# Data Brief
# Occupational Lung Disease Bulletin

Massachusetts Department of Public Health — Fall 2015

*Dear Healthcare Provider,*

*This Bulletin describes the risks for asthma among early education and childcare workers and highlights a new policy for cleaning, sanitizing and disinfecting promulgated by the Massachusetts Department of Early Education and Care (EEC). The policy change resulted from collaboration of EEC with staff from several Massachusetts Department of Public Health programs, especially Karen E. Hughes RN, MS Early Childhood Health Specialist in the Division for Perinatal, Early Childhood & Special Health Needs.*

*We hope you appreciate the Occupational Lung Disease Bulletin's new format, consistent with Department of Public Health data briefs and information releases.*

*A copy of the "Occupational Disease and Injury Reporting Form" is attached. Please continue to report suspected cases of work-related asthma using the enclosed form. To receive your Bulletin by e-mail, to provide comments, or to contribute an article to the Bulletin, contact us at MDPH.OHSP@state.ma.us*

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## ASTHMA IN CHILDCARE WORKERS

### Case study: work-related asthma in an early education/childcare provider

A 47 year-old woman worked as a teacher's assistant in an early education and care center, located in the basement of a Worcester church. She was a lifelong nonsmoker and never had asthma or allergies. Nor did any member of her immediate family have asthma, hay fever or allergies. She worked in the center for four months, and developed wheezing, cough, chest tightness and shortness of breath that would worsen during the course of the workday and workweek. Her physician recommended that she change jobs and prescribed controller and rescue asthma medications. The basement had sustained water damage, and mold growth was visible. Other staff and children had symptoms. The center was closed shortly thereafter.

### Early education and childcare workers

The early education and childcare industry employs an estimated 40,000 Massachusetts workers (American Community Survey, 2011-2013). Employees in this industry work in a variety of settings—center daycares, nanny-shares, and family-based centers. They tend to be female and earn low wages. The turnover rate among early childhood educators is more than 30%.

### Respiratory hazards and asthma

Respiratory hazards may be present in childcare settings, posing a risk for educators as well as the children they care for. Children aged one to four are a vulnerable population for asthma, with high rates of asthma-related emergency department visits and hospitalizations. Recent population-based studies found childcare providers to be among the occupations with elevated rates of asthma.

In Massachusetts, asthma prevalence among employees in this industry is substantially higher than average; an estimated one in four (25.2%) employees in childcare has current asthma compared to one in ten (9.9%) of all employed adults (MA BRFSS, 2011-2013). Despite this elevated asthma burden, few work-related asthma cases have been identified in this industry in Massachusetts and other states funded by the CDC's National Institute for Occupational Safety and Health to conduct surveillance.

The reason is unclear, but it is possible that childcare providers do not recognize the relationship between work and their asthma, fear losing their jobs if their illness is work-related, or their healthcare providers do not make the connection. It is also possible that asthma among these workers is not caused or made worse by exposures at work. Further research is needed to look at asthma among adults and children in childcare and potential exposures. Diagnosis and reporting are key parts of this surveillance.

There are several factors within childcare settings that warrant attention.

- Moisture incursion and mold have been associated with asthma in many settings.
- The location of many centers in church basements and other low cost locations may contribute to poor building

conditions or inadequate maintenance, which may add to respiratory risks. A Children's Investment Fund study of Massachusetts early childhood education and out-of-school time facilities found that 36% of centers lacked ventilation systems over diapering areas and toilets, 22% of centers had elevated carbon dioxide indicating poor indoor air quality and 38% of programs contained equipment or furnishings that contain formaldehyde, a carcinogen and asthmagen.

- Latex gloves, especially powdered gloves, have historically contributed to latex allergy and asthma in healthcare and elsewhere. Improvements in gloves have reduced the risk, but guidance for asthma-friendly childcare centers advises against using natural rubber latex gloves.
- Respiratory infections, shared among children and staff, may trigger exacerbations in staff that have asthma. Overzealous protecting against shared viruses may also contribute to the hazards posed by cleaning and disinfecting activities. Diapering and food preparation also lead to increased use of chemicals for sanitizing. Bleach and Fabuloso® are among the least expensive products available for cleaning, sanitizing and disinfecting used by childcare providers. But they each can pose respiratory problems and contribute to the risks for asthma.
- Bleach can cause asthma. The Association of Occupational and Environmental Clinics designated bleach a sensitizing asthmagen in 2012, after reviewing research about cleaning workers, as well as healthcare workers. Bleach should be used with caution, and only where needed.
- Fabuloso® has been rated "moderate concern" for asthma/respiratory health and cancer by the Environmental Working Group, a leading environmental/public health advocacy group that specializes in consumer products.

## Recent steps forward in protection

### *Guidance on cleaning and disinfecting*

Employees in childcare strive to provide a safe, healthy environment for children to learn. This task includes protecting the children, and themselves, from both infectious disease as well as illness from chemicals and other environmental hazards. Balancing these two competing hazards led the Massachusetts Department of Early Education and Care (EEC) to issue a new policy statement that was developed in collaboration with the Department of Public Health. The policy includes updated recommendations on cleaning, sanitizing and disinfecting that will help reduce hazardous exposures to bleach.

Department of Early Education and Care
THE COMMONWEALTH OF MASSACHUSETTS

**Family, Small Group, Large Group and School Age Licensing**
**POLICY STATEMENT:**
**Cleaning, Sanitizing and Disinfecting**

www.mass.gov/edu/docs/eec/licensing/policies/sanitizing-disinfecting.docx

The 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.

### *Infrastructure improvement*

State legislation established a new Early Education and Out of School Time Capital Fund. Since January 2015, EEC has already awarded 10 grants ($400,000 to $1 million) for new construction and major renovation in early education and out of school time facilities and will leverage millions more for expenditures for low income children.

## Diagnosis and reporting

Healthcare providers who see adult patients for new-onset or worsening asthma should ask about work, and suspect work-related asthma. As with other "women's jobs" the risks, injuries and illnesses that occur in early education and childcare may be invisible. According to the Bureau of Labor Statistics, the number of employed childcare workers is expected to grow by 21% from 2006 to 2016, as more parents enter the workforce. Identifying the conditions in early education and childcare settings that contribute to asthma will allow action to improve conditions for staff as well as the children.

References are available on request.