



Welcome!

A Comprehensive Approach to Healthy and Sustainable School Environments

Presented by EPA's Indoor Environments Division,
Healthy Indoor Environments in Schools



Goal of the Session

To share a proven framework for building and sustaining comprehensive school environmental health management programs.



Learning Objectives

- Gain technical knowledge, tools and resources to help you create a green and healthy school environment.
- Discover a framework for building and sustaining environmental health management programs in schools.
- Learn how effective IAQ management programs can increase attendance and lower costs.
- Identify strategies for securing funding and administrative and community buy-in.
- Explore the resources available through the National Schools Network and learn how to join.



Introductions

- Stacy Murphy, U.S. EPA Region 6
- Frank Di Nella, Keller Independent School District, Keller, TX
- Diane Rhodes, North East Independent School District, San Antonio, TX



We Want to Hear From You!

Who's in the room?

- ✓ Architects/Engineers
- ✓ Building Managers
- ✓ School District Representatives (e.g., administrators, teachers)
- ✓ Other



We Want to Hear From You!

What do you think makes a school facility green and healthy?



We Want to Hear From You!

What characteristics come to mind?



We Want to Hear From You!

What do you hope to gain from
this session?



Action Planning





Creating Green and Healthy Schools

The What, The Why and The How



Creating Green and Healthy Schools

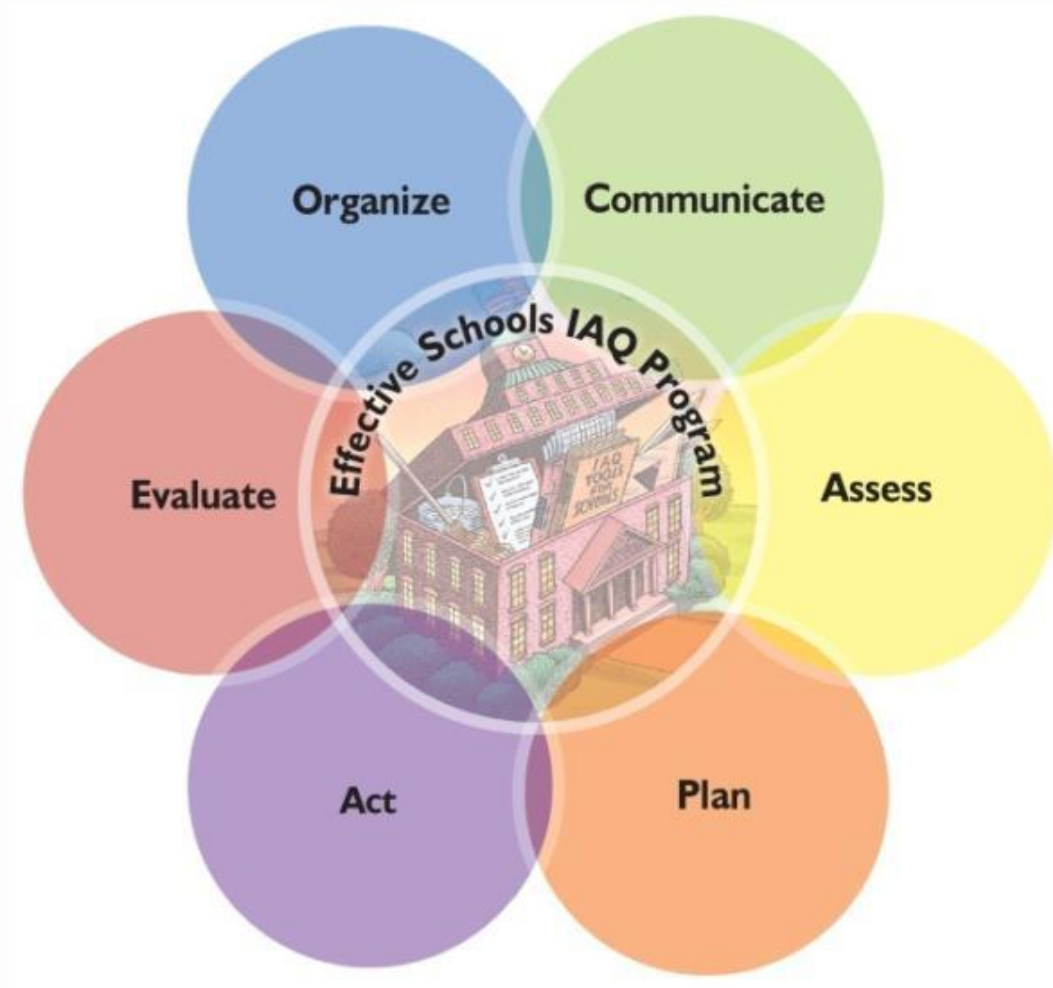
“When it comes to greening a district, there is something in it for everyone. This value equation is commonly referred to as the triple bottom line – a truly sustainable solution that integrates people, planet and prosperity.”

