

Evaluating the Risks of **Indoor**

by Paul R. Lees-Haley and Richard S. Brown

Recently, two business executives were asked, "What is the first thing that crosses your mind when you hear the words indoor air pollution (IAP)?" They both said "lawyers."

Given the litigious nature of modern business, this is not surprising. What may be surprising, however, is that business owners, employers and landlords can do much to ward off IAP complaints and ensuing lawsuits. Risk managers should have information on the proper procedures on what to do and what not to do when a group of employees, visitors, tenants or other building occupants complains about IAP illness.

Concern with IAP has grown markedly in the past decade and complaints associated with indoor air quality have been lodged with increased frequency. This increase may be due to the fact that in the 1970s builders started constructing buildings with fewer openable windows that were "tighter" to increase energy efficiency. Illnesses such as Legionnaires' disease, asthma, hypersensitivity pneumonitis and humidifier fever have been directly traced to air problems in buildings. Frequently, however, a significant number of building occupants experience symptoms that do not fit the pattern of any particular illness and are difficult to trace to any specific source. These symptoms can include any one or more of the following: dry or burning mucous membranes in the nose, eyes and throat; sneezing, stuffy or runny

nose; fatigue or lethargy; headache; dizziness; nausea; irritability; and forgetfulness. Aside from indoor air contaminants, poor lighting, noise, vibration, thermal discomfort and psychological stress may also cause, or contribute to, these symptoms. There is no single manner, in terms of when symptoms occur or how many people in the office experience them, in which these health problems manifest themselves.

New or recently renovated buildings are particularly susceptible to IAP. Research has shown that there are usually some occupant complaints about health concerns in newer buildings. In fact, experts from the World Health Organization believe that up to 30 percent of new or remodeled commercial buildings may have unusually high rates of health complaints from occupants, and that many of these complaints may be related to indoor air quality.

CAUSES OF IAP

There are three major causes of poor indoor air quality in office buildings. The first is the presence of indoor air pollutants. Commonly found office pollutants and their sources include second-hand tobacco smoke; asbestos from insulation and fire-retardant building supplies; formaldehyde from pressed wood products, carpeting and other office furnishings; vapors from cleaning materials, rest room air fresheners, paints, adhesives, copying machines, and photography and print chemicals; biological contaminants from dirty ventilation systems or water-damaged walls, ceilings and carpets; and pesticides from poor pest management practices.

The second cause of IAP is poorly

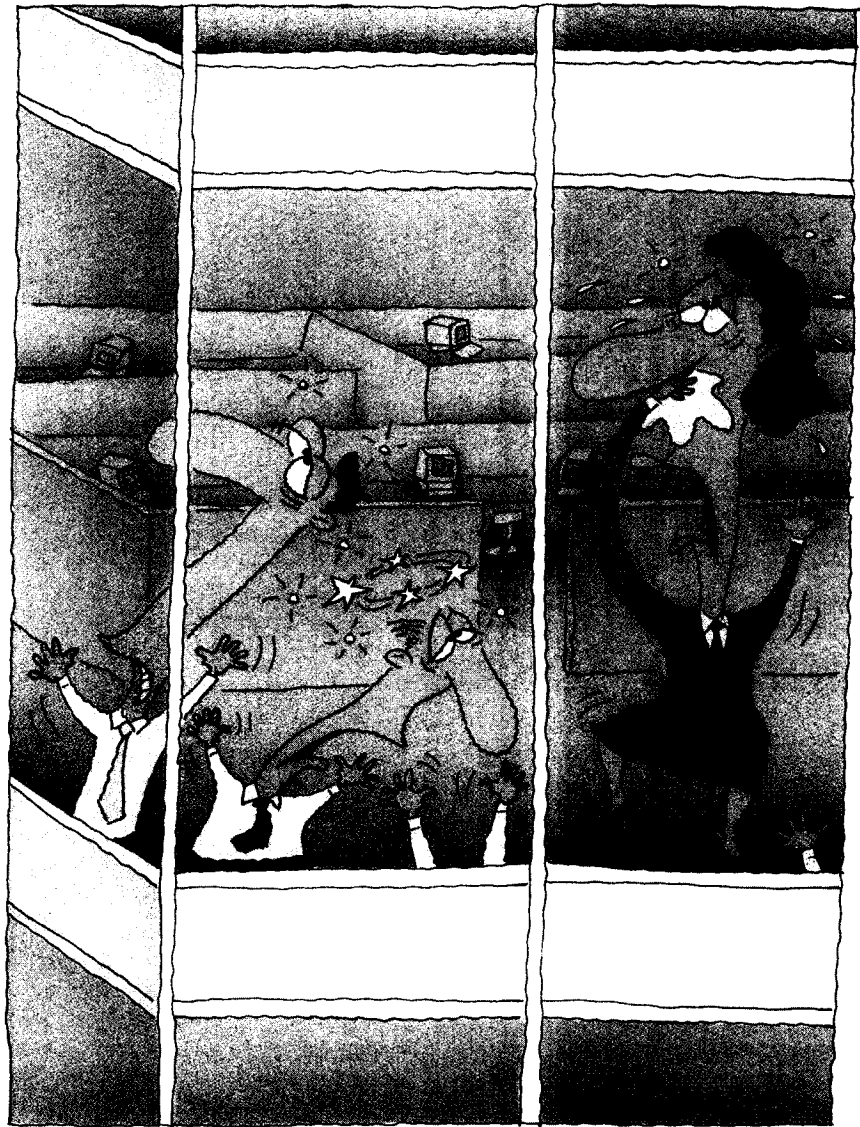
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Air Pollution

