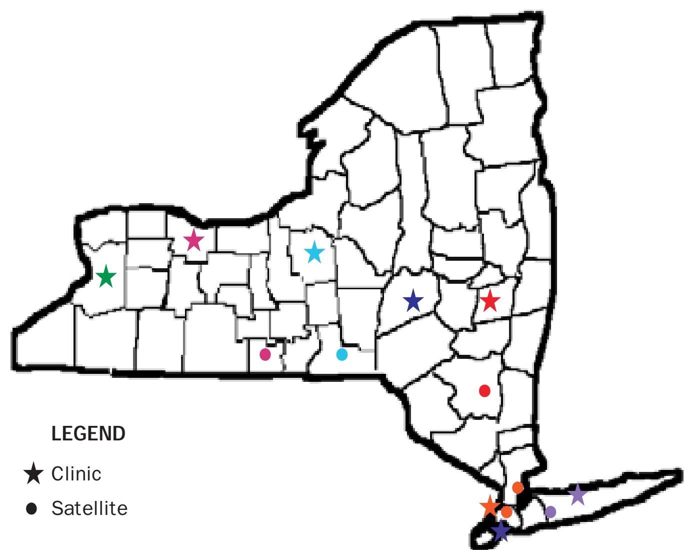
Chapter 1. Background

The New York State (NYS) Occupational Health Clinic Network (OHCN) is unique in the United States as a partially public funded, statewide, public health-based network offering clinical and preventive occupational disease services.[1] It was established in 1987 following the publication of a Mount Sinai School of Medicine evaluation of the problem of occupational disease in New York State[2]. The evaluation focused upon assessing the nature, magnitude and costs of occupational disease in NYS and developing recommendations for improving the recognition, prevention and treatment of occupational disease. The study estimated that occupational exposures were responsible for more than 35,000 new cases of disease and 5,000 to 7,000 deaths each year in NYS. The annual cost, in 1985 dollars, was estimated to be over $600 million for five disease categories - cancer, chronic respiratory disease, pneumoconioses, strokes and coronary heart disease, and fatal kidney disease. The majority of these costs were borne directly by the ill workers and/or their families. With regard to the resources available to workers, there were 73 physicians board-certified in occupational medicine licensed to practice in NYS in 1985.

The evaluation concluded that the state's resources, both in clinical facilities and professionals trained in occupational health, were inadequate to meet the public health need and recommended that the State of New York establish a statewide network of occupational health clinics. Backed by data presented in the evaluation, a group, led by organized labor, lobbied the New York State Legislature to enact this recommendation. As a result, the NYS Legislature appropriated funding through a small assessment of less than 0.3% of the total Workers' Compensation medical expenditures, to create a statewide network of six regional occupational health clinics, with oversight provided by the NYS Department of Health.

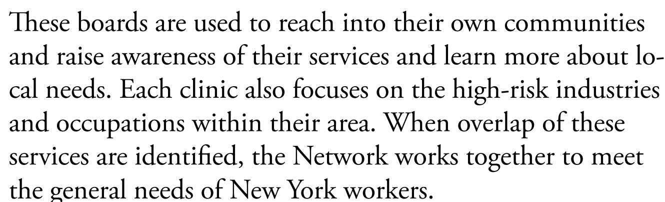
Since then, the Network has increased to eight regionally based clinics, some of which have satellite facilities. However, due to funding issues, many of these satellite facilities have closed, or changed location over the years. The Clinics reside in a variety of institutional settings, including state and private medical schools, a healthcare insurer, and a local consortium of unions. Figure 1 displays the locations of the Clinics and the satellite offices, as of January 2006.

Figure 1.1. Location of NYS Occupational Health Clinics



The Clinics employ multidisciplinary teams of physicians, nurses, industrial hygienists, health educators and social workers trained in occupational health, to perform a variety of prevention activities as well as provide clinical services. Staff are able to provide diagnosis and basic treatment for the full range of occupational diseases, along with evaluating the work conditions of the patients to determine whether other co-workers are at risk and to improve the workplace environment. The Clinics are open to anyone in NYS with a potential work-related illness. A sliding fee scale assures access for those without health insurance. Receiving funding from NYS allows Clinic staff to spend more time with each of their patients than typical health care facilities.

The Clinics are located throughout the state in order to meet specific regional needs. One clinic is specifically designed to provide services in the area of agricultural safety and health. While occupational medicine practice is generally similar through all regions of the United States, integration of practice with specific local needs is desirable. Therefore, each Clinic maintains a local advisory committee consisting of local businesses, organized labor, the medical community, local politicians, community and/or health organizations, environmental groups and government representatives.



These boards are used to reach into their own communities and raise awareness of their services and learn more about local needs. Each clinic also focuses on the high-risk industries and occupations within their area. When overlap of these services are identified, the Network works together to meet the general needs of New York workers.

Occupational Health Clinic Network Goals

As described in the Network's Mission Statement, "the primary focus of the New York State Occupational Health Clinic Network is to provide high quality occupational medicine services, specializing in the diagnosis, treatment, and prevention of occupational diseases." The Clinics were established to achieve five main goals:

- To contribute to the quantification and description of the occupational disease burden in the state.
- To increase the accuracy of the diagnosis of occupational disease;
- To improve the treatment and management of occupational disease;
- To contribute to the prevention of occupational disease;
- To strengthen and expand training programs in occupational health for professionals at all levels.

