

**Project Title:** “From Healthy Homes to Hogares Saludables: Spanish IPM Video for Low-literate Latinos”

**Project Director:** Michael O’Leary

**Lead Institution:** Baltimore City Health Department

**Project Type:** Regional IPM Publications

**Project Summary:** Baltimore City Health Department (BCHD) was recently funded by the Northeastern IPM Center (NEIPMC) to translate, reproduce and distribute Integrated Pest Management “Do-it-Yourself” Booklets for low-literate Spanish speaking Latinos. BCHD has created a short companion IPM video that will improve IPM awareness and comprehension for low-literate residents. It provides vocal instructions and visual demonstrations on the benefits of IPM and how to practice IPM in the home. The video was designed to complement the booklet, but may also be used as a stand-alone resource. It may be found here:

<http://www.youtube.com/watch?v=p2MPoByymQE>

With continued NEIPMC support, BCHD will translate the video into Spanish, distribute it to organizations and community groups serving Latino residents in Baltimore City, and provide copies throughout the region to state health departments and groups such as the Northeast IPM Center and National Center for Healthy Housing. Translation will omit references to Baltimore and reference general urban conditions to make the video applicable to all urban regions.

Latinos demonstrate a unique need for quality information and instruction on how to safely and effectively manage residential pests. Beset by low incomes, language and literacy barriers, and a propensity to not read labels, Latinos are predisposed to use widely accessible and promoted, inexpensive, dangerous and unhealthy, chemical pest control products.

BCHD will work with Maryland Institute College of Art (MICA) faculty and two bilingual students to translate the video, test translations on Latino clients of the Esperanza Center (partner on previously funded initiative) and BCHD clients, incorporate voice over and captions/sub-titles in the video, and produce the finished product. This will be the third video production partnership between BCHD and MICA.

By funding this Spanish-translated video, the Northeast IPM Center will produce an effective, enduring educational tool that will significantly reduce literacy and comprehension gaps among Latinos and will empower them to safely and effectively practice residential IPM.

**Problem and Justification:** Public health pests, particularly rodents and cockroaches, are a significant concern in low-income, urban households, especially in areas of high population density. Not only these pests but also the conventional pesticides used to control them are either directly related to or closely associated with a variety of adverse health effects. Latinos especially, need to know how to safely and effectively control pests. Not only are they disproportionately affected by pests, they are disadvantaged and predisposed to using commonly accessible, heavily marketed conventional sprays, bombs and foggers.

Rodents and cockroaches are widely known to trigger allergic reactions and asthma attacks, especially in children. In a study of homes with asthmatic children from Bronx, East Harlem and

Baltimore, 29% contained evidence of mice in the home; however, 95% of the homes tested positive for mouse allergens (Phipatanakul et al. 2000). The Inner City Asthma Study looked at geographic differences in asthma exposure in 7 inner city areas and found Northeast homes had the highest levels of cockroach allergens (Gruchalla et al. 2005). Among the families visited by BCHD staff, 59% reported problems with cockroaches, 71% mice, and 41% rats. Children who are sensitized and highly exposed to mouse allergen report more days of asthma symptoms, exercise-induced asthma and 80% more days that require use of a rescue inhaler than children who are not sensitized or highly exposed to mouse allergen in their homes (Matsui et al. 2006). Hospitalizations and ED visits are thus much more common for sensitized children who are often exposed to mouse allergens (Matsui et al. 2006). This results in a disproportionate health and cost burdens on low income families who reside in these conditions.

The use of widely accessible and relatively inexpensive conventional pesticides such as sprays, bombs and foggers are associated with a variety of adverse health effects. These include mild symptoms such as vomiting, loss of coordination, and respiratory distress, as well as more severe respiratory hypersensitivity reactions and birth defects (Davis and Ahmed 1998). The use of pesticides indoors during pregnancy has also been shown to be significantly associated with certain types of childhood leukemia and lymphoma (Rudant et al. 2007).

Latinos are disproportionately affected by pests and conventional pesticides for many reasons. They suffer a higher pest presence than most. Latinos are more likely to report that they have cockroaches in their homes, for instance, than non-Latino white families (Everhart et al. 2011). Latinos generally have lower incomes, which is correlated closely with pest presence. Latinos in the United States have a median income of \$37,758 compared to the median income of \$54,620 for White, non-Latinos (DeNavas-Walt et al. 2011). A Rhode Island study found that Latinos were more likely to report higher levels of poverty than African Americans and non-Latino white families (Everhart et al. 2011). Low-income people are more than twice as likely to live in crowded housing and twice as likely to live in a home requiring maintenance and upkeep as others (Federman et al. 1996), and poor structural housing conditions have been shown to be associated with increased pest allergen in homes. In a study of African American and Latina women in Manhattan, poor and deteriorating housing conditions were significantly associated with cockroach allergens in kitchens, where cracks, water damage and leaky pipes were evident (Rauh et al. 2002). In a Baltimore study, Matsui et al. (2005) found that holes or cracks in walls or doors were strongly associated with detectable levels of airborne mouse allergen in the home.

