

Annual Report, July 2014 - June 2015
Occupational Health Surveillance Program (OHSP)
Massachusetts Department of Public Health (MDPH)
Expanded Occupational Health Surveillance in Massachusetts
Fundamental Project

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

- Generating and disseminating state occupational health indicators (OHIs),
- 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 occupational health surveillance capacity.

MAJOR OUTPUTS/PRODUCTS

A new data source & partner in surveillance. OHSP has fully implemented the system for receiving and reviewing bi-weekly reports of work-related poisonings (electronically via secure email) from the Massachusetts – Rhode Island Regional Center for Poison Control and Prevention (PCC). We have received 212 cases since July 2014. At the PCC's request, OHSP staff presented to toxicology residents rotating through the Center (see below) and also published a MDPH blog on work-related poisonings. OHSP staff continue to participate on the PCC's advisory board.

Focus on local government workers. OHSP completed an analysis of injuries/illnesses among local government workers using workers' compensation indemnity claim data, just as the Massachusetts Coalition for Occupational Safety and Health (MassCOSH) and other groups are launching efforts to bring workplace health and safety to these workers, who are not covered by OSHA in MA. A state law to extend OSHA protections to local government workers has been proposed.

New source of employment data. OHSP is exploring the use of the American Community Survey (ACS) for characterizing the working population in MA because of the survey's diverse data elements and ability to produce robust estimates. We have refined methods for generating estimates for full-time equivalents (FTEs) as the denominator for occupational injury and illness rates and for characterizing employment and social demographic characteristics at the sub-state level. MyDzung Chu, of the OHSP staff, presented in a national webinar hosted by the Council of State and Territorial Epidemiologists (CSTE) on this use of the ACS in occupational health.

Referrals for worksite follow-up. OHSP continued timely identification of serious burns and amputations through the Massachusetts Burn Injury Reporting System (M-BIRS) and workers' compensation records, respectively. We referred 14 burns and 88 amputations cases to the three OSHA area offices and other agencies for worksite follow-up this period. Referrals are detailed below under 'intermediate outcomes.'

Integration. The movement of our Program into the Bureau of Community Health and Prevention this period has increased opportunities for OHSP to serve as a resource for other MDPH programs as well as other groups seeking to understand and use occupational health-related data and information.

- OHSP staff from the Healthcare Worker Project and the Fundamental Project collaborated with the Bureau of Infectious Disease (BID) to update the standardized occupation list for use in the electronic infectious disease surveillance system (see Healthcare Worker Project for details). Information has been shared via CSTE with other states.

- OHSP worked closely with the MDPH Health Survey Program (HSP) in preparing a special report summarizing 23 health indicators in the MA BRFSS by 20 industry groups and by 16 occupation groups (anticipated release August 2015). OHSP contributed to this effort by including an introduction that frames work as an important determinant of health to aide our MDPH colleagues and other public health partners in understanding the impact of work on health and in interpreting these data. OHSP participates in the BRFSS I/O Workgroup facilitated by CSTE and NIOSH, as well as the MDPH BRFSS Working Group.
- OHSP has collaborated with the MDPH Worksite Wellness Initiative in implementing a new state funded initiative to support development of worksite wellness programs in small workplaces, with an emphasis on the need for comprehensive programs that address work organization and work exposure factors as well as individual behaviors.
- Legislation legalizing gambling in MA established a public health prevention trust to support efforts to address public health impacts of gambling in the state. OHSP, with input from community partners, developed a brief on the need to address health and safety issues of casino workers in the strategic plan under development.
- OHSP provided MDPH Bureau of Family Health and Nutrition with data on employment characteristics and work-related injuries and illnesses for reproductive age working women in MA to guide the Bureau's consideration of occupational health as a priority area in the MCH Title V Block Grant.
- The OHSP Director continues to participate in the MDPH team working on the public health department accreditation process.

Occupational Health Indicators (OHIs). OHIs for 2012 have been generated and submitted to NIOSH.

Collaborations.

- OHSP continues to play an active role co-chairing the MA Occupational Health and Safety Team (MOHST) that includes representatives from state and federal agencies that share responsibility for protecting workers in the Commonwealth. Activities this period included collaborative efforts on: 1) promoting the national campaign to reduce falls in construction; 2) training for temporary and host employers regarding best practices (see FACE progress report) and 3) ongoing work to document and address the occupational health and safety needs of local government workers.
- OHSP staff participated in planning the 24th annual Northeast Regional Occupational Health Surveillance meeting May in Chester, Connecticut. Over 40 people attended representing health department from CT, MA, NJ, NH, NY State and NYC as well as the New England Center for Agricultural Medicine and Health, NIOSH, the New Jersey ERC, the Harvard ERC, Connecticut OSHA, Rutgers University, and the University of Connecticut.
- OHSP played a leadership role in planning the Sunday Occupational Health Sub-committee Workshop and the Occupational Health Track at the CSTE Annual Conference held in Boston in June, 2015.
- OHSP staff serve on Advisory Boards to two NIOSH funded Centers for Excellence in Total Worker Health and on the Healthcare Services Board of the Department of Industrial Accidents.