Scope of Report

This report describes the patient population seen by the OHCN from the inception in 1988 through 2003. Information on demographics, types of medical conditions, exposures, and industries and occupations worked in by the patient population are presented in Chapters 2 through 5. Chapter 6 describes the working population in NYS and some of the health issues faced by the NYS workers. This information is used in Chapter 7 to predict the future clinical needs and challenges the OHCN will need to address.

Services

Clinical Services

The Clinic Network enables individual cases of occupational disease to be diagnosed and treated by physicians who are board-certified or eligible in occupational medicine. Due to the potential economic consequences of occupational diseases resulting from the inability to work and the potential loss of employment, the integration of clinical care with other services is essential to the management of the disease. Occupational diseases are under-recognized and therefore, under-diagnosed. Failure to consider the workplace factors that may contribute to a patient's condition can result in the ordering of unnecessary tests, inappropriate referrals, and of equal or greater importance, a missed opportunity to protect others who may be at risk. Many occupational factors act in concert with non-occupational factors to cause disease, so indication of other etiologic factors, such as smoking, does not necessarily rule out a disease as also having an occupational etiologic component.

Healthcare professionals may contact the clinics for the purpose of consultation or referral. The Clinics are located throughout the state to function as regional resources.Patients with possible work-related diseases are evaluated to determine not only medical diagnosis, but also whether their conditions are work-related and, if so, the likely etiologic agents in the workplace. Accurate diagnoses can lead to successful prevention for exposed co-workers, reduced severity, and sometimes complete recovery. An inaccurate diagnosis, such that a person has the disease but is diagnosed as not having it, or missing the possibility of an occupational etiology, can jeopardize the opportunity for prevention not only for the patient, but also for others with similar exposures. An inaccurate diagnosis may also result in the patient undergoing inappropriate diagnostic testing and/or treatment, and can cause unnecessary social and financial costs to both the employers and the workers.

The Clinics also provide medical recommendations for returning injured workers to work under conditions that will allow them to continue working while minimizing the chances for re-injury or delayed recovery.

Industrial Hygiene Services

Because occupational medicine must link clinical care of individuals to preventive efforts in the workplace, it is often critical that the healthcare provider identifies workplace hazards and assists in facilitating workplace prevention efforts. The Clinics each have an industrial hygienist on staff, or have access to one through contracts. Industrial hygienists are professionals with expertise in recognizing, evaluating and controlling health hazards in the workplace. Utilization of an industrial hygienist helps increase the accuracy of diagnoses through understanding the work environment and can help minimize hazardous exposures among co-workers, thus preventing future work-related diseases. By reducing or eliminating exposures, not only are further cases prevented, but also the likelihood that patients can successfully return to work is increased.

Industrial hygiene services focus on workplace hazard evaluations, training and education. Routine educational and workplace intervention programs are guided by individual patients presenting to the Clinics, employers and unions requesting assistance, and by priorities established through knowledge of regional health needs. Through a site visit, the industrial hygienists can identify health and safety problems in the workplace and then develop or recommend corrective measures to prevent future problems. While air and bulk sampling may be used to determine exposure levels, other methods including questionnaires, work practice observation, ventilation assessment, and review of personal protective equipment and engineering controls may be used to determine the potential toxic or hazardous effects of substances or physical agents in the workplace. Examples of the types of industries where the Clinic Network conducted site visits and the number of site visits conducted in one year are provided in Table 1.1.

Effective workplace safety and health programs require appropriately trained workers. Many small employers are often in need of assistance in developing or maintaining their health and safety programs. Therefore, training and education of the workforce focusing upon specific workplace operations are included in the industrial hygiene services offered. Recently, three clinics worked together to develop, coordinate and deliver training at numerous sites for the Operating Engineers Hazardous Waste Worker program.

The industrial hygienist can assist in providing technical assistance and consultation services for employers, unions and public health agencies. Sometimes these services are offered as the result of a presenting patient who serves as a sentinel health event. Other times, an employer or union initiates the contact. Industrial hygienists assist employers and unions in establishing respirator programs including the selection and fitting of respirators, and training the employees in their use. In addition, the Clinics serve as sources of information, consultation, and education regarding new or complex hazards – such as exposure to multiple chemicals, hazards of aerosolized metal working fluids in manufacturing, or latex allergy in health care.

Table 1.1. Number of Industrial Hygiene Site Visits Conducted by the NYS Occupational Health Clinic Network in 2003, by Industry

