



**La Cámara de Comercio de Puerto Rico**  
y su Comités de Educación y Ambiente, Infraestructura y Permisos  
presentan:

**Seminario:**  
**Concienciación sobre el moho, plomo y asbestos para Municipios y**  
**Responsables de la Toma de Decisiones**

**MOLD-LEAD-ASBESTOS AWARENESS SEMINARS FOR MUNICIPALITIES & DECISION MAKERS**



**Adiestramientos en Puerto Rico**

**Ameesha Mehta-Sampath MPH, LEED-AP**

**Indoor Air Quality Coordinator (Mold, Asthma, Radon)**

**Disaster Recovery HSS-RSF-Co-Lead**

**USEPA- Region 2**





# Seminario y Taller

## Ameesha Mehta-Sampath, MPH, LEED-AP

Indoor Air Quality Coordinator (Asthma, Mold, Radon, Disaster Recovery, & Healthy Buildings) at US Environmental Protection Agency Region 2. She is known for her leadership and collaborative skills in initiating and implementing national public health programs in Pesticides, Asthma, Engineering Controls in the Agricultural Sector, Climate Resilience & Adaptation, and an Indoor Air Focused Healthy Buildings Long-term Disaster Recovery Initiative. She was instrumental in developing key Asthma partners in Puerto Rico collaborating on joint highly successful and creative initiatives to address the Asthma epidemic, including, training and certifying a cadre of 600 asthma educators; implementing the Indoor Air Quality Tools for Schools program in over 300 schools on the island; and, developing an asthma business case to begin to secure insurance reimbursements for environmental asthma management. At EPA Headquarters, she directed a national initiative, ***Pesticides and National Strategies for Health Care Providers*** in collaboration with other federal agencies and non-profits to equip the medical, nursing and public health system with the knowledge and tools to respond effectively to environmental health hazards.





## Environmental Issues Post- Hurricanes



Housing, Schools, Buildings' issues related to Mold, Asthma, Lead, Asbestos, other exposures to Hazardous Chemical/Materials leading to expanded Asthma & Respiratory triggers.

Need for strategic worker training (mold remediation, RRP, hazardous waste, community health workers, healthy home specialists, lead inspectors, pesticide applicators, health care providers, etc.)





# Healthy Homes Initiative Identification & Management: Lead Poisoning & Asthma Care



## Super Storm Sandy Recovery



American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

New Jersey Chapter





## Environmental Issues Post- Hurricanes

Perfect Opportunity: To Rebuild PR Wisely and For the Longer Term.

- Investing in the Local Work Force Leads to Higher Return-On-Investment for PR.
- Less Migration, Healthy Buildings, Healthy, Resilient Communities.
- Implement Energy Star & Water Sense, built Environment and Walkability Institute recommendations
- Increased use of resilient & sustainable building materials; revision & enforcement of building codes
- Integrated approaches to assuring Healthy Homes/Public Housing/Schools/Public Buildings