Adding to Latinos' pests problems are low literacy rates that present challenges to effective educational outreach and predisposes them to use common, inexpensive pest products. Latino adults have lower health literacy scores than adults from any other population in the nation. (Kutner et al. 2006). Additionally, fewer Latinos (31%) have an intermediate health literacy level than Whites (52%) and Asians (58%) (Kutner et al. 2006). A Johns Hopkins study found that nearly 2/3 of Baltimore Latinos have been in the United States less than five years and only 10% prefer reading in English; also in this cohort, 43% have either no or only primary level education, although 86% participants reported they could read in Spanish (Muñoz et al. 2008)

Also noteworthy, few Latinos reference written materials for health-related information. In a 2008 study, less than 5% of Latinos relied on written resources such as brochures, books and

internet; however, many Latinos turned to verbal communication for health information from health clinics, community centers, friends and family (Muñoz et al. 2008). Compounding the problem is Latinos' tendency to not read labels. One study in San Diego found significantly less Spanish speakers than English speakers reading a pesticide label to determine the specific pests controlled, ingredients, how much to use and when to treat for pests (Wilén 2001).

Underscoring the need for this video is the rapid increase in the Latino population in the region and nationally. In the last decade Rhode Island, Connecticut and Maine experienced nearly a 50% increase in Latinos, Pennsylvania 83% and Maryland and Delaware 106% and 96%, respectively. Additionally, the Latino population is increasing in Maryland more rapidly than Asians, African Americans and Whites (Governor's Commission on Hispanic Affairs Annual Report 2007-2008). Baltimore City, also, has experienced a growth in Latino residents (54% increase 2000-2008). Hispanics are now the fastest growing population in Baltimore City (Governor's Commission on Hispanic Affairs Annual Report 2008-2009).

This self-help Spanish IPM video is therefore a timely and effective means to improve awareness and comprehension among a growing and underserved population with a high unmet need.

BCHD believes this Spanish IPM video will provide future initiatives in the Northeast Region and beyond with an effective, culturally and linguistically appropriate, novel way of delivering IPM education and assistance to low-income, low-literate Spanish residents. By accomplishing the objectives of this project, BCHD will address NEIPMC stakeholder priority of using diverse media to educate the public on implementing IPM in their homes.

**Objectives and Anticipated Impacts:** This initiative will have two objectives, 1) adaptation of the existing English instructional IPM video into Spanish, which entails Spanish audio dubbing and incorporation of Spanish chapter headings throughout video; and 2) distribution of the Spanish IPM video regionally and locally to organizations and community groups in Baltimore City and Maryland which serve Latino residents, and to urban centers throughout the region via state health departments and organizations such as NCHH and NEIPMC. **Target audience, activities and short-term, intermediate and long-term impacts are also noted in the Logic Model appended to this proposal.**

Translation will omit current references to Baltimore City and substitute language that will make the video relevant to urban environments everywhere. The current IPM instructional video can be found here: <http://www.youtube.com/watch?v=p2MPoByymQE>

In broader terms, the anticipated impacts of the translation and distribution of this video speak directly to two educational activities that will lead to the adoption of IPM by homeowners as specified in the National IPM Roadmap. This video will:

- 1) Provide educational opportunities for IPM specialists to learn [obtain] new communication skills [tools] that enable them to engage new and unique audiences having specific language, location, strategy, or other special needs;

And through its distribution and use the video will:

2) Create public awareness and understanding of IPM programs and their economic, health and environmental impacts, through education programs in schools, colleges, and the workplace, and through creative use of mass media.

**Impacts:** Anticipated impacts are the following:

Type of Impact	Anticipated Impact
Safeguarding human health and the environment	<p>The Spanish IPM video will serve as a novel educational tool to enhance the effectiveness of interventions.</p> <p>Behavioral changes in response to this IPM education will minimize adverse health outcomes of pests and pesticides in low-income urban communities.</p>
Economic benefits	<p>Target families will purchase cost effective and efficient pest management supplies that will have a long-term impact and prevent the fervent need to repeatedly buy futile, toxic pesticides such as bombs, foggers and sprays.</p> <p>Implementation of IPM maximizes weatherization and sanitation efforts in the household. By sealing cracks, fixing leaks, using trash cans with lids, and weatherizing window and door frames, families will decrease utility and replacement costs and risk for other structural damage such as mold.</p> <p>The impact for public housing and health agencies will be noted since individualized IPM adoption will decrease need for cyclic public spending on subsidized repairs and pest management services.</p>
Implementation of IPM	<p>IPM practices will be adopted by Latinos, who currently lack access to culturally and linguistically appropriate IPM education and resources.</p> <p>2000 Spanish IPM DVDs will be distributed to Latino population through core community and regional partners</p> <p>Both of the Spanish and English IPM videos will be available on websites of health and housing agencies as well as those of other community and regional organizations.</p> <p>This project will enhance collaboration among health and housing agencies in other cities in efforts to combine IPM and weatherization services to reach minority populations.</p>