– August 2010 *The School Administrator* article,
“The Road to a Green District”

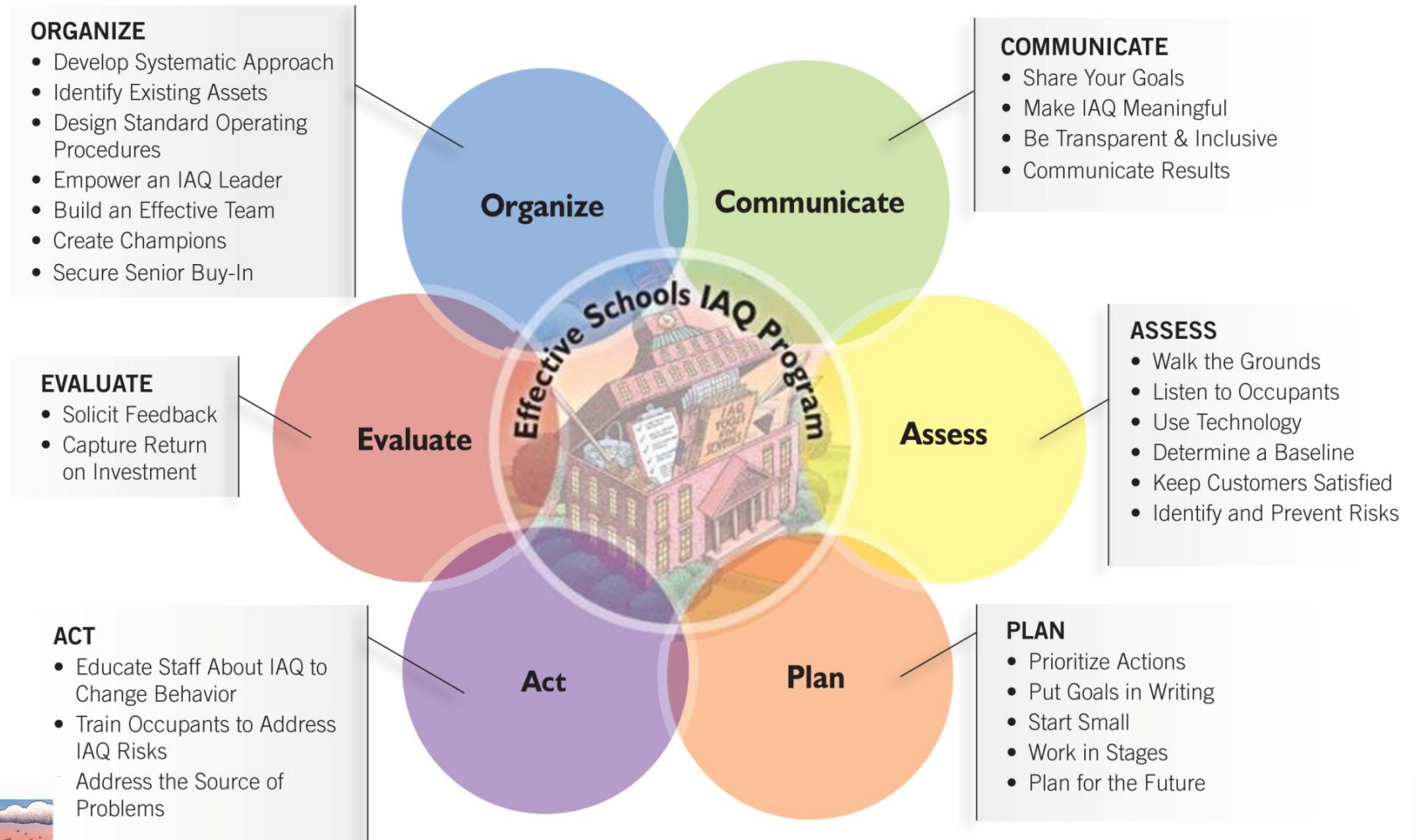


Creating Green and Healthy Schools

The Framework for Effective School IAQ Management: Key Drivers



The Framework for Effective School IAQ Management: Key Drivers



The Framework for Effective School IAQ Management: Technical Solutions

ACTION KIT

- ★ HVAC
- ★ Moisture/Mold
- ★ IPM
- ★ Cleaning & Maintenance
- ★ Materials Selection
- ★ Source Control



The Framework for Effective School IEQ Management:

Six Technical Solutions

Quality HVAC

- Inspect HVAC systems regularly
- Establish a maintenance plan
- Change filters regularly and ensure condensate pans are draining
- Provide outdoor air ventilation according to ASHRAE Standard or local code
- Clean air supply diffusers, return registers, and outside air intakes
- Keep unit ventilators clear of books, papers, and other items

Control of Moisture/Mold

- Conduct routine moisture inspections
- Establish mold prevention and remediation plan
- Maintain indoor humidity levels between 30% and 60%
- Address moisture problems promptly
- Dry wet areas within 24-48 hours

Strong Integrated Pest Management (IPM)

- Inspect and monitor for pests
- Establish an IPM plan
- Use spot treatments and baits
- Communicate with occupants prior to pesticide use
- Mark indoor and outdoor areas treated with pesticides



Effective Cleaning & Maintenance

- Conduct routine inspections of school environment
- Develop a preventative maintenance plan
- Train cleaning/maintenance staff on protocols
- Ensure material safety data sheets (MSDS) are available to staff
- Clean and remove dust with damp cloth
- Vacuum using high-efficiency filters

Smart Materials Selection

- Maintain products inventory
- Develop low-emitting products purchasing and use policies
- Use only formaldehyde-free materials
- Use only low-toxicity and low-emitting paint
- Select products based on product rating systems
- Use least toxic cleaners possible (only those approved by the district)

Aggressive Source Control

- Conduct regular building walkthrough inspections
- Test for radon; mitigate if necessary
- Implement a hazardous materials plan (use, label, storage and disposal)
- Establish a school chemical management and inventory plan
- Implement Smoke-Free policies
- Establish an anti-idling school bus policy
- Use walk-off mats at building entrances
- Conduct pollutant-releasing activities when school is unoccupied

Creating Green and Healthy Schools

The Framework for Effective School IAQ Management



The *IAQ Tools* for Schools Action Kit



Indoor Air Quality (IAQ)



<http://epa.gov/iaq/schools/actionkit.html>



Indoor Air Quality (IAQ)