# Intersection of Housing-Health-Environment

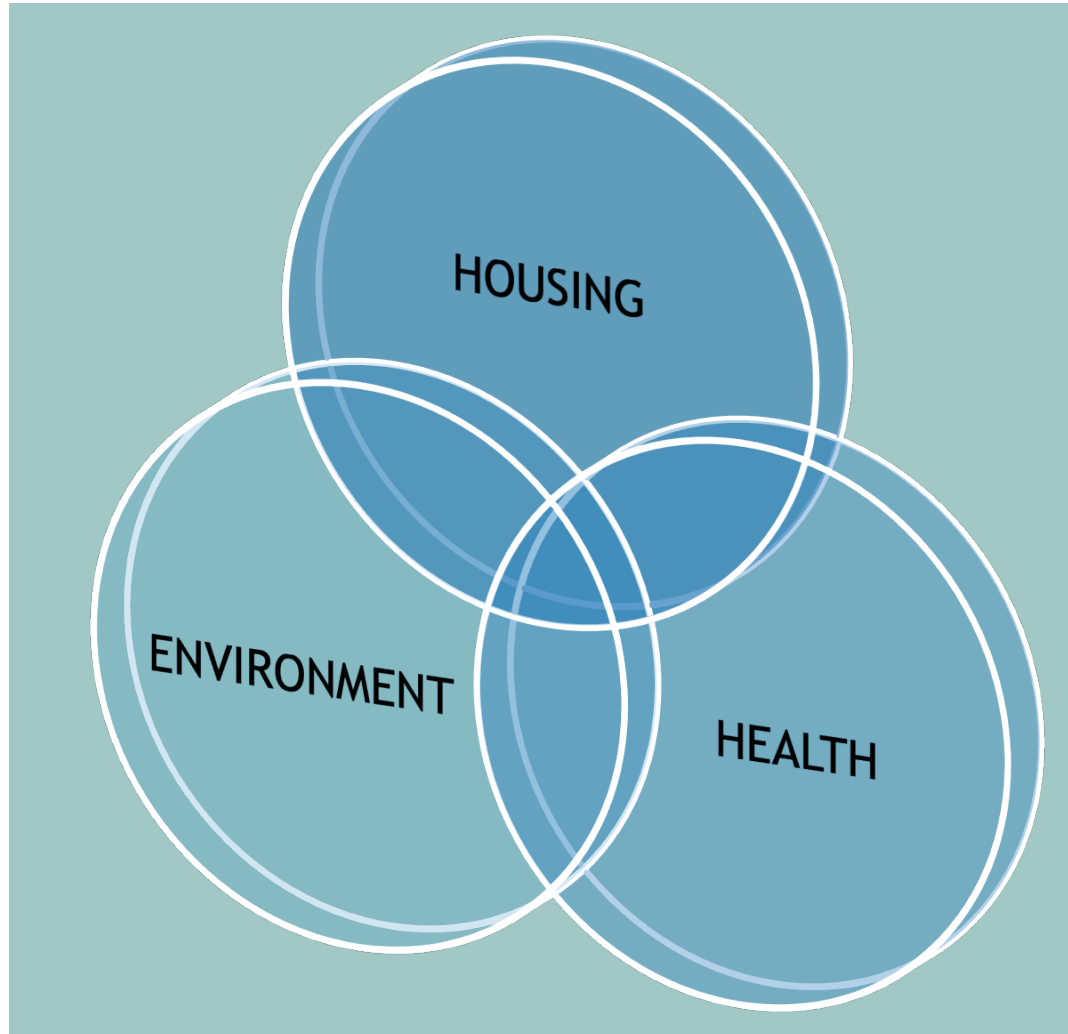
## Key Benefits

**Builds Capacity  
on all levels**

**Targets  
Workforce  
Development**

**Creates  
Sustainable New  
Jobs**

**Addresses Key  
Health issues-  
Integrative  
Manner**



**Assists in  
Optimal  
Utilization of  
Funds**

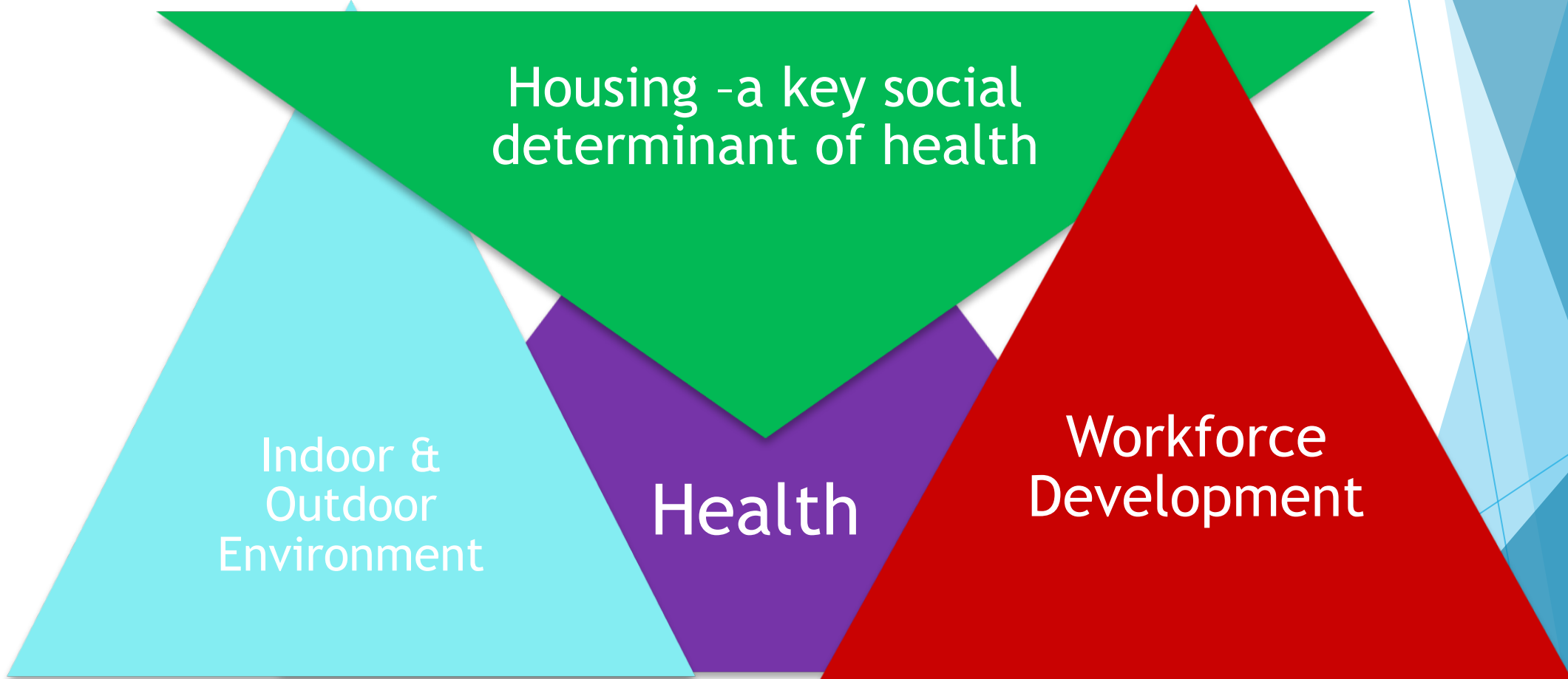
**Ensures that  
PR is Better  
Prepared**

**Promotes  
Resiliency**

**Ensures  
Sustainability**



# Components of PR Healthy Buildings (Homes/ Public Housing/Schools) Initiative





# Addressing IAQ Issues Received from Deployed RSF leads, Local Agencies, Community, Congress and Responders in Puerto Rico

Congress of the United States  
Washington, DC 20515

August 6, 2018

The Honorable Alex M. Azar II  
Secretary  
U.S. Department of Health and Human Services  
200 Independence Avenue, SW  
Washington, D.C. 20201

The Honorable Andrew Wheeler  
Acting Administrator  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, D.C. 20460

Dear Secretary Azar and Acting Administrator Wheeler:

We write to you regarding the federal response to the alarming increase in asthma cases in Puerto Rico in the aftermath of Hurricanes Maria and Irma recently detailed in media reports.<sup>1</sup> Doctors have also indicated that symptoms have become more severe for those already living with this chronic disease.<sup>2</sup>

## TRANSFORMATION AND INNOVATION IN THE WAKE OF DEVASTATION

AN ECONOMIC AND DISASTER RECOVERY PLAN  
FOR PUERTO RICO



## Rebuild and Enhance Health and Social Services Infrastructure and Regional Health Care Networks

### HSS 1 Increase Use of Solar-Powered Generators and Solar Backup Power Sources

Promote solar-powered generators for residential properties to reduce air and noise pollution.

**Potential benefits:** Reduces noise and air pollution and the risk for respiratory and hearing-related illnesses. Reduces the number of residents who need to be evacuated due to lack of power. Reduces morbidity among residents with technological dependence for health issues, and mortality and risk associated with fossil fueled generators.