**Approaches and Procedures:** Northeastern IPM Center support will build on a previously EPA funded program output, the English version IPM video currently available on BCHD’s website <http://www.youtube.com/watch?v=p2MPoByymQE> The video was developed in partnership with the Maryland Institute College of Art’s (MICA) Center for Design Practice which will again partner to produce this Spanish IPM video.

BCHD will transcribe video content and contract with MICA to translate, adapt, and produce the Spanish IPM video. A breakdown of activities and costs is included in the attached MICA

budget. BCHD and MICA will partner to recruit Latino participants and facilitate focus group discussions to test the video for Spanish comprehension and accuracy. Eligibility criteria will include: Baltimore city resident, native Spanish speaker, Latino ethnicity, head of household, being asthmatic or having at least 1 asthmatic family member, currently have or had pests in the home, and currently use or have used chemical pesticides such as bombs, foggers and sprays. Six participants will be recruited for two, 1-hour focus group discussions.

BCHD will develop a distribution plan and distribute the Spanish IPM video through community groups in Baltimore City. BCHD will work with the city’s Mayor’s Office of Neighborhoods to identify and reach out to those community and neighborhood associations located in areas of Latino residents. BCHD has a history of partnership with the local Catholic Charities chapter (LOS enclosed), which has strong ties to several predominantly Latino religious institutions and public schools. BCHD will also provide Spanish IPM videos through the Maryland Department of Health and Mental Hygiene (LOS enclosed) to distribute through local county healthy departments. BCHD co-chairs the Greater Baltimore Asthma Alliance (LOS enclosed) which will provide video copies to its members.

In order to expand regional efforts, BCHD will provide copies of the Spanish IPM video directly to Northeastern IPM Center and National Center for Health Housing for distribution through its networks and affiliations as well as via a link on the latter’s website. BCHD will utilize close ties with MD DHMH to distribute the video to other states’ health agencies.

Finally, although the current English version IPM video is available on the BCHD website, BCHD will add the Spanish IPM video and also make both videos available on the websites of the Greater Baltimore Asthma Alliance, National Center for Healthy Housing and Maryland Department of Health and Mental Hygiene.

**Timeline:** The timeline below has been proposed for this project:

Month	Activity	Responsible Party
1	Develop distribution plan for DVD copies of Spanish IPM video; Transcribe English IPM video content; Contract agreement with MICA	BCHD
2	Translate IPM video into Spanish and produce DVD  Develop focus group discussion guide  Recruit eligible participants for focus group discussions; Show Spanish IPM video during focus group discussions and record findings	MICA  BCHD  MICA and BCHD
3	Incorporate focus group discussions findings into video to improve Spanish comprehension and accuracy; Produce 2 <sup>nd</sup> Spanish IPM video	MICA
4	Show Spanish video during focus group discussions and record findings	MICA and BCHD

	Incorporate focus group discussion findings into video to improve Spanish comprehension and accuracy; Produce final Spanish IPM video	MICA
5-7	Distribute videos locally to BCHD clients through healthy homes parties; Measure knowledge gains, attitudinal and intentional changes among Latino clients who viewed Spanish IPM video	BCHD
8-12	Contract with video production company to produce 2000 DVD copies of final Spanish IPM video; Distribute DVD copies of Spanish IPM video to Latino residents through local, state-wide and regional core partners	BCHD

**Evaluation Plan:** Focus group discussion feedback of the Spanish IPM video will be used to improve Spanish comprehension and accuracy of video and serve as evaluation during the process of video translation, adaptation and production. The video will be revised accordingly after each focus group discussion before being finalized for reproduction and distribution.

Additionally, existing BCHD programs will be leveraged for evaluation of video prior to reproduction and distribution. Ms. Sonia Quezada, a BCHD Public Health Investigator, is a native-Spanish speaker with experience working on health interventions with Latino communities. She will provide a copy of the Spanish video for viewing, after it has incorporated findings from final focus group discussion, during BCHD Healthy Homes parties. Healthy Homes parties are conducted in residents' homes and educate neighborhood groups on using healthy homes techniques for a safe and healthy home. Ms. Quezada will survey viewers for changes in knowledge, attitudes, and intentions to use IPM after viewing the Spanish IPM video. For example, viewers will be asked to select from a list of pests those that are known to trigger asthma (knowledge), respond if they believe that cleaning and sealing are effective ways to manage pests (attitude), and select from list of IPM and conventional methods those that they intend to use to manage pests in their home (intent).

