



The CIAQ is very early in the process of implementing the GAO recommendations. As a consequence, detailed answers for many of the questions that people have (see F5.) are unknown at this time. However, more complete answers to these and other questions will be developed as implementation progresses.

Contents

- A. Preparation
- B. Meeting Purpose
- C. Attendance
- D. Synopsis of GAO Recommendations and EPA Response
- E. Discussion Themes
- F. Questions Asked by Participants
- G. Statements & Comments by Participants
- H. Overview of the Discussion, Action Items and Next Steps
- I. Resources

A. Preparation. To prepare for this initial discussion on implementing the GAO recommendations, EPA obtained from GAO a complete list of the 36 staff from the six Federal agencies that GAO had contact with in preparing the mold report: EPA(9); HUD(3); CDC(14); NIAID-NIH(2); NHLBI-NIH(1); and NIEHS-NIH(7). EPA notified everyone about the meeting, and invited them to participate in the GAO Mold Report discussion.

B. Meeting Purpose. The principal purpose, as stated in advance of the meeting, was to discuss how the CIAQ and its member agencies might begin to implement the GAO recommendations, i.e., by first identifying people, processes and tools suitable to the task. Also, it was made clear that any discussion about the scientific uncertainties, gaps in research, health effects and impacts were outside the scope of this first meeting.

C. Attendance. A total of 85 people attended part of or the entire CIAQ meeting. Some 24 staff from Federal agencies attended: EPA(9); DOE(1); NIOSH(2); HUD(2); USPS(1); GSA(2); CDC(4); NIH(1); DOJ(1); and USDA(1). Except for HUD and EPA (in part), there was little overlap on a name-for-name comparison between the GAO list and the attendees.

Staff from 11 state and local government agencies also attended the meeting: WA(1); SC(1); FL(1); TX(3); MA(2); and CA(3). The remaining 38 attendees were a mix of people from NGOs, academe, consultancy, medical practices, education, advocacy, manufacturing, and (of course) the proverbial "other".

D. Synopsis of GAO Recommendations and EPA Responses.

Recommendation #1. Help articulate and guide research priorities on indoor mold across relevant federal agencies, coordinate information sharing on ongoing and planned research activities among agencies, and provide information to the public on ongoing research activities to better ensure that federal research on the health effects of exposure to indoor mold is effectively addressing research needs and efficiently using scarce federal resources.

EPA Response. The Agency agreed:

- (1) That the CIAQ is one vehicle appropriate to implementing this recommendation.

- (2) To include the report's recommendations in the agenda for the February 18th 2009 meeting.
- (3) To schedule a discussion/review of inter-agency mold research priorities in 2009.
- (4) Lead the CIAQ in considering how best to use available information-sharing tools and technologies in order to meet the intent of this recommendation within the resources available to the Committee.

Intent/Goal: Ensure that research on the health effects of exposure to indoor mold is effectively addressing research needs and efficiently using scarce federal resources by:

- (1) Articulating and guiding research priorities
- (2) Coordinating information sharing on ongoing and planned research activities
- (3) Informing the public about ongoing research activities

Recommendation #2. Help relevant agencies review their existing guidance to the public on indoor mold - considering the audience and purpose of the guidance documents - to better ensure that it sufficiently alerts the public, especially vulnerable populations, about the potential adverse health effects of exposure to indoor mold and educates them on how to minimize exposure in homes. The reviews should take into account the best available information and ensure that the guidance does not conflict among agencies.

EPA Response. The Agency agreed:

- (1) To solicit the views of the member agencies on how best to accomplish and sustain such a role within the resources available to the Committee.
- (2) To include Federal mold guidance as a discussion/action topic in at least one of the three annual meetings.

