information needed to assess the products used in the centers.

The field staff will also complete the Room Inventory form which includes a list of all classrooms and multi-purpose rooms in the center during a center walkthrough. The center representative will be asked to accompany the field staff on this walkthrough and provide information about the age of children using each room. The field staff will use this inventory list to select the rooms in which environmental sampling will be conducted. Once the rooms are selected, the field staff will inform the center representative and ask her/him to make any arrangements required for testing in the selected rooms.

Table B-1 summarizes the rooms, component/surfaces, and environmental sample types to be included in the survey. Because the major emphasis of this survey is to assess environmental hazards to children under age 6 years in the child care centers served by this survey, we have elected to collect samples from those rooms in which children under age 6 years are permitted and spend time. While all rooms in each center will be inventoried, samples will not be collected from rooms in which only children over age 6 years or adults spend time (e.g., offices, classrooms for older children).

Table B-1. Matrix of Rooms, Component/Surfaces, and Sample Types within a Child Care Center

Rooms with Children under age 6 years	Sample Type	Sampling SOP References	Window Sill	Floor	Work/Play Surface	Play Area
Classroom(s) – 2 classrooms (3 if more than 6 classrooms)	Lead dust wipe (only for facilities older than 1978)	ASTM E1728-16, National Survey of Lead and Allergens in Housing, National Child Care Survey	X	X		
	Allergen vacuum	National Child Care Survey, National Survey of Lead and Allergens in Housing, Inner-City Asthma Study		X		
	PCB vacuum	National Child Care Survey, National Survey of Lead and Allergens in Housing, Inner-City Asthma Study		X		
	Pesticide/PCB wipe	National Child Care Survey, ASTM E1728-16	X	X	X	
	Lead dust wipe (only for facilities older than 1978)	ASTM E1728-16, National Survey of Lead and Allergens in Housing, National Child Care Survey	X	X		
	Allergen vacuum	National Child Care Survey, National Survey of Lead and Allergens in Housing, Inner-City Asthma Study		X		
	PCB vacuum	National Child Care Survey, National Survey of Lead and Allergens in Housing, Inner-City Asthma Study		X		
Multi-purpose room(s) – 1 multi-purpose room (2 if more than 6 multi-purpose rooms)	Pesticide/PCB wipe	National Child Care Survey, ASTM E1728-16	X	X	X	
Exterior Play Area – up to 3 areas	Soil – lead, pesticide, PCB (lead analysis only for facilities older than 1978)	The Interstate Technology & Regulatory Council’s Incremental Sampling Methodology, ASTM E1727 – 05				X

Rooms where children under age 6 years are permitted and spend time will be randomly selected from each of the following room strata within each child care center:

- Classroom (for infants, this may be called a crib room) – Two classrooms will be sampled where there are two or more classrooms in which children under age 6 years spend time. If there are seven or more classrooms, a third classroom will be randomly selected.
- Multi-purpose room (including activity rooms, dining room/cafeterias, gross motor rooms, ball rooms, libraries, computer rooms, etc.) – One multi-purpose room will be randomly selected for sampling. If there are seven or more multi-purpose rooms, a second room will be randomly selected.¹

Once the rooms where sampling will be conducted have been selected, the specific components and sampling locations within each room will be determined. The basic sampling strategy is presented in Table B-2. There will be many different surfaces present in each child care center. However, since HUD rules specify acceptable dust lead levels for only two components (floors and interior window sills) during risk assessment, sampling of other surfaces for lead dust will not be addressed in this survey. For allergens, only floor samples will be collected. For pesticides and PCBs: floor, play/work area surfaces, and interior window sills will be sampled.

¹ When there are many rooms in a stratum, if only one of these rooms was selected, it would have a within-child care center sampling weight of seven or more. Since large weights reduce the precision of estimators, it is desirable to structure the sampling to minimize their variability. The planned procedure sets the maximum room stratum weight at four for classrooms and six for multi-purpose rooms. It should be noted that data from these additional rooms will also be used to estimate between-room error.

Table B-2. General Sampling Strategy within a Child Care Center

Rooms with Children under age 6 years	Surface Sampled in each Room*	Number of Samples per Room**	Sample Location
Classroom or Multi-purpose room	Floor wipe (L)	1	Center of largest open area
	Floor wipe (Pe, P)	1	Center of largest open area
	Floor vacuum (A)	1	Along center of random wall
	Floor vacuum (P)	1	Along center of random wall
	Play/work surface (Pe, P)	1	Play/work surface
	Window sill wipe (L)	1	Entire sill of random window
	Window sill wipe (Pe, P)	1	Entire sill of random window
Exterior Play Area	Soil (L, P)	1	Composite (~30 subsamples) of entire play area

*L = Lead (only for facilities older than 1978), A = Allergen (*Dermatophagoides pteronyssinus* allergen I (*Der p* 1) and *Dermatophagoides farinae* allergen I (*Der f* 1)), the cockroach allergen *Blattella germanica* allergen I (*Bla g* I), mouse allergens (Mus M1), and rat allergens (rat N1)), Pe = Pesticides (45 active ingredients), P= PCBs

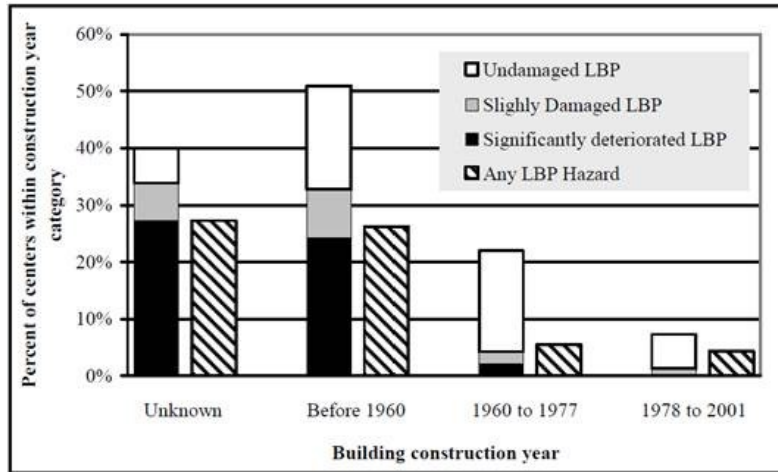
** Does not include QA samples

•

Only buildings older than 1978 will be sampled for lead. As shown in the National Survey chart below (Figure 1), centers in older buildings are more likely to have significant lead-based paint hazards² than those in newer buildings.