designed, maintained or operated ventilation systems. Problems linked to the ventilation system arise when, in an effort to save energy, these systems are not used to bring in adequate amounts of outdoor air. Inadequate ventilation also occurs if the air supply and return vents within each room are blocked or placed in such a way that outside air does not actually reach the breathing zone of the building's occupants.

Furthermore, improperly located outside air intake vents can cause air contaminated with automobile and truck emissions, fumes from dumpsters or air vented from rest rooms to enter the building. Ventilation systems that are inadequately cleaned are also a source of IAP through the spread of biological contaminants that have multiplied in cooling towers, humidifiers, dehumidifiers, air conditioners or the in-side surfaces of ventilation ductwork.

The use of buildings in ways that were unanticipated when they were originally constructed is the third cause of IAP problems. For example, buildings originally designed for one purpose may end up being converted for use as office space. If not properly modified during renovations, the room partitions and ventilation systems can contribute to indoor air quality problems by restricting air recirculation or by providing an inadequate supply of outside air. Also, indoor air pollutants can be circulated from portions of the building used for specialized purposes, such as restaurants, print shops and dry cleaning stores, into offices in the same building. And carbon monoxide and other components of automobile exhaust can be drawn from underground



parking garages through stairwells and elevator shafts into offices.

PREVENTING IAP

Risk managers can take several steps to prevent IAP problems or to lessen their severity. For example, new or newly remodeled buildings should

not be occupied until all construction has been completely finished. Ideally, occupancy should be delayed for several weeks, with ventilation maintained during that period at 100 percent outside air. Another way to prevent IAP problems is to regularly replace heating, ventilation and air

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Risk managers should determine the extent to which indoor air pollution complaints are based on real exposure to harmful toxins.

conditioning filters with new, high-quality filters. To prevent germination of fungal spores, roof leaks should be repaired immediately after they are discovered, and relative humidity in the building should be kept below 70 percent. Also, cigarette smoking should be banned from the building. Finally, in the event of an outbreak of an indoor air pollution condition, the company should consult with medical, epidemiological and industrial hygiene personnel to reduce the outbreak's severity.

However, although many IAP complaints are based on solid toxicological grounds, a large number of indoor air concerns are psychological in nature. For example, the mere thought that a contaminant may be present in the workplace is enough to make some employees question the cause of every ache and pain they experience. Additionally, sometimes the chemical constituents within the building's air are within unharmed

toxicological limits. However, from a psychological point of view, it does not really matter if a toxic exposure in the indoor environment is real or not: If the building's occupants perceive that there is a problem, then the situation has real consequences.

Therefore, the risk manager should respond to these perceptions in order to alleviate negative reactions. It is important for risk managers to determine the extent to which IAP complaints are based on real exposure to harmful toxins, perceived or rumored toxicity, or the degree to which they are manifestations of other problems unrelated to toxic exposure. The best way to conduct this investigation is to take an open-minded and concerned approach to all complaints.

For the sake of gaining some perspective, risk managers should consider what their companies have already done regarding the quality of air in their buildings. For example, informal polls of general managers,

self-insured company executives, and building and claims managers suggest that few have had their own offices tested, and almost none have had their homes tested. In essence, a company that has not tested its air quality is conveying two messages to its employees: first, that it is not alarmed about a potential IAP problem in the building, and second, that it has no way of knowing with exact certainty if the building's air is toxic, at least to the extent that experts have anything to offer in the way of knowledge about this issue.

There is a tendency for companies to take the view that they are too busy to waste time on IAP complaints. Often, concerns about IAP come from individuals who complain about numerous other subjects, so their credibility within the firm is relatively low. Also, some of the complaints may seem extremely implausible — for example, fear of cancer, chemophobia, fear of immunotoxicity (or so-called chemical AIDS), multiple chemical sensitivities and employee claims of suddenly being allergic to virtually everything, including non-allergenic, inert substances. However, the problem with suppressing or ignoring these complaints is that avoidance does not make them go away, and may actually cause them to increase.