SIC	Group Name	Number of Visits
01	Agriculture, Forestry and Fishing	17
15	Building Construction-General Contractors and Operative Builders	3
17	Construction-Special Trade Contractors	13
20	Food and Kindred Products	6
26	Paper and Allied Products	1
27	Printing, Publishing and Allied Industries	12
28	Chemicals and Allied Products	1
30	Rubber and Miscellaneous Plastic Products	1
34	Fabricated Metal Products, Except Machinery and Transportation Equipment	2
35	Industrial and Commercial Machinery and Computer Equipment	2
37	Transportation Equipment	5
41	Local and Suburban Transit and Interurban Highway Passenger Transportation	3
42	Motor Freight Transportation and Warehousing	1
48	Communications	4
49	Electric, Gas and Sanitary Services	3
60	Depository Institutions	1
67	Holding and Other Investment Offices	2
70	Hotels, Rooming Houses, Camps and Other Lodging Places	1
73	Business Services	1
76	Miscellaneous Repair Services	1
79	Amusement and Recreational Services	1
80	Health Services	4
82	Educational Services	11
83	Social Services	1
84	Museums, Art Galleries, And Botanical and Zoological Gardens	1
86	Membership Organizations	6
87	Engineering, Accounting, Research, Management and Related Services	4
88	Private Households	5
91	Executive, Legislative and General Government, Expect Finance	2
92	Justice, Public Order, and Safety	1
94	Administration of Human Resource Programs	5
96	Administration of Economic Programs	1
	Missing	5
	Total	**127**

Social Work Support Services

Many of the Clinics have a social worker or nurse advocate on staff to offer counseling regarding financial, social and psychological aspects of occupational diseases. Many Clinic Network patients experience changes in their ability to perform tasks at home, activities of daily living, recreational activities and work duties as a result of their diseases. In addition, patients often have financial concerns resulting from the inability to work, the lag period to obtain Worker's Compensation benefits, changes in lifestyle and family roles, and medical concerns created due to chronic illness. These issues can lead to difficulty coping, requiring the need of interventions. Clinics that do not have a social worker on staff often make referrals to the local Department of Social Services to ensure appropriate services are offered to the patients.

Short-term counseling and guidance are offered to Clinic patients and their families. This involves discussing problems and developing action plans directed towards resolving the issues including crisis intervention, education about illness/injury and common responses, legal services, and referrals to community agencies. Support groups are often organized by the Clinics bringing together patients with similar symptoms, problems and illnesses. Support groups may also be available for families, spouses, and caregivers. Stress reduction techniques are also often taught to Clinic patients.

The Clinics often assist in coordinating services, thus ensuring that appropriate agencies respond to the patients' needs. General information about Medicaid, public assistance, Social Security disability, and Workers' Compensation are offered to Clinic patients, particularly those without health insurance. The Clinics assisted the AFL-CIO in developing the Navigator program that assists union members in navigating the NYS Workers' Compensation system.

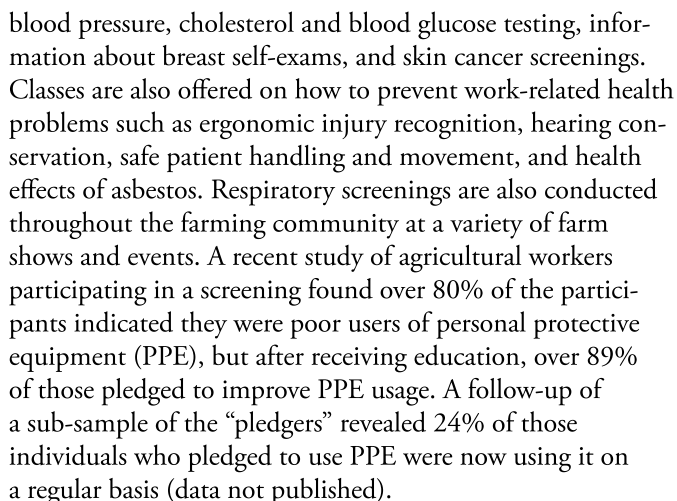
The Clinics also assist in disability assessment and rehabilitation services to facilitate safe return to work. The NYS Education Department oversees the VESID – Vocational and Educational Services for Individuals with Disabilities program. Services offered include vocational assessment, vocational counseling, job training and placement, job follow-up, and other services to support the individual's employment objectives.[3] Members of the Clinic Network refer patients to VESID who can no longer work at their jobs. These patients receive job training in new fields, allowing them to remain in the workforce.

The social work support services often note that the agricultural community experiences increased stress levels due to reduced milk prices, the cost of fuel and weather conditions, and the lack of health insurance among many farmers. In order to serve this population better, the farm specialty clinic also runs a program called "Farm Partners". This program offers a coordinated response to assist the farmer and his/her family by coordinating services using other agencies including FarmNet, Department of Social Services, County Mental Health Clinics, Rural Housing, Social Security Administration, Veteran's Administration, Cooperative Extension Associations, American Red Cross, Office for the Aging, Catholic Charities, and VESID. Patients from the agricultural community have additional problems including financial difficulties such as bankruptcy due to potentially losing their farms. Clinics also refer patients from the agricultural community to the AgrAbility Program, which was created to assist people with disabilities employed in agriculture such as amputations, arthritis and mental illness. The project links the Cornell Cooperative Extension Service with a private nonprofit disability service organization to provide practical education and assistance that promotes independence in agricultural production and rural living. The AgrAbility Project assists people involved in agriculture production who work both on small and large operations.

In the past few years, as a direct result of the World Trade Center (WTC) tragedy, there has been an increase in awareness among the psychiatric community of occupational health issues. The existing social work infrastructure maintained by the OHCN has facilitated easier access to psychological services needed by NYS OHCN patients affected by the WTC tragedy. This in turn has created the opportunity for other Clinic patients to receive appropriate psychological services.

