Asthma Prevention and Planning

Stanley H. Weiss, MD, FACP, FACE

1. Name of Activity:

Asthma Epidemiology, Prevention and Planning

2. Project Leader:

Stanley H. Weiss, MD, FACP, FACE, Professor, Department of Preventive Medicine & Community Health, New Jersey Medical School, and Department of Quantitative Methods, School of Public Health

3. Other Faculty:

Current:

Clifford P. Weisel, PhD, Professor, Environmental and Occupational Health Sciences Institute (EOHSI) and Division of Exposure Measurement and Assessment, Department of Environmental and Occupational Medicine, Robert Wood Johnson Medical School, Piscataway

Daniel M. Rosenblum, PhD, Assistant Professor, Department of Preventive Medicine & Community Health, New Jersey Medical School, and Department of Quantitative Methods, School of Public Health

Historical:

Leonard J. Bielory, MD, former Professor and Director, Division of Allergy, Immunology & Rheumatology, Department of Medicine, New Jersey Medical School

Amy L. Davidow, PhD, Associate Professor, Department of Preventive Medicine & Community Health, New Jersey Medical School

David L. Hom, MS, formerly Director, Clinical Research Group, Department of Medicine, New Jersey Medical School; subsequently School of Health Related Professions
4. **Project Staff and Collaborators:**

*Current:*

Teresa Lampmann, Coordinating Manager, Pediatric/Adult Asthma Coalition of New Jersey (PACNJ)

*Historical:*

Alan C. Diamond, *former* Research Assistant to Dr. Weiss, Department of Preventive Medicine and Community Health, New Jersey Medical School; *since 2006*, working as a computer scientist for Intel

Joshua R. Parks, BA, *former* Research Assistant to Dr. Weiss, Department of Preventive Medicine and Community Health, New Jersey Medical School; *currently (as of Fall 2011)* pursuing a PhD in Mathematics at the University of Virginia

Azadeh Tasslimi, BA, MPH, *former* Research Assistant to Dr. Weiss, Department of Preventive Medicine and Community Health, New Jersey Medical School; *currently (as of Fall 2011)* Epidemiologist, Vaccine-Preventable Disease, Communicable Disease Epidemiology, in the Epidemiology, Health Statistics and Public Health Laboratories Division of the Washington State Department of Health

Caixia Zhao, *former* Research Assistant to Dr. Weiss, Department of Preventive Medicine and Community Health, New Jersey Medical School

Shahnaz Alimokhtari, *former* Research Assistant to Dr. Clifford P. Weisel, Environmental and Occupational Health Sciences Institute (EOHSI), Robert Wood Johnson Medical School, Piscataway

Katherine Belby, RN, *former* Research Assistant to Dr. Weiss, Department of Preventive Medicine and Community Health, New Jersey Medical School

Maris Chavenson, *formerly* with Pediatric/Adult Asthma Coalition of New Jersey (PACNJ)

5. **Mission/Vision:**

Increased quality of life for persons with asthma throughout the State.

Increased understanding of the possible effects of low levels of air pollution, below current federal guidelines, on the risk of symptoms and reduced peak expiratory flow rate in persons with asthma, especially those who are very sensitive. Increased understanding of the definition of asthma. Promotion of awareness of proper asthma disease management among persons with asthma, parents/guardians of children with asthma, and providers of public and private education and child-care — i.e. following NHBLI guidelines, asthma action plans in schools, reduced exposure to known indoor/outdoor asthma triggers,
reduced outdoor activity on high air pollution (e.g. ozone, SO$_2$, PM$_{2.5}$, etc.) days.

6. **Specifics about Activity:**

   **Current:**

   Dr. Weiss is both co-chair of the Evaluation Task Force and a member of the Coordinating Committee of the Pediatric/Adult Asthma Coalition of New Jersey (PACNJ). The PACNJ acts as a statewide clearinghouse for asthma programs and services, working with schools, child care providers, health care providers, health insurers, community groups, and environmental agencies. The PACNJ reaches out to individuals and caregivers in New Jersey to help promote the most effective methods for managing asthma. Dr. Weiss helps design and analyze surveys for the PACNJ, evaluating the implementation of PACNJ’s Asthma Action Plan in New Jersey Schools and the development and revision of educational documents and resources. He helps determine if outreach and education efforts by the PACNJ have improved compliance with state guidelines for treating asthma in schools.

   On April 27, 2011 Dr. Weiss testified at an Environmental Protection Agency (EPA) hearing in Oxford, New Jersey, to address dangerous pollution from the GenOn coal plant in Portland, PA based upon prior findings from a nearby region in that same county. (See Publications, below) There has been strong evidence that emissions from this plant are making residents of both Pennsylvania and New Jersey sick, and preventing New Jersey from meeting federal air quality standards.

   **GIS Analysis:** We have used Geographic Information System software to map and analyze asthma prevalence in New Jersey by county and school district. The findings have revealed a number of surprises concerning the epidemiology of asthma. Preliminary data have been presented at national and international meetings. This project is ongoing.

