

**Annual Report of Accomplishments and Outcomes, July 2010- June 2011
Massachusetts Department of Public Health, Expanded Occupational
Health Surveillance in MA, Fundamental Project**

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The aim of the project is to reduce the incidence of work-related injuries and illness in Massachusetts by:

- **Generating and disseminating state occupational health indicators**
- **Conducting more extensive analysis of available population-based data sets and disseminating findings**
- **Conducting sentinel case surveillance and follow-up of serious occupational health events**
- **Maintaining working relationships with stakeholders to promote use of surveillance findings for prevention**
- **Integrating occupational health with other ongoing public health activities, and**
- **Promoting collaboration among Northeastern states to improve state occupational health surveillance capacity in the region**

MAJOR ACCOMPLISHMENTS AND OUTCOMES

Occupational health indicators (OHIs)

The Occupational Health Surveillance Program (OHSP) generated twenty Massachusetts OHIs for 2008 and submitted these to CSTE for inclusion in the CSTE multi-state OHI report. We also completed an annual state OHI report based on most currently available data for the 14 CSTE recommended health outcome indicators as well as two state specific indicators: sharps injuries to hospital workers and work-related injuries to teens treated in ED departments. OHIs by race and ethnicity were included in this report, which was posted on the OHSP website in April 2011 to coincide with Workers' Memorial Day. OHI and other recent findings were also provided to the Massachusetts Coalition for Occupational Safety and Health for inclusion in their annual report "Dying for the Job" released on Workers' Memorial Day.

OHSP staff took a leading role, with staff from CSTE and Michigan, in conducting quality assurance review of multi-state indicator reports for 2006 and 2007 and transitioning responsibilities for OHI quality review to NIOSH. We have also met with the Assistant Commissioner for Environmental Health who has agreed to pilot inclusion of select OHIs in Environmental Public Health Tracking (EPHT).

Population-based surveillance

OHSP presented findings from the previously completed analysis of workers' compensation claim data for state employees in a number of agency venues to promote implementation of a new Executive Order to improve health and safety protections for state workers. The Principal Investigator is participating in the Governor's Public Sector Health and Safety Advisory Board taking an active role in the statistics subcommittee. We have negotiated access to the new Human Resource Division database of all injuries to state employees to use for surveillance purposes. Analysis of this data set to examine MSDs among employees of state hospitals is in progress (see report from Hospital Workers project). We are also working on development of

methods for using the American Community Survey data as the denominator in calculating illness/injury rates.

In follow-up to our previously funded Community Health Center Project, we are now collaborating with Cambridge Health Alliance and NIOSH on a study to code and analyze 45,000 patient occupation titles collected at registration in 2010. We also collaborated with colleagues from NIOSH and other states in preparing an MMWR article on work-related injuries and illnesses among older workers, published 4/29/11. A journal article based on previous work was accepted for publication in the American Journal of Occupational Medicine: *Use of statewide electronic emergency department data for occupational injury surveillance: A Feasibility Study in Massachusetts.*

Case-based surveillance of selected serious occupational health conditions

OHSP continued collaboration with Massachusetts Burn Injury Reporting System (M-BIRS) to conduct surveillance of work-related burns. We received and triaged 38 reports of burns affecting 5% or more of body surface area, of which 15 were referred to OSHA for follow-up. We also completed a summary analysis of work-related burns for inclusion in the annual M-BIRS Report.

This year we expanded piloting referrals to OSHA of work-related amputations identified through workers' compensation records to include digit as well as more extensive amputations. Referrals were found to be productive and cases are now referred to OSHA area offices in MA on a regular basis. OSHA conducted inspections of 13 worksites based on these referrals, nine of which resulted in related citations. OHSP presented the results of OSHA referrals and our proposed framework for making and tracking referrals at the CSTE-OSHA meeting held in Washington DC (3/11). Following this meeting, we worked with Michigan and other states to develop a "how to guide for making referrals to OSHA" soon to be available on the CSTE website. In June, we presented findings on referrals at the OSHA Region I managers annual meeting.

OHSP is also facilitating collaboration between the adult and childhood poisoning lead registries in the Department of Labor Standards (DLS) and MDPH, respectively, to develop a centralized web-based system to obtain data electronically from laboratories.