Preventive Services

Providing preventive services is one of the goals established for the NYS OHCN. Besides working to prevent occupational diseases and injuries from occurring, providing preventive services also helps the Clinics maintain a presence within the community and serve as springboards for contacts with future patients and clients. Various preventive services including offering immunizations, screening of high-risk workers, and providing respirator fit testing and medical certification are supplied. The Clinics also provide basic health services at health fairs and through worksite wellness programs such as



blood pressure, cholesterol and blood glucose testing, information about breast self-exams, and skin cancer screenings. Classes are also offered on how to prevent work-related health problems such as ergonomic injury recognition, hearing conservation, safe patient handling and movement, and health effects of asbestos. Respiratory screenings are also conducted throughout the farming community at a variety of farm shows and events. A recent study of agricultural workers participating in a screening found over 80% of the participants indicated they were poor users of personal protective equipment (PPE), but after receiving education, over 89% of those pledged to improve PPE usage. A follow-up of a sub-sample of the "pledgers" revealed 24% of those individuals who pledged to use PPE were now using it on a regular basis (data not published).

Multiple types of immunizations are provided by the NYS OHCN, usually through the employer. These include pre-exposure rabies vaccines to veterinary workers, animal control and wildlife workers; Hepatitis A and B vaccinations to firefighters, health care workers, and individuals who may work in hospital operating rooms such as a surgical prosthetic devices employer; and anthrax vaccinations to National Guard, Army Reserve, and local laboratory staff. Other vaccination programs include flu shots and tetanus and Diptheria vaccines.

Screenings of high-risk groups of workers include blood lead testing of people involved in bridge maintenance, stained glass work and residential painting; audiometric screenings for firefighters and workers requiring CDL licensure; asbestosis screenings, pulmonary function tests, EKGs, urinalysis, and vision testing. Quantitative and qualitative fit testing for respirator use, respirator medical certification exams, and respiratory protection training is also provided. Screenings for high-risk workers often include an educational component.

Services to Special Populations

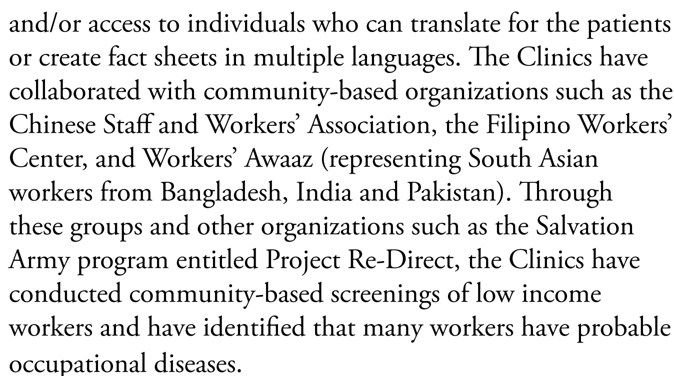
World Trade Center Worker and Volunteer Medical Screening Program

The WTC disaster on September 11, 2001 provided a number of significant public health challenges. The Clinics worked closely with local, state and federal governmental agencies, as well as with employers and unions to assist in providing a coherent public response. The Clinics helped obtain and/or interpret environmental and occupational samples to evaluate the physical, chemical and psychological risks posed by the disaster and its cleanup. They assisted in providing medical certification and fit-testing for respirator use. The Clinics were part of a nationwide consortium of providers, led by Mount Sinai in NYC, funded by the CDC's National Institute for Occupational Safety and Health (NIOSH) and private philanthropies that developed, coordinated and provided medical evaluation, monitoring and treatment services for WTC responders. This program continues to provide free, standardized medical assessments, clinical referrals, and occupational health education for workers and volunteers exposed to hazards during the WTC rescue and recovery effort. Over a two-year period from July 16, 2002 to August 6, 2004, the first 11,768 responders (other than current and retired NYC Fire Department employees) received their first medical screening examination. Analyses of a subset of the participants indicated that a substantial proportion experienced either new-onset or worsened preexisting respiratory symptoms, musculoskeletal symptoms, and gastrointestinal symptoms with symptoms persisting for months after the exposure stopped.[4] Approximately half of those screened for symptoms of post-disaster mental health conditions met the criteria for a clinical mental health evaluation. Six percent of the participants reported symptoms of depression, panic and generalized anxiety, and approximately 20% of participants reported symptoms related to post traumatic stress disorder.[5]

Low Income Populations

An important aspect of the Clinic Network's mission is to make high quality occupational medical services accessible to those working populations with the greatest needs. Low income workers are at substantial risk of occupational injuries and illnesses attributable to employment in the most dangerous jobs, long work hours, poorly controlled physical, chemical and biological hazards in the workplace, inadequate protective equipment, limited access to occupational health information and training, inadequate access to general medical care, and language, literacy and cultural barriers. Not only are occupational medical services provided to these populations, but awareness sessions are offered to participants on hazard communication, worker rights, conflict resolution and stress management.

Providing these populations with access to clinical and preventive occupational medicine services is a challenge that requires innovative approaches. Members of the NYS OHCN have undertaken a variety of approaches to reach these populations. The majority of the Clinics have bilingual staff



and/or access to individuals who can translate for the patients or create fact sheets in multiple languages. The Clinics have collaborated with community-based organizations such as the Chinese Staff and Workers' Association, the Filipino Workers' Center, and Workers' Awaaz (representing South Asian workers from Bangladesh, India and Pakistan). Through these groups and other organizations such as the Salvation Army program entitled Project Re-Direct, the Clinics have conducted community-based screenings of low income workers and have identified that many workers have probable occupational diseases.

