

Regulating Mold Indoors

Elisa Larkin

INTRODUCTION

On June 24, 2002 the ceiling in the bathroom of a rented condominium collapsed, exposing the underside of the sheetrock. Upon examination and environmental testing, three different types of toxic mold were identified. The family had been experiencing health problems, especially the youngest, a three month old infant girl, who had been hospitalized for respiratory failure at 17 days old. Because of the unusual circumstances, the family was forced to flee their home, leaving all their possessions behind. With the exception of small local donations, no local, state, or federal agencies had help for the family with their new beginning. The family was left to whatever type of support they could find from family and friends. This story is not of one family, but of many. Millions of dollars in damages have been inflicted upon those least able to cope with the loss, the renters. The next step is to get laws passed at the state and local level in order to protect families from this unjust, unnecessary suffering.

The media plays a big part in the legislative process, as mold cases are making headlines, the public is asking for regulations to address the problem. Through the headlines, the media has spawned widespread discussion on mold regulations. This has created hysteria within the industries affected, and in the legislatures, who want to help their constituents. Some states have addressed this problem through legislative changes. We will consider the efficiency of this current legislation as well as propose alternative approaches.

The earliest known publication, the Bible, describes a plague, commonly known today as mold, and exactly how to address the problem. Today, scientific studies show that exposure to the toxins produced by certain toxigenic molds are having adverse health effects upon people. Mold should be regulated because it affects many cross-sections of the population, such as: renters, homeowners, businesses, and schools. Yet, the history of city, state, and federal mold legislation is scarce. Currently there has been a drive toward indoor regulation of mold at every level of government. In the near future every state will have regulations, either on their own or through federal mandates.

There are many problems with regulation. Apart from the opposition, there would be a number of agencies effected, at all levels of government. Funding, and enforcement are other major concerns when discussing regulatory policy. These difficult issues propose a political challenge when trying to regulate public policy.

One proposed course of action includes instituting a task force to gain a greater understanding of the problem. Another course of action would be to pass more effective legislation. Mold cannot simply be ignored. Indoor mold legislation is necessary for the safety and well being of a cross-section of society.

Media:

One only has to read the newspapers to see what an enormous problem mold is today. The great costs associated with damages from mold have caused insurance companies to pull out of issuing new home policies or policy renewals in the state of Texas.¹ People are gradually being made aware of the danger through the media, as hundreds of headlines like these have been making the news across the country;

"Landlord loses major mold case. A family is awarded \$2.7 million after health problems."² "Mold: is your apartment building infected?"³

Some of these headlines are a result of lawsuits being filed. Jurors around the country are awarding large settlements to some victims of toxic mold, making it "the asbestos of the 21st century."⁴ Pamela Davis, a Policy Analyst with the Environmental and Natural Resources Division of the California State Library, California Research Bureau, in the paper "Molds, Toxic Molds, and Indoor Air Quality" points out that "journalists of these articles have used the term "toxic mold" when writing about molds that have been implicated in severe health reactions in humans. As used in the press, this term generally refers only to those molds capable of producing mycotoxins (defined as toxins or poisons produced by mold). However, all molds under proper conditions are capable of eliciting a negative health response in humans through other methods such as inflammation, allergy, or infection."⁵

HISTORY OF MOLD

Mold is not something that was just discovered in this century. Ancient writings about mold reveal that its deadly characteristics have been known throughout history. It is in the earliest known publication, the Bible. The Bible refers to a plague on the house, "the Hebrew word used in this text is tsara'ath, which according to Strong's Exhaustive Concordance, can be translated as mold when used in conjunction with clothing or a building," as stated by Jim Holland of Restoration Consultants.⁶ In Leviticus 14, the priests' were ordered to cleanse the house of the mold, if it looked a certain way. By its coloration and where it was located within the walls, the priest could tell if the mold was most likely toxic or poisonous. Once this type of mold was

discovered, it had to be destroyed. The priest would order the house demolished, and the site to be cleaned, taking the stones away and disposing of them. This was not done by throwing them in the dumpster, but by taking the stones to an unclean place outside of the city.⁷ By today's standards, this would be a hazardous waste site. "The instructions from Leviticus is the first written mold remediation protocol in recorded history, which is over 3500 years old. The High Priest was directed to act as the first environmental consultant," states Jim Holland.⁸

In the paper "A Review of Mycotoxins in Indoor Air", Hendry and Cole state, "In the seventeenth century, it was recognized that moldy rye produced disease. Ergot alkaloids derived from fungi were identified as toxic agents in the eighteenth century. In the early twentieth century, thousands of deaths were attributed to consumption of moldy grain or rice. A massive outbreak of hemorrhagic disease occurred during World War II in regions of Russia, later it was determined to be caused by mycotoxins in food prepared from moldy grain."⁹

When scientists opened King Tut's tomb in 1922, the superstitious believed the scientists were struck by the "curse of King Tut". By 1935, the media had attributed 21 deaths to "the curse." It was not until 1999, when a German microbiologist, Gotthard Kramer, from the University of Leipzig, identified several potentially dangerous mold spores on 40 different mummies, that the mystery of the mummy's curse was solved.¹⁰ "When spores enter the body through the nose, mouth or eye mucous membranes, they can lead to organ failure or even death, particularly in individuals with weakened immune systems," Kramer said. As a result of his work, archaeologists now wear protective gear (like masks and gloves) when excavating sites, or unwrapping a mummy.¹¹

Engineers, microbiologists, and other scientists from around the country are searching for the answer to the mold problem. In California, a task force has been established through legislation, to examine the effects of mold.¹² Other states have legislated similar task forces. The focus of the task force is to determine levels of mold that an individual can be exposed to before experiencing health problems.¹³

One only has to look at the World Health Organization (WHO) to justify the need for indoor air quality control. In 1999 WHO issued a statement that if we reduce air pollution indoors by twenty (20%) worldwide, then we can reduce the death rate from respiratory diseases by four-to-eight (4-8%) percent.¹⁴ This may not seem like a big deal to most, but eight (8%) of respiratory diseases constitute about 240,000 lives saved per year!