Continue working relationships with stakeholders for prevention

With support of the heads of the MDPH and DLS, we established the Massachusetts Occupational Health and Safety Team (MOHST), which brings together representatives of state and federal agencies quarterly with the following mission: *To reduce work-related injuries and illnesses among the working people of Massachusetts by increasing coordination of state and federal agency efforts to enforce health, safety and related labor and public health laws, provide training and technical assistance to employers and workers, conduct surveillance of work-related injuries/illnesses and hazards, and mobilize partnerships to address identified health and safety problems and emerging health and safety concerns.* MOHST includes representative from MDPH (OSHP and Bureau of Environmental Health); Attorney General's office, Division of Labor Standards, Department of Industrial Accidents and federal OSHA. Three meetings were held this year leading to: a) jointly held interagency training on wind turbine safety; and b) our new collaboration to coordinate laboratory reporting of adult and childhood blood lead levels.

The OHSP Advisory Board met three times this year. OSHP also continued to serve as public health practice rotation site for residents in the Harvard Occupational Environmental Medicine Residency Program. With research collaborators at the University of Massachusetts at Lowell

(UML), we presented a previously completed study of mesothelioma risks by industry and occupation to the International Mesothelioma Program at Brigham and Women's hospital. OHSP follow-up of select cases employed in educational settings is in progress.

Integration of occupational health into ongoing public health activities

In collaboration with the OHSP work-related asthma project, we included questions on industry and occupation (I/O) in the 2011 MA BRFSS. We modified the interviewer training manual, coordinated with MA BRFSS and our vendor to train interviewers on I/O questions, and monitored interviews in real time and provided feedback. We also coded 2010 I/O data using the NIOSH Standardized Occupational and Industry Coding (SOIC) software and conducted preliminary analysis of responses. We have provided extensive input to NIOSH on our experience to inform their efforts to promote collection of I/O in the BRFSS nationwide.

Based on input from OHSP, the MDPH Commissioner, who is currently serving as President of ASTHO, included consideration of occupational health concerns in his ASTHO challenge to other states to promote health equity. Data on occupational health disparities were included in his presentations to ASTHO and APHA.

OHSP collaborated with colleagues from UML to complete an in-depth analysis of the data from the 2008 Massachusetts Worksite Health Assessment Survey examining the extent to which Massachusetts employers are implementing worksite health promotion and occupational health and safety programs and the relationship between activities in the two domains. (Manuscript submitted.) OHSP Advisory Board members led a discussion on incorporating consideration of working conditions in the public health obesity agenda at the April 2011 OHSP board meeting, and Board members are engaged in follow-up. This year, OHSP has also increased use of the Department's social medial tools, including the MDPH twitter site and blog, to disseminate occupational health information.

The Principal Investigator is serving on Institute of Medicine Committee on "Occupational Information and Electronic Health Records" sharing experience from previous and ongoing work to collect occupational information in various data systems.

Regional collaboration

With Connecticut, we organized the 20th annual Northeast Regional Occupational Health Surveillance conference, held May 2-3, 2011. Staff from the Northeast states (CN, NY, NJ, NH, MA, VT, ME) were joined by OSHA Regional I representatives this year and well as representatives from the NE Center for Agricultural and Occupational Health, the Harvard ERC and NIOSH. A NIOSH training session in industry and occupation (I/O) coding was held in conjunction with this meeting. OHSP also participated in the NIOSH visit to NH, a newly funded Fundamental state.

Plans for next year

OHSP will continue with case-based and population-based surveillance activities, and collaborations with internal and external partners to promote efforts to address identified occupational health problems. Specific plans for new population-based surveillance activities include: 1) a report on occupational health disparities (in response to request from the MDPH commissioner), and 2) a report on adult lead poisoning. NIOSH will take the lead on our collaborative effort to analyze occupation data collected by the Cambridge Health Alliance. Resources allowing we will continue efforts to document work-related injuries to public employees using workers' compensation and HRD data.

**Annual Report of Accomplishments and Outcomes, July 2010- June 2011
Massachusetts Department of Public Health, Expanded Occupational
Health Surveillance in MA, Teens at Work Project**

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The overall aim of the project is to reduce the incidence of work-related injuries to young workers by:

- **Continuing case ascertainment using multiple data sources**
- **Conducting case follow-up with injured youths**
- **Analyzing surveillance data and disseminating findings**
- **Conducting and fostering intervention and prevention activities**
- **Collaborating with government and community partners to promote use of surveillance findings for prevention.**

Since 1993 the Teens at Work Injury Surveillance System (TAW) has focused on injuries to workers under age 18. In July 2010, TAW expanded its scope to include workers ages 18-24 years old (young adults). Case-based surveillance and follow-up are focused on injuries to teens under age 18 and fatalities among all workers under age 24. Population-based surveillance and prevention activities now address the full age range of young workers.

