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and Early Childhood
Initiatives Center
**Healthy Operation and
Maintenance Strategies
Supplement**

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Healthy
Materials
Lab

“Children are our first priority!”

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OBJECTIVES

Cultivating a Healthier Environment For Children and Staff

With the HWCEC-ECIC's new facility constructed, the maintenance and operations team has the opportunity to set a new standard for children's health in early childhood education. These initiatives can potentially reduce the prevalence of some of the most widespread diseases affecting our community, creating a healthier next generation of future leaders, activists, and innovators.

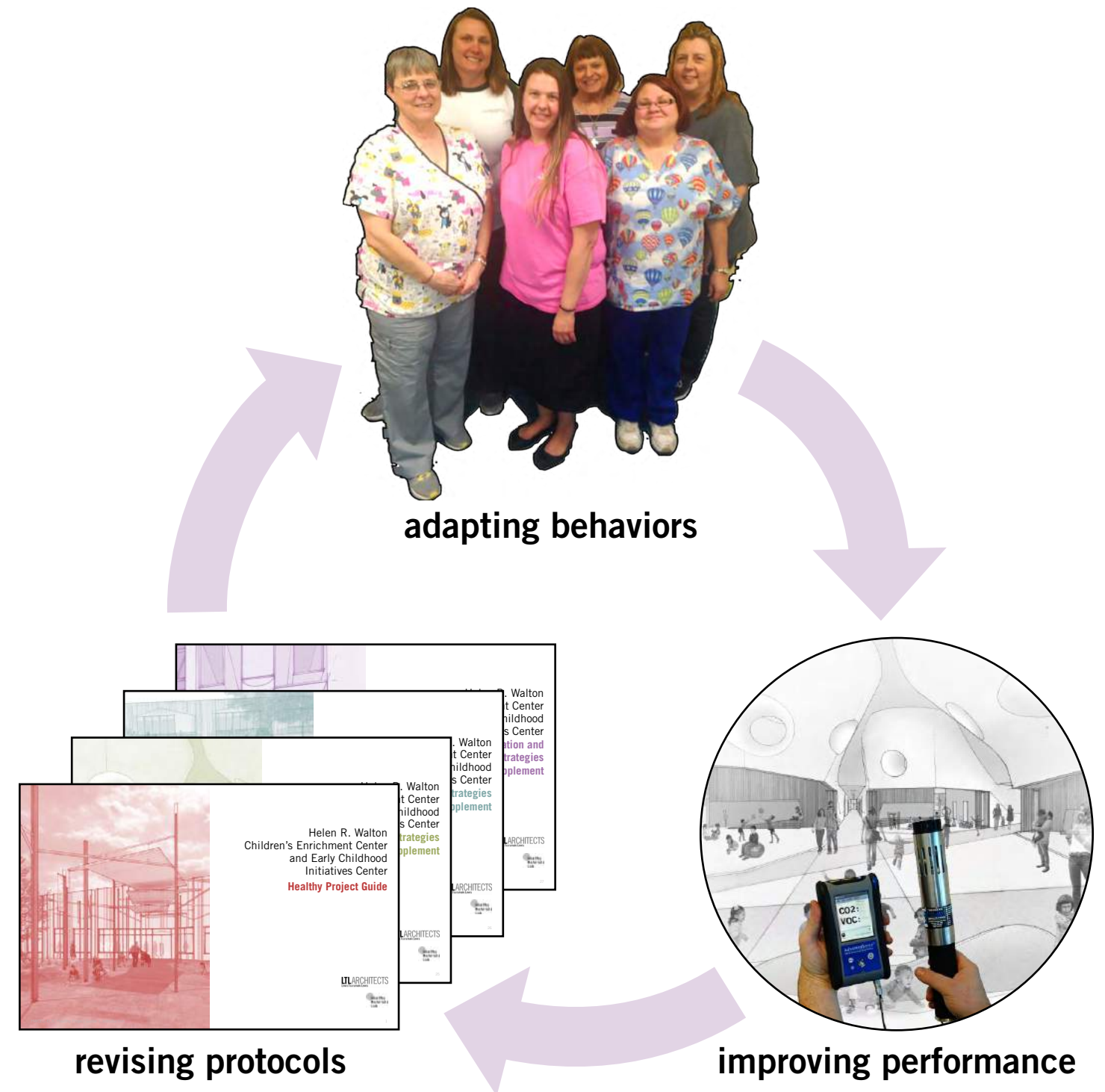
“Our organization stemmed from a love and concern to do what’s right for the children in our community, and it’s reflected in everything we have done in the past, present, and plan to do for the future.”



Continuously Learning and Developing Healthier Early Childhood Practices

While these guides for healthier strategies set a trajectory for improving best practices, they are merely a jumping off point from which we can continuously build upon. In this process, there is no specific benchmark at which to say “we have achieved healthy conditions” as our potential for creating healthier children’s environments is unbounded.

With this progressive adaptation, feedback, and development, we can progressively make strides in elevating early childhood practices, always learning, always improving, always working towards healthier environments with children as our first priority.



Inspiring Healthier Early Childhood Practices Regionally, and Beyond

Building upon the regional impact outlined in the Healthier Project Guide, the practices established at the HWCEC-ECIC go beyond the walls of the building. Here, professionals learn strategies that will reach nearly 40,000 children across Northwest Arkansas, every year.

The extent of this influence can drive the momentum for early childhood education standards, creating real, noticeable improvements on a quantifiable scale. With the breadth of this impact, HWCEC-ECIC has potential to become the prototype that inspires healthier environments for children across our region, state, nation, and beyond.