Another approach the NYS OHCN has utilized is to expand services through satellite Clinics that allow better geographic accessibility. After the WTC tragedy, members of the Clinic Network utilized mobile medical vans to conduct screenings and follow up on Day Laborers who worked at Ground Zero.

Improving the Treatment and Management of Occupational Disease

Clinical Practice Reviews

The goals of the OHCN include improving the treatment and management of occupational disease in New York State. To this end, Clinic Network staff collaborated to develop nine clinical practice reviews, which were published in the January 2000 issue of the *American Journal of Industrial Medicine*.[1] These were designed to assist clinicians in the diagnosis, treatment and prevention of the following occupational conditions: asbestos-related diseases, work-related asthma, work-related upper extremity disorders including CTS, low back disorders, lead poisoning, noise-induced hearing loss, and solvent-related disorders. A guide for respirator clearance examinations was also developed. The reviews integrate public health approaches (primary, secondary and tertiary disease prevention) into the clinical model by emphasizing a team approach to the diagnosis and treatment of occupational diseases. Public access to these reviews has been provided by the NYSDOH through the NYS OHCN web page (http://www.nyhealth.gov/environmental/workplace/clinic_network.htm). Since posting access to these documents in the Spring of 2000, over 38,000 hits have been made, with an average of approximately 750 hits per month.

Quality Assurance/Quality Improvement

The clinical practice reviews are used by the OHCN to guide clinical practice and as a tool to foster quality of care and consistent practice. A quality assurance/quality improvement (QA/QI) program was developed and implemented to enable the Network to evaluate the level and consistency of care provided in the diagnosis of each of those conditions chosen for the clinical practice reviews. The QA/QI process also enables the Network to evaluate the quality and consistency of case management and the degree to which prevention is integrated into the Clinics' practices.

Utilizing information in the published clinical practice reviews, an audit program was developed for the purposes of evaluation and improvement of patient care. Each Clinic reviewed up to five patient charts for each condition. This program also afforded intra-Clinic as well as inter-Clinic comparisons. To be eligible for review, charts must have included at least one patient visit in 2001 or later (after the clinical practice reviews were published). Charts were reviewed for the presence or absence of specific items/information listed on condition-specific audit checklists. The NYS Department of Health (NYSDOH) then also audited five charts per condition, with approximately half from among those also reviewed by the Clinic. Following each audit, the NYSDOH provided a short report summarizing the audit findings. Audits occurred from September 2003 through October 2005.

Condition-specific audit sheets were developed by the authors of the clinical practice reviews to provide a checklist of criteria that should be part of an occupational health exam (Table 1.2). In addition, ten core criteria were identified that should be noted for any work-related condition. These included an occupational history that includes all past and current jobs; exposures in relevant jobs; the presence of personal protective equipment or other prevention/exposure reduction methods; other non-occupational potential exposure sources; and a smoking history and recommendation for cessation, if appropriate, should also have been noted. Within the chart, certain items should have been clearly noted including work-relatedness, work status, whether co-workers are at risk, and whether there was a decision on Industrial Hygiene involvement. In addition, all patients should have been informed of their diagnosis and treatment options.

Table 1.2. Audit Criteria for Each Clinical Practice Review

Condition-specific Criteria:

Asbestos-related Diseases

- **Symptom History -** evidence of review of asbestos-related symptoms
- **Radiological Results –** chest PA and lateral X-ray or chest CT results
- **Spirometry Results –** pulmonary function test results

Work-related Asthma

- **Relevant Medical History –** notation regarding history of asthma or allergies (adult or childhood)
- **Asthma Symptoms –** presence or absence noted of: wheezing, shortness of breath, chest tightness, or cough
- **Upper Respiratory/ Mucosal Symptoms –** presence or absence noted of: eye irritation, rhinitis, nasal congestion
- **Temporal Relationship** – occurrence/worsening of asthma symptoms in relation to work or workplace exposures clearly noted
- **Symptom/Peak Flow Diary –** maintained or reasons stated why not
- **Evidence Supporting Diagnosis of Asthma –** concise summary with dates of onset (and recrudescence, if appropriate)
- **Job Impact-** note whether patient leaving work or changing jobs due to asthma symptoms

Carpal Tunnel Syndrome

- **History**
  - Hand diagram depicting numbness or tingling in digits 1, 2, and/or 3, **OR** health care provider note describing above symptoms
  - Presence or absence of weakness and/or discoordination of hands, especially involving APB
  - Other contributors noted: MSD, neck or UE trauma, wrist fracture, cervical disk disease, h/o diabetes, hypothyroidism, TB, current pregnancy or lactation, malignancy, collagen vascular disease, OBCP use, uremia, alcohol dependency
- **Physical Examination**
  - Complete exam of neck and upper extremities (inspection, palpation, AROM, RROM, neurological including sensory)
  - Presence or absence of thenar atrophy, Tinel's sign and/or Phalen's noted
- **Laboratory tests -** CBC, SMA, ESR, thyroid function testing
- **Treatment and Follow-up**
  - Referral to surgeon made and documented (if evidence of APB denervation present)
  - Neutral wrist splints provided
  - Referral to PT or OT made if conservative treatment chosen, with documentation of WC authorization requests
  - Return to work restriction provided (clear instruction)