**Potential upfront costs:** \$4.2 billion–\$6.2 billion in estimated upfront costs

**Potential recurring costs:** \$1.4 million in estimated recurring costs

### HSS 2 Prevent Disease Through a Capacity-Building Healthy Housing Initiative: Targeting Mold, Lead, and Other Stressors

Build capacity for the identification and management of mold and other environmental stressors through an integrated healthy homes/housing and buildings initiative to prevent respiratory-related and other health exacerbations. This includes training for implementation, capacity-building mechanisms within agencies for enforcement, and promotion of NHLBI Expert Panel Report 3 guidelines for asthma management.

**Potential benefits:** Contributes to decreased public health burden of asthma and other respiratory-related diseases, as well as a reduction in health care costs.





# Healthy Buildings (Homes/Public Housing/Schools/ Public Buildings) Initiative: Current Partners (to-date)

**Federal/Territory/State:** EPA- Region 2, HUD, HHS-HRSA-OASH-NIEHS, FEMA, DOE, DHS, PR OSHA, PRDOH, PRDE, PRDoH, PR HA, etc.

**Asthma/Health Coalitions:** PR Asthma Coalition, PR Primary Care Association;

**Academia:** Ana Mendez Univ- OSHA Training Center-PR; Universidad del Turabo, University of Puerto Rico (UPR)- Medical Center-School of Health Professions & School of Public Health; UPR-Mayaguez- DHS Coastal Resilience Center of Excellence-Department of Civil Engineering & Surveying; Pediatric Environmental Health Specialty Unit (PESHU) at Mount Sinai; Hunter College-Centro PR, Rutgers University-School of Public Health.



# Healthy Buildings (Homes/Public Housing/Schools/ Public Buildings) Initiative: Current Partners (to-date)

**Advisory Groups/Foundations:** Relmagina PR;  
100 Resilient Cities

**Health & Housing Policy/ Non-  
Profits/Community Organizations:** Heart to  
Heart; Hopenow; Servicioslegales, Consumer PR;  
USGBC-Caribbean Chapter; Path Stone, etc.

**Industry Associations:** PR Builders Association,  
PR Chamber of Commerce, United Auto Workers,  
Chemical Workers Union, LIUNA, etc.





# Expanding Our Circle of Influence in Rebuilding PR

REALIZE HEALTHY PEOPLE &  
HEALTHY COMMUNITIES &  
SUSTAINABLE HOMES /PUBLIC  
HOUSING /SCHOOLS /PUBLIC  
BUILDINGS

USE RESILIENT BUILDING  
MATERIALS, COMPLY WITH  
BUILDING CODES, FOLLOW BUILT  
ENVIRONMENT & WALKABILITY  
INSTITUTE RECOMMENDATIONS,  
AND DO REGULAR MAINTENANCE

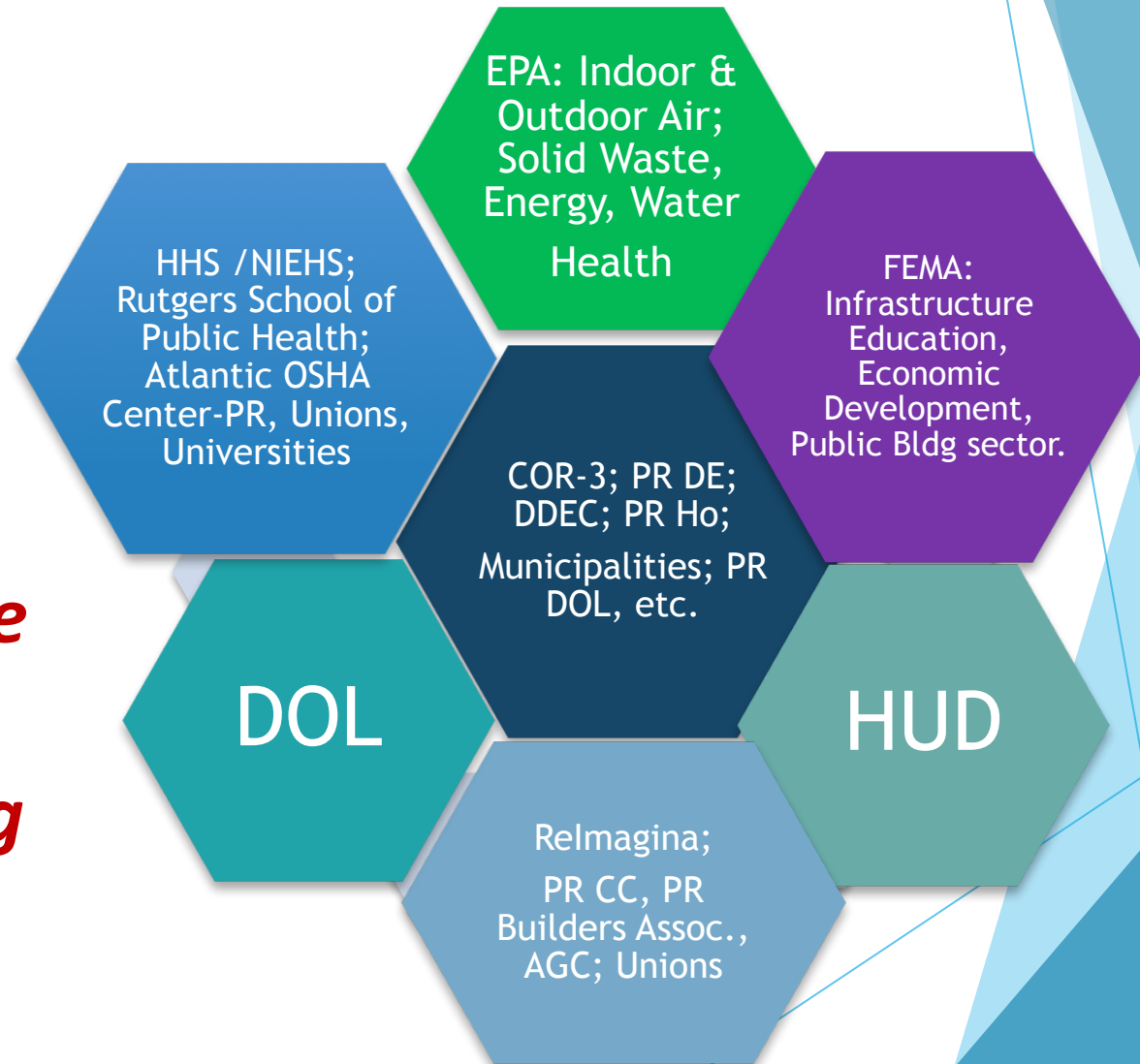
EXPAND AWARENESS & TRAINING OF  
ENERGY STAR, WATERSENSE,  
WEATHERIZATION, INDOOR AIRPLUS