“It’s not what you gather, but what you scatter, that tells what kind of life you have lived.”

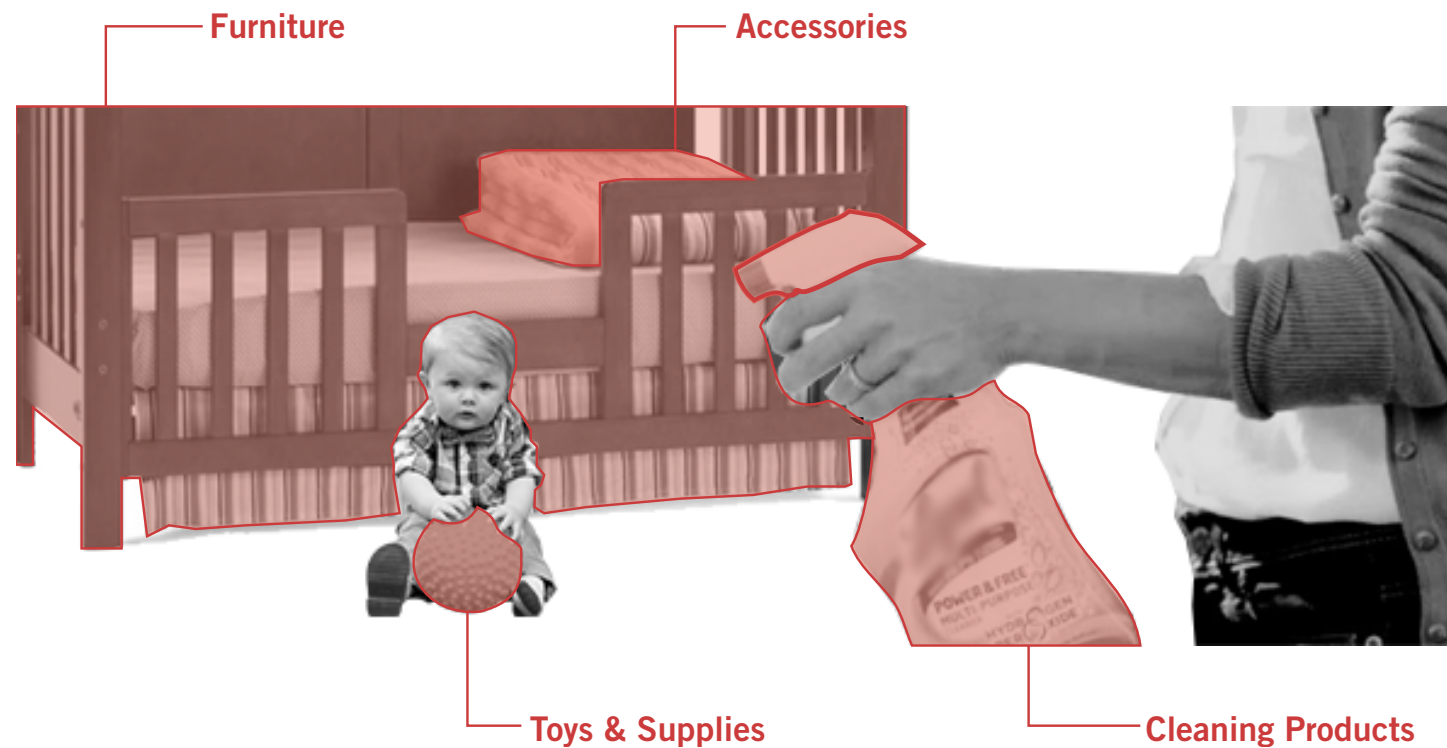
-favorite saying of Helen R. Walton



CHALLENGES

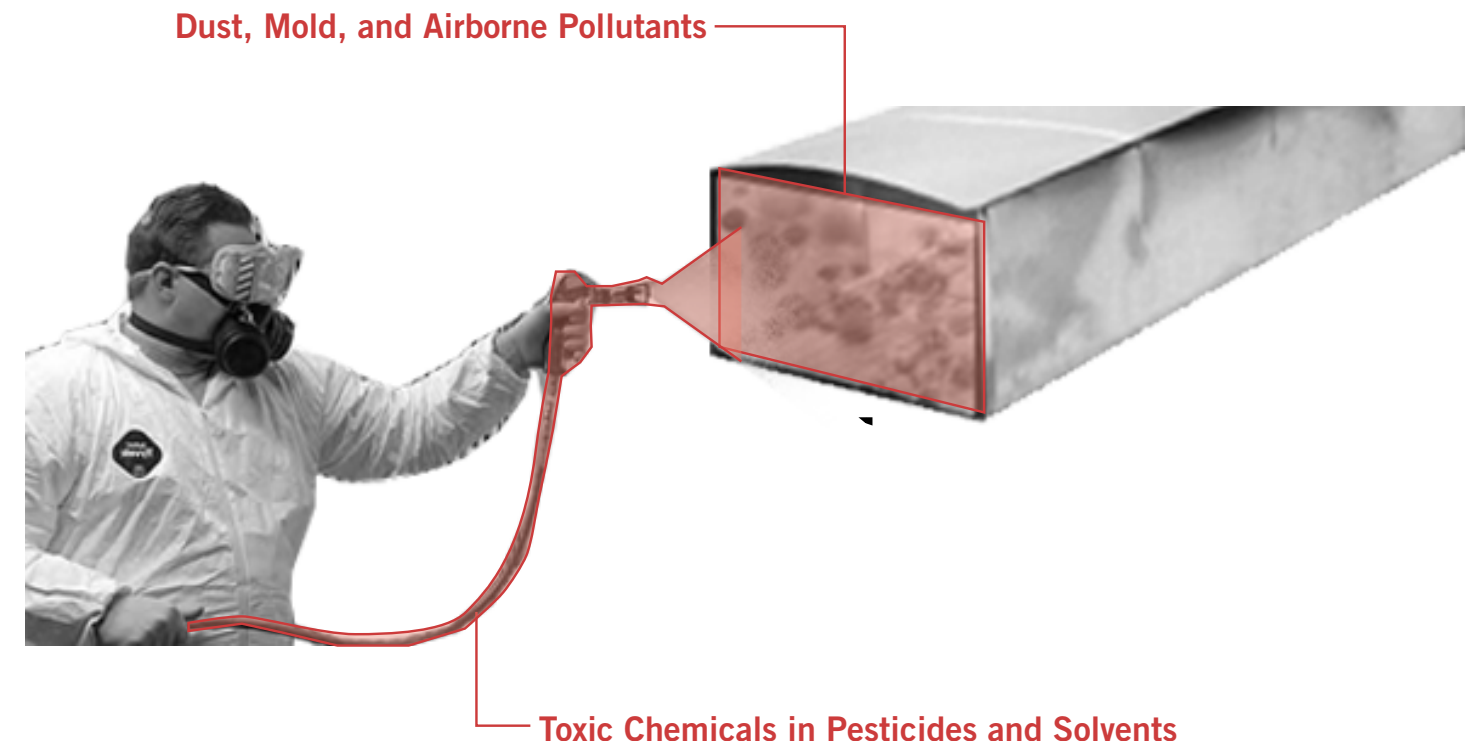
Ongoing Risks Involved with Maintenance and Operation