New Funding Application: OHSP prepared and submitted an application to CDC NIOSH for continued funding of the Expanded Occupational Health Surveillance Program. This application was developed with extensive input from the OHSP Advisory Board of community and agency stakeholders. OHSP was also successful in its application for new NIOSH funding to maximize use of workers' compensation data.

Presentations

- Brown K and Chu M. "American Community Survey 101: Overview and Application in Occupational Health Surveillance". National CSTE Webinar. April 2015.
- Chu M, Grattan K, Laing J, Tak S, and Davis L. Work-Related Injuries and Illnesses Among Massachusetts Local Government Workers. Presentation at the 2015 Annual CSTE Conference, Boston, MA. June 2015.

- Chu M, Pechter E. Surveillance of Work-Related Exposures and Poisonings Using the Poison Control Center Data. Presentation to Toxicology Residents at the MA-RI PCC, Boston, MA. Nov. 2014.
- Chu M, Pechter E. Using Poison Control Center Data for Occupation Health Surveillance. Roundtable presentation at the 2015 Annual CSTE Conference. Boston, MA. June 2015.
- Davis LK, Occupational Health Surveillance and the Use of Data for Action. Co-presented with Occupational and Environmental Medicine Resident, Soni Mathews. Brown Bag at Harvard School of Public Health. May 2015
- Davis LK, Epi in Action: Looking Forward, Reflecting Back: Occupational Health Surveillance in Massachusetts. Presentation at the Occupational Health Surveillance Workshop, CSTE Annual Conference, Boston, MA. June 2015.
- Grattan K. Considering the Impact of Work on Health & Well-being: What States can do. Presentation/Discussion at the Occupational Health Surveillance Workshop, CSTE Annual Conference, Boston, MA. June 14, 2015.
- Pechter E, Davis L, Chu M. Little Data: Sentinel Surveillance of Occupational Injuries and Illnesses are Crucial for Action. Presentation at the 2014 Annual APHA Conference. New Orleans, LA. Nov. 2014.

MAJOR OUTCOMES

Intermediate outcomes

- Of burn injuries reported to OHSP by the Department of Fire Services this period and referred to OSHA, OSHA investigated all (14) based solely on the OHSP referral; six of these investigations resulted in citations. Of all the amputation injuries identified this period, 83 were referred to OSHA and five were referred to the MA Department of Labor Standards (DLS). For 68 of these referrals to OSHA, OHSP's referral was OSHA's first notification of the amputation. Of the amputation referrals for which we have outcome data, 52% resulted in citations and an additional 30% resulted in a written notice to correct or recommendations to address the hazard.
- OSHA Region 1 reports that these referrals are a useful means of targeting fruitful investigations. While we have not assessed the impact of these specific investigations, prior research indicates that OSHA enforcement investigations contribute to the improvement of working conditions.
- OHSP Director with other community and academic stakeholders were successful in advocating for the inclusion of several objectives and a number of strategies related to work and health within various Priority Areas of the State Health Improvement Plan (SHIP).
- The work of the Governor's Advisory Committee to extend OSHA protections to employees of State Executive Branch agencies has continued this period. The state legislation passed last year went into effect in March 2015 and require that the new safety and health measures be at least as protective as OSHA standards. OHSP's work to provide data on injuries and illnesses among state employees contributed to this effort and our role will continue as the MA DLS implements this new law.
- The MA DLS has conducted labor assurance reviews of approximately 30 employer applications for tax credits for implementing worksite wellness programs. Last period, the MOHST Team, co-chaired by OHSP director, worked to ensure that the eligibility criteria for tax credits included assurances that applicant employers carry workers compensation insurance and have had no repeat or willful violations of OSHA standards or Wage and Hour laws within the last several years.
- MassCOSH cited data on OHIs and other recent OHSP surveillance findings in their annual report, "Dying for Work in Massachusetts," released on Workers' Memorial Day (late April).

Potential and end outcomes

The MA Fundamental project has not tracked specific end outcomes in relation to its activities. The interagency collaborations and substantial efforts to integrate occupational health into other ongoing public health activities, including the BRFSS and the SHIP, have the potential to promote increased consideration of the influence of work on health by the broader public health community and, in turn, improve the health and safety of working people in Massachusetts and throughout the nation. The increased effort to provide health and safety information to some of our most vulnerable workers and the people who serve them has the potential to reduce occupational health disparities over time.

Annual Report, July 2014- June 2015
Occupational Health Surveillance Program (OHSP)
Massachusetts Department of Public Health (MDPH)
Expanded Occupational Health Surveillance in Massachusetts
Teens at Work Project

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The Teens at Work: Injury Surveillance and Prevention Project (TAW) within the Massachusetts Department of Public Health (MDPH) aims to prevent 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,
- Developing and conducting intervention and prevention activities, and
- Collaborating with government and community partners to promote use of surveillance findings for prevention.