POPULATION EFFECTED

Why spend money trying to regulate mold, since it has always been present, because recognition and remediation of molds can save millions from needless suffering yearly. In Oklahoma alone, there is a large population affected by mold. The impacted population will be examined, not by age group or how healthy an individual is, but instead by classifying them into groups as tenants, homeowners, commercial, and schools.

Figure 1. Overview of effected population in Oklahoma

Schools 930,865 children enrolled ¹⁵	Residential 1,514,400 homes in OK ¹⁶	Commercial 70,491 business in OK ¹⁷
Rent	Tenant 424,034 or 31.6% ¹⁸	Tenant Businesses
Own	Owner Occupied 918,259 or 68.4% ¹⁹	Owner Occupied Businesses

Tenants:

In the above represented population, tenants are the least able to protect themselves, because they do not own the dwelling they are at the mercy of the landlord. When mold grows in a rental property, the tenant cannot hire a company to come in and test the home or hire someone to clean it up; they lack the authority to make that decision.²⁰ The property owner has to be the one to call and have these tasks performed. Additionally, the cost of testing is usually prohibitive to individuals ranging from \$60 to \$5,000, depending on the area tested and type of test used.²¹ Testing expenses such as a walk-through of the property, bulk sampling of visible mold, and air sampling begin at \$1,500.²² The cost for clean up depends on the size of the problem, the type of mold identified, and the extent of damages, costs can range between \$1,000 and \$1,000,000.²³ Along with the costs, the majority of the tenants are afraid that if they report a problem, their rent will increase or they will be evicted from their homes.²⁴ Most tenants are generally uninsured and unable to pay for the costs of mold problems. Even if they do have renters insurance, mold is normally not covered. We are not talking about a few

citizens; there are 424,034 (or 31.6%) of the residents living in housing within the state of Oklahoma that are tenants.²⁵

Homeowners:

Homeowners are in a similar position to the tenants, however, they have some advantages as many carry insurance. In the past this has been sufficient protection, but today a greater problem has developed as more and more insurance policies are excluding mold from their coverage. Insurance Companies have started issuing rider policies, limited the coverage by putting caps on the amount a policyholder can claim regardless of the cost of mold remediation. In some instances these companies have stopped writing policies altogether.²⁶ There are 918,259 (or 68.4%) homeowners within the state of Oklahoma potentially not covered for mold problems,²⁷ leaving many people vulnerable.

Commercial:

Another affected class is the businesses in Oklahoma. There are currently 70,491 businesses within the state²⁸, no statistics could be found as to how many actually owned or rented their facility. Most businesses carry some type of insurance and, since there have not been massive claims filed in the commercial industry, mold remediation is generally covered.

Schools:

Schools present the greatest challenge when it comes to regulating indoor air problems. First, schools are a business as they employ administrators, teachers, cafeteria workers, and maintenance workers. Second, most schools are considered public buildings. Third, it is an environment to which our children are exposed to daily for nine months out of the year. There are approximately 930,865 students enrolled in Oklahoma

schools, preschool through college.²⁹ This is almost one third of the population within the state! Schools present a unique danger if indoor air problems are not remediated. If an employee gets sick from poor air quality, they can call the Occupational Safety and Health Association (OSHA) and file a complaint. Since a public school falls within the public domain, the State Health Department can be called in to address the problem. Unfortunately, more often than not, schools are left to their own devices when a problem arises, including air quality.³⁰ In the best-case scenario, this means that the school district sends out a maintenance worker to look for the problem and then the maintenance workers address the problems themselves.³¹ This is not the best solution because most maintenance employees are not trained in the field of air quality and remediation.

With pressure from parents, the school districts may do what they can to fix the problem with the limited budgets they have for maintenance. One only has to pick up a newspaper within the state of Oklahoma to see that schools are having to fight budget cut backs and restraints. Most school districts have made cuts from the already doomed maintenance budget. To help with the problem of indoor air pollutants, the Environmental Protection Agency (EPA) has launched a program to target schools' air quality. The "Tools for Schools Program" is being implemented around the country; however, participation in the program is not mandatory.³² At the beginning of the school year, the companies that receive grant money send out a letter to the school districts. The districts are then responsible for contacting the program coordinator and arranging for the initial survey. At the University of Tulsa, Indoor Air Program, they have contracted with EPA to send out questionnaires to the school systems within the southern half of the United States.³³ The schools are asked to fill out the information and send it back. The

coordinator then analyzes the information given by teachers and administrators to identify any problem areas. The school is then sent the information so it can better identify the areas needing attention. The program also includes a walk-through inspection, bulk and air sampling and a report of the findings.³⁴ The EPA, at no cost to the district, provides this service. So why does every school not participate? If a problem is identified, then the school district must find funding to address the problem. Second, it is possible that the districts are afraid if they were to identify problems within the school; they will be an open target for lawsuits.

STUDIES/RESEARCH

Today science and medicine are at the forefront of an investigation over the most recently discovered silent killers. This generally hidden danger has affected millions worldwide. The effects of exposure to molds have been linked to various cancers.³⁵ One of the most deadly and increasingly common mycotoxins found in households today is produced from a mold called *Stachybotrys*. In one study, all rats and mice administered the mold died "within 24 hours of exposure."³⁶ *Stachybotrys* particularly thrives in saturated wood of water-damaged buildings. The primary reason mold grows is because of a water breach of some kind, this could be from a bathroom, a water fountain, or even the sprinklers outside of a building. If a leak is not taken care of immediately, and the wet materials are not dried out quickly, then mold will grow and thrive in the moist environment. The longer the problem is not attended to, the more the mold growth spreads and imminently dangerous conditions develop. For some molds, as little as four to twelve hours is enough time to begin to germinate, and they begin to spread in 24 to 72

hours.³⁷ (NOTE: STACHY TAKES ABOUT TWO – SIX MONTHS TO START COLONIZING BUT ONCE IT DOES, IT GROWS EXPONENTIALLY.)