The Framework in Action: IAQ Results

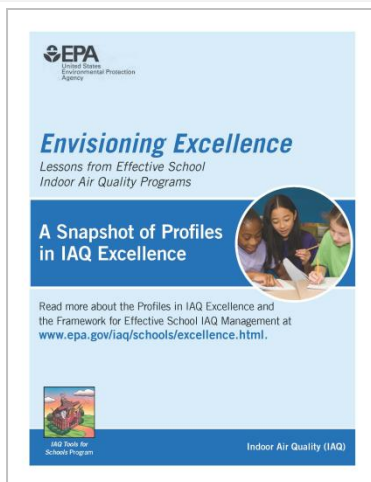
School District	Successes
<i>Baltimore County Public Schools, Maryland</i>	✓ Reduced average expenditures on mold remediation from \$513,000 to \$150,000 in one year.
<i>Blue Valley School District, Kansas</i>	✓ Rise in test scores every year since program began (highest ACT scores in the state; four of the six top-ranked schools in the state are in BVSD).
<i>The School Board of Broward County, Florida</i>	✓ Achieved a 50-percent decrease in IAQ complaints, and continues to observe a steady decline.
<i>Charlotte-Mecklenburg Schools, North Carolina</i>	✓ Early identification and prompt response to IAQ concerns have reduced response costs: items costing \$150,000+ in the past are safely handled for less than \$10,000 today.
<i>Hartford Public Schools, Connecticut</i>	✓ Decrease in asthma visits to school health rooms over the initial three years of systematic data collection.
<i>Katy Independent School District, Texas</i>	✓ Walkthrough assessments of all schools show continuous improvement from baseline.
<i>Newark Public Schools, New Jersey</i>	✓ Observed decrease in missed school days since IAQ program implementation and asthma-friendly policy changes.
<i>West Carrollton School District, Ohio</i>	✓ Increased voter support: converted a fixed-term levy to a permanent one to provide guaranteed funds for capital improvements and operations.



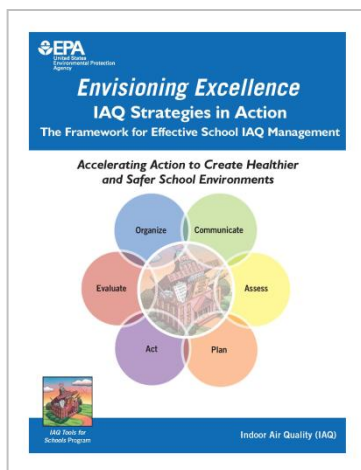
The Framework in Action: IAQ Results

Read more at the *IAQ Tools for Schools* Case Studies website:

<http://epa.gov/iaq/schools/casestudies.html>



Envisioning Excellence: Lessons from Effective School Indoor Air Quality Programs — A Snapshot of Profiles in IAQ Excellence



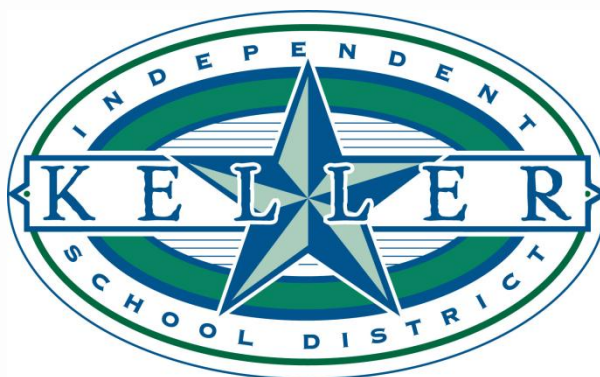
Envisioning Excellence: IAQ Strategies in Action — The Framework for Effective School IAQ Management





Healthy Schools

Keller ISD's Focus on Environmental Quality



Keller ISD at a Glance

- Serves 9 Communities
- 33,000 Students
- 3,500 Employees
- 2,100 Teachers
- 39 Campuses and 4 Additional Facilities
- Fast Growth District – 18 New Campuses in the previous 10 Years

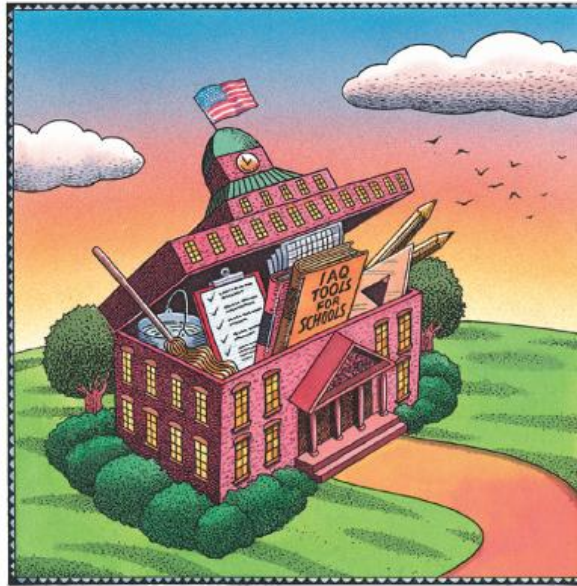


IAQ Tools for Schools



Why *IAQ Tools for Schools*?