TRAIN & CERTIFY  
WORKFORCE



# Healthy Buildings (Homes/Public Housing/Schools) Initiative:

***Task Force on Raising the  
Local Workforce in the  
Renovation & Rebuilding  
of PR***







# Healthy Buildings (Homes/Public Housing/Schools) Initiative: Raising the Local Workforce

- ▶ How Do We Promote the Local Economy?
- ▶ Disaster Response to Long-Term Recovery Solutions





# Investing Locally (Step by Step) Results in Healthy Buildings & Healthy, Resilient Communities



Unemployed residents to fully employed in long-term, sustainable career paths.

Training of local workforce resulting in direct hire for renovation/rebuilding projects at the municipality level.

Successful labor agreement/CBI:

- Training funds set aside in awarded contract;
- Requiring 75% of local hires with the goal of 100% local hires within 2/3 years





***Raising the Workforce in PR***

***Invest in the Local Residents Now;***

***Empower them to be part of the Re-Building of PR;***

***From Mainland to the Island;***

***High Return-On-Investment***



# INSTITUTE A PR-WIDE WORKFORCE POLICY

**Objective:** Establish a policy that highlights the economic impact (ROI) to utilize the local workforce in the long-term disaster recovery effort:

- ▶ Unemployed residents to fully employed in long-term, sustainable career paths
- ▶ Training of local workforce resulting in direct hire for renovation/rebuilding projects at the municipality level.
- ▶ **Community Benefit Agreement (CBI):** Training funds set aside in awarded contract; requiring 75% of local hires with the goal of 100% local hires within 2/3 years
- ▶ Policy implementation by Federal & local partners







## **Healthy Buildings Initiative: Task Force on the Raising the Local Work Force:**

### **Optimum Strategies to Achieve Sustainable Local Hiring/Labor Agreements**

- ▶ Request for language on local hire provision be added to contracts for clean up/recovery/renovate/rebuild projects island-wide.
- ▶ Use a **community benefit agreement (CBA)** or other local hire provision that is developed with local municipalities and PR Schools to make sure it is community driven and sustainable.
- ▶ Share success stories or best practices on CBA/Local Hire
  - ▶ <https://www.forworkingfamilies.org/page/community-benefits-101>





# HOUSING TENURE: OVER 76% HAVE LEAD, ASBESTOS ISSUES

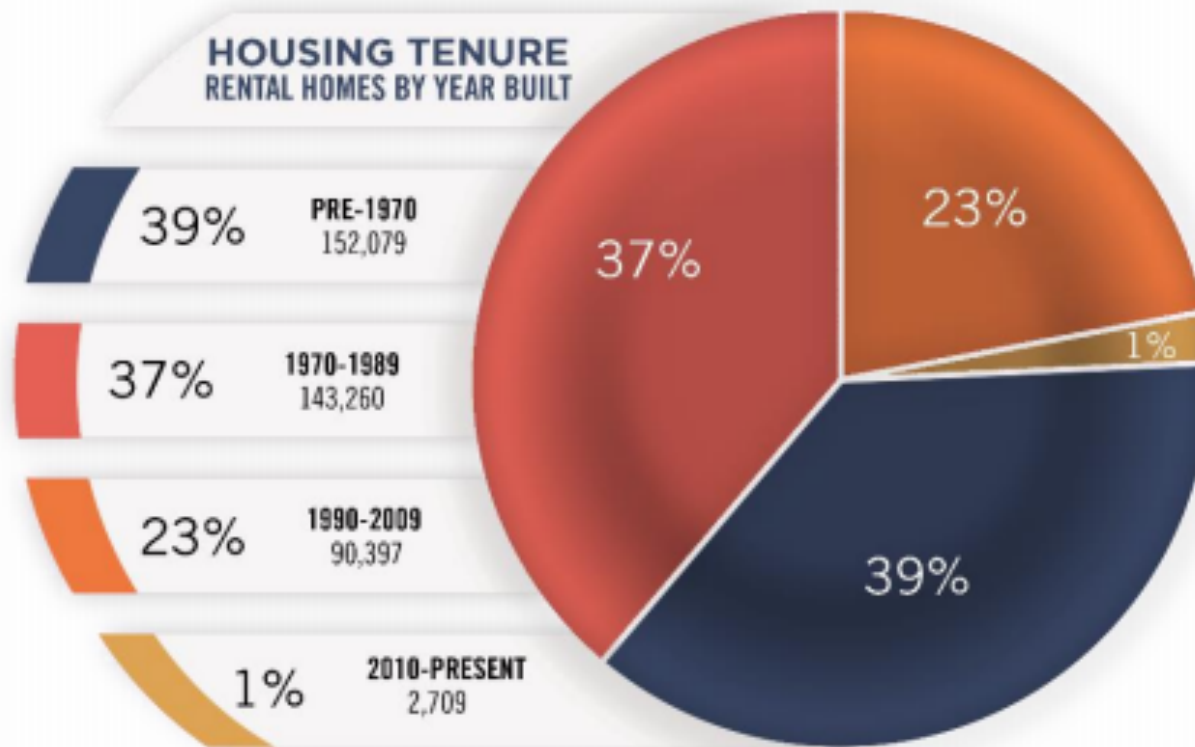


Figure 30. Rental Housing Tenure, source data from American Community Survey 2012- 2016



# HOUSING TENURE: OVER 71% HAVE LEAD, ASBESTOS ISSUES

Figure 27. Housing Unit Tenure, source data from American Community Survey 2012-2016