Since 1993, TAW has conducted a range of surveillance and outreach activities that aim to make jobs safer for workers under age 18. This project period we expanded our efforts to include young adult workers ages 18-24. Listed below are highlights from Fiscal Year 2015.

MAJOR OUTPUTS/PRODUCTS

- **Annual Teens at Work Surveillance Update.** TAW disseminated its annual [Surveillance Update](#) to over 2,000 schools, employers, unions and other stakeholders. This year's *Update* includes findings on teen work injuries and information on driving for work in Massachusetts.
- **Information on injuries to young adult workers.** TAW presented its first ever analysis of workers' compensation lost time claim records for workers ages 18-24 at CSTE last June. The analysis has been finalized and a written report is in progress to be released in the next grant period. TAW also completed an updated analysis of injuries among young adult workers based on statewide hospital discharge and emergency department data for 2008-12 (under final MDPH review).
- **Ongoing case based surveillance.** TAW identified 171 injuries to teen workers this year, through lost time workers' compensation claims and reports from a sample of emergency department. Twenty-three interviews were completed resulting in 1 referral to enforcement agencies; an additional 2 enforcement agency referrals were made via alternate sources. Educational materials on health and safety and child labor laws were mailed to all employers of injured teens. TAW also identified 2,972 injuries to young adults this year through lost time workers' compensation claims. Interviews were attempted with all young adults sustaining an amputation or burn; twenty-three interviews were completed resulting in 1 referral to enforcement agencies.

- **New Funding Application.** Prepared and submitted an application to NIOSH for funding to continue surveillance and prevention of work-related injuries to young workers under the age of 25.
- **Ongoing Social Media.** TAW continues to post all output materials [online](#) within the MDPH website, and use MDPH frontline media aggressively to promote TAW messages, through Tweets, blog posts, and MDPH [homepage stories](#).

Presentations

“Protecting Youths at Work: Surveillance to Action in Massachusetts.” Massachusetts Department of Public Health Office of Statistics and Evaluation Meeting. September 24, 2014.

“Protecting Youths at Work: Surveillance to Action in Massachusetts.” Essential School Health Services School Nurse Leader Quarterly Meeting. December 9, 2014.

“Protecting Young Workers in Massachusetts: Surveillance to Action.” Harvard School of Public Health. Feb. 6, 2015

“Utilizing Infographics: How to Quickly and Effectively Deliver Prevention Messages.” Northeast Regional Occupational Disease and Injury Surveillance Conference. May 5, 2015.

Youth @ Work, Talking Safety Lesson: Finding Hazards. LARE Institute Youth Education and Vocational Exploration Program. May 12, 2015.

“Protecting Youth at Work: Surveillance to Practice in Massachusetts Coffee Shops.” Closing Plenary at the National Occupational Injury Research Symposium. May 19-21, 2015.

“Protecting Youth at Work: A Tale of Coffee & Consequences.” Council for State and Territorial Epidemiologists Annual Conference: Sunday Occupational Health Workshop. June 14, 2015.

“Using Social Media to Promote Data for Action: The Massachusetts Teens at Work Project.” Council for State and Territorial Epidemiologists Annual Conference. June 16, 2015.

MAJOR OUTCOMES

Intermediate Outcomes

MA YES Team & Poster Contest community engagement

TAW continues to lead the MA Youth Employment and Safety Team ([YES Team](#)), which brings together representatives from eight government agencies quarterly to coordinate efforts to protect youth at work. This past period, the YES Team, in partnership with the Massachusetts Coalition for Occupational Safety and Health, continued its success in extensive interagency/community engagement through the fifth [Safe Jobs for Youth Poster Contest](#).

A number of Massachusetts secondary school teachers assign the contest as homework each year, exposing more students to our educational materials and other information on injury prevention to working teens. An awards event was held at the State House and attended by finalists and their families, state



2015 Winning Poster, Cori Farrow

agencies and community partners, and state legislators. TAW [blogged](#) about the event. This June through August, English and Spanish versions of the winning poster are on public transit throughout Greater Boston, and on buses in the Greater Attleboro-Taunton area, where the winning teen is from.

Engineering solution to reduce coffee burns

As a result of TAW's case ascertainment, follow-up and outreach, a new coffee brewer designed to engineer out a common hazard that can lead to burn injuries has been rolled out by the manufacturer for a national coffee shop chain. As of April, nearly 3,000 brewer units had been purchased for over 1,200 franchised coffee shop locations across the country.

Partner agency citation

In response to one TAW referral, a violation of child labor laws was investigated by the US Department of Labor, Wage & Hour Division. The employer paid a \$6,350 fine for violations related to three minors using hazardous equipment, and one underage teen working. There were fortunately no injuries tied to these violations.