Work-related Upper Extremity Cumulative Trauma Disorders

- **DeQuervain's Disease –** performed Finkelstein's test & recorded result (+ or -)
- **Forearm tendinosis –** presence or absence of symptoms (e.g., pain, paresthesias) in neck and contralateral upper extremity
- **Medial epicondylitis –** presence or absence of symptoms and signs of median or ulnar neuropathy near elbow
- **Lateral epicondylitis –** presence or absence of symptoms & signs of radial or posterior interosseous neuropathy near elbow
- **Ulnar neuropathy at elbow –** presence or absence of pain or paresthesias in 5th or 4th digits (ipsilateral upper limb)
- **Hand-Arm Vibration syndrome –** presence or absence of blanching in at 1 digit in ipsilateral upper limb

(Continued on page 8)

Table 1.2. Audit Criteria for Each Clinical Practice Review (continued)

Low Back Disorders

- **Neurological Signs –** presence/absence notes
- **Past Medical Records –** requested, obtained, reviewed
- **Work Restrictions –** specified, including dates in effect
- **Diagnostic Criteria Supported –** findings on exam consistent with diagnosis and ICD9 codes

Lead Poisoning

- **History** – evidence of review of lead-related symptoms
- **Physical Exam** – findings of CNS, PNS, blood pressure
- **Laboratory Results** – blood lead and ZPP (FEP) levels recorded longitudinally

Noise-Induced Hearing Loss

- **Exposure History –** notation of noise exposure
- **Occupational Exposures (all jobs) –** include source and noise dosimetry
- **Recreational Exposures** – e.g., loud music, firearms, power tools, motorcycle, snowmobile, wood cutting
- **PPE** – use of hearing protection detailed
- **Past Medical History –** notations of:
  - Symptoms, surgery, injuries, infections, trauma
  - Previous audiometry
- **Physical Examination**
  - Evaluation of cranial nerve function- primarily facial nerve
  - Examination of ear canals, TM's
  - Tuning fork determination of conduction & lateralization (Rinne, Weber)
- **Laboratory Results- Audiometry**
  - Includes 0.5, 1, 2, 3, 4, 6, and 8 KHz with appropriate calibration
  - Compared to previous studies and STS is evaluated, when available

Respirator Clearance Examinations

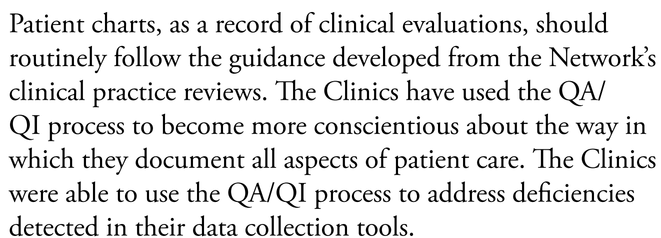
- **Employer and/or Employee –** filed information on work description
- **OSHA Questionnaire –** reviewed by a health professional
- **Certification** - issued

Solvent-related Disorders

- **Previous Conditions –** History in chart of past neurologic, psychiatric, renal, hepatic, dermatologic conditions
- **Physical Examination –** inclusion of positive and negative solvent-related findings and findings indicating possible confounding conditions
- **Non-Occupational –** History of alcohol or other substance abuse, using of medication and herbal products
- **Laboratory Test –** Baseline liver and renal function results noted

Core Criteria:

- **Occupational History**
  - Past and current jobs listed
  - Exposures/sources in relevant jobs
  - Presence of Personal Protective Equipment or other prevention (or exposure reduction) methods
- **Other Exposures (non-occupational) –** possible exposure sources
- **Work-relatedness –** should be clearly noted
- **Work Status –** should be clearly noted
- **Education** – inform patient of diagnosis and treatment options
- **Follow-up**
  - Notation as to whether co-workers are at risk
  - Decision on Industrial Hygiene involvement
- **Smoking** – obtain History and recommend cessation (if relevant)



Patient charts, as a record of clinical evaluations, should routinely follow the guidance developed from the Network's clinical practice reviews. The Clinics have used the QA/QI process to become more conscientious about the way in which they document all aspects of patient care. The Clinics were able to use the QA/QI process to address deficiencies detected in their data collection tools.

Education and Outreach to the Medical Community

Many of the Clinics work with students in the medical community to inform and educate them about occupational health. They act as preceptors to first year medicine residents having them spend time within their Clinics and arranging site visits of industrial settings. They are also mentors for preventive medicine and nursing students. These students observe and participate in patient testing/interaction as part of their program requirements. These preceptor relationships continue to be of mutual benefit to both the students and the Clinic staff. Most Clinics serve as sites for clinical rotation from nearby institutions, which seek out clinical training in occupational medicine. Trainees include third and fourth year medical students, Family Practice, Internal Medicine and Occupational Medicine residents, and foreign medical student and graduates. Training is also provided to primary care providers on diverse topics such as management of Workers' Compensation patients; Grand Rounds are presented at local hospitals. Clinic Network staff also participate as visiting faculty in Rural Medicine Programs.