So how can the risk manager take an open-minded and concerned approach to investigating these problems? When a complaint occurs, it is important to engage in an active, positive course of behavior. First and foremost, this means not reacting defensively. For example, it is a common response by company executives, building owners and managers to act personally insulted by questions concerning air quality in their buildings.

Several steps can be taken to help avoid ineffective responses and to deal with IAP complaints. First, risk managers should listen carefully to the complaints and then seek information in the same way they would if their families were at risk. This approach is not intended to be a ploy as if the risk managers felt the same concern for the well-being of building occupants as they do for their own family members; it is merely a good business practice to ensure the welfare of employees, tenants and visitors.

Another step is to switch to 100 percent outside air to determine whether this alone will cure the problem. Unfortunately, the air quality in buildings does not always show significant improvement after outside airflow has been increased. This may be due to a higher than usual concentration of contaminants within the building, the presence of extremely potent contaminants or the fact that newer buildings may have ventilation systems that are incapable of circulating more than 20 percent fresh air, even when perfectly maintained.

Therefore, if switching to 100 percent outside air does not solve the problem, the risk manager should contact the companies that manufacture the building materials that may be contributing to the problem (such as carpeting, wallboard or paint), as well as air quality and chemical experts. The product manufacturers will be able to provide literature and data regarding the safety of their products, and the experts can provide reviews of empirical research regarding specific toxins and indoor air pollution in general. Also, a toxicologist, pulmonologist and other medical, epidemiologic and industrial hygiene personnel should be immediately consulted to conduct a scientific analysis of the problem. Their expert assistance will help determine if the outbreak is actually related to an IAP condition. Finally, if the exposure concerns only one unit or office, it is unnecessary to alarm the entire building or complex. However, before proceeding it is important to consult with legal counsel in order to deal with duty to warn and other pertinent legal issues.

DISSEMINATING INFORMATION

After any scientific investigation of a building's air has been conducted, the company will have to inform all concerned employees about the results. Since the best ammunition against irrational fears is information, the risk manager should plan in advance the best way to disseminate the investigation's findings. The first step in this process involves choosing the best communication channel for conveying this message.

This is important because, psychologically speaking, for many people

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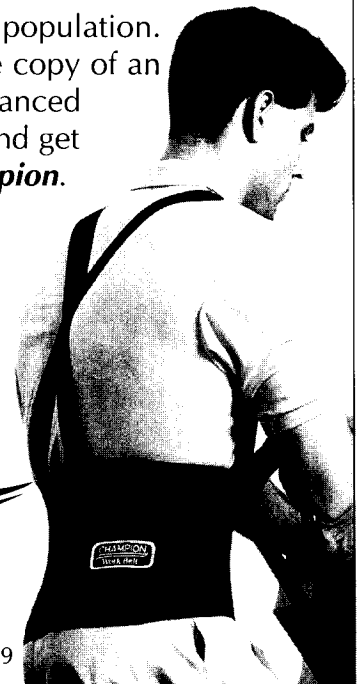
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the source of certain types of information is more important than the quality of the information itself. As a result, the risk manager should identify in advance who in the building or organization has the greatest credibility with the employees. These individuals can be informal company leaders, community leaders or any other persons the employees deem trustworthy and reliable. This person – or persons – should then be charged with presenting the conclusions of the IAP investigation, which will include data provided by the toxicologist, pulmonologist and any other air quality experts hired for the investigation. These outside experts should also be enlisted to help disseminate the infor-

manager's initial reaction may be to think that by having the meeting, the company has opened a can of worms, and that the discussion is leading to a situation that will get out of control. Be forewarned that in group meetings of this type, negative feelings, angry outbursts, inflammatory comments and alarmist remarks tend to come out fairly early in the session. However, attempting to suppress these comments will only create conflicts and feed the initial negative feelings. Permitting employees to express their views freely while listening carefully to them will help shift their anger to a more positive attitude that is conducive to problem solving. Therefore, allow the meeting to run its course.

vided attention and, despite any initial inclination to do so, should not cut this question period short. Instead, they should give the employees ample time to gather and exchange information so they can allay their concerns.

During the meeting, the presenters of the investigation's conclusions should be instructed to admit it when they do not know the answer to a question. In these situations, the company should promise to take appropriate action by a specific date in order to answer the question. For example, if there is fear that a particular substance is present in the building's air, the company can promise to call a toxicologist within a specific time limit after the meeting to test for that substance. A new meeting can then be called within a specified time frame during which the toxicologist can present the results of the analysis. Following through on agreements such as these with employees helps the company affirm its concern for their welfare and its commitment to resolving the IAP problem.