MAJOR ACCOMPLISHMENTS AND OUTCOMES

Case ascertainment and follow-up

TAW identified 124 non-fatal injuries to workers under age 18 using statewide workers' compensation data together with emergency department data from a sample of hospitals. Educational materials were mailed to all employers of injured teens. Interviews were completed with 23 of the injured workers. There were six young workers who were fatality injured at work, all in the age range of 18-24. TAW collaborated with the Massachusetts FACE project to complete two investigations young adult worker deaths. TAW also worked with FACE to conduct an investigation of two injuries to students in the same electrical shop at a regional vocational school.

Data analysis and dissemination

A *TAW Surveillance Update* including surveillance findings for 2004-2008 was finalized and disseminated to schools, employers, unions and other stakeholders. This annual *Update* also included important new findings on the extent of middle schools students who are working (18%) based on questions TAW had included in the 2009 Massachusetts Youth Health Survey. Close to 5% reported being injured at work seriously enough to receive medical care. These results underscore the importance of reaching middle school students, parents and teachers. Middle schools have been added to the dissemination list used for the *Update* and other educational materials about young worker health and safety.

TAW included a Massachusetts specific occupational health indicator for teen injuries based on statewide emergency department data (2008) in the report, *Occupational Health Indicators for Massachusetts*, released in April 2011.

TAW data were also used in the policy arena. We provided findings on injuries to young workers employed in nursing homes to the Wage and Hour Division of the U.S. Department of Labor (DOL) for their consideration in review of the child labor provisions regarding use of power driven patient handling devices. Data on injuries to teens employed in restaurants were also provided to DOL on request. TAW also included surveillance findings in comments submitted in response to the U.S. Department of Labor Notice of Proposed Rulemaking to Implement the *YouthBuild* Transfer Act of 2006.

Prevention activities and collaborations

TAW finalized and published *Safe Jobs for Youth*, a 55-page guide to help cooperative education placement coordinators in Massachusetts vocational schools assess the basic safety of worksites, both prior to and throughout student placements. The guide was developed in collaboration with the MA Association of Cooperative Education Coordinators to fill a critical resource gap. It includes information about laws affecting placements, key questions to ask employers about health and safety, industry specific worksite assessment checklists to be used during worksite visits, and other tools that can be used during the placement process. Content input was provided by the MA Department of Elementary & Secondary Education, the MA Department of Labor Standards, OSHA staff, and OHSP Advisory Board members. The guide was successfully piloted by a sample of placement coordinators in the fall of 2010, and finalized for presentation at the statewide Connecting for Success Conference in June 2011.

All of our educational materials were updated to reflect the 2010 changes to the Federal Child Labor Laws. The parent guide and child labor law poster were translated into Spanish and Portuguese.

TAW continued to lead the MA Youth Employment and Safety (YES) Team which brings together representatives of multiple government agencies quarterly to coordinate government efforts to protect youth at work. This year, the YES Team together with the Massachusetts Coalition for Occupational Safety and Health and NIOSH, held the first Massachusetts statewide 'Safe Jobs for Youth' Poster Contest for teens aged 14-18. Over 40 teens, diverse in age and from three different communities across the state, were engaged in evaluating the submitted posters, and winners were announced by the MDPH Commissioner at a public press conference on 4/21/11. Copies of the winning poster were disseminated in May to schools and organizations throughout the state, and orders continue to be filled upon request. The winning poster and runners-up were posted on the OHSP-TAW website.

TAW successfully applied to the Occupational Health Internship Program, which is run by the Association of Occupational and Environmental Clinics. Two interns will work with TAW over the 2011 summer conducting interviews with teens in summer jobs programs and supporting and learning from other TAW activities.

All our materials were posted on the TAW webpage. TAW routinely tracks use of our data and materials. In August 2011, following a TAW presentation to the MDPH Public Health Council, the Boston Globe published a multi-page lead article on young worker health and safety. In April, 2011, the Boston Globe published findings from our Surveillance Update. Over 6,700 educational materials were mailed out on request this year. Between July 2010 and May 2011 there were 10,937 hits to the TAW website, averaging around 1,000 hits per month. These hits increased in the months following TAW outreach activities.

A new initiative this year has been the increased use of media, including social media, to disseminate information about TAW activities. Our combined use of the TAW website, Twitter,

and the MDPH home page and blog to promote our 'Safe Jobs for Youth' Poster Contest has been labeled a social media success story by MDPH, and is now an example our Communications Office shares in presentations on using new media to promote health messages.