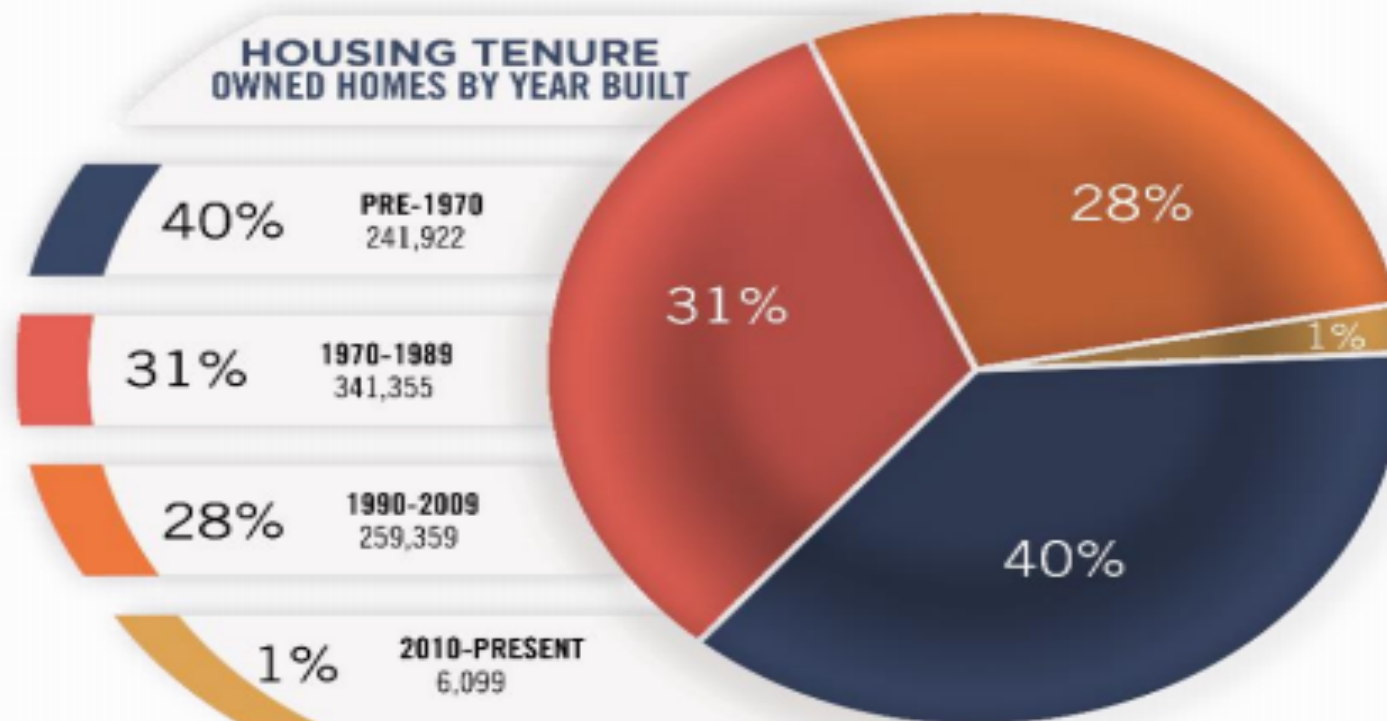


Figure 28. Housing Tenure, source data from American Community Survey 2012-2016



# MUNICIPALITIES OF PUERTO RICO



ISLANDS OF  
PUERTO RICO

**How many workers do we need to address the massive renovation/rebuilding of the numerous damaged buildings in Puerto Rico? Taskforce developing workforce projections for 3 specific environmental skilled trades:**

**MOLD-LEAD-ASBESTOS**





**Preparation through  
Education is Less Costly  
than Learning through  
Tragedy.....Max  
Mayfield**





# What is Mold?

## What are the common types of Mold?

Mold is a sub-group of the Fungi Kingdom.

It is present everywhere (indoor and outdoor); on our clothing, carpet, food, etc

They produce spores that are very small, can be airborne.

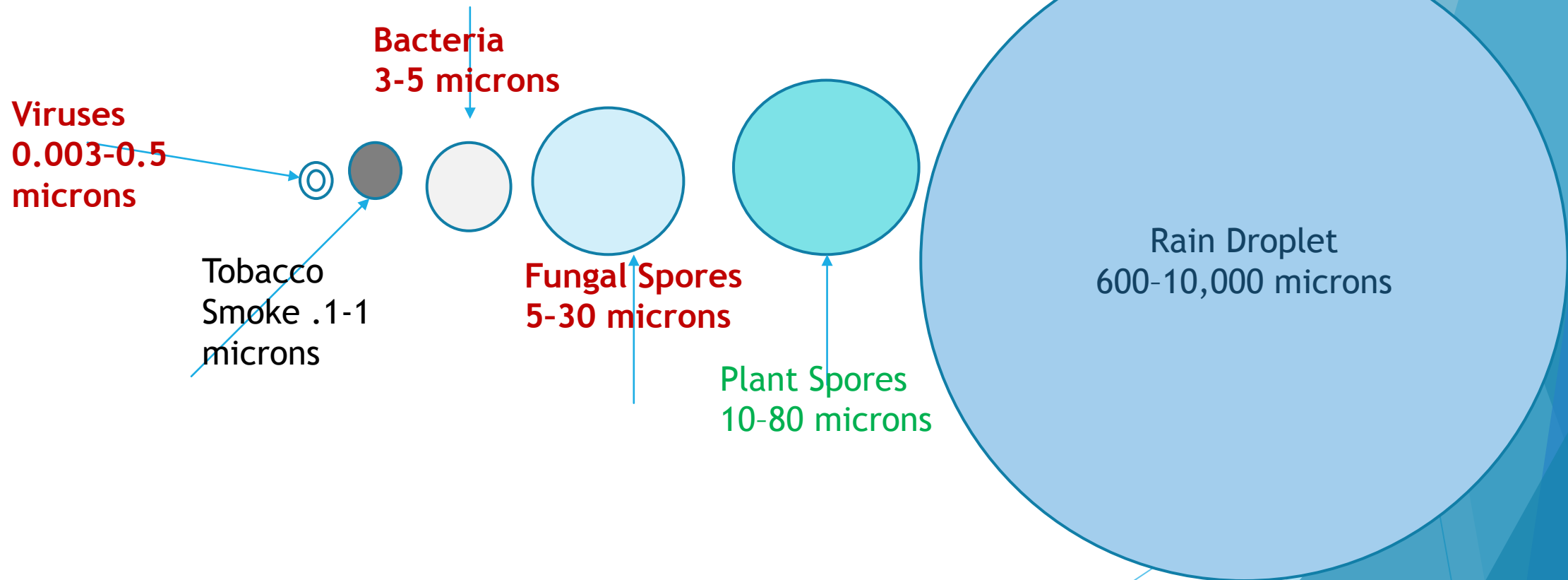
Conditions for Mold growth: mold spores are always present,

Temperature range; Food, pH, and Moisture Control

- ▶ **Common Types of Mold:** Aspergillus, Penicillium, Botrytis, Stachybotrys; and Fusarium.