Intent/Goal: That Federal guidance sufficiently informs the public/vulnerable populations about potential adverse health effects and how to minimize exposure by:

- (1) Using the best available information in reviewing existing guidance
- (2) Ensuring that guidance issued by agencies does not conflict among agencies

E. Discussion Themes. The discussion had several themes (as excerpted from the audio recording).

- 1-private researchers need to be included in the debate/discussion, etc.
- 2-public health departments need to know more & be more aware of mold, health effects, etc.
- 3-those in crisis and the general public want-need something simple to use (e.g., a resource, help line).
- 4-need a series of "white papers" similar to those produced by the NIOSH IAQ team.
- 5-need to share the available mold information with physicians & public health department staff.
- 6-more research on the health effects of mold is needed.
- 7-mold remediation practitioners have practical & valuable experience & information to contribute.
- 8-schools aren't getting the help they need from CDC, EPA, public health departments, etc.
- 9-mold is a very political issue & a national emergency; what resources are available to the CIAQ?
- 10-it is plausible that mold-water damaged buildings cause illness.
- 11-how will the public be involved in implementing the GAO recommendations?
- 12-the goal is to keep the implementation the GAO recommendations as simple, straightforward and effective as possible, given the resources available to the committee, and the process will also be keep as transparent as possible.

F. Questions(Q) Asked by Participants.

- Q1-3: SB-Brinchman, Susan: The Center for School Mold Health (director@schoolmoldhelp.org)
Q4-5: CF-Fitzgerald, Carolyn: No Mold Left behind 95 (nmlb95@aol.com)
Q6-9: RS-Shoemaker, Ritchie: Center for Research on Biotxin Associated Illnesses (ritchieshoemaker@msn.com)
Q10-11: AB-Bailey, Alesia: University of Tulsa (OK) (alesia-bailey@utulsa.edu)
Q12: GL-Lane, Ginny: MASS Cosh/Boston Teachers Union (gtomlane@comcast.net)
Q13-14: HZ-Zachman, Heidi: Air Quality Sciences (hzachman@aq.com)

- Q15-16: JJ-Joost, Julie (julesyost@yahoo.com)
Q17: CJ-Julian, Chris (cjulian@triad.rr.com)
Q18: MB-Berry, Mark, EPA (Berry.mark@epa.gov)
Q19: CP-Parrish, Charlotte: United States Postal Service (USPS) (charlotte.parrish@usps.gov)
Q20: JZ-Zenuch, Jennifer: General Services Administration (GSA, New Orleans) (Jennifer.zenuck@gsa.gov)

The following questions [edited for their relevance to the discussion] were posed by participants during the webinar; brief answers are provided by EPA (unless noted).

Q1: SB; Can you comment on the extent of the mold and water-damage problems in our nation's schools?

A: [The following answer was provided courtesy of Bill Fisk/LBL]

EPA researchers assembled and analyzed data on dampness prevalence in homes but did not find much data on prevalence in schools. They did briefly review the evidence that dampness and mold in schools poses a health risk; what was found on prevalence in schools follows. For U.S. schools, a survey* by the General Accounting Office (GAO) reported that 30% of schools had plumbing problems and 27% had roof problems [14]; however, the nature of the problems were not described so the prevalence of associated dampness and mold cannot be determined.

*GAO, *School facilities: condition of America's schools*. 1995, General Accounting Office: Washington, D.C.

Here is text from the California (CA) survey of classrooms; moisture and mold:

- In the Phase I mail survey, 69% of the teachers reported smelling musty odors in their classroom, 43% reported current or previous floods or leaks, and 11% reported visible mold.

- Field observations by the study technician in Phase II showed that:

 - 21% of the portable classrooms and 35% of traditional classrooms had visible water stains on the ceiling, and 13% of portables and only a few traditional classrooms had visible water stains on the floor.

 - 17% of all classrooms (12% portables, 20% traditional classrooms) had excess moisture measured in the walls, ceiling, or floor. Excess moisture was measured as material moisture content above levels measured in comparable known dry material.

 - 3% of portables and almost no traditional classrooms had visible mold on the ceilings; 3% of all classrooms had visible mold on exterior walls.

[14] Reference is: CARB, *Report to the California Legislature: Environmental health conditions in California's portable classrooms*, 2004; California Air Resources Board and California Department of Health Services.

Q2: SB; How can the government, on a very fast track, collectively provide help to people experiencing severe health issues from mold in schools, workplaces and in residences?