Plans for the future

We will continue ongoing surveillance activities and collaborations to prevent injuries to young workers. Specifically we will:

- Publish the Annual TAW Surveillance Update
- Release new findings on injuries to young adult workers
- Request medical records from EDs for all injured teens <18 to obtain additional information about occupation and industry
- Implement new protocols for follow-up of Hispanic teens who are injured on the job
- Disseminate *Safe Jobs for Youth* to vocational schools and make necessary modifications for use by other professionals who place youths in jobs
- Continue to coordinate the Massachusetts YES team and outreach through social media

Presentations

Davis, L.; Vautin, Beatriz P.; Rattigan, S. Protecting Youth at Work: Surveillance to Practice in Massachusetts. Presented at the American Public Health Association Annual Conference, November 2010.

Vautin, Beatriz P.; Rattigan, Sara; Davis, Letitia K. *Safe Jobs for Youth*: Tailored, user-friendly materials for cooperative placement coordinators assessing worksite health and safety. Presented at the Council of State and Territorial Epidemiologists Conference, June 2011.

Vautin, Beatriz P.; Rattigan, Sara; Davis, Letitia K. Employment of Middle School Students: Findings from the Massachusetts Youth Health Survey, 2009. Poster presentation at the Council of State and Territorial Epidemiologists Conference, June 2011.

In April, TAW staff participated in a MDPH panel commemorating Sexual Assault Awareness month. TAW presented about sexual harassment in the workplace.

In April, TAW staff presented a workshop at the annual Leadership Education Acton to Promote Safety for Young Workers (LEAPS) Academy, hosted by the Massachusetts Coalition for Occupational Safety and Health and sponsored, in part, by the MDPH workplace violence program.

April 21 Press Conference on young worker safety and health by MDPH Commissioner announcing the winners of the 'Safe Jobs for Youth' Poster Contest and highlighting our 2011 TAW Surveillance Update.

Annual Report of Accomplishments and Outcomes, July 2010- June 2011
Massachusetts Department of Public Health (MDPH), Expanded Occupational Health
Surveillance in Massachusetts, Work-Related Asthma Project

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The aim of this project is to reduce the incidence and severity of work-related asthma (WRA) in Massachusetts by:

- **Ascertaining cases from multiple sources**
- **Conducting timely follow-up interviews to confirm and fully characterize the cases**
- **Conducting intervention and prevention activities, independently and with partners**
- **Analyzing sentinel and population data, and disseminating findings to raise awareness and activity**
- **Collaborating with governmental and community stakeholders to use data for prevention**

MAJOR ACCOMPLISHMENTS AND OUTCOMES

Case ascertainment and confirmation

The MDPH Occupational Health Surveillance Program (OHSP) identified 300 potential cases of WRA from four sources—healthcare provider reports, inpatient hospital discharge data, emergency department (ED) visit data, and workers' compensation claims. Of these, 127 were deemed probable and followed-up. In light of the both departmental and OHSP priority to improve health equity, we have placed new emphasis on reaching underserved populations. We translated the WRA survey instrument into Spanish and hired an experienced bilingual interviewer. She has conducted six interviews in Spanish, five of which confirmed cases of WRA. These cases would have otherwise been lost to follow-up. We have also developed a new relationship with a community health center in Lawrence Massachusetts which has reported several cases among Latino workers.

A significant accomplishment this year is a new exclusive agreement with the Massachusetts Department of Health Care Finance and Policy to access interim inpatient hospital and ED files before final files are closed (usually 1-2 years after date of discharge). This agreement will allow us to contact potential WRA cases sooner after they were treated for asthma, reducing the number of cases lost to follow-up. This should also increase our ability to reach younger and non-white workers who are more often identified in these than other data sources.

OHSP continued to publish the Occupational Lung Disease Bulletin throughout the year. This newsletter is intended to promote awareness of WRA and other occupational respiratory diseases and serves as a regular reminder to healthcare providers to report cases. This year we have increased electronic dissemination, including to the Massachusetts Medical Society and the national email list for the Collaborative on Health and the Environment. This has facilitated secondary distribution of the Bulletin to others not on our mailing lists.

Intervention and prevention activities

OHSP continued to play a leading role in promoting safer cleaning products and supporting third party certification of green products without sensitizing asthmagens. On the national level, OHSP supported Green Seal's new standards (GS-52 and 53) for specialty cleaning products and EcoLogo's proposed standard CCD-146 for hard surface cleaners, all of which prohibit asthmagens, as defined by the Association of Occupational and Environmental Clinics. Within Massachusetts, the Operational Services Division (OSD), the state government procurement agency, invited OHSP to serve on a Toxics Reduction Taskforce to assist state agencies in purchasing 3rd party certified cleaners without asthmagens. The task force was established in response to a Governor's Executive Order (EO 515) mandating that state agencies use environmentally preferable products (EPP). OSD is requiring approved vendors to offer the same services to at least two other states in the Northeast region, thus providing a regional benefit. Now the Taskforce is assessing the impact of EO 515.

