How One School District Decided on a Carpet Policy
Howard Taras, Jack Campana

The school environment represents one of eight components of a coordinated school health program, as defined by the Centers for Disease Control and Prevention. An increased prevalence of asthma among school-aged children, and national efforts to augment asthma management in schools, necessitate a renewed focus on the school environment in many schools and districts.

Health-related information and mechanisms to translate that information into school policy are already in place for a number of environmental issues. For example, ill-effects of second-hand smoke and the influence of adult role modeling on students’ obviates the need for no-smoking policies on school campuses. As a result, almost all school districts have no-smoking policies in school buildings, and more than 82% prohibit smoking on school grounds and off-campus events. Similarly, the prevalence and severity of allergies to cat, dog, and the dander of other animals is well known. School nurses, health educators, and others who work regularly on school sites often can influence their colleagues about the adverse effects classroom pets can have on students and staff. In comparison, flooring policy (and specifically carpeting versus hard flooring) is a school environmental concern significantly less likely to be modified as a result of the direct influence of school health personnel alone.

Research-based information on flooring policy is not as readily available as other issues affecting the school’s indoor air quality. Controversy also surrounds the health ramifications of carpeting. Many health professionals presume that any school district policy that mandates hard floors in favor of carpeted floors is unquestionably preferable. Alternatively, reading materials provided by the Carpeting-Rug Institute argue compellingly that carpeting is equally acceptable, if not preferable, to other flooring options. This organization, which represents carpet manufacturers, suppliers, and the carpet maintenance industry, provides a great deal of useful information on the Internet and elsewhere on this matter. Being a trade organization with financial interest in carpet sales does not necessarily discredit the information provided, yet the selection of data shared with the public by the institute could be prone to some bias.

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STEPS IN POLICY DEVELOPMENT
San Diego (Calif.) City Schools’ health professional and health-administrative staff re-examined a carpeting policy for their schools. The process this district underwent to arrive at a new set of recommendations can be helpful for other school districts.

1. Self-Assessment. A decade-old policy of this school district restricted all wall-to-wall carpeting, with only some very restrictive exceptions. This policy was well-meaning, but not wholly effective. For various reasons, school administrators and staff in most schools across the district brought their own area rugs and wall-to-wall carpeting. Some were donated and others were purchased by principals using site-specific discretionary funds. Carpets were old and poorly maintained. Vacuum schedules were not always established, and vacuuming often served only to recirculate dust and other allergens into the air. No budget or policy was established to regularly launder or replace area rugs.

Some validity supported the reasons given by administrators, teachers, and other school staff for non-compliance with the policy. Preschool, kindergarten, and first grade students often sit on the floor when they learn. They require something other than a cold, hard surface. Many schools were built in the late 1960s and early 1970s when “sof tunnels” were popular. As many as six to eight classrooms were combined into one space without walls, and only neck-high room dividers demarcated one learning area from another. Without carpeting, echoes in those classrooms were deafening. These acoustic reasons were equally valid for many schools’ media centers and libraries. Uncarpeted areas were considered tolerably unaesthetic – a reason less compelling to health staff, but of no less importance to teachers.

In summary, this district’s self-assessment demonstrated a very tight policy with poor compliance, often for valid reasons. The result is an unhealthy environment for students and staff.

2. Carpets as a Health Issue In School: Establishing the Facts. Evidence suggests that organic chemicals and odors exacerbate asthma and allergic symptoms, although the role of the immune system plays in this sensitivity is not well understood. New carpets are the worst culprits for irritation. A more significant and longer lasting problem with carpets is that carpets and rugs harbor dust mites, cockroaches, and other common allergens. “Allergens” are organic compounds that initiate an allergic, human immune response in susceptible persons. Mold, often found under wall-to-wall carpet pads, is not uncommon and is also an important allergen. The pres-
The information above does not bode well for having any carpeting in school, even where there is little choice. However, other studies show that school districts may be able to accommodate those with asthma and allergies, while meeting other needs, like areas where something other than hard-surface flooring is provided. For example, in schools with carpeted classrooms where the carpets have low levels of dust mite allergen, carpets were found to not exacerbate asthma symptoms of school-aged children. This finding demonstrates that it is not carpets per se that are important, but the level of allergenic compounds associated with their presence.