The problem with dangerous toxic mold, like *Stachybotrys* is that it usually grows behind the walls, in the sub-flooring, and on the topside of the ceiling, generally out of sight.³⁸ Many people are unaware of this deadly invader since it is not visible. Many take the position that since the mold is not visible, than it is not a problem. However, one can recognize mold by the odor through volatile organic compounds, like the odor in cheese, and the "off" taste of mold infested foods.³⁹ This ignorance and/or lack of concern have resulted in a widespread problem that has lead to contamination in all 50 states. Oklahoma residents have seen a significant amount of damages due to this enigma;⁴⁰ to date there has been little relief due to the lack of actionable legislation to alleviate this threat.

Due to the limitations of currently available science, few studies exist regarding the exposure limits and effects of inhaled molds on individuals.⁴¹ The top study within the United States in the medical field, and perhaps the most controversial, is the Cleveland outbreak. Between 1993-94, Cleveland, Ohio had several infants admitted to the Rainbow Babies and Children's Hospital with respiratory problems. While some of these infants died, all of them had several things in common. First, all of the infants were diagnosed with Pulmonary Hemorrhaging. Second, it was later discovered that all of them had high levels of *Stachybotrys* in their homes. Third, most of them lived with a smoker.⁴² In 1998 the American Academy of Pediatrics Committee on Environmental Health issued this statement: "A case-control study comparing those 10 infants who had acute pulmonary hemorrhage and hemosiderosis with 30 age-matched control infants

from the same are in Cleveland revealed that the infants with pulmonary hemorrhage were more likely to have resided in homes with major water damage from chronic plumbing leaks or flooding with a 95% confidence interval.”⁴³

The Center for Disease Control and Prevention (CDC) sent investigators to find out what was causing the lungs of these infants to bleed and subsequently die. The CDC initially published their findings suggesting that *Stachybotrys* in the homes of the infants was linked to their diagnosis.⁴⁴ This is the same conclusion that all of the doctors that were treating the infants had come to. Then, as controversy plagued the issue, the CDC questioned the methodology and stated more studies were needed to support the initial conclusion.⁴⁵ As a result, several of the doctors that worked on the cases in Cleveland, published their findings along with a scathing report about the CDC. Following is a brief overview of the findings:

*For public health reasons, some of these cases have been defined as "unexplained" pulmonary hemorrhage in infants and have included cases diagnosed on the basis of extensive hemosiderosis at post mortem. However, we have applied a more stringent case definition to include only infants that we cared for at Rainbow Babies & Children's Hospital. This latter group is referred to as "idiopathic" pulmonary hemorrhage in infants (IPHI) because we have reached this diagnosis of exclusion by ruling out known causes (e.g. necrotizing pneumonia, congenital heart defects, trauma, etc). This is the same case definition used in the initial study. We have now cared for 30 cases of IPHI including the original 10 cases. All but one of these patients had acute, overt PH; five have died. Twenty-four of the 28 homes investigated were found to contain *Stachybotrys* and one had *Trichoderma*, i.e. 89% of these infants came from home environments containing documented toxigenic fungi. Similarly, 85% of these homes had a history of water damage and 85% of the infants were exposed to environmental tobacco smoke in their homes.*⁴⁶

As it stands today, the CDC has not officially determined the cause of the Cleveland outbreak, but all the doctors have gone on record stating that their opinion stands, and that *Stachybotrys* was the culprit.

Recently, the Department of Housing and Urban Development (HUD) awarded a \$3.15 million dollar grant to investigate and eradicate *Stachybotrys* from the homes of infants.⁴⁷ That is a large grant considering that the government considers there to be no official link between IPHI and *Stachybotrys*.

After the Cleveland outbreak, the county coroner re-examined all infant deaths in Cleveland during 1993-95 to determine whether pulmonary hemosiderin-laden macrophages were present in the lung tissue. Postmortem examinations were reviewed for all 172 infants who died during that period, including 117 deaths attributed to Sudden Infant Death Syndrome (SIDS). The presence of hemosiderin-laden macrophages indicates alveolar bleeding at least two (2) days before death.⁴⁸ The macrophages were abundantly present in the lung tissue of nine (9) of the infants. Of the nine deaths, two (2) resulted from homicide, and one (1) had a recent history of child abuse. The other six (6) deaths may have been misclassified as SIDS. All six (6) infants had lived in the same limited geographic area as the previously described cases of pulmonary hemosiderosis.⁴⁹ Further research is needed to determine how many deaths attributed to SIDS could actually be from exposure to toxic molds.⁵⁰

Because of the Cleveland Study, The American Academy of Pediatrics Committee on Environmental Health in April 1998 issued a statement that "physicians should make every effort to ensure that infants less than one year of age avoid chronically moldy, water-damaged environments."⁵¹

In response to the lack of scientific evidence, a building has been donated for a research facility to develop a state of the art research facility that will be the first of its kind in the world. This facility is designed to combine disciplines from the health science

field with engineering departments and microbiology/mycology departments. The facility will conduct research to address all indoor air pollutants like radon, asbestos, lead, mold, and tobacco in homes, schools, and office buildings.

Within this program, classes will be offered through a university system to train testers and remediators. This will set a higher standard in the field, offering individuals a degree in indoor air quality. Because of these steps, people hiring these individuals can be sure that they have received the proper training and experience in this field. This program is expected to begin around the fall semester of 2003.

