Regulations & Guidelines
Short History of Mold Standards

• **Leviticus 13: 47-50, 14: 39-47**
  
  - Initial assessment by priest; follow-up visit in 7 days
  - If mold spreads to walls, tear out contaminated stones and throw into unclean place outside the town
  - If mildew reappears in house after stones are gone and house re-plastered, tear down house and dispose in landfill
  - If clothing is contaminated -- wool, linen or leather, green or red -- show to priest, who will isolate it for seven days

• **Biblical “unclean” criteria** -- served well for millennia as definitive guideline for mold assessment, remediation and clearance verification
Short History of Mold Standards

1819 - Seasonal allergic rhinitis described as “Hay Fever”
1906 - The word “allergy” is coined
1932 - “Farmer's Lung” is recognized as disorder of the lung due to inhalation of dust from moldy hay, the most common type of hypersensitivity pneumonitis
1943 - American Academy of Allergy, Asthma and Immunology (AAAAI) established
1970 - AAAAI begins national ecological counts for pollen and mold; in 1992 begins reporting mold counts to news media
1984 - EPA publishes “Clean Your Room” -- a primer on IAQ
1989 - ACGIH publishes “Guidelines for the Assessment of Bioaerosols in the Indoor Environment”
• Early-Mid 1990s
  • Cleveland, OH -- CDC suggested possible link between acute pulmonary hemorrhage in infants and exposure to molds, specifically *Stachybotrys chartarum*
  • NYC Dept of Health produces “Guidelines on Assessment and Remediation of Fungi in Indoor Environments” (1993)

• Late 1990s
  • ACGIH -- “Bioaerosols: Assessment and Control”
  • AIHA Biosafety Committee -- Field Guide for Determination of Biological Contaminants in Environmental Samples
  • AIHA accredits Environmental Microbiology Labs (EMLAP)
Short History… (The Texas Story)

1999 - 2002

- Melinda Ballard’s Bad Faith lawsuit with Farmers Insurance
- Resulting media circus makes “Toxic Mold” a household word
- Ruling spawns Texas insurance “crisis” as hundreds of thousands of kitchens and bathrooms are remodeled with HOA policies
- The “Mold Rush” peaks. Insurance industry demand “bubble” for IH services expands
- “Mold Expert” certifications multiply, abuses proliferate
- AIHA -- Report of the Microbial Growth Task Force
- EPA -- “Mold Remediation in Schools and Commercial Buildings”
Recent History

• 2002 - 2003
  • Congress introduces “The United States Toxic Mold Safety and Protection Act”
  • OSHA -- Safety and Health Bulletin on mold
  • IICRC “S520 Standard and Reference Guide for Professional Mold Remediation”
  • AIHA Biosafety - Environmental Mold: State of the Science, State of the Art
  • AIHA “The Facts About Mold” public outreach brochure
Recent History

• 2004

• Texas Board of Health adopts Licensing Bill for Assessors and Remediators

• National Academy of Sciences Institute of Medicine issues report, "Damp Indoor Spaces and Health"

• Health Canada -- Fungal Contamination in Public Buildings: Health Effects and Investigation Methods

• AIHA Guideline - Assessment, Remediation, and Post-Remediation Verification of Mold in Buildings
Current Policy

• Regulatory and Public Health Policy
  • NYC and EPA guidelines still set de facto “standards of care”
  • Texas Board of Health establishes certification
  • OSHA Workplace Guide
  • NIOSH IAQ Guidelines for Building Owners & Faculty Managers
  • ASHRAE IAQ Standards
  • Other states (Fl, La) adopt standards

• Society and the News
  • Increased attention and concern
• 12 Deaths Now Reported in NYC Legionnaires’ Disease Outbreak
• More deaths reported in New York Legionnaires' outbreak
• NYC Legionnaires' disease cases now at 124, say officials
• Legionnaires' disease returns to former 'outbreak' site
Drivers of the US Mold Issue

- **Businesses and Institutions**
  - Real Estate and commercial entities ignore/prevent/comply
  - Schools and institutions comply, most begrudgingly (budgets)
  - Healthcare facilities - ICRAs, Nosocomial management, > concern

- **Legal**
  - Construction defect litigation. IAQ? Healthcare facilities?
  - IICRC S520 & AIHA Guideline newest “professional standards”
AIHA Guidelines

- Defines Appropriate Building and Occupant Protection
  - Negative air good. Containment good. HEPA filtration of non-re-circulated air?
  - Cleaning and wiping of all contents?
  - Replacement of soft goods without visible growth?

- Defines Appropriate Post-Remediation Verification
  - Visual is key
  - Sampling appropriate for containment, adjacent spaces
  - Data interpretation (same as “Assessment”)
New York City Department of Health and Mental Hygiene “Guidelines on Assessment and Remediation of Fungi in Indoor Environments” – 2008

• Environmental Assessment
  – Visual Inspection
  – Environmental Sampling

• Communication with Building Occupants
New York City Department of Health and Mental Hygiene “Guidelines on Assessment and Remediation of Fungi in Indoor Environments” – 2008

- Remediation
  - Moisture Control and Building Repair
  - Worker Training
  - Cleaning Methods
  - Quality Assurance Indicators
  - Restoring Treated Spaces
New York City Department of Health and Mental Hygiene “Guidelines on Assessment and Remediation of Fungi in Indoor Environments” – 2008

- Remediation Protocol
  - Small Isolated Areas (less than 10 square feet) – e.g. ceiling tiles, small areas on walls
  - Medium-Sized Isolated Areas (10 – 100 square feet)
  - Large Areas (greater than 100 square feet in a contiguous area) – e.g. on separate walls in a single room
Agency Guidelines & Recommendations