A: A difficult question to answer in depth, since government at the Federal, state and local level theoretically all have mold related roles and responsibilities. At the moment schools are the primary responsibility of local governments and special districts. In general, the Department of Labor's Occupational Safety and Health Administration (OSHA) has responsibility for the workplace. In addition to the owner, homes are nominally the responsibility of local health departments. See section I. herein on mold-related resources.

Q3: SB; How can this be accomplished so that there are resources on an urgent basis during this research?

A: My understanding of this question is that it is about what resources will be available to people in crisis while the research to explore the effect on human health from mold exposure is conducted, etc. If so, aside from existing resources in government and the private sector, more about this may not be known until more information and steps to be taken related to implementing the second of the GAO recommendations becomes available or are known.

Q4: CF; Has the Illinois (IL) Department of Health been included in the communication [about the report]?

A: No. That is because the GAO recommendations are specific to the CIAQ and Federal mold activities. Presumably states (and others) will monitor this activity informally, through the CIAQ website and listserv, and will have staff participate in meetings.

Q5: CF; I would like to see some procedures put in place for parents to register a complaint and request proper evaluations, ideally using EPA's mold "analysis" using DNA technology. With IAQ not being regulated, I have repeatedly been told no one has jurisdiction or enforcement power over the IAQ within a school building. Our school district continues to make excuses why Tools for Schools can not be fully implemented. Will CIAQ have an impact in this? Please help!

A: Much too early in the process to estimate what the effect of the CIAQ activities might be. I've forwarded you question/comments to the EPA Indoor Environments Division's Schools Team and to our Regional Office in Chicago for their consideration/information.

Q6: RS; The original request to GAO from Senator Kennedy included a request to comment on the potential that conflict of interest contributed to 'current' status of the science looking at mold illness. Why did GAO not comment on that [part of the] request?

A: Not known. Your question was forwarded to the GAO staff that prepared the report along with your contact information.

Q7: RS; Ideally mold research priorities should involve [cooperation between agencies and the private sector] with scientists/researchers in the field, particularly with respect to avoidance of duplication of effort and access to affected patients. Will private researchers be allowed to participate with [the] CIAQ?

A: The existing CIAQ resources remain accessible to the public, i.e., the website (www.epa.gov/iaq/ciaq), the listserv (CIAQ-subscribe@lists.epa.gov), email (CIAQ@epa.gov), and meetings/webinars. The degree of public involvement in the implementation of the GAO recommendations will be considered as work progresses, and as existing Agency policies permit, etc. It is important to remember that the recommendations are specific to Federal agencies.

Q8: RS; Given the use of review studies only by the GAO, will there be some use of papers published by physicians actually treating affected patients?

A: That has yet to be determined relative to implementing the GAO recommendations. In general, the use of such information is at the discretion of the individual agencies preparing the guidance and in setting their research agendas.

Q9: RS; the concept of providing current information must account for the rapidly expanding field of information regarding human illness acquired following exposure to water-damaged buildings. The suggestion from Laura Kolb today, that of the 2004 EPA/University of Connecticut report does not account for the fact that 2004 is now ancient history in approach to diagnosis and treatment. The Institute of Medicine (IOM) report was also published in 2004, based on research performed no later than 2002-2003. You cite the IOM report repeatedly, these studies are now of historical interest. What effort will be made by the agencies to assess innate immune abnormalities shown to be acquired in humans re-exposed to water-damaged buildings?

A: In general, the use of such information is at the discretion of the individual agencies preparing the guidance and in setting their individual research agendas. We are too early in the process to address this issue/question definitively.

Q10: AB; would the gentleman from ProSource Technologies, Inc., repeat his name?

A: Jon Dacken (jdacken@prosourcetech.com, 218-625-7004)

Q11: AB; Will you be funding new applicants to the FY09 NOFA?

A: Presumably this is a question related to the HUD Healthy Homes NOFA. Details are available from Peter Ashley and his staff (peter.j.ashley@hud.gov).

Q12: GL; Is the Department of Defense (DoD) involved with the (GAO) mold issue since the mycotoxins spawned by mold are enumerated in the Military Medical Manual?

A: The DoD will be invited to participate in the effort to implement the GAO recommendations.