PROBLEMS WITH REGULATION

Most Americans feel that before we can regulate something, science must first come up with acceptable limits. This is where the problem that arises, when we look at regulating mold. It is difficult to set limits when the severity of the impact on people depends upon the type and amount of mold present, as well as the susceptibility and sensitivity of the individual experiencing mold exposure.⁵² It is similar to setting limits or standards for E. coli. Some people die from ingesting E. coli-tainted food while others may just get an upset stomach.⁵³

In "Reservoirs of Opportunistic Fungi in the Home Environment: A Guide for Exposure Reduction in the Immunocompromised," Cook, Cole, Dulaney, and Leese point out: "Fungal pathogens are emerging as significant causes of morbidity and mortality in immunocompromised adults and children. Uncommon diseases and atypical cases due to fungal infections are increasingly being reported, and their incidence over the last decade has increased dramatically."⁵⁴

Most legislation that calls for acceptable limits to mold exposure pose a problem for the experts because mold does not affect all people the same way. Therefore, acceptable limits of exposure to mold are difficult to set. Another cause of concern is that mold is only part of the problem; Dr. Cole states, “Only addressing molds or toxic molds does not encompass the entire problem. That is not to say that mold should not be addressed, but the overall air quality in our buildings is of major concern.”⁵⁵ Why should we just address mold when there is asbestos, radon, lead, and tobacco smoke that is polluting our indoor air?⁵⁶

MOLD LEGISLATION

Mold legislation is beginning to crop up around the country. At every level of government, some legislation has been introduced and/or passed in the last three (3) years. For each level of government, we will examine the past legislation, current legislation, and the future legislation of indoor air pollutants.

City/County:

In the past, most cities have left these measures up to the state or federal government. As a result, most cities do not currently have mold specific regulations. San Francisco passed a specific ordinance to deal with indoor air pollutants in 2001. The ordinance declares mold, mildew, and lead as public nuisances, and calls for their immediate abatement. The ordinance institutes stiff penalties for owners that do not address the problem immediately.⁵⁷

Norman, Oklahoma has a health nuisance ordinance that is currently under review by the City Council's Environmental Control Advisory Board (ECAB). This is a citizen's board that makes recommendations to the City Council; however, they have no authority

to make laws. At the October 16, 2002 meeting, the board announced that toxic mold would be covered under the health nuisance ordinance, Sec. 10-203; the opinion was obtained from the City Attorney stating:

"This section gives the City Code Compliance Inspector authority to order a private entity to remove any "cause of sickness" or "any other condition adversely affecting the public health..." Failure to comply is a violation of the Code. Therefore, it appears that if a Norman citizen were to complain causing an investigation by a City Code Compliance Inspector, the City could, upon proof that a "toxic" mold exists in a structure, order the abatement of the public health nuisance within a reasonable period of time."⁵⁸

It must be noted that although the city has the authority to address the issue, it does not mean they will. At the ECAB meeting, the board determined that further research would be needed to determine if the City should be involved in what they consider a "private civil matter." The issue will again be addressed at the next board meeting on November 20, 2002. At this meeting, Dr. Terry Harrison from QuanTEM Labs in Oklahoma City will be speaking, along with Randy Smith, Indoor Air Quality Investigator from Tulsa and a toxic mold attorney from Oklahoma City. These three experts plan to educate and make recommendations to the board. These recommendations will hopefully lead to a revised mold remediation policy in Norman.

Future mold laws at the City level will most likely model those of asbestos and lead laws around the country, because mold affects people in the same manor as asbestos and lead. With increasingly people becoming ill and suffering from asthma symptoms, lawmakers are no longer able to ignore the problem. Cities will adopt standards such as the ones in the San Francisco mold ordinances, which are equipped with heavy fines and penalties for the violators. Realistically, the insurance companies will continue to ask

lawmakers to place limits on claims. One thing is sure; the air quality problem will continue to get attention by lawmakers.

State:

In the past, legislatures from the states have left indoor air problems to be addressed at the federal level, should they be addressed at all. As a result, state lawmakers have been hesitant to implement laws that would alleviate the mold problems. The most common viewpoint is that it is best left up to the homeowner or businesses to decide what type of environment they work or reside in. Several states have addressed the mold issue. Some states have written resolutions, others have passed laws, and still others have called for more research into the issue. The following is information about each state's attempt at regulating mold:

Arizona: Assembly Bill 284 would require the Department of Health to establish a mold surveillance, monitoring, and education program, including a web based service for educating the public.⁵⁹

State Bill 1432 would create a legislative study group to consider the financial, environmental and health-related effects of indoor commercial and residential mold contamination. This bill was introduced and referred to the Senate Natural Resources, Agriculture and Environmental Committee, the Health Committee and Rules Committee in February 2002. This bill was reported favorably by all committees after amendments, and passed the Senate on March 26, 2002.⁶⁰

California: Assembly Bill 284 went into effect in January 2002. This bill directs a panel to review issues related to fungal contamination in environments. Currently, Pamela Davis is working on getting the experts together; they are slated to meet in January 2003.

State Bill 662 Went into effect in January 2002. This law makes technical changes to provisions of state law directing the State Resource Board to study environmental conditions of classrooms.

State Bill 732 is the Toxic Mold Protection Act; it went into effect in January 2002. Initially the legislatures did not appropriate any funds to this bill, however, in a separate act, legislatures appropriated \$2 million.

State Bill 1763 would direct the insurance department to examine availability and adequacy of commercial and residential property coverage for mold damage. This bill passed the Senate in May 2002 and was referred to Assembly Insurance committee in June 2002.

SB 2684 introduced in February 2002, this bill expresses legislative intent to limit the liability of school districts for personal injury or wrongful death claims arising from toxic mold on school premises. ⁶¹

Connecticut: House Bill 5039 was introduced on February 7, 2002 to provide assistance and direction to school districts to improve the quality of the air in school buildings on April 10, 2002 this bill was tabled.

House Bills 5221, 5222, 5223, and 5227 were introduced on February 14, 2002 to fund projects that improve the indoor air quality of schools. They were referred to Joint Committee on Environment and no further action has been taken.

House Bill 5707 and Senate Bill 157 was introduced on March 6, 2002 to provide funding for schools that undertake projects to improve the indoor environmental quality of its facilities and to require each board of education to perform an inspection program of the indoor environmental quality of its schools. This bill was tabled on April 29,

2002.⁶² To date Connecticut has not passed any legislation to regulate indoor air quality or mold.