New York City Department of Health and Mental Hygiene “Guidelines on Assessment and Remediation of Fungi in Indoor Environments” – 2008

- Remediation of HVAC Systems
  - Small Isolated Area of Mold Growth in the HVAC System (<10 square feet) – e.g. box filter, small area on insulation
  - Large Area of Mold Growth in the HVAC System (>10 square feet)
Agency Guidelines & Recommendations


• Mold Remediation – Key Steps
• Plan the Remediation Before Starting Work
• Remediation Planning
• HVAC System
Agency Guidelines & Recommendations


• **Remediation**
  – Table 1: Water Damage – Cleanup and Mold Prevention
  – Table 2: Mold Remediation Guidelines
  – Cleanup Methods
  – Personal Protective Equipment (PPE)
  – Containment
  – Equipment
Agency Guidelines & Recommendations

OSHA “Brief Guide to Mold in the Workplace” – 2013

• Skin and Eye Protection
• Respiratory Protection
• Protective Clothing
• Remediation methods – per EPA/NYC
• Sampling – Not Recommended for visible mold
• Equipment for Assessment & Remediation
Trade Organization Protocols

- Institute of Inspection, Cleaning, & Restoration Certification (IICRC.org)
- American Industrial Hygiene Association (AIHA.org)
- American Society of Heating, Refrigeration, Air Conditioning Engineers (ASHRAE.org)
Trade Organization Protocols

IICRC S520 - a procedural standard and reference guide for the remediation of mold damaged structures and contents and is based on reliable remediation and restoration principles, research and practical experience, and attempts to combine essential academic principles with practical elements of water damage restoration for technicians facing “real-life” mold remediation challenges.
AIHA

- 2013 Position Statement on Mold & Dampness in the Built Environment
- Environmental Microbiology Laboratory Accreditation Program (EMLAP) - For laboratories specializing in analysis of microorganisms commonly detected in air, fluids, and bulk samples.
ASHRAE

• 2012 Position Document on Limiting Indoor Mold and Dampness in Buildings

• Standard 62.1-2013 -- Ventilation for Acceptable Indoor Air Quality (ANSI Approved)
International Standards

• Environment Canada – recommendations for testing
  – Canadian Mortgage & Housing Corp. – standards for cleanup

• France, Germany, Italy, Japan, UK & Netherlands preparing regulations
NYS Legislation

- Signed by Governor January, 2015
- Establishes certification and licensing program with fees
- Provides for accreditation of training providers
- Establishes standards for assessment & remediation
- Defines practices & procedures
NYS Legislation

- Enforced by NYS Dept of Labor Division of Safety & Health
- Assigns Roles & Responsibilities
  - Mold Assessment Consultant
  - Mold Remediation Contractor
NYS Legislation

The Mold Remediation Plan Must Specify:

• The Rooms Or Areas Where The Work Will Be Performed;

• The Estimated Quantities Of Materials To Be Cleaned Or Removed;

• The Methods To Be Used For Each Type Of Remediation In Each Type Of Area
The Mold Remediation Plan Must Specify:

- The PPE To Be Supplied By Licensed Remediators For Use By Licensed Abaters;
- The Proposed Clearance Procedures And Criteria For Each Type Of Remediation In Each Type Of Area;
- Occupant Notification
The Mold Remediation Plan Must Specify:

• Recommendations For Notice And Posting Requirements
• An Estimate Of Cost And An Estimated Time Frame For Completion;
• When Possible, The Underlying Sources Of Moisture That May Be Causing The Mold And A Recommendation As To The Type Of Contractor Who Would Remedy The Source Of Such Moisture.
Disinfectants, Biocides And Antimicrobial Coatings May Be Used Only If Their Use Is Specified In A Mold Remediation Plan, If They Are Registered By The United States Environmental Protection Agency For The Intended Use And If The Use Is Consistent With The Manufacturer's Labeling Instructions.
NYS Legislation

Post-remediation Assessment And Clearance

• Determine Whether The Work Area Is Free From All Visible Mold

• All Work Has Been Completed In Compliance With The Remediation Plan And Remediation Work Plan Meets Clearance Criteria Specified In The Plan.
Post-remediation Assessment And Clearance

• Post-remediation Assessment Shall Determine That The Underlying Cause Of The Mold Has Been Remediated So That It Is Reasonably Certain That The Mold Will Not Return From That Remediated Area.

• If It Has Been Determined That The Underlying Cause Of The Mold Has Not Been Remediated, The Mold Assessment Licensee Shall Make A Recommendation To The Client As To The Type Of Contractor Who Could Remedy The Source Of The Mold Or The Moisture Causing The Mold.

• A Mold Assessment Licensee Who Determines That Remediation Has Been Successful Shall Issue A Written Passed Clearance Report To The Client At The Conclusion Of Each Mold Remediation Project.
NYS Legislation

EXEMPTIONS

• A Residential Property Owner Who Performs Mold Inspection, Assessment Or Remediation On His Or Her Own Property;

• A Non-residential Property Owner, Or The Employee Of Such Owner, Who Performs Mold Assessment Or Remediation On An Apartment Building Owned By That Person That Has Not More Than Four Dwelling Units

• An Owner Or A Managing Agent Or A Full-time Employee Of An Owner Who Performs Mold Assessment Or Remediation On Commercial Property Owned By The Owner Provided
  – Does Not Apply If The Managing Agent Or Employee Engages In The Business Of Performing Mold Assessment Or Remediation For The Public.
More to come...

• NYS Work Practices Regulations
• Updated Guidance & Recommendations