If necessary, findings from healthy homes parties' evaluations will be incorporated into a revised final Spanish IPM video prior to its reproduction and distribution.

**Cooperation, Institutional Units and Key Personnel:** The Baltimore City Health Department's Healthy Homes Bureau will partner with Maryland Institute College of Art's Institute for Research to develop translation and produce a finished translated video.

BCHD's Healthy Homes Bureau (HHB) has collaborated on four such initiatives with MICA that have produced two booklets and two videos, 1 of each on lead poisoning prevention and on IPM. The companion IPM booklet funded for translation by NEIPMC is a MICA product, for example.

BCHD is the longest serving municipal health department in the United States and has a proven track record in grant management. The Healthy Homes Bureau (HHB) has managed federal, state, and local awards in excess of \$10,000,000 and regularly exceeds performance targets. Funders have included the U.S. EPA, HUD, CDC, SAMHSA, and state departments of Health and Mental Hygiene, Housing and Community Development, and the Environment.

The Project Director will be Ms Genevieve Birkby, Acting Director of the HHB, who will dedicate no less than 5% of her time for the full project period. Her CV accompanies this application. She holds an M.P.H. and M.A., supervised the development of the lead poisoning prevention booklet and video, and has had a long-standing relationship with MICA.

**Maryland Institute College of Art (MICA):** MICA (letter of collaboration attached) is the nation's oldest independent and fully accredited degree-granting art college and serves as an educational and cultural resource for the mid-Atlantic region. MICA immerses students and faculty in communities and partner organizations to fully understand the issues/audiences, accurately identify their needs, and develop appropriate design solution(s).

Mr. Allen Moore will lead MICA's efforts on this initiative. He is a professor of film and video production at MICA and produced the lead poisoning prevention and IPM videos for HHB. Mr. Moore is Professor of Video and Film Arts and has a long list of accomplishments, including Primetime Emmy nominations and contributions to Peabody Award winners.

Maryland Department of Health and Mental Hygiene will utilize its contacts in health departments across the state of Maryland to distribute the video. The Latino Providers Network and Esperanza Center (letters of support attached) will make the video available to Latino organizations and families, respectively, throughout Baltimore City.

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**Logic Model**

**Focus Area:** Residential IPM; **Impact Area:** Low-income, Low-literate Latino residents

**Roadmap Goal:** Educate and empower Latino residents to adopt household IPM for safe and effective pest management in order to improve health outcomes

Inputs	Audience; Activities	Impacts		
		Short Term (Knowledge Change)	Intermediate (Action Change)	Long Term (Condition Change)
Spanish, instructional IPM video  Translation and reproduction of existing English version IPM video   Core Partners for distribution     	<p><i>Target Audience</i></p> <p>Low income, lower-literate Latino residents</p> <p><i>Activities</i></p> <p>Will watch Spanish IPM demonstration video and adopt IPM</p>	<p><i>Indicators</i></p> <p>Identify current live pests and signs of pests in homes</p> <p>Improve knowledge of health risks associated with pests and conventional, toxic pesticides</p> <p><i>Possible Measures</i></p> <p>Measure ability of residents to identify pests as asthma triggers</p> <p>Measure residents' intent to clean and sanitize homes for long-term, safe pest management</p>	<p><i>Indicators</i></p> <p>Discontinue use of conventional, toxic pesticides</p> <p>Implement IPM practices of sealing cracks, fixing leaks, using safe, least toxic pest control products (diatomaceous earth, rodent traps, baits), and adopt sanitation habits</p> <p><i>Possible Measure</i></p> <p>Measure consumer patterns in local pest product retailers for sprays, bombs and fogger purchases (BCHD IPM outreach and training programs)</p> <p>Conduct attitudinal survey to assess implementation of cleaning, sanitation and pest exclusion techniques (BCHD IPM outreach and training programs)</p>	<p><i>Indicators</i></p> <p>Decreased pesticides-related hospitalizations and physician visits</p> <p>Decreased asthma prevalence in children in homes with previous pests and heavy pesticides use</p> <p>Empowered and knowledgeable residents who can identify and immediately respond to household pests</p> <p><i>Possible Measures</i></p> <p>Measure ED visits and hospitalizations due to toxic pesticide use</p> <p>Conduct survey with local poison control centers</p> <p>Measure changes in asthma symptomology and pest sightings (BCHD asthma home visit programs)</p>

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