OHSP also engaged in a number of activities to increase awareness of the link between WRA and cleaning products. We presented on a panel on green cleaning vs. green-washing at the national APHA meeting (11/8/10), along with Responsible Purchasing Network, Green Seal and Healthy Schools Network. We provided a webinar for Healthy School Days (4/15/11) and helped to complete training materials for school nurses developed by the national Cleaning for Healthier Schools and Infection Control Workgroup. We also translated our brochure "Asthma and Cleaning Products at Work" into Spanish and Portuguese. OHSP took the lead, together with colleagues from Michigan and Texas, in developing a CSTE position statement about cleaning products that was adopted at the CSTE annual meeting. 11-OH-01, 6/11). The statement calls on CDC to include experts in occupational health along with infectious disease and toxicology in developing policies about disinfectant use.

Other prevention activities included work to support nail salon regulations in Boston, participation on the rejuvenated Healthy Cosmetology Committee, continued work with the Massachusetts Nurses Association with their free online training for nurses regarding WRA, site visits to a screen printing facility and shoe manufacturer, both of which used isocyanates, and referrals of selected cases to other state agencies.

Data analysis and dissemination

The widely disseminated December 2010 Bulletin summarized findings from an analysis of 14 years of sentinel WRA data. From 1995 through 2008, OHSP ascertained 1,247 possible cases of WRA and confirmed 596, with healthcare and manufacturing remaining the leading industries, and cleaning products, indoor air quality, dusts, unspecified chemicals and mold being the top five exposures. The findings highlighted the importance of ED data to compensate for the decrease in the number of occupational health clinics in Massachusetts and decline in case reports by healthcare providers.

OHSP continued to collaborate with asthma surveillance partners throughout the country. We participated in the CDC's Behavioral Risk Factor Surveillance System (BRFSS) Asthma Call-back Survey Workgroup, playing a key role with other state representatives in planning the design and analysis of the WRA section and developing a User's Guide. We have worked with the OHSP Fundamental project to incorporate questions on industry and occupation in the MA BRFSS which will allow us to examine asthma patterns by industry and occupation in the future. We are also collaborating with NIOSH funded WRA states on a paper on isocyanate induced asthma.

Collaboration and integration activities

OHSP collaborates closely with the CDC National Center for Environmental Health funded Asthma Prevention and Control Program, with whom we share an epidemiologist; we actively participate in the MDPH Internal Asthma Working Group and with the Department's advocacy partner, the Massachusetts Asthma Action Partnership. This year we worked with the American Lung Association of New England to update our brochure for workers about WRA. We also accepted an invitation by the American Lung Association (ALA) to participate in the Asthma at Work Advisory Group, and met with the Advisory Group to help them plan a 5-year project to help employers and employees deal with "asthma at work."

OHSP helped the Massachusetts Toxic Use Reduction Institute (TURI) disseminate findings from a report on asthmagen use in Massachusetts. This report documented declines in overall asthmagen releases, but an increase in use and release of isocyanates. We are working with TURI and MA Office of Technical Assistance, to explore strategies to raise awareness about primary prevention of asthma and reduce asthmagen use in Massachusetts.

Plans for the future

Next year, OHSP will

- Continue ongoing surveillance of WRA using multiple data sources, including more timely ascertainment and follow-up of hospital treated cases.
- Characterize the burden of asthma among workers in Massachusetts using the 2010 BRFSS data
- Continue to play an integral role in state and national asthma planning and prevention activities, maintaining our focus on green cleaning.

State reports:

- Occupational Lung Disease Bulletin (8/10). Work-Related Asthma Surveillance: Massachusetts, 1995-2008
- Occupational Lung Disease Bulletin (1/11). Work-Related Asthma among Laboratory Animal Workers.
- Spanish and Portuguese versions of the "Asthma and Cleaning Products at Work" brochure (6/10).
- "Is My Asthma Work-Related?" brochure in collaboration with the American Lung Association, New England (5/11).
- Contributed to "Cleaning for Healthier Schools—An Infection Control Handbook" and slide show.