Q13: HZ; Could the GAO "Articulate and Guide" recommendation (objective) be served by a periodic (annual?) update of the IOM research needs described in Damp Indoor Spaces and Health (May 2004)?

A: That possibility will be considered.

Q14: HZ; is there an update from the National Toxicology Program (NTP) on the exposure studies of animals exposed to mold (mixed components or pure substances)?

A: Possibly; for more information visit the NTP website for more information (<http://ntp.niehs.nih.gov/>).

Q15: JJ; My experience (3 years of searching for a doctor to diagnose and help my son) has been that most physicians don't have a clue that indoor mold contamination causes extreme illnesses in about 24% of human beings and they don't know how or want to diagnose and treat these patients. Why is it that physicians in the United States seem to be in the dark about mold and its effect on the human body?

A: Presumably additional education, outreach and awareness efforts through channels that reach physicians may be needed.

Q16: JJ; when will indoor mold regulations become law for protection of our children in public schools?"

A: At this time that is unknown.

Q17: CJ; Environmental hazards associated with damp indoor environments other than mold need to be somehow included in public information. How can that be incorporated?

A: There is much information on non-mold problems available online; visit <http://www.epa.iaq> for a start.

Q18: MB; How do you get to the online EPA Science Inventory for research projects?

A: Visit <http://cfpub.epa.gov/si/index.cfm> to access the EPA Science Inventory.

Q19: CP; USPS does not have the exact role, but has major mold concerns with about 36,000 facilities. Does mold responsibility solely cover a need to do research and/or guide mold policy?

A: As a quasi-Federal agency USPS is welcome to participate in CIAQ efforts to implement the GAO recommendations.

Q20: JZ; we partner with Federal Occupational Health (FOH) to perform full IAQ surveys in our federally owned and leased facilities. They would be a wealth of knowledge for the project. Are the United States Public Health Service (USPHS)/FOH included in this panel of agencies?

A: The USPHS/FOH will be invited to participate; as many agencies do, there are FOH staff that are CIAQ listserv subscribers.

G. Statements & Comments (S) by Participants.

- S1: LN-Nagy, Lisa: Preventive & Environmental Health Alliance (lisa@nagy1.com)
- S2: SB-Brinchman, Susan: The Center for School Mold Health (director@schoolmoldhelp.org)
- S3: NB-Bernard, Nancy: WA Department of Health (nancy.bernard@doh.wa.gov)
- S4: CF-Fitzgerald, Carolyn: No Mold Left Behind 95 (nmlb95@aol.com)
- S5: RS-Shoemaker, Ritchie: Center for Research on Biotxin Associated Illnesses (ritchieshoemaker@msn.com)
- S6: GL-Lane, Ginny: MASS Cosh/Boston Teachers Union (gtomlane@comcast.net)
- S7: JG-Glickman, Joseph (joeglickman@yahoo.com)

S8: HZ-Zachman, Heidi: Air Quality Sciences (hzachman@aq.s.com)
S9: SM-Murphy, Stacy: EPA (Region 6) (Murphy.stacy@epa.gov)
S10: JL-Laguna, Jorge: FL Department of Health (jorge_laguna@doh.state.fl.us)
S11: SS-Schultz, Sheryl: MACTEC (saschultz@mactec.com)

The following stand-alone statements and comments [edited for their relevance to the discussion] were posted during the webinar, and are grouped by participant.

S1: LN; I would like to suggest they involve the IOM as I am trying to get them to have a meeting on the treatment of mold related conditions as well as other environmentally related illnesses. Christine Coussens is my contact there. Suggestion - At NIH, Dr. Scheidt is doing a study on 100,000 children and mothers and their environmental exposures. We have just discussed about assessing mycotoxin exposure in these people (also with Phillip Landrigan). I agree that the department of defense and researchers from the last 30v years would be helpful to engage. Also Bioterrorism committee in Congress - I have spoken to their chief counsel.

S2: SB; [We] need an urgent, fast track. [This is] a matter of national security [and of the] highest urgency. We need] solutions - this is a matter of public safety. The CDC needs to have a point person, as well. The information being provided now is inadequate and not consistent, according to the GAO Mold Report.