There are a variety of challenges in preserving environmental health throughout HWCEC-ECIC's maintenance and operation. These difficulties fall into two basic categories:



Avoiding Products That May Contain Harmful Chemicals

Both the **furnishings** brought in at the beginning of operation and the **daily supplies** used for activities and maintenance can contain chemicals that are unhealthy to children. Given the frequency that children interact with these substances, it is important to establish criteria for what products will be brought into HWCEC-ECIC, and create methods for screening and evaluating these materials.



Protecting the Building From Developing Unhealthy Conditions

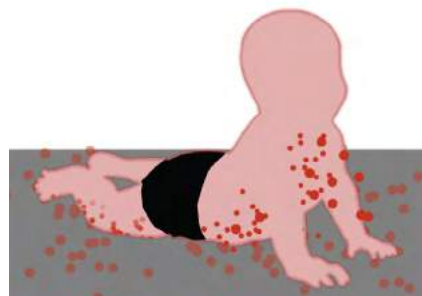
There are a variety of maintenance protocols that are necessary to reduce the risk of unhealthy contaminations from mold, dust, bacteria, and infestation. However, these practices should also be approached with caution because cleaning agents, sanitizers, and pesticides can contain harmful substances themselves.

From the Classroom to the Body

If these kinds of chemicals are used in classrooms or facilities around HWCEC-ECIC, there is a risk that the substances will eventually find their way into children's bodies. Looking at the paths of chemical intake from the *HWCEC-ECIC Healthy Project Guide*, there are several ways in which children can be exposed to dust, fumes, and air pollutants, meaning there are many things used in the surrounding environment that can have an effect on children's health.



Inhalation



Dermal Absorption



Ingestion



Placental Transfer



Breastfeeding



Furnishings and Supplies that often Contain Harmful Chemicals

Furniture:



plastics
BPA and phthalates can be found in many plastics, including PVC, styrene, and polycarbonate¹



wood furniture
wooden cribs, chairs, and other furniture often use high VOC glues and finishes, such as formaldehyde²



cushions & upholstery
mats and upholstered furniture often contain toxic flame retardants in their foam cushions and surface treatments²



rugs and carpeting
synthetic carpets may off-gas perfluorinated compounds, and often contain toxics in protective coatings³

Appliances:



copiers
fumes from copiers are a major contributor of VOCs to indoor air pollution⁴



laminators
thermal laminators can emit toxic fumes in the heating process as they melt adhesives



laser printers
vapors from laser printer inks are another primary source of VOC air pollutants⁴

1. [Plastics & Plastic Toys, Eco-Healthy Child Care](#) 3. [Building Green: Area Rugs](#)
2. [Furniture & Carpets, Eco-Healthy Child Care](#) 4. [Schools and Daycare Guide](#)

School and Office Supplies:



toys
children's toys have historically used phthalates, BPA, and PVC in plastics¹



art supplies
lead, asbestos, and organic solvents can be used in art supply pigments, preservatives, and adhesives⁵



chalkboards and whiteboards
chalkboard dust and whiteboard chemicals contribute to indoor air pollution



food service products
Plastic containers and tin can enamels can contain BPA and phthalates, particularly toxic when heated⁶

Hygiene and Cleaning Products:



cleaning products
cleaning supplies often have strong off-gassing of toxic chemicals, disinfectants are particularly hazardous⁴



soaps and sanitizers
soaps and sanitizers can contain high concentrations of toxic antimicrobials and various airborne toxics⁴



laundry detergents
detergents, fabric softeners, and dryer sheets may have toxic chemicals, particularly in fragrances⁷

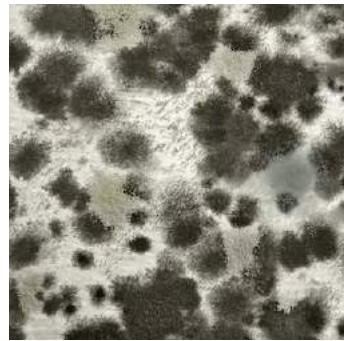


air fresheners
fragrances in scented products of all kinds are very high in VOCs⁷