Presentations

- NIOSH/States WRA Surveillance Annual Meeting (3/23/11), "To Harmonize or Not to Harmonize State WRA Questionnaires?"
- Webinar for National Healthy Schools Day (4/15/11), "Work Related Asthma Is Associated with Cleaning: Clean as a Whistle but What about that Wheeze?"
- APHA annual meeting (11/8/10), "WRA is Associated with Cleaning"
- CSTE annual meeting (6/13/11), "Toxic chemical use data for primary prevention of work-related asthma in Massachusetts: Hazard surveillance to practice"

**Annual Report of Accomplishments and Outcomes, July 2010- June 2011
Massachusetts Department of Public Health (MDPH), Expanded
Occupational Health Surveillance in MA, FACE Project**

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The overarching aim of the Massachusetts FACE project is to reduce the incidence of fatal occupational injuries by:

- **Using multiple data sources to rapidly identify all fatal occupational injuries**
- **Conducting fatality investigations to identify risk factors and prevention strategies**
- **Disseminating prevention recommendations to stakeholders who can intervene**
- **Planning and conducting targeted prevention activities**

MAJOR ACCOMPLISHMENTS AND OUTCOMES

Surveillance and investigations

MA FACE identified and documented 42 fatal injuries through our 24-hour Occupational Fatality Hotline, newspaper clipping service and other sources used to ensure timely notification of fatalities. As a new initiative, we developed protocols and working relationships to pilot the routine collection of union status and ambiguous work-relationship for all fatal occupational injuries identified. We are collaborating with OSHA Region I, the state Attorney General's Office, the state Federation of Labor and the Massachusetts Coalition for Occupational Safety and Health in this effort.

Incidents targeted for FACE investigation included: deaths of workers under 25 years of age; foreign-born workers; falls in residential construction; deaths involving machines; energy production industries (with a focus on green energy); and public sector employees. Seven of thirteen investigations initiated were completed: two immigrant worker fatalities; two deaths of 18-24-year olds (one of whom was an immigrant); two public sector worker deaths; and one fatal fall in residential construction. We also collaborated with the MDPH *Teens at Work* project to investigate two serious electrical shock injuries to vocational students in different incidents at the same school.

Development and dissemination of prevention recommendations

Five MA FACE reports were finalized as well as one shorter *FACE Facts: City Laborer Struck and Killed by a Motor Vehicle while Closing a Water Gate Valve*. MA FACE also collaborated with others in developing a number of outputs. We worked with our state CFOI program to produce the Massachusetts *Fatality Update* for 2009 in a redesigned, more user friendly format this year. We also worked with the NIOSH Office of Research to Practice to develop an impact sheet describing our participation in a multi-year community partnership to reduce hazards of floor finishing that resulted in the July, 2010 passage of state legislation banning use of highly flammable lacquer sealers. Based on input from the Preventing Falls in Construction workgroup and contractors (see below), we also redesigned MA FACE brochures on ladder and scaffolding safety.

MA FACE findings were highlighted in multiple media sources. The FACE coordinator was interviewed for Berkshire Eagle newspaper article *Grim cycle of falls and fines plagues state construction industry* (October 2010). The MA FACE report "Forklift Operator Crushed Between

Forklift Cage and Mast while Loading Waste Paper into a Trailer” was summarized in the National Safety Council’s *Safety and Health Magazine*, *FACE Value* (January 2011). Another report was highlighted in the trade journal *Asphalt Pro Magazine*, *Safety Spotlight*, “Keep Loads Safe with Smart Haul Practices” (February 2011).

All MA FACE reports finalized were disseminated to individuals involved in the incidents as well as victims’ families. The reports were also disseminated broadly to the community using mailing databases specifically developed for each incident (between 130-250 companies per incident) as well as a core list of health and safety stakeholders. The *Massachusetts Fatality Update 2009* was disseminated to over 2,700 individuals, including police, fire, health, and public works departments, town clerks, health/safety professionals, employers, medical examiners, and unions. This mailing included the “High Visibility Safety Apparel” bulletin, developed by the Massachusetts Department of Labor Standards, to about 800 police departments and departments of public works as part of our ongoing collaboration to provide municipal workers and agencies, who are not covered by OSHA in Massachusetts, with health and safety information. As part of this effort, we also disseminated the *FACE Facts* on safe procedures when working in and around roadways for a short duration and the proper positioning of work vehicles to 396 municipalities, with information regarding free work zone safety training that was subsequently attended by a number of agency staff. In addition, MA FACE disseminated posters developed by NY FACE about health and safety during snow making to all Massachusetts downhill ski areas and provided additional copies upon request. We also used FACE materials in teaching in several courses at the Harvard School of Public Health. All Massachusetts FACE materials were posted on the OHSP website.