TAW online and social media expanded outreach

TAW implemented a trial social media strategy this past period which utilized Twitter and Blog posts to increase impact during the project's peak outreach periods: our Poster Contest and our annual Surveillance Update dissemination. As a result, there were over 26,000 combined hits and downloads to our webpages and online materials from July 2014 to May 2015. Highlights from this time period include nearly 10,000 downloads of our *Guide for Working Teens*, nearly 4,000 downloads of our *Child Labor Laws in Massachusetts* poster, and several retweets by Massachusetts legislators of our Poster Contest Awards Ceremony. As of this past Spring, TAW materials are also now available on the [Massachusetts Health Promotion Clearinghouse](#), a one-stop shopping website that houses and distributes educational materials for the entire health Department, free of charge to the public. Having our materials in the clearinghouse will help to increase the visibility of "Workplace Health & Safety" as a public health issue alongside other more prominent topics like Alcohol & Other Drugs, School Health, and Tobacco Cessation & Prevention.

Young Worker Indicator

A new indicator using emergency department visit data to calculate the rate of injury for young workers under age 25 was developed and included in the Massachusetts Department of Public Health's (MDPH) State Health Improvement Plan document.

Driving for Work

TAW worked with the MDPH Division of Violence and Injury Prevention and the Massachusetts Registry of Motor Vehicles to include language about driving for work under the child labor laws in the MA Driver Education Program Curriculum for parents of teen drivers.

Potential and End Outcomes

The surveillance findings and educational materials that TAW disseminates have the potential to reduce injuries to young workers both in MA and throughout the nation. They not only serve to provide stakeholders (teachers, employers, parents as well as teens themselves) with specific tools and resources to address risks faced by youth at work but also have the long term potential to contribute to a change in community norms that result in improved young worker safety.

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Occupational Health Surveillance Program (OHSP)
Massachusetts Department of Public Health (MDPH)
Expanded Occupational Health Surveillance in Massachusetts
Massachusetts FACE Project

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The overarching aim of MA FACE 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 OUTPUTS

Surveillance and Investigations

- MA FACE identified and documented 48 fatal injuries; information about these deaths was included in the MA Workers' Memorial Day report published by MA AFL-CIO and MassCOSH.
- MA FACE initiated ten fatality investigations of which we were able to complete four. We finalized four MA FACE reports and several others are in various stages of completion.

Development and dissemination of prevention recommendations

Reports and FACE Facts Dissemination

- MA FACE, in collaboration with the state CFOI program, released the report [Fatal Injuries at Work - Massachusetts Fatality Update, 2013](#), and disseminated it to over 3,200 individuals, including police, fire, health, and public works departments, town clerks, health/safety professionals, employers, medical examiners, and unions.
- Finalized MA FACE reports were disseminated to individuals involved in the incidents as well as victims' families; to the broader community using mailing databases developed for each incident (between 130-250 companies per incident); and to a core list of health and safety stakeholders.
- Four similar fatalities in recent years led MA FACE to develop the *FACE Facts* – [Use Skid-steer Loader Lift Arm Supports during Maintenance That Requires Lift Arms to Be Raised](#), addressing the use of lift arm supports when performing maintenance where the skid-steer loader lift arm is raised. In these incidents, the victims were working underneath raised lift arms when the lift arms unexpectedly lowered crushing the workers between the lift arm and the loader. This *FACE Facts* is being disseminated to municipal DPWs, equipment rental companies, and construction and landscaping contractors. The MA Department of Labor Standard (DLS) is also disseminating this *FACE Facts* in the course of their investigations of non-fatal incidents involving municipal workers.

Educational Material Dissemination

- As of this Spring, MA FACE educational materials are now available on the [Massachusetts Health Promotion Clearinghouse](#), a one-stop shopping website that houses and distributes educational materials for the entire state health department, free of charge to the public. Having materials in the clearinghouse will help to increase the visibility of "Workplace Health

& Safety” as a public health issue alongside other more prominent topics like Cancer Control, Influenza, and Nutrition & Physical Activity.

Fall Prevention in Residential Construction

The MA FACE coordinator participates on the NORA Construction team, sharing state public health agency perspectives, during biannual meetings. MA FACE continues to promote preventing falls in construction in MA. This year, MA FACE supported the National Campaign to Prevent Falls in Construction by conducting a combination of email and in-person outreach to promote the campaign’s National Safety Stand-Down to Prevent Falls in Construction.

Email dissemination:

- MA FACE reached out to all MA municipalities, approved course providers for MA construction licenses, and MA vocational school superintendents and principals.
- Emails explained the national campaign and safety stand-down, last year’s success of these events, and how to participate this year.
- Emails also included three links which included the CPWR safety stand-down getting started guide, fall prevention resources and training materials on the OSHA website, and the certificate of completion page on the OSHA website page.
- Emails to the approved course providers encouraged them to talk about the campaign and safety stand-down during construction related courses and to include information on their websites about the campaign and safety stand-down.