Migrant Farmworker Clinics

Various Network Clinics have been involved in working with migrant farmworkers. They provide general and preventive health services for conditions such as back, neck or arm strain, skin rashes, eye injuries and respiratory problems. The specialty clinic for agricultural health identified that 15 to 20% of migrant clinic visits are related to occupational problems. Therefore, this Clinic has developed a loose-leaf manual designed for ready access in the examining room. This manual provides information ranging from cultural differences of various migrant groups to descriptions of specific commodity work and the patterns of injury documented for each commodity. Treatment guidelines for common problems are included, as are photocopy-ready patient information sheets in Spanish and Creole.

Emergency Response

The public health approach to treating occupational diseases and injuries has allowed the Clinics to be in a unique position to handle emergencies that affect workers. The Clinics are designed to respond to exposure episodes and disease clusters. In the past few years, two situations, in particular, have occurred in NYS where the Clinics have made substantial contributions. These include the WTC disaster and exposure to Anthrax in a public building. The unique training of clinic medical staff has allowed them to offer immediate technical expertise and consultations with the medical community. Working closely with local, state, and federal governmental agencies, as well as with employers and unions, the Clinics assisted in providing a coherent public health response. The established relationship with social service agencies allow rapid response for social, psychological and financial services – all much needed particularly after the WTC disaster. The Clinics have also been part of the ongoing public health response to bioterrorism by providing guidance to many groups about the risks of various chemical and biological agents, conducting anthrax testing and vaccinations to "at-risk" workers, and educating workers and employers on the signs and symptoms of anthrax and preventive measures they can take to reduce exposure.

Disease Monitoring

Utilization of the public health approach has allowed for effective disease monitoring among workers. For example, the Clinics conduct cardiac risk factor screening for high risk populations as part of their respiratory fit testing certification. They offer screenings for health issues as diverse as skin cancer to Lyme disease, and prophylactic vaccinations for conditions like rabies and Hepatitis. The Quality Assurance/Quality Improvement program, conducted over the past 4 years, confirmed that the Clinics address basic public health issues such as smoking cessation with all patients who smoke.

Table 1.3. Summary of Outreach Activities Conducted by the New York State Occupational Health Clinic Network in 2003*

Type of Activity	Number of Events	Number of Attendees
Education		
Workers	236	8,060
Physicians	2	736
Other healthcare providers	14	235
Students (non-medical)	14	259
Other	41	1,331
Subtotal	**332**	**10,648**
On-Site Services		
Physicals	19	155
Respirator certification and fit testing	38	524
Screenings	41	1,231
Vaccinations	3	39
Subtotal	**101**	**1,477**
Mass Media Outreach		
Print	68	N/A
Radio	11	N/A
Television	26	N/A
Meetings		
Community group	131	8,961
Health care organization	49	644
Health care provider	9	189
Professional/scientific	77	3,456
Worker organization	95	9,217
Subtotal	**361**	**22,467**
TOTAL	927	35,435

* This data is not routinely collected by the OHCN, so numbers are an underrepresentation of outreach activities.

Community Benefits

The public health approach also allows the Clinic Network to reach deep into their local communities. The design of the NYS OHCN, requiring advisory boards to assist in setting policy for each Clinic, has created a network of partners that are useful for disseminating information into the working community, and for developing effective, affordable and acceptable worksite interventions. These partnerships, along with other outreach endeavors, have allowed the Clinics to enlist communities in prioritizing occupational health problems, determining and evaluating potential interventions, and then actually testing these interventions with the goal towards widespread dissemination. Table 1.3 illustrates the various types of education and outreach activities conducted by the NYS OHCN within a one-year time period. The sheer magnitude of activities conducted along with the large number of people potentially affected illustrates the wide range of outreach conducted within the Network.

The Clinics continue to improve the work environment for New Yorkers. They offer substantial education and training courses, and have developed materials being used nationally such as the Mt. Sinai – Irving J. Selikoff Blueprint Project – "Guides for Managing Lead and Silica Control Programs in Construction". Fact sheets about various occupational diseases and exposures created by many of the Clinics are widely distributed. The Clinics also assist in designing and developing interventions in the worksite. This has included working with individual employers, along with redesigning equipment. For example, the New York Center for Agricultural Medicine and Health developed an ergonomic apple bag that is currently being field tested with positive responses from both the apple pickers and the farm managers. The Clinics also play a role in mediating between labor and management to assist in maintaining safe and healthy work environments.

The OHCN efforts to improve workplace environments benefit the community as a whole. For example, improvements to the indoor air quality in school and hospital settings can have immediate health benefits for all individuals who enter these environments. Control of workers' exposures can also control environmental exposures. Concerns about unwanted agrichemicals on farms has prompted the NYS Department of Environmental Conservation to re-institute pesticide collections across the State – thus reducing the potential for leaking into water supplies, exposures to emergency responders when barn fires occur, and exposure to farmers and their families. Reducing the use of hazardous materials can indirectly improve the air quality around manufacturing facilities. Some of the Clinics have participated in Environmental Justice community-based participatory research grants funded by the NIEHS/EPA. The Bellevue/NYU Occupational and Environmental Medicine Clinic assisted in designing methodology to assess home exposures and their impact on asthma in the Williamsburg-Brooklyn area.