5. [Art Supplies, Eco-Healthy Child Care](#) 7. [IAQ: Scented Products Emit a Bouquet of VOCs](#)
6. [Caring for Our Children](#)

Maintenance Concerns in Preserving a Healthy Environment

Air Quality, Mold, and Dust



mold
toxic molds can grow in areas that collect moisture, or in humid spaces that are poorly ventilated¹



dust
dust particles affect asthma and other respiratory sensitivities, and can contain toxics from abraded materials



fumes
mechanical equipment and appliances can release fumes that affect respiratory disease and organ function



radon
radon, a radioactive and carcinogenic gas, can leach through soil to infiltrate cracks in basements and foundations²

Pests and Pesticides



pests and insects
rodents and certain insects have been found to trigger asthma, contaminate food, and spread bacteria and disease³



pesticides
all pesticides are potentially harmful, containing poisons that are intended to kill some form of life³



fertilizers
plant fertilizers may contain hazardous pesticides or strong concentrations of chemicals that irritate skin or lungs⁴

1. [Go Green Rating Scale for Early Childhood Settings, Phil Boise](#)
2. [Managing Radon in Schools](#)
3. [Integrated Pest Management: A Curriculum for](#)

Maintenance Protocols



custodial solutions
noxious gases and volatile reactions can result from the mixing of chemical solvents



storage of supplies
disorganized storage can lead to unnoticed spills and toxic contaminations⁴



waste contamination
neglected waste can be a breeding ground for airborne pathogens, and can attract pests and other rodents



periodic maintenance
common upkeep tasks such as the resealing of floors or paint touch ups can lead to exposure if not timed appropriately

Cleaning and Maintenance Supplies



cleaning products
can contain many hazardous chemicals and solvents that have high rates of VOC emissions



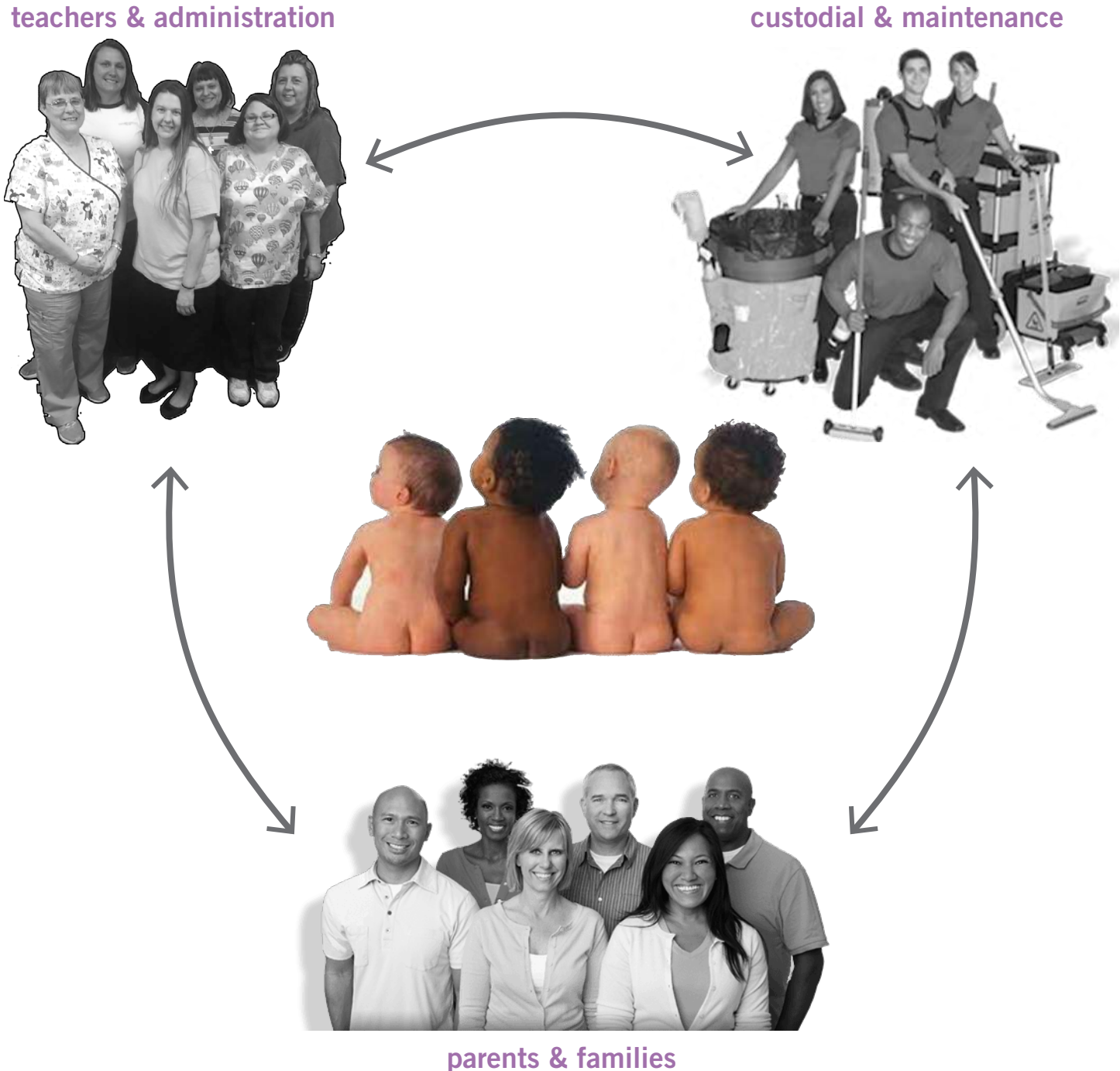
air & water sealants
caulks and sealants may contain BPA, a chemical linked to autism, cancer, hormone disruption, and obesity⁵