Indiana: House Bill 1253 introduced on January 29, 2002, calls for the establishment of mold standards. This bill establishes an Interim Committee to study risks of mold exposure and mold exposure limits. This bill was referred to the Public Health Committee where it received a unanimous due pass, as amended by committee.⁶³

Maryland: State Bill 283 went into effect July 1, 2001. It established a task force on Indoor Air Quality.⁶⁴

Massachusetts: State Bill 2353 introduced December 3, 2001 in the Joint Health Care Committee will authorize a task force to consider toxic mold exposure limits in indoor environments, assess public health risks, and adopt protections. On July 16, 2002 the bill was referred to the Senate Ways and Means Committee, after due pass was given in the Joint Health Care Committee.⁶⁵

Nevada: State Bill 584 went into effect June 14, 2001 authorizing the issuance of bonds to finance capital improvements for toxic mold remediation and prevention.⁶⁶

New Jersey: State Bill 77 introduced on November 9, 2000 and adopted May 3, 2001 urges Commissioners of Health and Senior Services and Community Affairs to provide information and assistance for infestations of *Stachybotrys*.

Assembly Bill 3933 introduced November 9, 2001 to address the concerns of mold hazards in indoor environments and appropriates \$2 million.⁶⁷

New York: State Bill 5799 introduced on October 3, 2001 and referred to Senate Health Committee. The Toxic Mold Protection Act, creates a task force to advise the Department of Health on exposure limits, assessment standards, and remediation.⁶⁸

Assembly Bill 10610 on March 26, 2002 was referred to the Health Committee would enact the Toxic Mold Protection Act. Directing the Department of Health to convene a task force, that will advise the Department on the development of standards concerning toxic mold. In addition, it will direct the task force to consider the feasibility of adopting permissible exposure limits to mold in indoor environments and requires the department to report to the legislature.⁶⁹

North Carolina: Insurance Commissioner imposed a \$5,000 cap on mold clean up.⁷⁰

Pennsylvania: Senate Resolution 171, referred to Public Health and Welfare on March 11, 2002 and adopted June 18, 2002 urges the Insurance Department to create a task force to study the effects of mold.⁷¹

House Resolution 434 referred to Committee on Rules on February 25, 2002 and adopted on June 17, 2002. This resolution urges the Department of Health to develop a task force to investigate the health effects of toxic mold.⁷²

House Bill 2933 introduced on October 22, 2002 and referred to the Committee on Health and Human Services. This bill calls for toxic mold testing of schools; and makes appropriations.⁷³

House Bill 2652 referred to Environmental Resources and Energy Committee on May 13, 2002. This bill will develop a program to examine and test indoor residential air quality. Also provide for detection of biological substances, including toxic molds, which could affect human health.⁷⁴

Texas: Insurance Code Article 21.21 Seeks to create a new basis for allegations. Texas Insurance Commissioner, Jose Montemayor, has proposed a new rule making it unfair or

deceptive trade practice for Texas insurance companies to refuse to sell homeowners policies based on prior mold or water claim without first inspecting the property.⁷⁵

Texas Governor Rick Perry, Attorney General John Cornyn and Insurance Commissioner Jose Montemayor announced a lawsuit they had filed on August 5, 2002:

“The lawsuit seeks an injunction barring Farmers from what the state considers improper business practices and a refund of ‘all excessive premium payments to Texans aggrieved by Farmers’ practices.’ Among the deceptive trade practices claimed in the lawsuit are that Farmers charged Texas policyholders for natural disasters in other states and used credit histories to set insurance rates.”⁷⁶

In the future, the states are expected to take a more aggressive approach to the indoor air problem. People like Melinda Ballard, President of Policyholders of America, a homeowner advocacy groups with 305,000+ American families in its membership, and Erin Brockovich, a Political Activist, are now demanding that something be done about the indoor air problem. As a result, the states are beginning to look at the mold problem the same way as asbestos was viewed twenty-five (25) years ago and will begin to start passing more stringent laws regulating mold.

Federal:

The federal government, in the past, has left pollution problems up to individual agencies to take care of. Agencies like the Environmental Protection Agency (EPA), Center for Disease Control and Prevention (CDC), Federal Emergency Management Agency (FEMA), and other governmental agencies have attempted to address some of the issues. However, the problem has thus far been limited to outdoor air quality regulations. Most agencies do not claim to have the power to address indoor air

problems. As a result, most of these agencies have only issued statements about indoor air quality and have not instituted any rules governing the regulations of the problem.⁷⁷

United States Representative Conyers from Michigan introduced a bill on June 27, 2002, H.R. 5040, The United States Toxic Mold Safety and Protection Act, also known as the Melina Bill. This bill presents with twenty-four (24) co-sponsors in the House. It directs (1) the CDC, EPA, and the National Institute of Health (NIH) to jointly study the health effects of indoor mold growth and toxic mold; (2) EPA to set standards for preventing, detecting, and remediating indoor mold growth; (3) EPA, NIH, and HUD sponsor public education programs. The bill also directs (1) rental property lessors to conduct annual indoor mold inspections; and (2) the Secretary of HUD and the Administrator of EPA to set mold hazard disclosure regulations with respect to housing offered for sale or lease. It directs the Secretary to: (1) establish inspection requirements for existing housing and construction standards for new housing with regards to mold and (2) establish model construction standards and techniques for mold prevention in new buildings. Establishes an indoor toxic mold inspection to federally made or insured home mortgages. This bill amends the National Cooperative Research and Production Act of 1993 to provide for industry standards development with respect to building products that are designed to retard mold development. It also directs the Administrator of EPA to make grants to states and local governments for mold growth remediation efforts in buildings owned or leased by such governments, including schools and multi-family dwellings. Amends the IRS Code to allow annual tax credits for sixty (60%) percent of non-reimbursed mold inspection and remediation expenses (\$50,000 annual maximum) paid or incurred by taxpayer. Requires the Director of FEMA to (1) establish and carry

out a toxic mold insurance program, with priority for one-to-four-family residential properties; and (2) establish in the Treasury a National Toxic Mold Hazard Insurance Fund. The bill authorizes the Director to assist qualified insurers to form a federally assisted toxic mold hazard insurance pool. It also authorizes state waiver of income, resource, and other Medicaid requirements for an individual whose health has been adversely affected by toxic mold exposure and lacks adequate medical coverage.⁷⁸