Prevention activities and collaborations

MA FACE continued to coordinate the *Preventing Falls in Construction* workgroup that brings together public and private partners to learn from each other about approaches to preventing construction falls and identify opportunities for collaboration. Members provided input on FACE’s new ladder and scaffolding materials, learned about innovative approaches using leading indicators to promote safe worksite practices and new research on ladder stability. We enlisted the help of a communications graduate student who conducted formative research, including a survey of contractors, to develop recommendations for improving outreach to small contractors. MA FACE provided technical assistance to Protección en Construcción: Lawrence Latino Safety Partnership - a community-initiated project to reduce construction falls and silica exposure among Latino construction workers in the Lawrence, MA area. We continued our collaboration with the University of Massachusetts Lowell engineering faculty who review MA FACE reports and provide input on engineering solutions to identified hazards

An important outcome this year was the passage of legislation banning use of flammable floor finishing products. MA FACE continues to provide assistance to the Floor Finishing Task Force, which is comprised of the local industry, unions, and community stakeholders that successfully advocated for this policy change. The Task Force is working to disseminate information about the new law and evaluate its impact. A formal evaluation of earlier outreach activities to Vietnamese Floor finishers showed that having seen the MA FACE Alert on the hazards of wood floor finishing was among the factors associated with making a change in work practices.¹

Plans for the Future

Next year, MA FACE will:

- Continue surveillance and pilot collection of information on union status and ambiguous work-relationships for all deaths

- Conduct investigations of targeted fatalities and develop and disseminate FACE reports and FACE Facts, including one addressing responsibilities for training temporary employees
- Disseminate revised fall prevention materials through various networks and, with the *Preventing Falls in Construction* workgroup, explore the feasibility of implementing more intensive outreach to small contractors
- Collaborate with MA Department of Labor Standards in developing a state strategy to more effectively provide health and safety information to municipalities
- Expand our ongoing collaborations with community partners serving newcomer communities
- Host the national annual FACE meeting in Boston (October 2011)

¹ Azaroff L, Nguyen HM, Tuan D, Gore R, Goldstein-Gelb M: Results of a Community-University Partnership to Reduce Deadly Hazards in Hardwood Floor Finishing. *J Community Health*, Published online January 2011.

Annual Report of Accomplishments and Outcomes, July 2010- June 2011
Massachusetts Department of Public Health, Expanded Occupational Health Surveillance
in MA, Surveillance and Prevention of Sharps Injuries and Musculoskeletal Disorders
(Hospital Workers Project)

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The overarching aim of this project is to reduce the incidence of sharps injuries and musculoskeletal disorders among hospital workers in Massachusetts. Specific aims are to:

- **Collect data on sharps injuries among hospital workers annually**
- **Analyze data and disseminate surveillance findings to promote prevention efforts**
- **Conduct intervention and prevention activities to reduce sharps injuries**
- **Characterize musculoskeletal disorders (MSDs) among hospital workers using administrative data set**
- **Continue collaborations with stakeholders to address sharps injuries and extend these efforts to address MSDs**

State law in Massachusetts requires hospitals licensed by the Massachusetts Department of Public Health (MDPH) to record sharps injuries among employees and to report these injuries to MDPH annually. Since 2002, MDPH has collected, analyzed and disseminated data on sharps injuries reported by hospitals and worked with hospitals and hospital workers to promote prevention activities. This year, we have continued the Massachusetts Sharps Injury Surveillance System (MA SISS) and related prevention activities and have taken initial steps, building on this successful experience, to address MSDs in hospital workers.

MAJOR ACCOMPLISHMENTS AND OUTCOMES

Collection of sharps injury data

The MDPH Occupational Health Surveillance Program (OHSP) collected data on nearly 3,000 sharps injuries during 2010 from all MDPH licensed hospitals, maintaining reporting by 100% of hospitals for the 10th consecutive year. All data for 2010 was reported electronically using a simple MExcel tool developed by MA SISS. Pick lists used by hospitals in maintaining their sharps logs were updated and shared with hospitals via email to facilitate standard data collection. For the first time in 2010, we collected information regarding the mechanism of the sharps injury prevention feature. This critical information, to be collected on an ongoing basis, will enable us to better describe the devices involved in sharps injuries and inform the development of improved sharps injury prevention technologies.

Analysis and dissemination of sharps injury data

The annual report “Sharps Injuries among Hospital Workers in Massachusetts, 2009” was distributed to all hospitals. Analysis of 2010 data was completed in record time and a report is in progress. A brief fact sheet summarizing findings from 2002-2009 was developed and a special topic report, *Sharps Injuries among Medical Trainees, 2002-2007* was finalized and disseminated. All reports were posted the OHSP website. Several MA SISS reports have been also been posted on NIOSH and OSHA web sites and circulated by WHO.