In person outreach:

- MA FACE worked with the Region I OSHA Andover Office and the MA On-site Consultation program to attend and present at their sponsored fall protection trainings for residential roofers held on April 30, May 5 and 7, 2015. There were a total of 90 attendees at the three trainings.
- MA FACE handed all participants of these trainings informational packets. The packets included a set of the four previously developed MA FACE fall prevention brochures ([falls](#), [ladder](#), [scaffold](#), [PFAS](#)), MA FACE [Falls in construction fact sheet](#), CPWR safety stand-down getting started guide, official fall campaign poster, and a fall campaign card.
- MA FACE presented at these trainings on the campaign and the safety stand-down, explaining how to participate and obtain the certificate of completion, and stressing the importance of fall protection, talking to employees about fall protection, and keeping an open line of communication with employees about safety and possible job hazards.

New Funding Application

- Prepared and submitted an application to NIOSH for funding to continue the surveillance and in-depth investigations of fatal occupational injuries.

Publications

- Fatal Injuries at Work: Massachusetts Fatality Update, 2013
- FACE Facts: Use skid-steer loader lift arm supports during maintenance that requires lift arms to be raised
- MA FACE report 13MA002 - Mechanic Crushed When the Dozer He Was Lowering Shifted and Fell off the Jack – Massachusetts
- MA FACE report 13MA019 - Landscaper Working from a Raised Portable Work Platform Was Electrocuted When a Pole Saw Contacted Overhead Power Line - Massachusetts

- MA FACE report 13MA026 - Temporary Worker Fell from a Fixed Ladder inside a Building Being Renovated – Massachusetts
- MA FACE report 13MA032 - Laborer Compressed between the Top Rail of a Scissor Lift Guardrail and a Steel Beam – Massachusetts

MAJOR OUTCOMES

Intermediate Outcomes

FACE Reports and FACE Facts

- In response to a previous dissemination of our *FACE Facts* - [Temporary Agencies and Worksite Employers Share Responsibility for Keeping Temporary Workers Safe](#), MA FACE was asked to give two presentations at a state temporary worker safety conference. One of the presentations, the importance of protecting temporary workers, highlighted MA FACE cases. The second presentation, best practices to temporary worker health and safety, led MA FACE to review documents written by multiple stakeholders and develop a framework on which the presentation was based.
- American Road and Transportation Builders Association (ARTBA) transformed a MA FACE report into an animated training video. The video [Avoiding Fatalities: Police Officer Run Over by a Dump Truck](#) is based on a MA FACE report of a police officer who was backed over by a dump truck while performing a traffic detail at a roadway construction site.
- MA FACE reports were used as a teaching tool in several courses at the Harvard School of Public Health (HSPH), University of Massachusetts at Lowell and Northeastern University.
- Multiple MA FACE reports were highlighted during a HSPH Grand Rounds presentation.
- American Society of Safety Engineers (ASSE) technical publication *ByDesign* highlighted MA FACE reports:
 - *Municipal Electrician Dies After Falling From an Aerial Lift Truck's Raised Bucket After It Was Struck by a Semi-Tractor Trailer* (12MA013), [Vol. 14, No. 3, 2015](#).
 - *Temporary Worker Died While Cleaning a Double Auger Screw Conveyor Machine* (11MA050), [Vol. 14, No. 1, 2014](#).
- A popular Hispanic lifestyle magazine highlighted a MA FACE blog about fall prevention in construction and the national fall campaign and safety stand-down in an article. [Candela Magazine, Edition 59, August 2014](#), Previñiendo caídas y mejorando la seguridad de los trabajadores de la construcción (Improved construction worker safety by preventing falls).
- National Trucker Association (NTA) addressed the [hazards of demountable multi-piece rim wheels](#) on their web site by highlighting MA FACE report *Truck Driver Dies while Rotating Tires Mounted on Demountable Multi-piece Rim Wheels* (11MA044).
- The NIOSH/OSHA publication [Recommended Practices: Protecting Temporary Workers](#) highlighted a MA FACE report *Temporary Worker Died While Cleaning a Double Auger Screw Conveyor Machine* (11MA050) on the front page of the publication.

Potential and end outcomes

All FACE reports and educational materials include recommendations that if used have the potential to reduce workplace hazards.

The annual number and rate of fatal occupational injuries in MA since 2000 has fluctuated over the years with no consistent upward or downward trend. Since 2012 through the first half of 2015, the numbers of deaths have been low when compared to the 10 year average. Given the relatively small number of deaths in any single year, however, it is challenging to differentiate the effect of the project from normal yearly fluctuations in the fatality rate or the effects of external factors such as changes in employment due the recession and enforcement activities.

Annual Report, July 2014 - June 2015
Occupational Health Surveillance Program (OHSP)
Massachusetts Department of Public Health (MDPH)
Expanded Occupational Health Surveillance in Massachusetts
Surveillance and Prevention of Sharps Injuries and
Musculoskeletal Disorders among Massachusetts Hospital Workers

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The overarching aim of this project is to reduce the incidence of sharps injuries and musculoskeletal disorders (MSDs) among hospital workers in Massachusetts by:

- Collecting data on sharps injuries among hospital workers annually,
- Analyzing data and disseminating surveillance findings to promote prevention efforts,
- Conducting intervention and prevention activities to reduce sharps injuries,
- Characterizing MSDs among hospital workers using administrative data sets, and
- Continuing collaborations with stakeholders to address sharps injuries and extend these efforts to address MSDs.