This is an aggressive bill to address the growing mold problem. This bill is currently under review by six different committees including; House Energy and Commerce, Subcommittee on Environment and Hazardous Materials, House Ways and Means, House Judiciary, and House Financial Services, where it was referred to the Subcommittee on Housing and Community Opportunity for a period to be subsequently determined by the Chairman.⁷⁹

Eventually, this bill or a revised version is expected to pass at the federal level. There are a number of people affected with this problem in America, and as a result, lawmakers will start responding to the voices that elected them. Although candidates currently running for office during the November 2002 general elections are not addressing this issue, it is expected to be one of the platforms that candidates can use in future elections. As early as the Presidential elections in November 2004, voters will see this issue being addressed.

REGULATION

Regulation of indoor air problems presents many questions:

1. Who favors and who opposes regulations?
2. What agencies at the federal, state, and local level will be affected?

3. Where will the funding come from?
4. Who will be responsible for enforcing regulations?

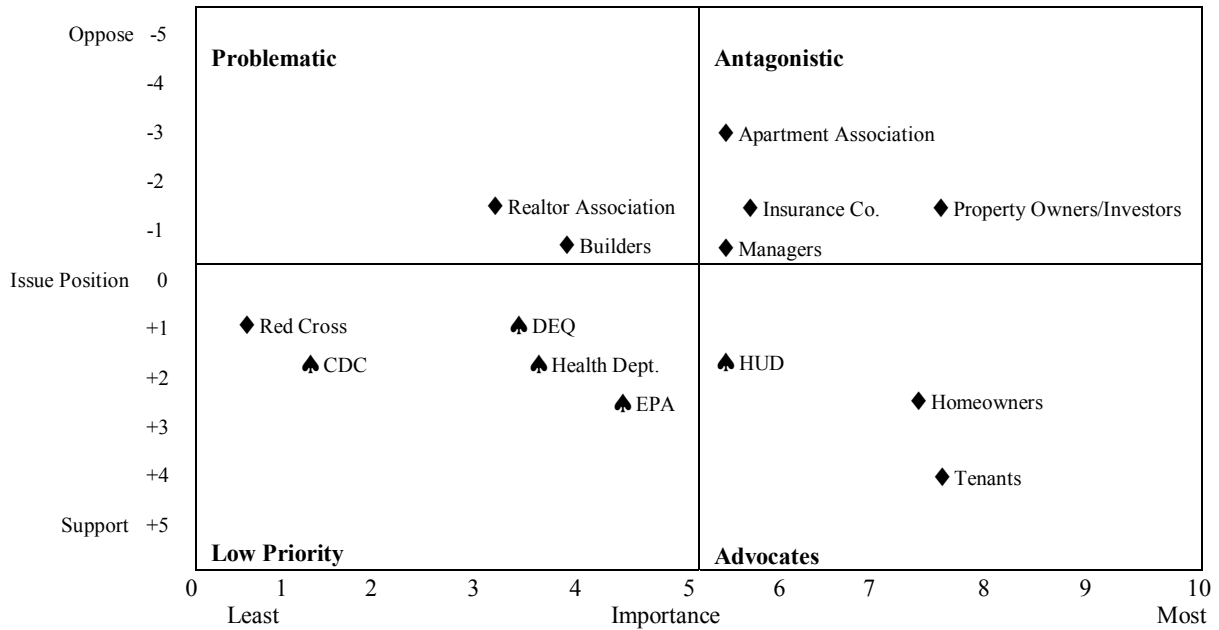
Each one of these questions are difficult to answer, some questions may not have a definite answer, others may have more than one answer, as a result, there are mixed feelings with regulations.

Supporters:

There is wide support for regulating on mold problems at every level of government. The media has been instrumental in making the public aware of this problem. As a result, most tenants and homeowners are in support of legislation of any kind. Support would also come from the commercial industries as more workers are becoming ill from sick buildings. Some governmental agencies would also be in support of regulations. Among the agencies supporting legislation would be HUD, EPA, CDC, and DEQ. Since these agencies are responsible for protecting the welfare of the public, they would support some type of legislation as long as it included funding for the programs being implemented. Depending on the legislation, support can come from the opposition, if it does not unduly affect them. Included is a table outlining the opposition and how much of a problem they can be when regulatory policy is being made and how to neutralize them.

Opposition:

Figure 2. Classification of Opposition⁸⁰



- ◆ Individuals and Independent Organizations
- ▲ Government Agencies

Those directly affected by governmental programs have organized to defend and increase their benefits and have become major participants in the budgetary process. This development has made budget decision-making both more political and more difficult.⁸¹ The opposition would come from lobbyist hired by groups that feel they are being unfairly targeted for an indoor air quality problem. For instance, Apartment Associations may lobby against measures that involve mold, because they will be asked to clean up any mold found in the apartments and that can be costly. In Oklahoma, the Association is participating in the writing of legislation being introduced in the House of Representatives next session. The Association is not in opposition in the state because they had a voice in the process.

The property owners and managers are also fighting against the regulations. They feel as does the apartment associations, that they are being unduly targeted in the fight against mold. It is not their fault that mold is growing, after all, mold is everywhere. So, why should it be left to an owner or a manager to make sure that mold is not in a building? Should we not blame the resident for mold problems? After all, if they would clean the house, mold would not grow. All of these concerns can be addressed through mold education. There is a difference in what type of molds grow where. The mold you see on food, for instance, is not the same mold you see growing behind the walls. The property owners and managers can be neutralized by involvement in the legislative process. In Oklahoma, the property owners have been involved in the writing of proposed legislation. They are no longer in opposition because they had a voice in what would be included in the legislation.