S3: NB; [An] additional major issue is better building standards and compliance to prevent water intrusion and condensation. The building science is established. There continues to be problems with application. When a newly remodeled school on the coast has a problem with wind driven rain I get very frustrated.

I have a comment on Susan's statement about state health departments and information on mold. Washington State DOH provides information to the public on mold and IAQ through our website and directly answering questions. The mold webpage is one of the most visited of the many DOH resources. We stay up to date on current research and standards. Because we don't do our own research, we rely on CDC, EPA, NIOSH, IOM, ASHRAE, AIHA, & the NYC Guidelines for our materials. We don't provide testing. Based on national guidelines we don't recommend testing in most situations. We also work hard to let the public know that what type of mold is present is not important (aside from research curiosity or speciation to track water history). If there is mold, the water problem needs to be corrected and the mold remediated. That frustrates some of our community. We also work with schools and promote the EPA mold remediation in schools guidelines. Final comment - please keep this process centered on research and not suppositions and assumptions.

S4: CF; Our BOE and administration continue to dismiss any concerns regarding IAQ from parents. All need to be more informed. My physician told me that common sense would tell me that if I had other alternatives for my son, choose that. So, I have him in a private school. This is wrong to not trust my public school. Please go to our group's site, 95.nomoldleftbehind.com for our story here in Lake Zurich, IL.

I am a parent in a school district where my son's elementary school was closed permanently and unexpectedly due to flooding and the resulting mold and asbestos. All were moved into the connecting building that was previously closed. The district's mold reports were not supported by IDPH.

When my son's school was closed unexpectedly due to mold, I did not find any governmental agency that would help me. It was only with the assistance of our State Representative Sullivan, did IDPH get more involved. Parents need help!

S5: RS; The current litigation of the FAA versus Air Traffic controllers Union in the Detroit Motor Metro Tower shows just how serious the absence of a logical Federal approach to human illness is. FAA has

spent over \$1 million in failed partial remediation but continues to stonewall all efforts of the Union to resolution of adverse health effects. The Office of Special Counsel is now involved. CIAQ needs to take a look at what has gone wrong with the FAA approach to human illness acquired following exposure to water-damaged buildings.

S6: GL; Also - is it possible that Customs Officers be briefed in order to stop shipments of defective sheetrock from China? [A question; however, unrelated to the GAO mold report/recommendations.]

S7: JG; Hello, my name is Joseph Glickman. I am a recent victim of indoor mold poisoning.

S8: HZ; Outreach to community and delivery of information [regarding] building dampness (not health effects!) could be facilitated through USDA Cooperative Extension Agents. The EPA/University of Connecticut document for primary care physicians already addresses the comment by Ms. Kramer. This doc should be "marketed" better. NIST should be involved as lead Fed agency for preventive measures - how to design, build and operate buildings that [are or stay] dry.

S9: SM; GAO Mold Report Recommendation: Incorporate where the public can go to access state/local laws related to IAQ, relevant applications of local building codes, etc., as part of any developed resource.

S10: JL; Example of literature conflict/disagreement - CDC, EPA on use of bleach to clean or remove mold.

S11: SS; If CIAQ or another focus agency could use the "product placement model" used by any marketing agency for a product, it could likely get the word out through popular media. The key will be to decide what the "word" is. As much as I enjoy being involved - the agencies need to meet in closed meetings for policy congruence. Providing opportunities to present and to publish on the topic of mold will help draw out info about studies.

H. Overview of the Discussion, Action Items and Next Steps.

(1) The Federal Agencies were asked to send any comments or questions about the meeting to the CIAQ via email (CIAQ@epa.gov). The GAO recommendations were read verbatim for the benefit of participants that had not yet read the GAO report. A short Q&A time followed each reading.

(2) Participants were asked if it were known whether any other agencies, other than the agencies identified by GAO, were known to have a mold research agenda or public guidance. If so, these agencies would be invited to participate in this CIAQ effort. No new information on this point was forthcoming.

(3) Participants were asked if they knew of any Federal Agency that had designated a point of contact (POC or lead office) for mold related issues. Based on the response, apparently no agency has done so. Given the general need for inter-agency coordination, the CIAQ will ask each agency engaged in mold-related research or that has issued public guidance on mold to designate a mold POC for the purpose of implementing the GAO recommendations.