# Mold Spores: Very Small & Airborne- We Can Breathe Them In.







# How Does Mold Exposure Occur?

- ▶ Breathing in Spores from the Air.
  - ▶ Skin contact from handling an item that has mold growing on it.
  - ▶ Eating without washing your hands after handling moldy objects.
- 
- ▶ Key to Mold Growth is Moisture Control
  - ▶ Fix the Source of Moisture, Mold Growth is Prevented
  - ▶ ***Mold remediation of large and extensive infestations is similar to Lead Abatement and Asbestos Remediation***



# Health Effects Related To Mold Exposure in the Indoor Environment

- ▶ Itchy, Runny or Stuffy Nose
- ▶ Sneezing
- ▶ Itchy or watery eyes
- ▶ Itchy or sore throat
- ▶ Cough
- ▶ Wheezing

**Allergic Reaction:** By far the most common, inhalation of spores or touching spores.

**Asthma:** Mold spores can trigger or make Asthma worse.

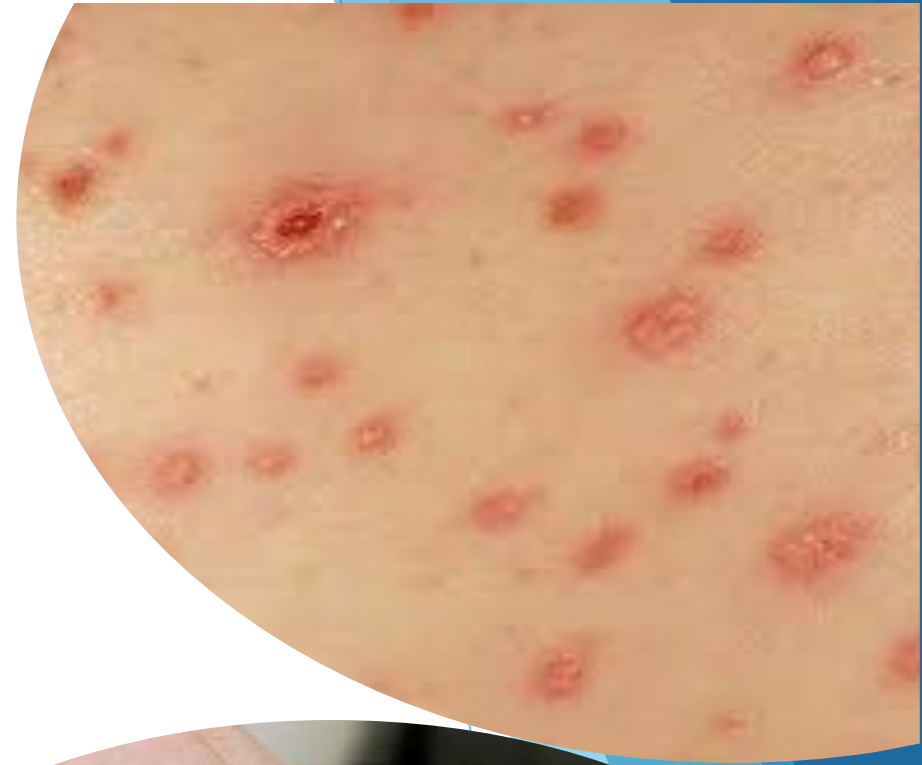
**Hypersensitivity Pneumonitis:** Develops after acute or chronic exposure.