Builders are also a growing source of opposition. The builders contend that they are not responsible for the mold problems either. Yet, a growing number of lawsuits are being filed against builders for mold. The lawsuits are blaming faulty construction as the primary reason for mold growth. The claim is that builders, in a rush to get a new home up, are using shoddy, wet material, and that the builders are not taking the time to insure that the structure is weather-proof.⁸² As a result, mold is growing even in newly constructed buildings. Because builders are getting the blame for the mold problems, they have started fighting back by opposing mold legislation. In Oklahoma, the builders were included in the process of proposed legislation. They are no longer in opposition of the legislation being introduced at the state level.

Insurance companies are currently lobbying legislatures to insure they are not responsible for the clean up of mold. Many state insurance commissioners are allowing insurance companies to limit or cap what the insurance companies will pay out in mold claims.⁸³ Insurance commissioners are also allowing companies to drop mold coverage from the homeowners' policies altogether.⁸⁴ Many citizens feel violated and let down by the commissioners. However, the commissioners are elected officials, and few citizens are voicing their concern by voting against their current commissioner. This could easily send mixed messages to the elected officials responsible for action involving mold. The insurance companies are the hardest to neutralize on this issue. No matter the legislation being introduced, insurance companies are going to be required to pay out individual mold claims. One way of changing their position to a less threatening one would be to include them in the process. If insurance companies are being consulted, then they can be moved out of the antagonistic viewpoint to a lesser problematic one.

Policyholders of America's members are convinced homeowners are the only ones willing to share more responsibility in this issue, meaning, homeowners seem more than willing to be required per their mortgage agreements to conduct semi-annual plumbing and roof inspections so that toxic mold infestations are less likely to happen.⁸⁵

Agencies Effected:

There are a number of agencies at the city, state, and federal level that would be affected if mold were to be regulated. City governments would be affected because inspectors would need training to be able to identify mold problems if someone were to make a complaint. Cities employ code compliance officers that are trained to look for

substandard housing. These employees could be trained to recognize and address mold problems then make a recommendation based on their evaluation of the home.

Local Red Cross organizations will be effected because they help families in crisis. In Cleveland County, Oklahoma, the Heart of Oklahoma Red Cross Chapter has helped at least two families affected with mold problems.

The state would get involved because standards and levels would need to be set. In addition, most states have an Environmental Department responsible for regulating pollutants. In Oklahoma, that agency is the Department of Environmental Quality (DEQ). The State Health Department would likely take action as well. The Health Department could keep track of illnesses due to environmental exposures; provide certification for testers and remediators operating within the state, issue statements and recommendations for the health of its citizens. If the legislation introduced increases their budget, then the Health Department would be in favor of the regulatory policy. However, if there were no new funding source, the Department would not have a way to implement the programs. In Oklahoma, the legislation being proposed is meant to be self-sustaining, meaning that all monies for the program come from the costs of the certification.⁸⁶

At the federal level, the Environmental Protection Agency would be asked to set standards for indoor air quality problems. The Center for Disease Control (CDC) would be asked to keep track of diseases caused by toxic mold and to help set standards for exposure. FEMA would be asked to help with the cost of clean up for mold in homes and office buildings. The Department of Housing and Urban Development (HUD) would be asked to ensure that the homes lived in are safe. They may be asked to regulate standards

and condemn buildings if they are not up to those standards. These are just some of the major agencies that could be affected by regulating mold in homes, and not meant to be an exclusive list. Again, as long as the legislation increases the agency budget, they will support it.

Funding:

All of the agencies involved would need funding to implement their programs. This can be costly for taxpayers. At a time when budget cuts are prevalent, where would the money come from? Schools in Oklahoma are finding it difficult to meet day-to-day operations. Budget cuts on top of budget cuts may force some school districts to make drastic cuts in teacher benefits, student activities and staff.⁸⁷ The budget is not only a financial statement; it is also a policy statement. Problems over money are in reality problems over policy.⁸⁸ The problems the United States have been experiencing with terrorism has lead Congress to increase defense spending. With no additional revenues to offset this spending, passing a new program would be difficult. One way of raising the money to implement an indoor air program would be to raise taxes. However, many taxpayers feel they are already paying more than their share. These are just some of the reasons why funding government programs have always been a problem. However, there are ways to address the funding problems.

One possible way of funding the program would be through the use of the state's tobacco settlement money. Health Departments around the country have taken a strong stand against tobacco smoke and the effects it has on indoor environments. Most state health departments are banning smoking indoors, because of the effects of smoking on the health of the people. In other words, smoking is an indoor air pollutant, mold is an

indoor air pollutant, and since we already regulate other pollutants like asbestos, lead, and radon, we can begin to address all indoor air pollutants. As a result, we can use the tobacco money to regulate indoor air quality, maximizing the number of people being helped.

Grants are currently being offered to examine asthma, cancer, lung diseases, and other medical conditions. There is grant money available to help the elderly and the poor. Scientists can access this grant money to examine the affects of molds and other indoor air pollutants in humans, including the elderly and the poor. This is a shift in policy for most agencies and how the money would be spent.

Enforcement:

The next problem needing to be addressed is enforcement or implementation of the proposed policy. If regulations are passed, who is going to enforce them and how will they be enforced? Congress usually does not attempt to fully define the intended impact of the law or try to anticipate all of the problems and situations that may be encountered in its implementation.⁸⁹ As a result, administrative agencies are often assigned much discretion when issuing rules and directives that fill in the gaps left by Congress.⁹⁰ Some feel that the administrative branch is the fourth branch of the government because of their ability to interpret the laws written by Congress.⁹¹ Congress generally enacts a law, and then leaves the implementation up to the agency it is assigned to. This can have grave effects on regulatory policies because the agencies are left to determine what Congress meant to say when addressing the issue.