(4) Participants were asked if, other than that identified by GAO, any other information on Agency research agendas/projects and guidance was known to be available publicly. No new information on this point was forthcoming. However, there appeared to be agreement that although this information was not available/accessible centrally, that it should be (e.g., perhaps via a web portal).

(5) Participants made a number of requests and offers to one another and the CIAQ. For details, listen to the audio recording of the meeting on the CIAQ website (www.epa.gov/iaq/ciaq) for the February 18th meeting. How the public would be involved in the implementation of the recommendations and in Federal agency research and guidance activities was a clear theme. Although the GAO did not explicitly recommend

or suggest public involvement, the CIAQ will consider how the public might be involved. The public is nominally involved by virtue of the CIAQ meetings being public. Also, individual agencies are presumed to have addressed the role of the public in developing their research agendas and guidance on mold. Once each Agency POC for mold is identified, this question will be revisited by the CIAQ/POCs as a group.

Action items, next steps and commitments.

- (1) The CIAQ will ask each agency engaged in mold-related research or that has issued public guidance on mold to designate a POC on mold. Presumably the POCs would comprise a working group to assist EPA in effecting the recommendations.
- (2) Maintain transparency in the process of implementing the GAO recommendations via the CIAQ listserv, website, and tri-annual meetings/webinars. Special meetings/webinars may be held on an as-needed basis.
- (3) Participants asked about the University of Connecticut (UConn) document for clinicians mentioned by Laura Kolb (EPA), i.e., *Guidance for Clinicians on the Recognition and Management of Health Effects related to Mold Exposure and Moisture Indoors*. Here's the link - <http://oehc.uconn.edu/images/PDFs/MOLD%20GUIDE.pdf>, and that for the UConn Center for Indoor Environments and Health front page - <http://oehc.uconn.edu/CIEH.asp>.
- (4) Make a preliminary assessment of Agency mold related research activities and plans publicly accessible, e.g., through Agency websites.
- (5) Make a simplified list of existing mold guidance (with links/ordering info) available on the CIAQ website or other suitable website.
- (6) Include mold as an agenda item in either/both the June 3rd and October 7th CIAQ meetings.

I. Resources

- (1) EPA's mold website: <http://www.epa.gov/iaq/mold/index.html>
Mold & moisture in your home: <http://www.epa.gov/iaq/molds/moldguide.html>
EPA's mold resources page: <http://www.epa.gov/mold/moldresources.html>
Mold Remediation in Schools & Commercial Buildings: http://www.epa.gov/mold/mold_remediation.html
Introduction to molds: http://www.epa.gov/mold/append_b.html
EPA Science Inventory: <http://cfpub.epa.gov/si/index.cfm>
- (2) UConn Clinicians Guidance: <http://oehc.uconn.edu/images/PDFs/MOLD%20GUIDE.pdf>,
- (3) CDC mold website: <http://www.cdc.gov/mold/>
CDC Mold resources page: <http://www.cdc.gov/mold/links.htm>
- (4) NIEHS mold website: <http://www.niehs.nih.gov/health/topics/agents/mold/index.cfm>
NIEHS NTP website: <http://ntp.niehs.nih.gov/>
- (5) NIOSH mold website:
<http://www2a.cdc.gov/nioshtic-BuildOyr.asp?s1=%22indoor+air%22+or+%22indoor+environment%2A%22+or+%22building+air%22+or+ieq+or+iaq&f1=%2A&Startyear=&t1=0&s2=mold+or+molds+or+fungi+or+fungus+or+fungal+&B1=Search&terms=3&Adv=1&f2=%2A&PageNo=1&RecNo=3&View=f&>
- (6) National Institutes of Allergy & Infectious Diseases:
http://www3.niaid.nih.gov/topics/allergicDiseases/PDF/airborne_allergens.pdf
- (7) Institute of Medicine's Damp Indoor Spaces:
http://books.nap.edu/openbook.php?record_id=11011&utm_source=WID%16180102120090430142357&utm_medium=Widgetv3&utm_content=11011&utm_campaign=Widget&utm_term=homeview

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