**Children, Elderly, People with low immunity are more susceptible.**



**Mold** Allergy  
Symptoms

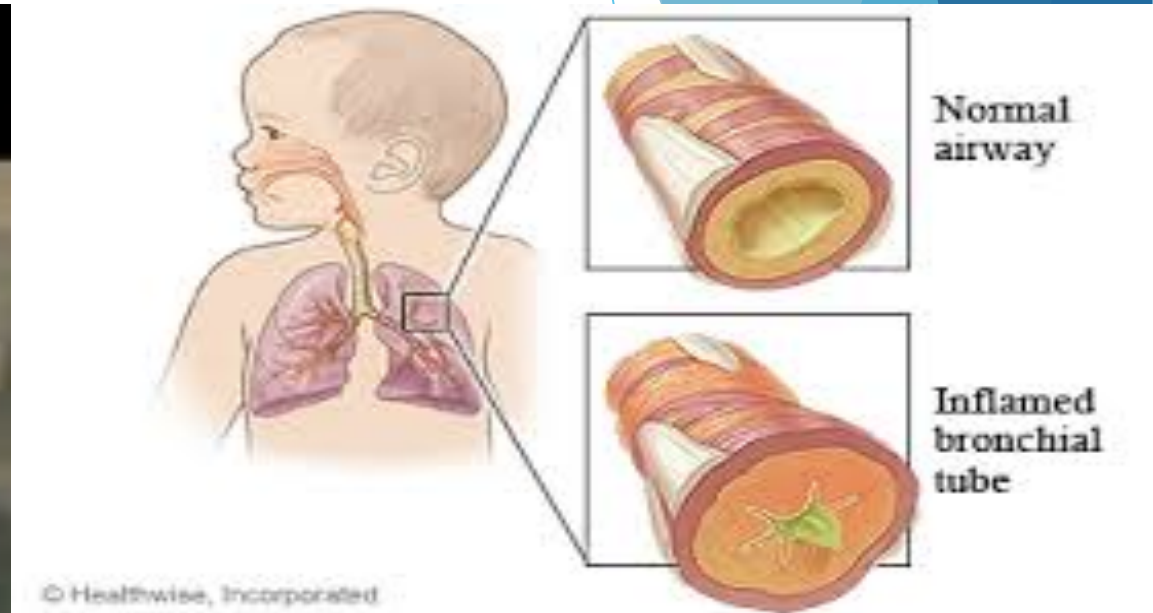
**Mold is a trigger  
for asthma**





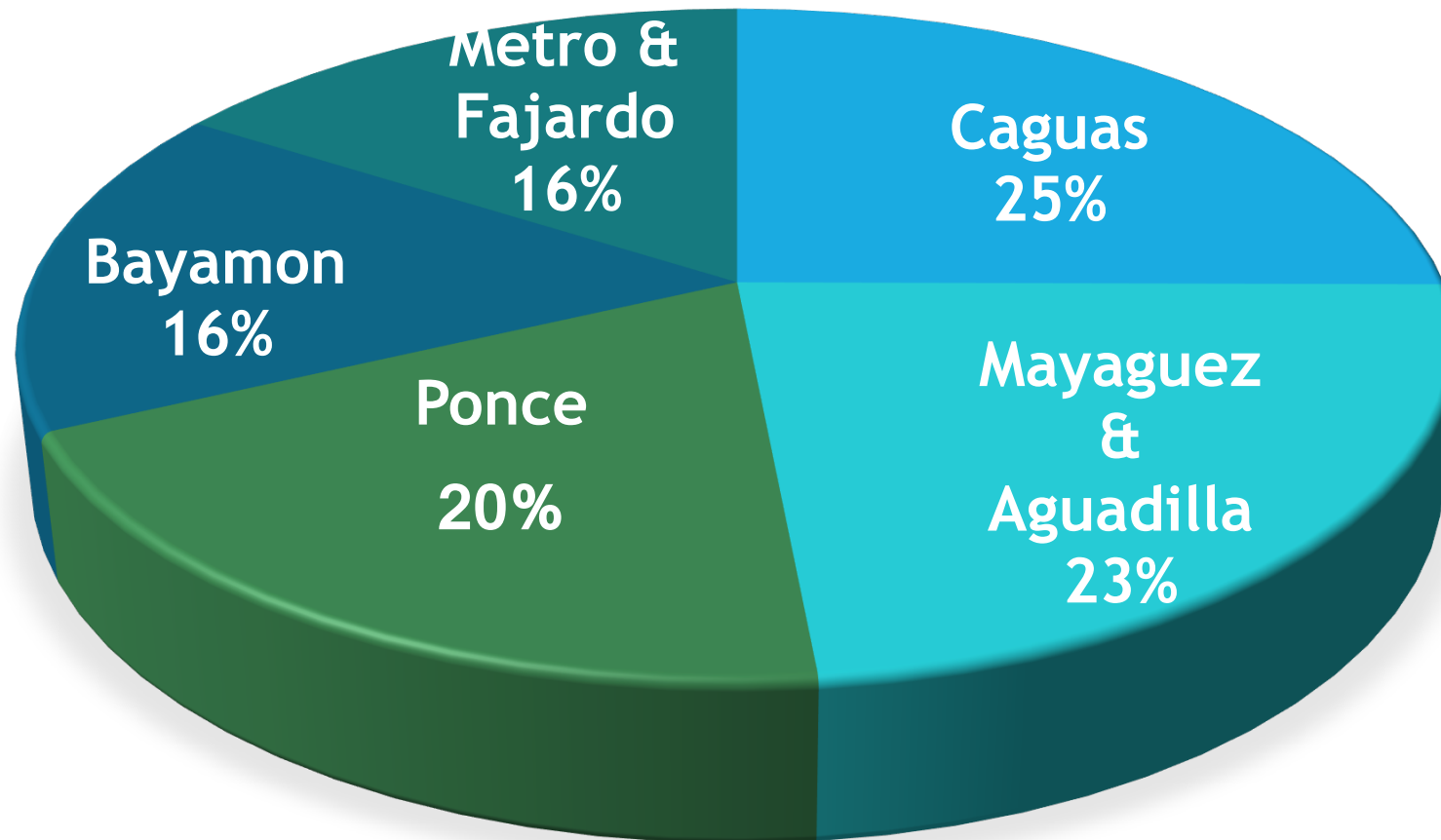


# MOLD-STRESS ARE TRIGGERS FOR ASTHMA





# ASTHMA RATES IN PUERTO RICO



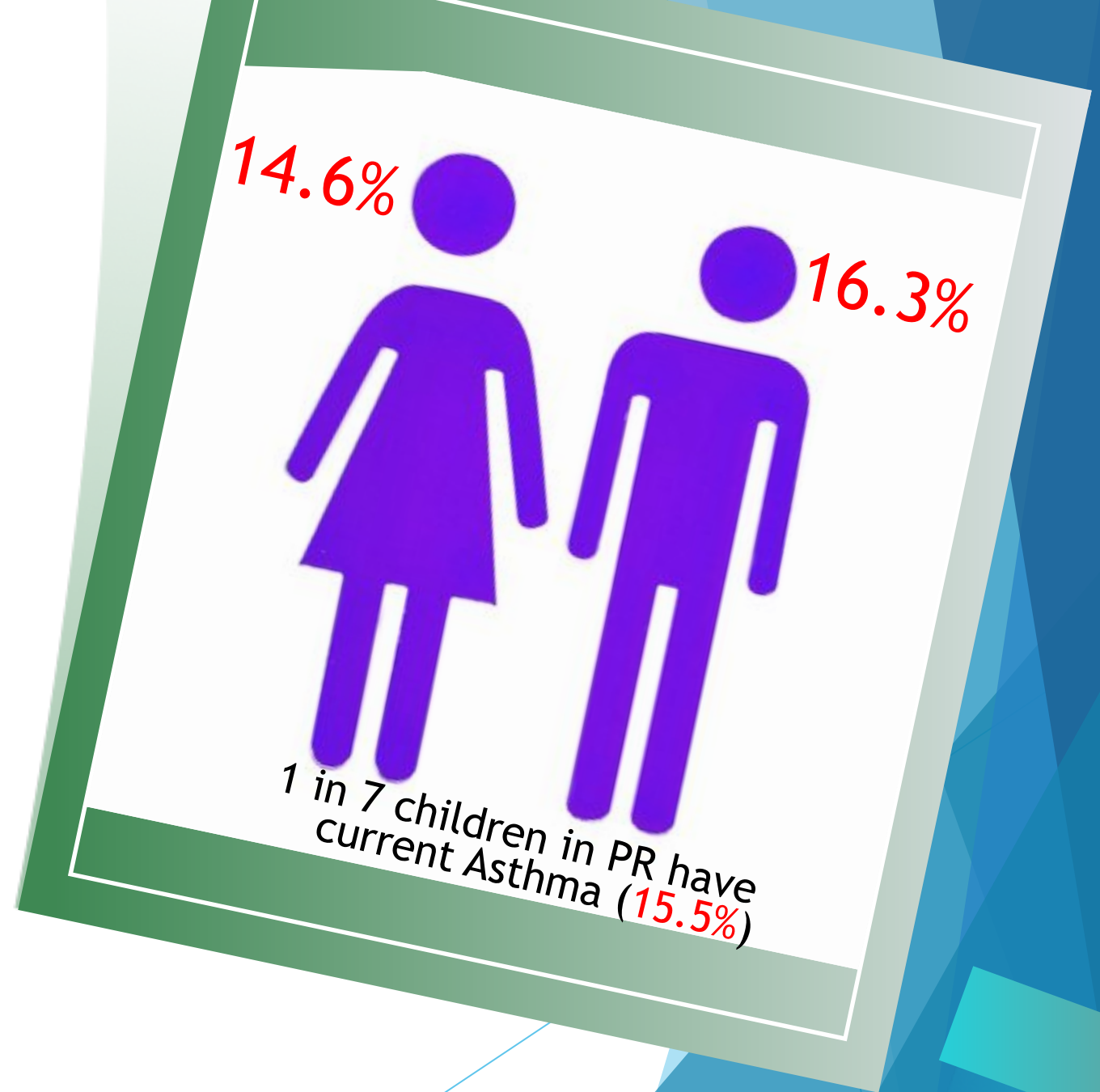
**The population of Puerto Rico is  
disproportionally affected by asthma**



## Data

### Asthma in PR

- ▶ 10.7%, 1 in 10 adults have current asthma before the Hurricane Irma and Maria.
- ▶ Almost, 25%- 30% increase in asthma cases after Hurricane Maria (PR Primary care association sample survey).







# Health Effects Related To Mold Exposure

- ▶ Water damage inside buildings after disasters contributes to the growth of mold.
- ▶ Workers exposed to mold during disaster recovery and cleanup or mold remediation may experience a variety of health problems.
- ▶ Removing mold growth and correcting the underlying source of water responsible for the mold contamination can help to reduce mold exposures and related health symptoms.



# EPA Guidelines for Mold Remediation & Worker Training

Guidelines for Remediating Building Materials with Mold Growth Caused by “Clean Water” Material or Furnishing Affected - Cleanup Methods:

- ▶ **Level I: Small Isolated Areas** (10 sq. ft. or less) - e.g., ceiling tiles, small areas on walls.
- ▶ **Level II: Mid-Sized Isolated Areas** (10 - 30 sq. ft.) - e.g., individual wallboard panels.
- ▶ **TRAINED & CERTIFIED WORKER: 3-4 days**
- ▶ **Level III: Large Isolated Areas** (30 - 100 square feet) - e.g., several wallboard panels.
- ▶ **Level IV: Extensive Contamination** (greater than 100 contiguous square feet in an area).



# **EPA Guidelines for Mold Remediation & Worker Training**

Mold caused by polluted water, including sewage backups, and during disasters may require a different set of procedures and worker protection.