A good example of interpretation of law is the Food and Drug Administration (FDA) under David Kessler. In the 1990's, Kessler interpreted the powers of the

administration to include adding new drugs and regulating them. Kessler went after the tobacco industry saying that nicotine was a drug and needed to be regulated. In 1998, the tobacco industry sued the FDA and the Supreme Court ruled in the favor of the tobacco industry, stating that Congress did not intend to give the FDA this type of power.⁹² This is just one example of how an agency can apply or interpret laws passed by Congress; in this case, they were called on it and were proven wrong.

Because agencies have so much discretion, special interest groups and others seeking a favorable ruling often target them. This puts the agencies in a position to become embroiled in politics, thus they are now a political actor in the public policy process.⁹³

POLITICAL ACTORS

The American political system is one of great power. The Constitution separates the power between three branches of government, executive, legislative and judicial with checks and balances in place. This makes up the formal actors in the process, however they are not the only ones. Informal actors may include chief executives, cabinet members, political bosses or party officials, special interest groups like insurance companies, pharmaceutical companies, and citizens.⁹⁴ The chief executives make up agency heads, large corporation presidents and/or CEO's of companies that make anti-microbial products, companies that perform remediation and/or testing, laboratories, researchers in the field, and Industrial Hygienists. This group has influence in the process by contributing to campaigns or to the individuals' party. The cabinet members are trusted people appointed by the president to advise on policy. They are usually the top in their field and are considered experts.

The political bosses or party officials may also have an agenda in the indoor air quality field. They can be campaign managers, party workers, and heads of the party that the official belongs to. Some feel that indoor air quality is a non-issue at this time and have steered the candidates away from the issue.⁹⁵ Some from this group may have experience with mold problems and may persuade the legislature to take it up as an issue.

Special interest groups contribute monies to campaigns, have lobbyists, provide parties for elected officials, and help with researching their interest for Congress.⁹⁶ This group includes insurance agencies that feel they have been targeted by this growing problem. The lobbyists have been steadfast in preventing legislation in many states and at the federal level. For example, at the federal level, the bill introduced by Conyers has been in committee since its introduction because of powerful lobbyists groups.

Citizens can participate in the lobbying process. Many citizens, like Melinda Ballard, and myself have lobbied for or against bills. Citizens vote, start petition drives, and help get officials elected. Citizens can be a powerful group, if they ban together for the good of the cause. This has happened in Texas as Melinda Ballard's Policyholders of America has grown in strength. They have successfully lobbied Congress to get the toxic mold bill introduced, have lobbied Texas lawmakers to legislate mold within their state and have gotten the attorney general of Texas to file charges against Farmers Insurance for fraud and deceitful practices.⁹⁷

Policyholders of America also contends that standards of exposure will curb illegitimate claims against builders and insurers. (NOTE: Some of these homeowners, tenants, students etc... who claim to be sick even though their structure only has a square

inch of mold should be weeded out otherwise they make the rest of us look like scam artists.)⁹⁸

PROPOSED COURSE OF ACTION

With so many actors in the process, one can see that policy formulation is often difficult and time consuming. There are no easy answers to the process. Increasingly, legislatures are calling for multi-agency task forces to look into the problem and report back to them within a year. This has helped spur research in the area of indoor air quality, but much work is still needed in the field. As a proposed course of action, we could continue to institute these task forces to gain even more understanding. However, research alone does not address the problem, and has often not produced recommended courses of action. Many experts feel that we have adequate research to start implementing programs to combat the indoor air problem as we continue to do research on the health affects.⁹⁹

Another course of action would be to continue to pass legislation, which has already proven to be a difficult challenge. We have already discussed the problems with the currently introduced legislation. The most effective way to get legislation passed to protect the citizens least able to protect themselves, is through the landlord/tenant acts and through real estate transactions. Landlord/tenant laws are already on the books, and could easily be broadened to include mold and mold related damages. Real estate transactions would be the ideal forum for mold related inspections and disclosures to take place. If we can get everyone to acknowledge the problem, then we can begin to combat it and address it.

CONCLUSION

In conclusion, there are no easy answers to the problem however; there are steps we can take to begin implementing programs while we continue to conduct research to further study the effects of indoor air problems. The causal mechanisms do not need to be fully understood to begin putting prevention measures in place. Knowing even one small component may allow significant degrees of prevention. As every epidemiologist knows, John Snow took the handle off the pump on Broad Street and put an end to London's cholera outbreak. Abraham and David Lilienfeld, in *Foundations of Epidemiology*, relate that Snow's 1855 report "led to legislation mandating that all of the water companies in London filter their water by 1857, only two (2) years after the report's publication. It was not until 1883 that Robert Koch identified the cholera vibrio.¹⁰⁰ The mandate was issued twenty-six (26) years before cholera was understood.

The Investigator Team from the Cleveland outbreak states that:

"Among environmental epidemiologists, the precautionary principle is frequently used to inform public health decision-making. The precautionary principle states: We must act on facts, and on the most accurate interpretation of them, using the best scientific information. That does not mean we must sit back until we have 100% evidence about everything. Where the state of the health of the people is at stake, the risks can be so high and the costs of corrective action so great, that prevention is better than cure. We must analyze the possible benefits and costs of action and inaction. Where there are significant risks of damage to the public health, we should be prepared to take action to diminish those risks, even when the scientific knowledge is not conclusive, if the balance of likely costs and benefits justifies it."¹⁰¹

As in the spirit of the epidemiologists, we can implement programs like those that they did with cholera in the 1800's while continuing to conduct research to further our understanding. We should not stick our head in the sand and ignore all of the research

and studies that has been conducted because there are not enough of them. Knowing mold causes disease is enough to reason to take action. The first measures do not have to be radical; they simply have to address remediation, as it was addressed in the earliest of times, in the Bible. We should act now to prevent the deaths of millions while we continue to gain understanding of the problem, in the true spirit of epidemiology.

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