4. [CHPS Maintenance & Operations Guide](#)
5. [Children and the Environment, Children's Environmental Health Center](#)

Strategies for Healthier Maintenance and Operations

Ongoing Collaboration Among Faculty, Staff, and Families

The greatest strategy for maintaining a healthy environment lies in the team's network of collaboration and mutual support. With our collective strength and an ongoing open dialogue, we can continue nurturing each other's abilities in advocating for the children. This communal process includes respectfully addressing any challenges that may arise, and as a team, working towards finding healthier solutions so that we can bolster the shared objective of improving children's education and supporting their general wellbeing.



Informing Staff, Disseminating Literature, and Reinforcing Protocols

Training for New Faculty and Staff

How do you make sure new members joining the team are informed of the center's health and toxicity concerns, and that they know the best protocols for addressing these issues?

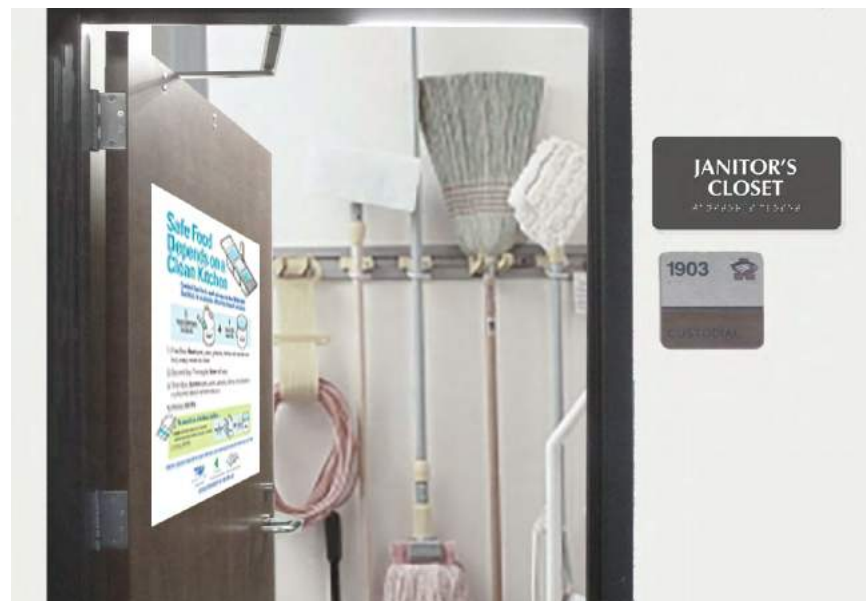
[Children's Environmental Health Workshops](#)



Reminders in Appropriate Locations

It can be useful to strategically post information directly in the areas affected, or the areas where relevant decisions will be made.

[Environmental Working Group's Guides and Literature](#)



Accessible Literature & Practical Information

Remembering all this information can be tricky, so it's helpful to break it down into distinct topics, and provide straightforward and practical instructions for healthier practices.

[Factsheets from Eco-Healthy Child Care](#)



Resources:

More information on strategies for informing staff can be found in the EPA's Reference Guide for Indoor Air Quality in Schools, [Section 3: Effective Communication](#), with additional literature and specific training materials in their [IAQ Tools for Schools Action Kit](#).

Evaluating Materials and Establishing Criteria for Product Certifications

Understanding certification labels can be a valuable skill as we begin sourcing healthier products for HWCEC-ECIC. These seals can indicate any number of material properties, such as recycled content, environmental impact, or energy efficiency, but the ones we are most concerned about for children’s health are those regarding **chemical ingredients** and **VOC emissions**. With these labels, we can begin assessing whether products contain potentially toxic substances, and what their likelihood is for off-gassing these substances into vapors that could be inhaled.

Certifications also come in various degrees of disclosure, performance, and authenticity, so the more we understand their differences, the better our chance is of finding healthier products. For example, some assessment agencies offer **multiple benchmarks** for certification, such as Cradle to Cradle’s Platinum, Gold, Silver, and Bronze rankings. Others, like Declare and HPD-C, require more complete **disclosure of material ingredients** and transparency from manufacturers. It should also be noted that some labels are not actually certifications, which usually meet a defined standard and are **verified by a third party**, but are simply generic claims made by manufacturers, such as “Non-Toxic” or “Low-VOC”. These labels should be treated with cautious skepticism, as it’s not clear if their statements have been confirmed by an unbiased, reputable agency.

Examples of more reliable certification labels can be found in the [Resources](#) section of this supplement, with further descriptions in the Design Institute of San Diego’s article [Green Labels & Certifications](#), and a full database of product seals and standards online in the [EcoLabel Index](#).

Comparing Product Seals

Certifications



example: Cradle-to-Cradle Certified

Certifications show that products have been tested and rated for a given benchmark of performance, or approved for the specific criteria put forth by the evaluating agency. The more reliable certifications are conducted by independent, third-party agencies, which are typically less biased than self-declared claims from manufacturers.

VS.

Declarations



example: Health Product Declaration

Declarations provide product information objectively, without ranking or certifying a given level of performance. These reports may include ingredients lists, hazard screenings, or exposure assessments, and can measure product contents at difference degrees of precision. The ultimate goal of product declarations is for greater transparency throughout the industry, particularly to consumers.

VS.