# EPA Guidelines for Mold Remediation & Worker Training

**Worker Training Guidelines must be followed BEFORE work begins:** Proper training of workers is critical in successfully and safely remediating mold growth.

- ▶ **Supervisor: up to 4 days** (Training topics include: \*Causes of moisture intrusion and mold growth \*Health concerns related to mold exposure \*The use of appropriate personal protective equipment \*Mold remediation work practices, procedures, and methods; and hands-on experience \* Mold assessment, mold cleaning, worker protection and clearance testing with moisture meters; and \* Drying after mold remediation is complete).



# EPA Guidelines for Mold Remediation & Worker Training

Worker Training Guidelines must be followed BEFORE work begins:

Workers: 3 days (Training topics that should be addressed include: 🏭 Causes of moisture intrusion and mold growth 🏭 Health concerns related to mold exposure 🏭 The use of appropriate personal protective equipment 🏭 Mold remediation work practices, procedures, and methods; hands-on experience).

▶ ***Mold remediation of large and extensive infestations is similar to Lead Abatement and Asbestos Remediation***



# Healthy Buildings (Homes/Public Housing/Schools/Public Buildings) Long-term Recovery Initiative: Investing Wisely & For the Long-term

- ▶ **CBI:** Require contracts to utilize local workforce and early on will need to include training dollars. The Return on Investment is very high. More costly to ship workers from the mainland- no experience in PR construction type; language barriers.
- ▶ **Job and Health Stability = No Migration**
- ▶ **Create Leaders of Sustainability**
- ▶ **Investment must occur at every point in the pipeline (young workers (Ramey Job Corps) to unemployed/displaced workers (AOTC, etc. )**





“

**“Planning without action  
is futile,  
action without planning  
is fatal.”**

*Cornelius Fichtner*

“ A natural disaster can happen to anyone. Seeing something like this makes you thankful for what you've got, and happy that you can help other folks who need it.

– Kate Novitsky

”

**WE ARE ONE  
DROP.**

**TOGETHER,  
WE ARE AN  
OCEAN.**

*I always tried to turn every disaster  
into an opportunity.*

**JOHN D. ROCKEFELLER**

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tab  
.com



# Gracias

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