Occupational Health Clinic Network Data

Information on each patient visit, stripped of patient identifiers to ensure confidentiality, is provided to the NYSDOH. This data is used to identify hazards, risk factors and trends; direct resources on emerging problems; create prevention strategies; and evaluate the success of various interventions.

The NYSDOH maintains a database containing information on each patient visit provided by each Clinic. This database has been upgraded over time as technology has improved and includes all patient visits from 1988 through the present. Information recorded in the database includes basic demographic variables, employment information, payment and referral information, and up to five diagnoses with up to two putative etiologic agents recorded for each diagnosis. Each Clinic enters data on all visits that occur at their Clinics and satellites and shares this information with the NYSDOH. The NYSDOH conducts quality control of the data and when necessary, the Clinics are responsible for making appropriate corrections to their data. All data presented in this report were obtained through this database. If data for a category is not displayed in a figure, it can be assumed that in that particular instance, the category is equal to zero.

The OHCN are centers for patient referral, not primary care centers. Therefore, the patient population is not representative of the workers in the State of New York, so the data presented in this report is specific to the Clinics, not to NYS workers. Since the OHCN was established in 1988, the data from that year is biased to the three clinics who were established early. Therefore, this data was ignored when examining trends.

Definitions of Terms

Diagnosis – Any health condition recorded in the patient's medical record, or reason for a visit to a Clinic. Patients can have more than one diagnosis recorded at any visit, and the same diagnosis may be recorded on multiple visits. The first visit with a diagnosis is referenced.

Exposure agent – A putative exposure associated with a diagnosis. Patients can have two etiologic agents recorded for each diagnosis.

Exposure type - Patients were categorized by the source of their suspected exposure. Occupational patients had an exposure from either their present or past occupation. Environmental patients had an exposure from a non-occupational environment which include individuals seen for exposures to such places as landfills, home mold-related problems, and a variety of others. In addition, some patients are family members of workers seen for possible health effects related to take-home exposures.

Geographic Region – It is often useful, for purposes of analysis, to divide the state into two regions: NYC and the rest of New York State (all regions of the State excluding the 5 boroughs of the City) due to differences in demographics and types of occupations between the two regions. Patients are presented based on their county of residence, not on where the Clinic was located, nor where their exposure occurred.

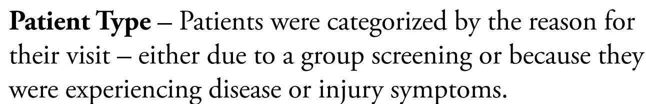
Group Screening – The Clinics offer screening services for groups of exposed workers. These services include disease screenings for Lyme disease, Hepatitis, skin cancer, TB and HIV; exposure screenings for asbestos, lead, noise and other toxic health hazards; DOT and respiratory certification screenings, as well as return to work screens. In addition, influenza and rabies vaccines are provided to high-risk worker populations. Because these patients are usually not experiencing symptoms and are not seeking diagnostic services, per se, they are classified separately in the database as group screening patients. If a health condition is identified as a result of the screening, the diagnosis is recorded in the database; otherwise, the visit is recorded with a V-code indicating they were screened, but no disease was present.

Industry – The patient's most relevant industry using 1987 Standard Industrial Classification (SIC) codes.

Occupation – The patient's most relevant occupation using Census 1990 occupation classification systems.

Occupational Disease – Any disease caused or exacerbated by the work environment.

Patient – A patient is somebody who lives (permanently resides) or works in New York State, and is seen by a clinician (clinician includes nurses as long as they conducted a clinical evaluation of the patient).



Patient Type – Patients were categorized by the reason for their visit – either due to a group screening or because they were experiencing disease or injury symptoms.

Patient Visit – An encounter with a Clinic. The number of visits in which a specific ICD-9-CM Code is recorded in the medical record. Because multiple diagnoses can be recorded for a single patient, number of diagnoses does not correspond to the number of clinical encounters occurring at the Clinics.

Symptomatic Patient – Patients seen by the Clinic Network due to disease or injury symptoms.

V-Codes - A code in medical records for patients who were not currently sick and encountered the NYS OHCN for some specific purpose such as to receive prophylactic vaccinations or to be screened for conditions for which the patients were at high risk.

Work-related –The diagnosing clinician determines whether a case is work-related. If there is a possibility that the diagnosis is related to the patient's work, but it cannot be given the certainty of yes, clinicians may choose "maybe". These are treated as work-related in this report.

World Trade Center Related – The Clinic Network played a critical role in providing medical care to individuals affected by the World Trade Center (WTC) disaster on September 11, 2001. In addition to providing direct medical, psychological and social work services, the Clinics participated in a federally funded screening and medical monitoring program. The scope of the Clinic Network's response was significant and influenced the type of patients seen by the Clinics, the nature of the services rendered and the conditions diagnosed. For some ICD-9-CM categories, it was necessary to separate the WTC-related cases to describe how the conditions seen for those patients differed from conditions diagnosed for those not related to the WTC disaster. This data does not reflect all WTC-patients seen by the Clinics, since for some clinics, the volume of patients necessitated opening separate clinical sites.

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