Labels



example: “antibacterial”

Generic labels may state specific properties, such as “BPA-Free” or “All-Natural”, but are not endorsed by independent agencies or verified for authenticity. These may come in the form of official looking seals, but without a specific organization backing their claims, they should be given less confidence than credible certifications.

Continuing Education Through Environmental Health Networks

Children’s environmental health is emerging as a major global initiative, and there are a variety of tools that have been developed to help you with these goals. You can find more details on these in this supplement’s resources section, but here are a few types of resources you might find beneficial:



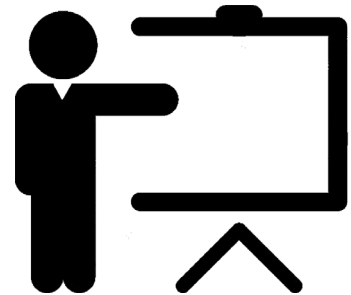
Best Practices Guides

Comprehensive guides can provide detailed recommendations for the best ways to address health hazards specific to early childhood education.

[CHPS Volume IV PDF](#)

[Go Green Handbook](#)

[Caring for Our Children](#)

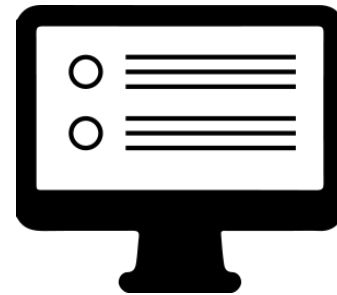


Local and Regional Training Programs

Several children’s health agencies offer free training workshops in facility management that directly target Arkansas’s major health issues

[Children’s Environmental Health \(CEH\) Program](#)

[DHS Child Care & Early Childhood Education](#)



Databases of Product Recommendations

These online directories have collections of different types of health-certified products, as well as rating programs to compare products against each other

[EWG Cleaning Product Evaluations](#)

[Smart Mommy Healthy Baby Product Guide](#)



Retailers and Industry Leaders

Retailers are beginning to join the advocacy for non-toxic materials, and it can be useful for consumers to know which companies require their products to meet healthier criteria

[Wal-Mart](#)

[Ashley Furniture](#)

[Hewlett-Packard](#)



Potential Funding Opportunities

There are also beginning to be funding opportunities that incentivize improving the health of early childhood environments, both in their construction, and in building maintenance protocols

[The Center for Health and Health Care in Schools Grant Database](#)

Bringing Together a Community Committed to Children's Health

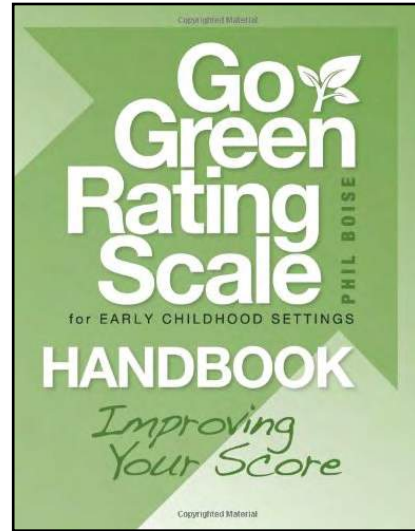
We are at an exciting moment where all the pieces needed to create healthier environments are coming into place. We have an organization rooted in innovative early childhood strategies, a training program dedicated to advancing best practices, a community of passionate and caring families, a network of industry leaders and retailers supporting healthier product standards, a team of designers and contractors collaborating on a new healthier facility, and of course, a region of inspiring young citizens who give us the ambition to reimagine what is possible in early childhood education.

Together, we can take a stand against childhood diseases like Asthma, ADHD, and Autism. Together, we can mitigate children's exposure to chemicals that stunt growth, cause obesity, and impair cognitive development. Together, we can build a community of practitioners that are continuously advancing best practices, improving the health of children throughout Northwest Arkansas, and beyond.



Resources

Guides for Healthier Practices in Early Childhood Education



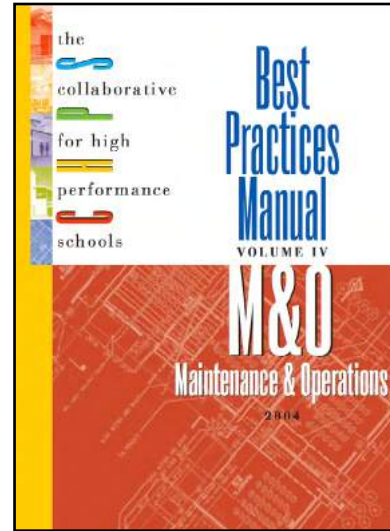
Go Green Rating Scale for Early Childhood Settings Handbook

by Phil Boise

Comprehensive guide to different subjectives concerning sustainability and health in early childhood centers.

Only available in print.

[Online Description](#)

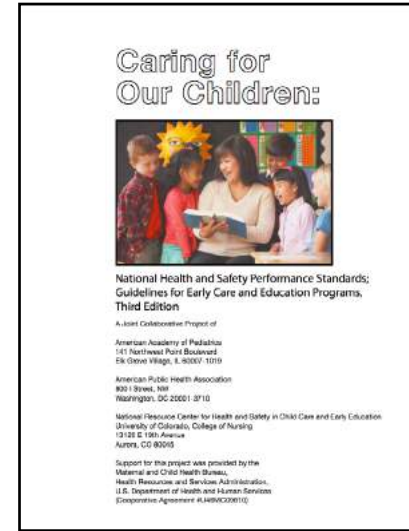


CHPS Best Practices Manuals: Volume IV: Maintenance and Operations of High Performance Schools

Collaborative for High Performance Schools

For school operators to operate their schools as their designers intended and provide optimal health, efficiency, and sustainability.