MAJOR OUTPUTS/PRODUCTS

Sharps Injury Surveillance

Data Collection

For the fourteenth consecutive year, OHSP has collected data on sharps injuries among Massachusetts hospital workers from all (N=97) MDPH licensed hospitals. For the calendar year 2014, more than 2,875 sharps injuries were reported electronically. Data from 2014 is in the process of being cleaned and coded for analysis. SAS code continues to be refined and updated to improve coding of text-fields, thus minimizing the amount of manual re-coding to more precisely categorize data provided.

Data reports

A new short format for annual statewide sharps injury surveillance reports was developed the previous project period and has been well received. These reports provide annual data by hospital, worker and incident and device characteristics. They also include data on sharps injury rates over time generated using two denominators - number of licensed beds and FTEs. Reports for 2011 and 2012 were published in August 2014; the report for 2013 is under review.

A short fact sheet summarizing sharps injury surveillance findings since 2002 has been updated and posted online. The summary includes rates by hospital size and also highlights persistent issues to be addressed.

Conferences/meetings

Three regional meetings with representatives from occupational health and infection control at hospitals around the state were held in December 2014. Forty-eight hospitals were represented and more than 75 healthcare professionals attended the meetings. These meetings allow hospitals to share successes and obstacles faced in addressing issues related to worker health and safety. At these meetings, not only was the topic of sharps injury prevention discussed, but also influenza prevention programs and safe patient handling activities at the hospital level.

Two sharps injury advisory committee meetings were held during the project period. This committee is legislatively mandated and includes labor and industry representatives as well as researchers and members of professional organizations.

Safe Patient Handling

As reported previously, a Hospital Ergonomics Task Force was convened in 2012 and met over the course of 18 months. The Task Force developed recommendations for next steps to be taken by hospitals, MDPH and other stakeholders to address patient handling in the hospital setting. These recommendations were included in the final report of the Hospital Ergonomics Task Force, "Moving into the Future: Promoting safe patient handling for worker and patient safety in Massachusetts Hospitals" released in January, 2015. In addition to being posted on the web, it was widely distributed to hospitals (CEOs and occupational health staff) and other stakeholders. MDPH has taken initial steps to implement the recommendations pertaining to MDPH, which include ongoing surveillance. Establishment of the recommended ongoing stakeholder group was postponed until notification about continued NIOSH funding to support this work.

OHSP is working with a researcher from the Harvard School of Public Health to conduct key informant interviews with select hospitals as a follow-up to the survey of safe patient handling activities conducted in 2012. Questions for key informant interviews have been developed and interviews are underway.

Other

OHSP staff participated in assessments of hospitals designated to care for confirmed or suspected ebola patients. These assessments were done with Rapid Ebola Preparedness teams led by the CDC, as well as with teams led by researchers working with DPH. OHSP staff provided expertise in occupational health surveillance and prevention of exposures to bloodborne pathogens and helped to facilitate involvement by OSHA staff.

OHSP staff from the Healthcare Worker Project and the Fundamental Project collaborated with the Bureau of Infectious Disease (BID) to update the standardized occupation list for use in the electronic infectious disease surveillance system in BID's infectious disease surveillance system. The updated occupation list was first integrated into the surveillance system for the Foodborne Illness Module and subsequently integrated into the General Epidemiology, TB, and STD Modules. Information has been shared via CSTE with other states that have expressed an interest in applying OHSP's approach in their respective states.

OHSP staff worked with two students during the project period, with one looking at injection related injuries and another preparing data for analysis at the hospital level.

New Funding Application

OHSP prepared and submitted an application to NIOSH for funding to continue surveillance and prevention of sharps injuries and patient handling related musculoskeletal disorders.

Presentations

Hawkins DM, Laramie AK, Davis L. (2015) Getting the Most from Your Surveillance Data: Methods Used By the Massachusetts Sharps Injury Surveillance System. CSTE Annual Conference,

Laramie AK, Hawkins DM, Davis L. (2015) Sharps injuries among Massachusetts Hospital Workers; Focus on injection related injuries. WHO Meeting of the Safe Injection Global Network.

OHSP staff presented information about occupational health surveillance, as well as sharps injury surveillance and prevention in several graduate classes at the Harvard School of Public Health, and Tufts University School of Public Health.

MAJOR OUTCOMES

Intermediate Outcomes

Findings from the Massachusetts Sharps Injury Surveillance System have been posted on web sites of other organizations including: Infection Control Today, Clean Bay Area, and The International

Society for Quality in Healthcare or referenced in articles published by the Journal of the Association of Occupational Health Professionals and the Archives of Hellenic Medicine.

Surveillance findings on sharps injuries as well as technical assistance provided to hospitals on request have contributed to sharps injury prevention activities undertaken in a number of hospitals.