Indoor Air Quality



Tools for Schools



Sobering Statistics

- 50% of all illness is caused or aggravated by poor IAQ
- About 20% of all schools have problems linked to IAQ
- Children in the U.S. miss more than 10.5 million days each year because of asthma due to poor IAQ
- Average productivity loss due to poor IAQ is between 3 – 7%
- 80% of parents believe that poor IAQ can have a direct negative effect on a student's academic performance
- IAQ is consistently ranked as a top five environmental risk to public health:
 - Impacts student and teacher attendance and performance
 - Can strain relationships among school administration, parents and staff
 - Can create negative publicity and be a liability



National Studies

- Improved health translates into an enhanced educational experience for students
 - 70% reported that students perform better and have fewer absences in green schools
 - Related studies show improved standardized test scores and other educational markers



Attendance vs. Performance

Campus	Rating	Att.
Keller-Harvel ES	R	97.3
Bear Creek IS	E	97.3
Florence ES	E	97.2
Shady Grove ES	E	97.2
Liberty ES	E	97.2
Timberview MS		97.1
Hidden Lakes ES	E	97.1
Keller MS	E	97.0
Heritage ES		97.0
Willis Lane ES	E	97.0
Park Glen ES	E	96.9
South Keller IS	R	96.9
Independence ES	R	96.9
Lone Star ES	E	96.8
Bette Perot ES	E	96.8
Woodland Springs ES		96.8
Parkview ES	R	96.7
Parkwood Hill IS	R	96.7
Eagle Ridge ES	E	96.7

Campus	Rating	Att.
Indian Springs MS	R	96.5
Chisholm Trial IS	R	96.5
Trinity Meadows IS	R	96.5
Basswood ES		96.5
Hillwood MS	R	96.4
Trinity Springs MS		96.4
Bluebonnet ES	R	96.4
Freedom ES	R	96.4
Whitley Road	R	95.7
Friendship ES		96.3
Fossil Hill MS	R	96.0
Caprock ES		95.9
North Riverside ES		95.8
Keller HS	R	95.6
Central HS		95.2
Timber Creek HS		95.2
Fossil Ridge HS		93.2
Keller ELC		92.7



Results over Three Years

- **Increase in test scores**
 - 14.8% increase in state assessment scores
- **Increase in scholarships offered**
 - 68.4% increase
- **Reduce cost of operating facilities**
 - 008% decrease in operating cost per square foot



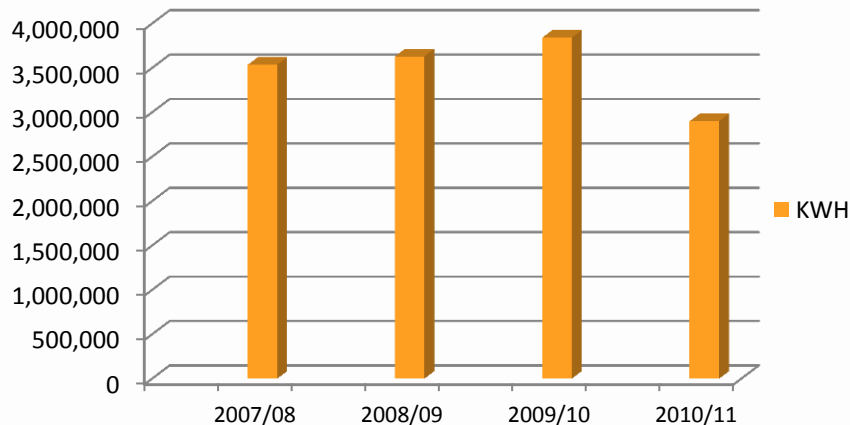
The Culture Changes

- **Cross Functional IAQ Team's Impact**
 - All department heads exposed to IAQ program benefits
 - Core of the business, educational excellence
- **Business Functions Focused on Educational Excellence**
 - Functions become part of the educational system
- **Board Includes Green Initiatives in 5 Year Strategic Plan**
 - Buy-in at the highest level
 - IAQ becomes over-arching umbrella for all “green initiatives”
- **Test Scores Increase Annually**
 - Widespread improvement across the district
 - Publicize, publicize, publicize!
- **Spending Patterns Change**
 - Departments seek cost effective “green solutions”

