

# ***Who's sick at school:* Linking poor school conditions and health disparities for Boston's children**



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## **Acknowledgements**

This report was written and produced by the Massachusetts Coalition for Occupational Safety and Health (MassCOSH) and the Boston Urban Asthma Coalition's (BUAC) Healthy Schools Committee. BUAC representatives are members of the joint City-wide Healthy Schools Taskforce which was established in 2003 with the school department and Health Commission to monitor the implementation of the annual environmental audits and address other environmental health and safety issues as they affect health and learning in Boston schools. This paper was written in response to a request by the school department to help raise awareness in Boston about the importance of building, renovating and maintaining safe, healthy learning spaces. BUAC believes that children with asthma are like the "canaries in the mines". When we improve our school buildings and rid them of the significant asthma triggers (mold, pests, chemicals and fumes) we will achieve a school environment that is health for everyone.

**MassCOSH** is a non-profit organization that advocates for safe, secure jobs and healthy communities. MassCOSH coordinates the Mass Healthy Schools Network, a statewide coalition which works with parents, students, school staff, public health and environmental advocates to promote environmentally healthy and safe schools through advocacy, education, organizing and technical assistance.

**BUAC** is comprised of 200 Boston residents and parents, community-based organizations, government agencies, medical professionals, and other individuals who share the common interest of improving the Boston community in order to halt the growing asthma crisis in low income neighborhoods. The Coalition serves as a clearinghouse and network for those in the city who are committed to improving the problem of asthma in Boston. Strengthening Voices, a program of BUAC, supports parent leadership on asthma through community organizing and education. Community-led committees on Housing, Healthy Schools and Access to Quality Healthcare develop the advocacy work and activities of the coalition.

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“We know what the problem is and we have the findings, so why does it take so long to get repairs done? It should be about the health of our children, yet why does it take so long? The money should be in the budget to fix our schools.”

- *Mary White, BUAC Parent Leader, parent of two BPS students, on fixing our school buildings*

## **Introduction**

A recent review of student asthma rates and environmental audits of school buildings suggests that schools with poor indoor air quality have higher than average rates of asthma. Many Boston Public School children and staff are learning and working in poor indoor environmental conditions that not only can exacerbate asthma, but also lead to other problems ranging from allergies and sinus infections to adverse academic performance.<sup>1</sup> The Boston Urban Asthma Coalition conducted a preliminary analysis of 2004-5 childhood asthma rates for BPS students and compared them to the 2004-5 environmental audits of the top 10 schools with environmental problems. This analysis suggests that schools with the highest rates of leaks, mold and pest infestations also have higher than average asthma rates for children.

## **Problem**

Asthma is a condition in which the airways in the lung constrict and become inflamed. It can result in loss of breath and loss of life. An asthma attack can be precipitated by exposure to allergens such as mold or pests, irritants, or cold temperature. Asthma is the leading cause of school absenteeism due to chronic illness, accounting for over 12 million missed school days per year.<sup>2</sup> Nationally, inequities in health conditions, such as asthma, together may account for as much as a quarter of the racial gap in school readiness.<sup>3</sup> The cause or causes of asthma are still unclear although research has found

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that exposure to pests, molds, diesel exhaust, and environmental tobacco smoke play key roles in asthma's development and exacerbation.

Childhood asthma is a major public health concern for the City of Boston and one that disproportionately impacts children of color. Asthma is the number one chronic condition treated in Boston Public Schools. Between 7% - 12% of the Boston Public School student body in grades K – 8 have asthma<sup>4</sup> and this number may be an underestimate of the extent of the problem for Boston's children as other local studies have found much higher childhood asthma rates for Boston's children.<sup>5</sup> Boston has higher childhood asthma hospitalization rates than the rest of the state, with children of color having much higher rates.<sup>6</sup> Latino and Black children suffer from asthma more than Boston's White children do.<sup>7</sup>

As Boston sets forth to tackle health disparities, addressing environmental factors that make asthma worse should be a top priority. Boston Public School students are primarily children of color, with 74% qualifying for free or reduced-rate meals.<sup>8</sup> Many Boston Public School families have no choice to send their children to a healthier school because of their economic situation. For many Boston Public School students and their families, advocating for improved environmental conditions is their only recourse.

Poor school environmental conditions are one of many components that affect a child's asthma. Housing conditions, outdoor air quality and environmental tobacco smoke are among other factors that also affect a child's health. Sixty-three percent of the housing in Boston was built before 1950 and 75% was built before the lead paint laws passed (1978). Twenty-five percent of the homes receive federal or state subsidies to charge below fair market rate. Many Boston families rent their apartments

“I know from my own experience in our old apartment that certain asthma triggers such as carpeting sent me to the emergency room many times with my daughter. As a BUAC Parent Leader in the Strengthening Voices project, I learned a lot about the asthma triggers in our schools. Now I tell other parents and teachers how important it is to speak up about the poor conditions in our schools so we can get them fixed.”

*-Bridget Hickson, BUAC Parent Leader, BPS Parent*

(approximately 63% of Boston residents) and lack affordable housing options (Boston ranks 48<sup>th</sup> in affordable housing), and so often have little control over housing conditions and little influence over the actions of their landlord. In Boston, air toxics exceed by 128 times the Environmental Protection Agency’s safe level of carcinogen in the air.<sup>9</sup> School conditions are only part of picture, but with children spending increasingly long hours in school buildings, school conditions play an important role in creating health disparities in asthma. It’s a role that should not be ignored.