Hospital Employee Health newsletter has published pieces on safe patient handling and sharps injury surveillance and prevention, discussing findings from the *Survey of Safe Patient Handling Activities in Massachusetts Hospitals* and the ergonomics task for report *Moving into the Future: safe patient handling for patient and worker safety* as well as the report *Sharps Injuries among Hospital Workers in Massachusetts: Findings from the Massachusetts Sharps Injury Surveillance System, 2012*.

The report *Moving into the Future: safe patient handling for patient and worker safety* was highlighted by the local public radio and television station as part of a series on healthcare worker health and safety, which ran in conjunction with a series on the same topic by National Public Radio.

End Outcomes

There has been an overall decline in the sharps injury rate since the inception of the Massachusetts Sharps Injury Surveillance System and it is reasonable to assume that our activities have contributed to this decline. Findings for the last several years, however, indicate that this decline is leveling off. Whether this represents improved injury reporting (a success), a plateau following prevention activities directed at solving the more straight forward, less complex problems or a shift in attention given the many issues facing hospitals in the era of healthcare reform is not clear. Regardless of the explanation, it underscores the need for continued surveillance and new approaches to maintaining a focus on preventing sharps injuries in Massachusetts hospitals. Several new initiatives are planned.

Annual Report, July 2014- June 2015
Occupational Health Surveillance Program (OHSP)
Massachusetts Department of Public Health (MDPH)
Expanded Occupational Health Surveillance in Massachusetts
Work-related Asthma Surveillance and Prevention

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The overarching aim of the project is to reduce the incidence of work-related asthma (WRA) in Massachusetts. Specific aims are to:

- Ascertain work-related asthma cases using multiple data sources,
- Follow-up to confirm, using telephone interview and/or medical records,
- Conduct intervention and prevention activities,
- Analyze and disseminate sentinel and population-based surveillance data, and
- Collaborate with government and community partners to promote prevention.

MAJOR OUTPUTS / PRODUCTS

Case ascertainment. OHSP continued to routinely ascertain possible cases of WRA from healthcare provider reports, hospital data and workers' compensation claims. This period, we ascertained 73 and confirmed 23 cases of WRA. Notably, we successfully negotiated more timely access to workers' compensation files, receiving them weekly rather than quarterly, substantially reducing time between "date of injury" and initiation of case follow-up.

Investigations. Two site investigations resulted in recommendations to abate hazards: an electroplating company and manufacturer of pressure sensitive films. In addition, OHSP followed up on two Health Hazard Evaluation (HHE) requests to NIOSH, accompanying staff from NIOSH's Division of Respiratory Disease Studies on an evaluation of risks for Legionnaires disease in a printing plant and attending a NIOSH presentation to workers about [HHE results](#) at a syntactic foam manufacturer. A letter was also issued to a school superintendent warning of respiratory hazards related to using baseboard stripper to clean desks.

Reports and partnerships.

- **Work-related asthma goals included in state's 2015-2020 asthma [strategic plan](#).** OHSP is a lead partner in goals involving surveillance, asthma management and reducing exposures to workplace asthma hazards, especially in schools and healthcare, and regarding cleaning products. This is the first state strategic plan to include a specific goal of primary prevention of asthma, which incorporates strong workplace objectives.
- **Partnered with MDPH Health Survey Program (HSP) on analyses of asthma by industry and occupation (I/O) using the Behavioral Risk Factor Surveillance System (BRFSS).** OHSP staff from WRA and Fundamental projects worked closely with HSP on: (1) multiple presentations on practical considerations in collecting and using I/O information from the BRFSS, highlighting asthma-related analyses as examples (see 'Publications and presentations' below); (2) an analysis of current asthma prevalence among childcare

workers (see 'Publications and presentations' below); (3) a special report in which current asthma is one of 23 adverse health indicators presented by I/O from the 2012-2013 BRFSS (anticipated Summer 2015). OHSP continues to champion including the I/O questions in the 2015 and 2016 BRFSS landline and cell phone surveys.

- **Educational materials are now available on the [Massachusetts Health Promotion Clearinghouse](#)**, a one-stop shopping website that houses and distributes educational materials for all of MDPH, free of charge to the public. Having our materials in the clearinghouse will increase the visibility of “workplace health & safety” as a public health issue alongside other major topics like Alcohol & Other Drugs and Family Planning.
- **Work-related asthma featured in redesign of MDPH asthma website.** OHSP worked closely with staff from the MDPH’s asthma and environmental health programs to redesign content and format of the MDPH asthma landing page. WRA is one of three featured sections and links to related materials and the OHSP page are provided. The website should be finalized by late Summer 2015.
- **New Funding Application.** OHSP prepared and submitted an application to NIOSH for funding to continue surveillance and prevention of WRA and to also explore approaches to surveillance of other work-related lung diseases. This application was developed with extensive input from community and agency stakeholders on the OHSP Advisory Board and beyond.

Publications and presentations.