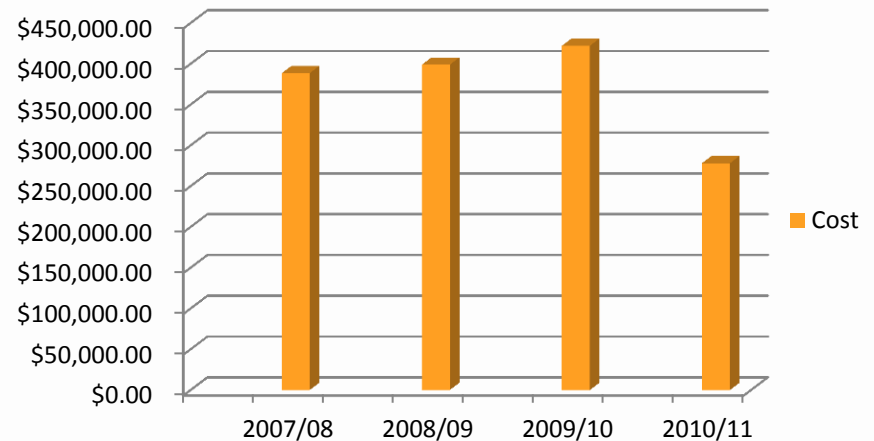


Energy Savings

KWH



Cost



Energy Management

- Last out Lights Out
- Remove Personal Appliances
- HVAC Control Upgrades
- Lighting Retrofits



Actual Measures

Test Scores Increase

2005	2006	2007	2008	2009	2010	% INC
75	79	82	85	87	88	14.8%

Scholarships Increase (in millions)

2005	2006	2007	2008	2009	2010	% INC
\$12.7	\$16.9	\$24.3	\$30.7	\$37.2	\$40.2	68.4%

Enrollment Increase

2005	2006	2007	2008	2009	2010	% INC
23756	25873	27905	29458	30299	31569	32.9%

Reduced Cost per sq ft (Operations)

2005	2006	2007	2008	2009	2010	% DEC
NA	\$.234	\$.243	\$.227	\$.232	\$.232	.008%



Board Policy

COMMITMENT	In alignment with its core documents, the District commits to providing a healthy and safe environment for students, faculty, staff, and visitors. In addition, the District has determined that environmentally responsible practices can lead to financial efficiencies.
ENVIRONMENTAL STEWARDSHIP	<p>The District shall practice environmental stewardship by:</p> <ul style="list-style-type: none">• Implementing responsible environmental processes;• Increasing awareness and engagement in sound environmental policies and procedures amongst staff, students, partners, and vendors;• Promoting practices consistent with environmental protection, both within and outside the District, to model societal responsibility;• Conducting continual improvement assessments and making data-driven decisions to minimize the impact of District facilities and operations on the environment;• Participating in local, regional, and national initiatives to improve the quality of the environment; and• Researching, developing, and integrating best practices to build capacity and expertise that ensure environmental sustainability.
RESPONSIBILITIES	The Superintendent or designee shall oversee the implementation of this policy through a comprehensive environmental stewardship plan including measurable goals, periodic evaluations, and analysis of performance against industry leaders inside and outside of education.