### **Boston Public Schools**

Boston Public Schools are mandated by city ordinance to conduct bi-annual environmental inspections for all elementary, middle, and high schools. These inspections serve as a method of tracking the environmental status of all Boston Public Schools.<sup>10</sup> As part of the inspections, data regarding leaks and visible water stains, visible mold growth, overt pest signs, improper chemical storage, and repairs needed are tracked. While there are other environmental issues that were inspected, we will address these issues specifically because of their direct relationship to triggering asthma episodes. Leaks are of concern because moisture can promote mold growth as well as encourage insect or rodent infestations. Visible mold growth is important because mold and mildew are often asthma triggers. Pests are of concern for sanitation reasons as well as being sources of animal dander that can be an asthma or allergy trigger. Improper chemical storage can be an issue because toxic fumes

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and chemicals can aggravate asthma as well. The use of chemicals through pesticides and cleaning products has also been linked to other health problems including behavioral disabilities and damage to the nervous and immune systems.<sup>11</sup> Building repairs are important because they can stop a small problem from getting bigger - such as immediately fixing a leak in the ceiling could stop mold from growing later.

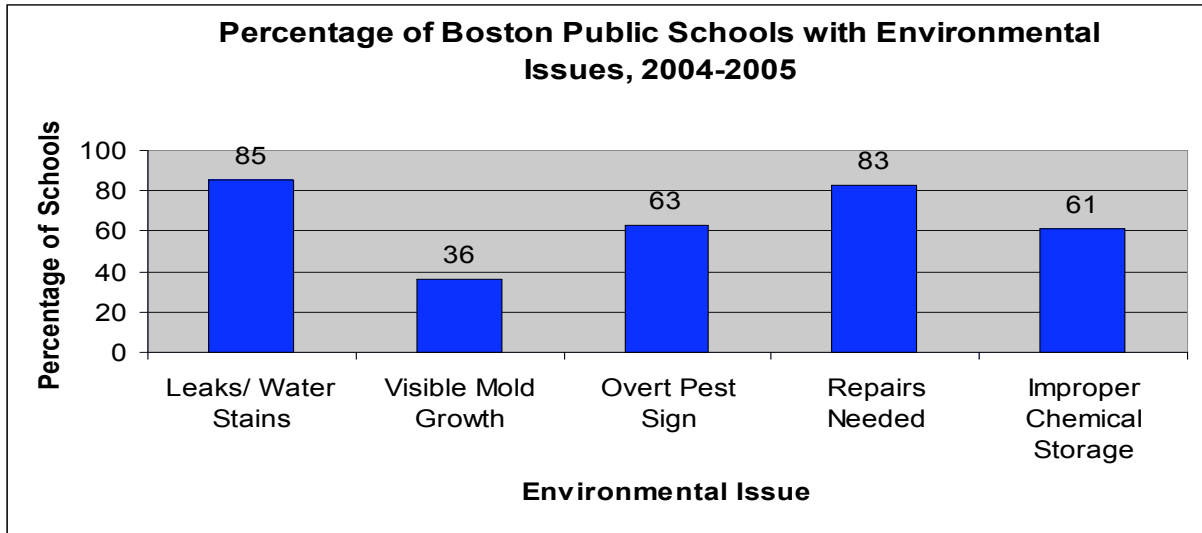
## Results

The overall estimated asthma rate for Boston Public Schools during the spring 2005 is 7.0%.<sup>12</sup> The rates across Boston Public Schools range from 0-27%; these asthma rates, however, do not include high schools.<sup>13</sup> Many schools had asthma rates well above the state average; in addition, inspections of the schools noted an overwhelming presence of environmental issues which contribute to the incidence of asthmatic children in schools.

“One of the major concerns at the Curley is that the building needs to be pointed. We have been on a list for 4 years and the project always gets postponed. We have water that makes its way into the building causing leaks, paint to flake and fall on students and teachers, and dust to cover the radiators. As a result many of our students with asthma are affected--so many have poor attendance because they are out a lot and as a result their grades suffer.”

*-Geraldo Martinez, Principal  
Mary E. Curley Middle School*

The following graph represents the percentage of schools within the Boston Public School system during the 2004-05 school year that reported the presence of environmental issues such as leaks, mold, or overt pest infestation.



Looking at the graph above, approximately 85 percent of Boston Public Schools reported leaks or water stains, 36 percent reported visible mold growth, 63 percent reported overt pest signs, 83 percent reported repairs needed, and 61 percent reported improper chemical storage.<sup>14</sup>

“I got adult onset of asthma, I believe, from working in a sick school building with a roof that was leaking and mold all over. I went on daily medication to deal with my breathing problems. Now, three years away from that building and working in another school, I no longer need my asthma meds. School buildings that are not maintained are a health problem for students and staff.”

*-Sue Trotz, Boston School Guidance Councilor*

For the 2004-05 school year, The Harvard Kent Elementary School in Charlestown reported the highest percentage of water intrusion issues with 62.5 percent of rooms inspected having leaks or visible water stains.<sup>15</sup> The James Curley Elementary School in Jamaica Plain had the highest percentage of overt pest signs, approximately 60.7 percent of all rooms inspected.<sup>16</sup> These schools both have significant higher rates of asthma than the city average of 7% percent (12.25 and 10.69 percent respectively). While

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environmental problems in the school may not be responsible for the higher asthma prevalences, the presence of triggers such as mold and pests do aggravate children who have already been diagnosed with asthma, increasing the incidence of asthma attacks at schools. The presence of these triggers also contributes to increased absenteeism among asthmatics and more frequent trips to the school nurse.<sup>17</sup>

Below are the top 10 ranked schools for the categories of leaks/ water stains, mold, and pests for the 2004-05 school year. The percentages listed indicate the percentage of rooms with the presence of the environmental issue.<sup>18</sup> Boston Urban Asthma Coalition calculated the asthma rates using raw data collected by the Boston Public School Department.<sup>19</sup>