- Strategic [Plan](#) for Asthma in Massachusetts, 2015-2020. May 2015.
- Casey M, Stanton ML, Cummings KJ, Pechter E, Fitzsimmons K, LeBouf RF, Schuler CR, Kreiss K. Work-related asthma cluster at a syntactic foam manufacturing facility - Massachusetts 2008-2013. [MMWR](#) Morb Mortal Wkly Rep. 2015 Apr 24;64(15):411-4.
- Quinn M, Henneberger PK, and NIOSH NORA Cleaning and Disinfecting in Healthcare Working Group: Braun B, Delclos GL, Fagan K, Huang V, Knaack JLS, Kusek L, Lee S-J, Le Moual N, Maher KAE, McCrone SH, Mitchell AH, Pechter E, Rosenman K, Sehulster L, Stephens AC, Wilburn S, Zock J-P. Cleaning and disinfecting environmental surfaces in health care: toward an integrated framework for infection and occupational illness prevention. [Am J Infec Control](#) 43(2015):424-434.
- “Work-Related Asthma Surveillance, Massachusetts, 2003 – 2013”. Occupational Lung Disease [Bulletin](#). Spring 2015.
- “Cleaning Can Be Bad for Your Health”. [Massachusetts Public Health Blog](#). 06/16/15.
- “Asthma in Child Care Workers”. Occupational Lung Disease Bulletin (anticipated Summer 2015).
- “Isocyanates, bleach, quaternary ammonium compounds”. Training for toxicology residents. MA/RI Regional Center for Poison Control and Prevention Center. Boston, MA. 11/4/14.
- “Can primary prevention of asthma be extended beyond the work environment?” [Oral presentation](#). APHA Annual Meeting. New Orleans, LA. 11/18/14.
- “Little data: Sentinel surveillance of occupational injuries and illnesses are crucial for action”. [Roundtable](#). APHA Annual Meeting. New Orleans, LA. 11/17/14.

- “Using industry and occupation information from the Massachusetts BRFSS: Framing the Role of Work”. Oral presentation with the Fundamental Project.
 - Northeast Regional Occupational Disease and Injury Surveillance Conference. 05/5/15.
 - OHSP Advisory Board Meeting. 03/15/15.
- “Elevated Asthma Prevalence among Child Care Workers: Using Industry Information from the 2011-2013 Massachusetts Behavioral Risk Factor Surveillance System”. [Oral presentation](#). CSTE Annual Meeting. Boston, MA. 06/15/15.
- “Practical Issues in Exploring Industry and Occupation (I/O) in the Behavioral Risk Factor Surveillance System (BRFSS)”. [Roundtable](#). CSTE Annual Meeting. Boston, MA. 06/15/15.
- “Work-Related Asthma at a Syntactic Foam Manufacturer Detected Through Surveillance”. ML Casey, ML Stanton, KJ Cummings, CR Schuler, E Pechter, K Fitzsimmons, K Kreiss. [Poster presentation](#). American Thoracic Society conference. Denver, CO. 05/18/15.
- “May is Asthma Awareness Month”. Lobby display featuring asthma data for children and adults, including WRA, with Asthma Program and Environmental Health Bureau. May 2015.

MAJOR OUTCOMES

Intermediate outcomes.

- **Policy change.** OHSP worked closely with colleagues in MDPH early childhood, infectious disease, and asthma programs and the Massachusetts Department of Early Education and Care (EEC) in developing a new [policy statement](#) on cleaning, sanitizing and disinfecting that will help reduce hazardous exposures to bleach and promote alternative products. The EEC policy distinguishes *cleaning*, which is sufficient to remove dirt from many surfaces, from *sanitizing*, which is needed for food surfaces, bottles, bibs and pacifiers, from *disinfecting*, which is needed for diapering and toilet training chairs. There is guidance about how to properly prepare and dilute bleach, with directions for new and old concentrations of bleach. Further, the policy guides childcare educators to avoid spraying onto hard surfaces, and to ensure that disinfectants remain wet for the necessary time to achieve disinfection.
- **Other action on cleaning and disinfecting.** OHSP continues to focus on promoting safer cleaning and disinfecting practices, and has contributed to a number of initiatives with potential to reduce exposures to asthmagens in workplaces. The collaborations have led to the [article](#) listed above about cleaning environmental surfaces in healthcare, and the new policy regarding sanitizing surfaces in childcare. OHSP’s work with the state procurement and environmental agencies on the Toxics Reduction Taskforce has continued to promote purchases of green cleaners without asthmagens by state agencies in Massachusetts and other New England states, totaling over \$3 million in 2013. The Taskforce reviewed the criteria for certification by Green Seal and ULE/EcoLogo as well as EPA’s Design for Environment, and is currently updating the factsheet “Understanding Best Management Practices of Cleaning, Sanitizing, and Disinfection”.

Potential and end outcomes.

Given under-recognition of WRA and the case-based nature of our surveillance system, it is not possible to document trends in WRA incidence. However, surveillance findings and prevention recommendations have the potential to lead to enhanced awareness, improved capture of WRA cases, improved prognosis, and real reductions in workplace exposures that cause and exacerbate asthma in a variety of settings.