A highlight this year was publication of an article in *Infection Control and Hospital Epidemiology* (June 2011) documenting a decline in injury rates in acute care hospitals from 2002-2009 using

FTEs as the denominator in rate calculations. Findings, while important evidence of public health impact, also underscore the need to address the continued use of hypodermic needles lacking sharps injury prevention features, in spite of the availability of alternative devices with sharps injury prevention features, as well as problems with alternative devices.

The project coordinator presented surveillance findings at a landmark national conference convened by the American Nurses Association and broadcast nationally via the web as well as a conference hosted by University of Virginia, both marking the 10 year anniversary of the federal Needlestick Safety and Prevention Act. Additional presentations were given at meetings of the Massachusetts Nurses Association, the American Public Health Association, the Council of State and Territorial Epidemiologists and the International Commission on Occupational Health. Sharps data were also used in teaching classes at several local universities.

Intervention and prevention of sharps injuries

OHSP continued to provide technical assistance to hospitals via phone, email and site visits on request. Written guidance was provided to all hospitals regarding compliance with the regulatory provision for exemption from the use of sharps injury prevention technology as well as a process and template for developing an inventory of sharps devices. We continued to provide the MDPH Division of Health Care Quality (DHCQ) staff with hospital specific sharps data prior to DHCQ site visits to assess compliance with MDPH licensure regulations. OHSP participated in five joint site visits with DHCQ this year. OHSP has also contacted the four public health hospitals, which currently do not report sharps injury data, in order to include them in MSISS.

This year we successfully piloted replacing the single statewide annual meeting with hospitals with regional meetings to increase participation. Three regional meetings to share sharps injury data and prevention strategies were held in October 2010. Participation in these three sessions was triple that in previous years; four regional meetings will be held in 2011 in response to requests from hospital contacts.

In line with our initiative to influence device suppliers as well as users, OHSP staff and members of the MDPH Sharps Injury Prevention Advisory committee met with a major device manufacturer in April, 2011 to share relevant sharps injury data and discuss strategies to reduce the sale and use of devices without sharps injury prevention features.

Analysis of MSDs among hospital workers

We have negotiated data sharing agreements and begun analysis of two data sets to examine MSDs among hospital workers in Massachusetts: 1) the data set of workers' compensation lost time claims maintained by the state workers' compensation agency, and 2) the data set of all injuries among state workers maintained by the Massachusetts Human Resources Division. These data sets have also been analyzed to describe sharps injuries resulting in lost time as well as those injuries occurring in state mental hospitals.

Collaborations

The Sharps Injury Advisory Committee, which includes representatives from hospitals, labor, and healthcare professional organizations, met three times this year, providing guidance to OHSP on the sharps injury surveillance and intervention. Together with colleagues at the University of Massachusetts Lowell (UML), we published an article in *Nursing Management* (March 2011) highlighting the need to ensure that devices with sharps injury prevention features are included in prepackaged procedure trays. We are also collaborating with UML on a research project examining exposure to sharps and other hazards in the home care setting. OHSP

actively participated in survey development as well as interviews with key stakeholders in the home care industry.

A UML graduate student received a grant from the Harvard School of Public Health Educational Resource Center to carry out a student project using MA SISS data to examine the mechanisms of sharps injury prevention features on devices associated with injuries. The project demonstrated the feasibility of obtaining information on the number of devices purchased to be used as denominator data, setting the foundation for future studies on the mechanisms of sharps injury prevention features.

Plans for establishing the Massachusetts Hospital Ergonomics Task Force are underway. We have solicited recommendations from our Advisory Board and others for individuals and organizations to be invited to participate and held initial discussions with several potential members. Dr. David Wegman, former Dean of Health and Environmental at UML, has agreed to serve as chair.

Plans for the future

Next year OHSP will:

- Continue collection, analysis of sharps injury data
- Disseminate a report on 2010 surveillance findings and a special topic report on sharps injuries among nurses
- Finalize a report on injuries involving devices without sharps injury prevention features that includes information about device manufacturers. This information will be used to target outreach to device manufacturers
- Hold four regional meetings to present findings and guidance to hospitals
- Finalize reports on MSDs among hospital workers and establish the Hospital Ergonomics Task Force charged with developing MSD surveillance and prevention recommendations
- Initiate a survey of hospitals regarding safe patient handling programs.