² defined in accordance with the HUD Lead Safe Housing Rule (24 CFR 35)

Figure 1. Lead results from the National Survey



Relevant information will be recorded about each environmental sample, including location of the sample, total surface area represented by the sample, carpeting, and vinyl mini-blinds, and building condition. Additional information about the rooms that will be collected include room dimensions, temperature and humidity, cleanliness, and observations related to allergens. Outdoor observations will also be collected including building debris and outdoor debris information. Photos will be used to document environmental hazards, location information and other non-personally identifiable information.

Quality assurance samples for wipe, vacuum, and soil samples will include duplicates and field blanks. The laboratory will analyze duplicate, blank, and spiked samples. Chain-of-custody forms will be used to verify the samples' origin and handling. Instrument maintenance logs will be used to ensure proper cleaning, maintenance, and calibration of equipment and supplies associated with the project.

In this survey, an authorized representative of the child care center must be on-site while the environmental samples and data are collected. We estimate this will take approximately 4 hours (Table B-3). The representative must allow the field staff to enter all rooms during the room inventory and spend time in up to five rooms to collect dust samples and to collect soil samples from the play area(s). Children may have to be removed from some rooms while samples are being collected. Despite these inconveniences to the centers, IHS and the NWHIB have strong working relationships with these centers and anticipate full cooperation. These centers already receive regular health and safety assessments from the staff who will be collecting the environmental samples and administering the questionnaires.

Table B-3. General Time for Activities* at Each Child Care Center

Minutes per Activity	Activity
10	Introduction
45	Questionnaire
10	Room Inventory/Selection
30, 40, 25	Interior dust and surface samples (Lead, allergen, PCBs/pesticides)
60	Soil samples (lead, PCBs, pesticides)
20	Additional time due to accommodate center and children's activities (10%)
240	Total time

*Actual order of activities in the field may vary depending on the center's schedule.

B.3. Methods to Maximize Response Rates and Deal with Nonresponse

Each center in the sample will be sent a letter and factsheet from IHS and EPA project officers. The letter will introduce the survey, explain the need for it, indicate the importance and advantages of participation, briefly outline the data collection procedures, and advise the visit by IHS and NWIHB staff in the near future. This letter will reduce the time required for the field staff to explain the survey during their first visit with the respondent. In addition, the field staff will confirm the data collection visit with the respondent a day or two before the scheduled appointment. These efforts will improve communication and commitment between field staff and the respondent, and help to ensure the respondent is ready for the data collection. This will reduce the extra burden associated with waiting for the field team and/or rescheduling the data collection.

Participation is expected to be very high (95% or greater) and the respondent refusal rate is expected to be minimal because IHS and NWIHB already provide environmental health services to these centers on a regular basis.

In cases where a respondent is reluctant to participate, the interviewer will attempt to use standard refusal avoidance techniques, including referral to the official introductory letter, answering questions the respondent might have, providing additional details about the data collection procedures, and the importance of data to understand needed services. If the respondent still refuses, a second call will be made by IHS staff to the center at a later date to attempt to convert the respondent. These efforts will reduce the recruitment burden to potential respondents.

A record of contact will be kept to record all contact with the centers.

Proven techniques will be used to minimize burden and achieve the highest completion rates possible. These techniques include such methods as sending letters from a senior official, scheduling visits at the respondents' convenience, using refusal avoidance techniques, reducing in-center time to the extent possible and limiting to no more than one day, etc.

Data collected in the field will be reviewed before leaving the center to ensure all required data have been obtained. This will prevent lost cases due to incomplete information. The database of coded responses will be subjected to quality control, including self and internal audits. In the rare case necessary, field staff will call the respondent back to clarify or fill in answers to key questions.

B.4. Tests of Procedures or Methods to be Undertaken

IHS and EPA will use a combination of methods to ensure that the procedures and instruments used in the survey are tested. These include consultation with experts in the field, role-plays, a pretest of all instruments, and data collection quality assurance audits.

Experts have reviewed the instruments that will be used for the survey. Their suggestions have been incorporated into the instruments. In addition, comments received during the public comment period after the Federal Register notice is published will be addressed.

Simulated interviews have been conducted to determine whether the questions and responses are clear (less than 10 respondents). Simulated environmental sampling will be used during field staff training to simplify the data collection for these samples.

Portions of the proposed data collection instruments and methodologies from the National Survey are used throughout this project. The OMB number for the National Survey's Information Collection Request by the HUD office of Lead Hazard Control is 2539-0019 (expired).

B.5. Individuals Consulted on Statistical Aspects and Individuals Collecting and Analyzing Data

All work conducted by this project will be by IHS Portland Area, EPA Region 10, and EPA ORD staff. The project officers on this project include:

Matthew Ellis, IHS Portland Area
matthew.ellis@ihs.gov, 503-414-7788

Bethany Plewe, EPA Region 10
plewe.bethany@epa.gov, 206-553-1192

Nicolle Tulve, EPA Office of Research and Development
tulve.nicolle@epa.gov, 919-541-1077