[CHPS Volume IV PDF](#)



Caring for Our Children: National Health and Safety Performance Standards; Guidelines for Early Care and Education Programs

A comprehensive (600 page) best practices guide for improving children's health in early childhood education centers, covering facilities, training, nutrition, staffing, furnishings, etc.

[Online Edition](#)

[Full Text PDF](#)



Integrated Pest Management: A Curriculum for Early Care and Education Programs

UCSF California Childcare Health Program

This toolkit presents practical information about using integrated pest management (IPM) to prevent and manage pest problems in early care and education programs.

[Toolkit PDF](#)

Sources and Tools for Finding Healthier Products, Furniture, and Supplies

Furnishings



Cradle to Cradle Material Health Certificate Registry
by Cradle to Cradle
[product database](#)

Declare Product Database
by International Living Future Institute
[product database](#)

CHPS Product Database
by Collaborative for High Performance Schools
[product database](#)

Supplies



UL's Sustainable Product Guide
by UL Environment
Large database of all products with EcoLogo, GreenGuard, and emissions certifications, which pertain to furniture, appliances, office equipment, and other consumer products.
[product database](#)

ACMI Certified Art Supplies
by The Art and Creative Materials Institute, Inc.
[product database](#)

Baby



Safe Product Finder
by Healthy Babies Bright Futures
Clear side-by-side comparisons and brand recommendations for various nursery furnishings and baby products.
[Safe Product Finder](#)

Smart Mommy Healthy Baby
Non-toxic, eco-friendly, natural and organic products for mothers and babies.
[Healthy Baby Product Guide](#)

Cleaning



Healthy Cleaning Product Guide
by Environmental Working Group
Guide for consumers to understand the hazards, labels, and certifications for different kinds of cleaning products, as well as database of hundreds of products with clearing ratings (A,B,C, D, F) for the health properties of each product.
[Cleaning Product Evaluation Database](#)

GreenSeal Product Database
by Green Seal
[product database](#)

Health Certifications and Product Labels

Furnishings & Appliances

CradletoCradle
Comprehensive, multi-attribute certification program (bronze-platinum) that evaluates both toxicity and risk of exposure
[Cradle to Cradle](#)

Declare
Similar to food nutrition labels, Declare lists all chemicals in a product, and says Red-List Free if it avoids 20 high-priority hazards
[Declare](#)

GreenScreen
Evaluation program that assesses product chemicals for health hazards and provides Benchmark Scores (1:Avoid - 4:Prefer)
[GreenScreen Overview](#)

BIFMA Level 3
BIFMA's level certification is a multi-attribute certification for furniture, with the level 3 tier meeting higher health standards
[BIFMA level overview](#)

SCS certified
SCS provides various certifications pertaining to material emissions, indoor air quality, and chemical content
[SCS Certifications](#)



Plastics

#1 – PETE or PET
Light plastic, not known to leach harmful chemicals, but it is best to avoid heating and freezing.¹

#2 - HDPE
Heavier, usually opaque plastic, not known to leach harmful chemicals.²

#3 – V or PVC (Vinyl)
Main ingredient, Vinyl Chloride, is known to cause cancer, and maybe also contain phthalates.³

#4 – LDPE
Light plastic used for shopping bags, not known to leach harmful chemicals.²

#5 – PP (Polypropylene)
Not considered as safe as #2, but not known to leach any harmful chemical toxins.²

#6 – PS (Polystyrene)
Polystyrene can leach toxins into foods, and is suspected to cause cancer.¹

#7 – Other, Miscellaneous
Main type is polycarbonate, which is made from BPA, a known endocrine (hormone) disruptor.¹



- Preferred Product Symbol
- Precautionary Symbol to Avoid

Cleaning Products

Green Seal
Certifies various consumer products for health and environmental properties and material transparency
[Green Seal Standards & Products](#)

EcoLogo
Multi-Attribute certifications for some or all of the following: materials; energy; health and environment; performance, etc.
[ECOLOGO Product Certification](#)

AISE Charter
The Charter for Sustainable Cleaning is a European-based initiative for healthier cleaning products and protocols
[The A.I.S.E. Charter](#)

Antibacterial
Sterilizers and disinfectants should be screened for containing hazardous antimicrobial chemicals like triclosan
[EPA Triclosan Facts](#)

Pesticide
There is no single warning label for pesticides, so products labels should be screened for insecticide, herbicide, etc.
[Integrated Pest Management](#)



Toys & Art Supplies

ASTM
ASTM defines regulations for toys and various consumer products, and while toys don't require a stamp, ASTM is a good indicator
[ASTM Toy Safety Requirements](#)

ACMI AP
The Art and Creative Materials Institute, Inc. evaluates materials for toxicological content and certifies Approved Products (AP)
[ACMI Seals](#)

GreenGuard
Certifications that limit VOCs and chemical emissions to standard levels (GreenGuard) and stricter requirements (GreenGuard GOLD)
[GreenGuard Certifications](#)

ACMI CL
Materials that have been evaluated to be appropriate only for adults due to toxicity are stamped Cautionary Labeling (CL)
[ACMI Seals](#)



References:

- [Guide to Plastic Recycling Symbols](#)
- [Toxic Talk: How to Choose Safe Plastics](#)
- [Healthy Child Healthy World: PVC](#)

Additional Resources:

[Ecolabel Index](#) - database of seals & labels

Literature & Training Materials from Children's Env. Health Organizations



Healthy Babies Bright Futures (HBBF)

A network of organizations collaborating on initiatives that reduce exposures to neurotoxic chemicals in the first thousand days of development

[HBBF Homepage](#)
[Safe Product Finder](#)



Children's Environmental Health Network (CEHN)

A national multi-disciplinary organization whose mission is to protect the developing child from environmental health hazards and promote a healthier environment.