Another important finding is that carpets have varying degrees of allergenic potential. The degree to which carpets harbor allergy-containing dust after vacuuming depends largely on carpet-surface area and presence of fluorocarbon. Fluorocarbon treatment of carpet fibers allows the release and recovery of allergens when vacu-

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**Figure 1**

A District's Policy for Carpeting in Schools

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**General**

1. Recognize the potential problematic health implications of carpeting in schools, particularly in basements and on bare concrete, where moisture and mold are potential problems.
2. Consider carpeting those areas of schools where teachers and administrators are likely to bring in their own areas, rugs, mats, and carpets (e.g., places where students sit on the floor, noisy areas where carpeting is needed to buffer the echo of sound).

**When Carpeting Areas of a School**

1. Clean old carpet before removal and clean the area thoroughly prior to installation of new carpet. (Otherwise the dust and dirt of the old carpet is emitted into the air system and collects onto the new carpet).
2. Assure that only approved carpets with specific properties be allowed into the school district. The following properties (and in this order of importance) are recommended: low pile density in loop carpet, low height, fluorocarbon coating of fibers, high density per filament, and a fiber shape with a low surface area. These properties are associated with increased release and recovery of common allergens when vacuumed.
3. Area rugs and children's mats need to meet the same health standards as wall-to-wall carpeting in schools (as above).
4. For large renovation projects, request that the manufacturer specify the adhesive, offer a warranty for volatile organic compound (VOC) emissions, and test beyond federal standards for a total VOC emission level that is less than 100 mg/m²/hour (measured after 24 hours).
5. Use new, available non-adhesive fastening systems. If adhesive is absolutely necessary, utilize solvent-free, low VOC products.
6. Prevent ventilation elsewhere for several days, when there are VOCs present.
7. Maximize ventilation during installation and isolate the area from the rest of the school (including air circulation).
8. Clean the new carpet prior to opening area to students and staff. Use HEPA filtration vacuum to remove all loose fibers and particles resulting from the installation process.
9. Keep students and staff away from the newly installed carpets as long as possible.
10. Keep carpet away from entrances where toxins track in from the outside and water sources.

**General Maintenance of Carpets**

1. Area rugs and students' mats need to be included with wall-to-wall carpeting as part of the district's maintenance responsibilities.
2. Provide deep, extensive vacuuming at least every other day with High-Efficiency vacuums and HEPA-style filters in order to control contaminant levels in carpets.
3. Ensure adequate, continuous ventilation throughout the carpeted space.
4. Replace wet carpets, rather than try to dry them and preserve (because of mold and mildew residues that cannot be removed).
5. Provide steam-cleaning to carpets regularly.
6. Do not consider use of the acaricide "Benzy1 Benzate" or denaturing agent "Tannin Acid" at this time.
7. Replace carpeting frequently.
The district physician reviewed the most current medical evidence on the effects of flooring on health. The entire group met to discuss drawbacks of the current policy, additional costs of purchasing an acceptable carpet compared to the current district-standard carpet, costs of purchasing high-efficiency vacuum cleaners, personnel and equipment costs of more frequent vacuuming and regular steaming, and of course, health ramifications of carpeted versus hard surface flooring. As these district departments were gathering information and considering policy options, the district administrator and district physician took steps to collaborate with the local community. Two venues were chosen: a meeting with representatives of the local American Lung Association, and a presentation of likely recommendations to an existing community-advocacy committee, whose purpose was to advise on district facility renovations. This approach allowed for exchange of information that enhanced the final recommendations.

CONCLUSIONS

A recommended policy was developed (Figure 1) and brought before the district’s board of education. Through self-assessment and coordination with community stakeholders, an unchallenged consensus was developed on a very controversial issue. In the future, we expect this policy to be enacted. As the policy unfolds into practice, adherence to it will be gauged. Over time, it is likely that more scientific information on various flooring options and health will become available. At some point, a similarly coordinated approach to this same environmental issue may need to be revisited. In the meantime, the district’s health and wellness staff enjoyed another collaborative success for arriving at decisions that affect student health, and we are well positioned to continue to coordinate with the community and other district departments as we seek solutions to other health issues.

References


