

## Healthy Homes Grantees in Region II, New York/New Jersey

**Name of Grantee:** New York Indoor Air Quality Environmental Quality Center  
**Name of Project:** Syracuse Healthy Indoor Environment Living Demonstration (SHIELD) – Program  
**Amount Awarded:** \$ 850,000  
**Year of Grant:** 2003  
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**Project Partners:** State University of New York (SUNY) Upstate Medical University and SUNY College of Environmental Science and Forestry, Cornell University/Cornell Cooperative Extension

### Summary of Project Activities:

This submission describes an indoor asthma intervention program that has been designated the Syracuse Healthy Indoor Environment Living Demonstration (SHIELD) Program. This New York Indoor Environmental Quality Center, Inc. led effort includes partners from the State University of New York (SUNY) Upstate Medical University and SUNY College of Environmental Science and Forestry, Cornell University/Cornell Cooperative Extension and a diverse cadre of cooperators from community, business and faith-based organizations. This consortium designed the SHIELD Program with the intent to increase home ownership opportunities by helping to restore troubled urban housing stock to healthy indoor environmental quality conditions.

This study proposes to use a battery of mitigation techniques to minimize the exposure effects of indoor asthma agents in the homes of an underserved urban population selected from inner city census tracts in Syracuse, NY. A statistically defined group of 60 asthmatic children will receive a high intensity package of asthma agent interventions while a control group of 60 asthmatic children will receive a package of low intensity interventions. Clinical improvements in forced expiratory volume in 1-second response will be measured. The aim of the project is to obtain a clinically significant improvement in the respiratory health of the study subjects as a result of the high intensity intervention. The SHIELD strategies are designed to be easily transportable through the nationwide Cooperative Extension education system.

The research team is eminently qualified to complete the work proposed. As the lead Organization, the New York Indoor Environmental Quality Center, Inc. (NYIEQ) will facilitate the completion of the project through its partners including research institutions (Upstate Medical University, College of Science and Forestry and Cornell), local businesses (Carrier Corporation, C&S Engineers, OP-TECH Environmental Services, and Rosenthal & Chadwick), and economic development agencies (Metropolitan Development Association). The research team has extensive experience as a result of its ongoing U.S. EPA funded work on asthma development in newborns located in inner city Syracuse,

There is a clear need for this demonstration program in the Syracuse, NY area. Asthma is a leading cause of chronic illness and school absenteeism among children in this region. Onondaga Co., which is the most populous Central New York County, had one of the highest pediatric asthma discharge rates in the region during the 1990s (1996 NYSDOH SPARCS data). More recently, asthma hospitalizations (1998-2000) numbered 1,486 (108.1 per 100,000

population) while asthma deaths (1998-2000) numbered 16 (1.2 per 100,000 population). Within the City of Syracuse there are spatial disparities in asthma hospitalization rates, with children (0-12 years of age) residing in city zip code areas 13202, 13203, 13204, 13205, 13206, 13207, 132081 13210, and 13224 having much higher hospitalization rates than children residing in zip codes in the rest of the county. These same neighborhoods are also socio-economically disadvantaged, and are the target for the SHIELD intervention program.

**Product Outcomes/Outputs:**

The tasks for the SHIELD project are delineated as follows:

- Task 1: Collection of pre-intervention indoor asthma agent baseline data in asthmatic children's houses.
- Task 2: Collection of pre-intervention pulmonary function test (PFT) data from asthmatic children.
- Task 3: Implementation of intervention strategies including steam cleaning, installing air filtration devices and putting impermeable covers on bedding as well as any specialized activities such as Integrated Pest Management to clean homes to a baseline level (Stage 1 of Intervention Activities).
- Task 4: Continuous intervention by a cleaning service (Stage 2 of Intervention Activities) and by the home occupants (Stage 3 of Intervention Activities) to maintain clean conditions.
- Task 5: Collection of clearance, 6-month and 12-month post-intervention indoor asthma level data.
- Task 6: Collection of 6-month and 12-month post-intervention PFT data.
- Task 7: Community outreach and education programs will be conducted at the same time as the intervention program to provide information to home occupants on how to reduce exposures to indoor asthma agents. This education program will be expanded to provide outreach to constituents within the targeted areas through a trained Peer Educator in concert with individuals from Cornell Cooperative Extension and community-based and/or faith-based organizations.

SHIELD has reached out and engaged the participation of grass roots faith-based and other community-based organizations from the greater-Syracuse area including the American Lung Association, the Onondaga County Health Department, the Inter-Religious Council, the Southwest Community Center, and Girls Inc. Furthermore, there is a Community-Based Organization Review Board for this project on which representatives from the various organizations have been invited to serve.

The ultimate goal of the SHIELD program is to make the asthma agent identification and removal intervention programs self-sustaining and transferable to other communities. It is envisioned that this will happen by creating economic opportunities that will lead to the creation of small businesses to take advantage of the vast potential market in remediating housing and creating healthy indoor environments. This is central to the mission of the NYIEQ, which

facilitates technology transfer and commercialization to improve human health and performance in urban and built environments through the development of useful products and services with its corporate, academic and economic development partners.

Features of the SHIELD program that will improve the housing stock for disadvantaged populations include:

- SHIELD goes right to the heart of the challenge to restore troubled housing stock to healthy indoor environmental quality levels by focusing on minority and low- and very low-income homeowners and tenants. Lessons learned from SHIELD interventions can make the home buying process less complicated and less expensive, thus motivating more HUD-assisted renters to become homeowners.
- SHIELD promotes decent affordable housing; improving indoor environmental quality expands access to affordable rental housing while improving the physical quality and management accountability of public and assisted housing. Designed to aid asthmatics and the respiratory challenged, including the elderly, SHIELD can increase housing opportunities for persons with all manner of respiratory disabilities.