[CEHN Homepage](#)



National Institute of Environmental Health Sciences (NIEHS)

A division of the National Institute of Health directed at discovering how the environment affects people in order to promote healthier lives.

[NIEHS Homepage](#)
[Environmental Health Topics](#)



Eco-Healthy Child Care (EHCC)

Children's Environmental Health Network (CEHN)

16 single-page guides (furniture, art supplies, air quality, etc.) providing hazard info, maintenance protocols, and product recommendations

[EHCC Factsheets \(PDFs\)](#)



US Environmental Protection Agency (EPA), Office of Children's Health Protection (OCHP)

National agency directed at children's health and environmental sources of exposure.

[Protecting Children's Environmental Health](#)

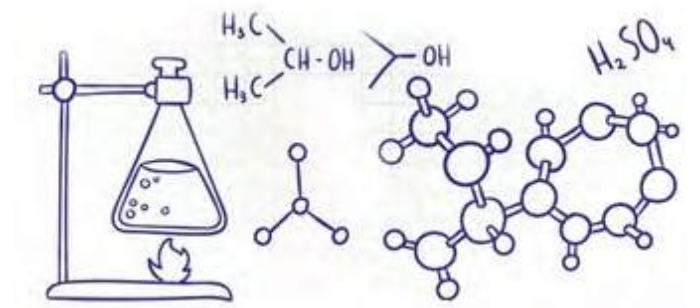


Building a Healthy Start, Professional Development for Caregivers of Infants & Toddlers

Six best practice training modules from the Alabama Department of Public Health

[Env. Health Module Description](#)
[Course Training Materials](#)
[Training Guide \(PDF\)](#)

Articles on Health Hazards, Toxic Chemicals, and Evaluating Materials



Environmental Health in Early Childhood Settings



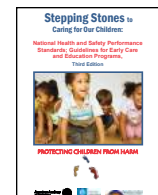
Easy Steps to Healthy Schools & Daycares
Healthy Child Healthy World
[Easy Steps PDF Guide](#)



Children & the Environment
Children's Environmental Health Center
[Report \(PDF\)](#)



Reducing Environmental Exposures in Child Care
ELI + CEHN
[Report Guide \(PDF\)](#)



Stepping Stones to Caring for Our Children
Third Edition
[Standards and Guidelines](#)

Asthma Specific Environmental Health Publications



Healthy Environments... Substances Linked to Asthma
Perkins+Will, NIH
[Report \(PDF\)](#)



Managing Asthma in the School Environment
US EPA
[Report \(PDF\)](#)



Asthmagens in Building Materials
Health Building Network
[Report \(PDF\)](#)

Consumer Articles and Reports on Products, Materials, and Toxicity



Trouble in Toyland: The 30th Annual Survey of Toy Safety
U.S. PIRG Education Fund
[Report PDF](#)



Walmart 2016 Global Responsibility Report
Walmart
[Report \(PDF\)](#)



What Stinks? Toxic Phthalates in Your Home
Environmental Health Strategy
[Report \(PDF\)](#)

The Sciences Behind Chemicals, Toxicity, and Materials



Toxic Chemicals in Building Materials Fact Sheet
Healthy Building Network
[Toxic Chemicals Factsheet](#)



Six Classes: A Webinar Series on Chemicals of Concern
Green Science Policy Institute
[Six Classes Topics](#)



Better Building Materials
U.S. Green Building Council
[Better Building Materials \(PDF\)](#)



Protecting Children's Health for a Lifetime
NIEHS/EPA
[Report \(PDF\)](#)

Local Partners and Contacts for Children's Health Initiatives

Regional Training Programs and Events

The Best Care

The Best Care training meets the professional development needs of Arkansas' early childhood professionals by providing 10 hours of verified face-to-face training annually through Traveling Arkansas Professional Pathways (TAPP). The areas of emphasis include child development, health, nutrition, and resource management.

[The Best Care 2016 Training Topics](#)

The Circuit Rider Initiative

A division of the EPA's Region 6 Children's Environmental Health Program: Protecting Children Where They Live, Learn, and Play

41 one-on-one training programs with officials, schools, and the general public on children's environmental health with priority outreach for small towns and rural communities.

[Fourth Annual Program Highlights Report \(PDF\)](#)

Healthy Child Care Arkansas

A team of health professionals from the University of Arkansas for Medical Sciences (UAMS) which aims to improve the quality of children's health in early child care settings by training children's health professionals in the overall well-being of children.

[Healthy Child Care Arkansas](#)

Local Organizations, Agencies, and Contacts

Arkansas Early Childhood Commission (AECC)

[AECC Website and Contact Information](#)

Arkansas Statewide Health Initiatives

Arkansas Center for Health Improvement (ACHI)

Descriptions of all health initiatives throughout the state, local organizations, and participating communities.

[ACHI Statewide Health Initiatives \(PDF\)](#)

Better Beginnings

Arkansas Department of Human Services: Division of Child Care and Early Childhood Education

[Better Beginnings Website](#)

DHS Division of Child Care & Early Childhood Education (DCCECE)

Arkansas Department of Human Services (DHS)

[DCCECE Website](#)

Southwest Center for Pediatric Environmental Health (SWCPEH)

A network of experts in children's environmental health aimed at reducing environmental health threats to children, improving access to expertise in pediatric environmental medicine, and strengthening public health prevention capacity.

[SWCPEH Homepage](#)