The risk manager should also have a psychologist present at the meeting to observe the factors that are influencing the groups' perceptions. However, be very careful about involving psychologists or psychiatrists as speakers in the meeting. If they are allowed to speak and the audience has not been given a clear and acceptable reason as to why this is so, some of the employees will infer that the company believes their complaints are psychosomatic or hypochondriacal in nature, that they are being hysterical or that they are crazy for feeling the way they do. In such situations, they will likely react with anger or mistrust. However, an exception to this rule is those situations in which the employees are complaining of emotional distress related to the IAP condition. In these cases, a psychologist should be brought in who is familiar with toxic exposure cases so that he or she can openly address the employees' fears.

When in the meetings, the employees should not be given false or misleading information to reassure them. By misleading the employees, the company is likely to increase fears by introducing uncertainty and mistrust

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mation to the employees.

It is also important to consider the setting in which the information will be delivered. Group meetings are the preferred method. Though expensive in terms of time and opportunity costs, collective gatherings are much better for confronting employee fears of airborne toxins than memos or chain of command communications. In the meeting, the experts' findings should be examined in-depth with the employees so that the relationship between the product manufacturers' data, the experts' findings and the occupants' experiences can be explored. Throughout this analysis, the speakers should not act exasperated or convey a brusque demeanor; otherwise, the speakers' tones of voice, facial expressions and other non-verbal gestures may be interpreted by employees as evidence of a lack of concern about the problem.

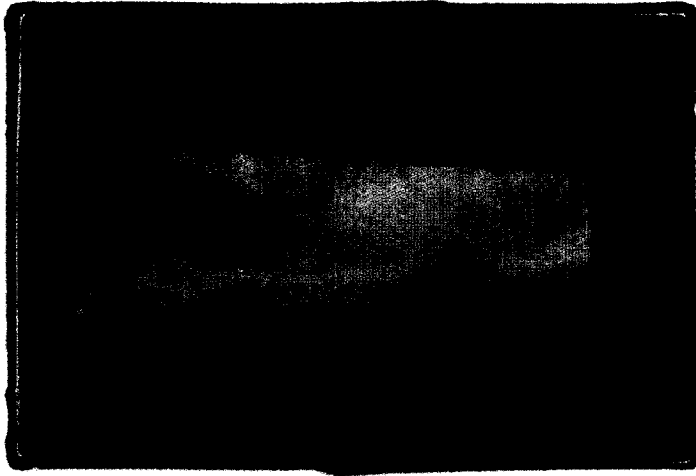
Sometimes, the meeting will begin on a negative note and will seem to be heading downhill. As a result, the risk

The toxicologist and pulmonologist involved in the investigation should be present at the meeting to review all pertinent information. It is important to make sure that the employees receive information that is credible as well as candid. If the employees do not believe an expert, then it does not matter to them whether his or her information is scientifically accurate.

STRUCTURING IAP MEETINGS

The meeting should be structured so that the investigation's conclusions are presented first, followed by an extended question and answer session. During this question and answer period, the employees should be encouraged to express their concerns and to ask questions. The opportunity to communicate their feelings and to be heard often helps the employees feel better about the situation. When the employees pose questions, the speakers should give them their undi-

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into the proceedings. Also, conveying inaccurate information creates the impression that the company has something to hide. If the meetings frighten the employees or cause them to lose trust in the company, they may turn to outside sources for help. Often, these outside sources will be individuals who lack objectivity or who do not share the company's interests. Examples include litigating attorneys, who are more than willing to provide a receptive forum for employees to air their complaints, quack doctors, aspiring plaintiffs, political activists and disgruntled employees.

When determining the extent to which the indoor air quality has affected the physical well-being of the employees, avoid handing out symptom checklists, whether they are verbally administered or in writing. Instead, ask open questions. The questions on checklists contain "leading" statements that prompt many people to imagine complaints that they otherwise would never have considered.

If the investigation does not uncover an IAP problem, the company can take certain steps to ameliorate these employees' concerns. One of the best psychological treatments for IAP complaints is to give the occupants some control over their air quality. This could include allowing them to control the temperature and humidity settings in their immediate work environment. Ironically, one good psychological measure is to install windows in areas where complaints are high. Finally, plants can be placed throughout the work area since they have proven effective in cleansing the air of toxic contaminants. However, the best strategy is to maintain a fully functioning, well ventilated air maintenance system.

Keep in mind that whenever dealing with potential IAP problems, it is important to first consult with legal counsel. And to summarize, always carefully investigate all complaints and conduct a thorough investigation. Even if employee fears concerning toxic exposure prove to be unfounded, the company can use the investigation's results to demonstrate that it took action to address the problem, and had the employees' best interests at heart.

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