   **Asthma Action (Treatment) Plans in New Jersey:** The PACNJ several years ago worked to enable passage of a provision by the NJ government so that children in school who had appropriate authorization from a health care provider, such as an asthma treatment plan signed by their doctor, could carry appropriate asthma medication with them in school and/or have them held by the school nurse. The PACNJ developed a form for use by physicians, designed with emphasis on use for the above purpose, but also which might assist parents, the school nurse, and others to be better informed about the asthma management plan and for them to be better able to implement it. Dr. Weiss was a part of the committees that developed the form. Dr. Weiss and staff, in conjunction with the PACNJ, have assessed this form in a number of ways (some of the reports are included below in the publications section), made
recommendations for its revision, and assisted in the revision process. The form is currently available through the PACNJ web site in multiple languages, and synopses of the above assessments have also been posted there.

**Historical:**

Examined the advantages and limitations of various methodological approaches in ascertaining asthma prevalence in a community, and the factors that affect apparent asthma prevalence such as the definition of asthma and the transient nature of symptoms.

Developed a web-based questionnaire for adolescents with asthma to determine asthma-related symptoms, visits to medical personnel, exposure to asthma triggers, peak flow rate and medication, with supplementary information on when events occurred and what medication was taken and for what duration/amount.

Conducted a prospective cohort study of 64 pediatric/adolescent asthma patients, grades 4-12, in northwestern New Jersey. Students recorded their daily asthma symptoms, medication use, and peak flow rates with the web-based survey over a period of 5 months.

Determined whether changes in peak expiratory flow rate (PEFR) and/or exacerbation of asthma-related symptoms among school children in Warren County, NJ were related to both short-term and lagged effects of levels of sulfur dioxide (SO\(_2\)). Compared SO\(_2\) levels of effect with current federal guidelines.

Examined the association between the number of pupils absent from school for respiratory-related ailments with the daily air quality near schools, after controlling for potential confounders. School absenteeism was captured daily through the distribution of surveys to school nurses at Harmony, White, and Belvidere Elementary Schools and Belvidere High School. There were three air-monitoring stations in Warren County which collected hourly and 5-minute concentrations of SO\(_2\), PM\(_{2.5}\), and various volatile organic compounds.

For further information please contact:

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7. **Publications, including published peer-reviewed abstracts:**


Weiss SH, Weisel CP, Zhao C, Louis H, Hade J, Bielory L. A "Pilot" assessment of asthma patient (Pt) data collection by health care providers (HCP) on hand-
held personal digital assistant devices (PDA). Oral presentation, session 5164. 129th Annual Meeting of the American Public Health Association, Atlanta, GA (October 24, 2001).


Weisel CP, Tasslimi A, Davidow AL, Weisel CP. Are peak expiratory flow rates of asthmatics impaired by levels of SO2 in the EPA 'safe' zone? The 132nd Annual Meeting (November 2004) of the American Public Health Association, Washington DC, Session 3118.0: Monday, November 8, 2004 (oral).


Diamond AC, Weisel CP, Lee N, Weiss SH. Design and implementation of an Internet-based questionnaire for daily ascertainment of asthma status in a
prospective study. The 8th Annual Public Health Symposium, Rutgers University, Piscataway, NJ, April 7, 2003.


http://apha.confex.com/apha/134am/techprogram/paper_141255.htm


CP Tuohy, E Montalvo-Stanton, DM Rosenblum, BM Suarez, SH Weiss. The bilingual community-based Children’s RESPIRA Education Program is effectively conveying knowledge about asthma to Latino adults and children. The 13th Annual Public Health Symposium, UMDNJ - School of Public Health, Piscataway, NJ, April 7, 2008. Also presented at the: School-Wide Public Health Research
and Community Service Day, UMDNJ - School of Public Health, Newark, NJ, April 15, 2008 where it won a “special commendation” from the 3 campus deans of the School of Public Health.


DM Rosenblum, CP Weisel, A Tasslimi, SH Weiss. Advanced statistical models to assess the effects of very low levels of ambient sulfur dioxide on students’ asthma symptoms and respiratory function. Mathematical Association of America-New Jersey Section, Annual Paper Session, March 29, 2009, Monmouth University.


Weiss SH. Testimony to the U.S. Environmental Protection Agency concerning effects on respiratory health from coal burning electric generation plants, May 2011.

Weiss SH, Krell JA. Implementation and Assessment of the Pediatric/Adult Asthma Coalition of New Jersey (PACNJ) Asthma Treatment Plan: Analysis of
the 2010 School Nurse Survey. UMDNJ-New Jersey Medical School, 2011. 
http://www.pacnj.org/pdfs/PACJNNurseResults.pdf

8. Other related web sites

www.pacnj.org

9. Opportunities for students:

Graduate students are currently working with Dr. Weiss on assessments of the activities of the Pediatric/Adult Asthma Coalition of New Jersey (PACNJ).

Additional opportunities may be available for students to work on asthma projects.

10. Opportunities for volunteers:

None at the moment