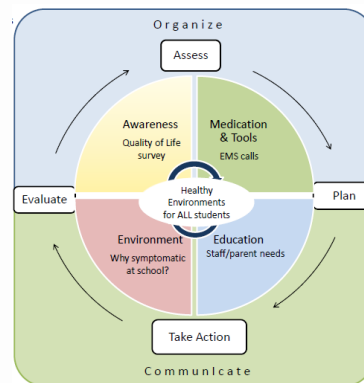




A Comprehensive Approach to Healthy and Sustainable School Environments

Leading by Example

Diane Rhodes, BBA, RRT, AE-C, RCP
North East Independent School District





North East Independent School District

8961 Tesoro Drive San Antonio, Texas 78217 (210) 407-0000 www.neisd.net

District Profile

Student Statistics*

Infant Program	19
Early Childhood	283
Grades PK-5	31,345
Grades 6-8	15,339
Grades 9-12	20,375
Total Enrollment	67,361

Student Demographics*

African American	7.0%
Asian	3.5%
Hispanic	55.1%
Native American	0.3%
Pacific Islander	0.2%
Two or more	2.7%
White	31.1%
Free/Reduced Lunch	44.40%

*Student enrollment information as of November 16, 2011.

Campuses

Elementary	44
Middle	13
High	8
Total	65
Alternative Schools	8

Magnet Programs

Castle Hills Elementary School
 Krueger School of Applied Technologies
 Interactive Media Applications at Krueger
 Agriscience Magnet Program
 Automotive Technology Academy
 Design and Technology Academy
 Electrical Systems Technology
 Engineering & Technologies Academy
 International School of the Americas
 North East School of the Arts
 RAM Academy (Science, Technology, Engineering and Mathematics)

Achievement Statistics

Number of Actual Graduates in 2012	4,150
2012 graduates continuing education	91.64%**
2012 Military Academy Appointments	14
2012 Scholarship offers (in millions)	\$68.95
2012 Honor Graduates	1,999
2012 Summa Cum Laude Graduates (100 avg.)	657
Reading and Math SAT score (2010-2011)	1021***
Writing SAT score (2010-2011)	487
2011-2012 National Merit Finalists	11
2011-2012 National Merit Semifinalists	12
2011-2012 Commended Scholars	58
2011-2012 National Hispanic Scholars	78
2011-2012 National Achievement Scholars	4

** Percentage of seniors from the class of 2012 planning to continue their education at a two-year or four-year college, trade, technical or business school/institution

*** Combined score exceeds state and national averages; SAT Writing test not included in Reading and Math SAT averages.

Campus Ratings

	2011	2010	2009	2008	2007
Exemplary	16	25	28	19	9
Recognized	24	30	25	28	28
Acceptable	25	8	10	15	23
Unacceptable	0	0	0	0	0

Employees (FTE)

Total Teachers	4,299
Total Employees	8,417

Administrative Cost Ratio

(for districts over 10,000 students)

NEISD 5.14%

State Standard 11.05%



2006 – Topics on the horizon for ISD

Evaluation Measures



Higher
Academic
Standards

No Child
Left Behind



Close
Gaps

Equity



Funding Revenues

Frozen
Target
Revenue



Funding Cliff

Margins tax

Anticipate
State funding
shortfall



The Perfect Storm was brewing....

STUDENT ATTENDANCE

Texas public schools receive state funding based on student attendance, not enrollment. Here are some local examples.



Source: Texas Education Agency, school districts

MONTE BACHimbach@express-news.net

Asthma Remains a Serious Health Risk in the US

23 million Americans suffer from Asthma
7 million children

10.5 million school days missed annually

Every day in America approximately ...

78,000 people miss school or work due to asthma

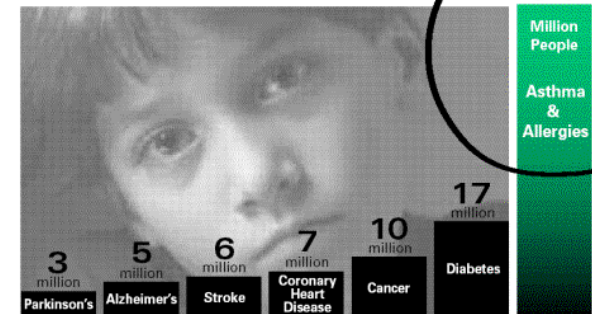
35,000 people have an asthma attack

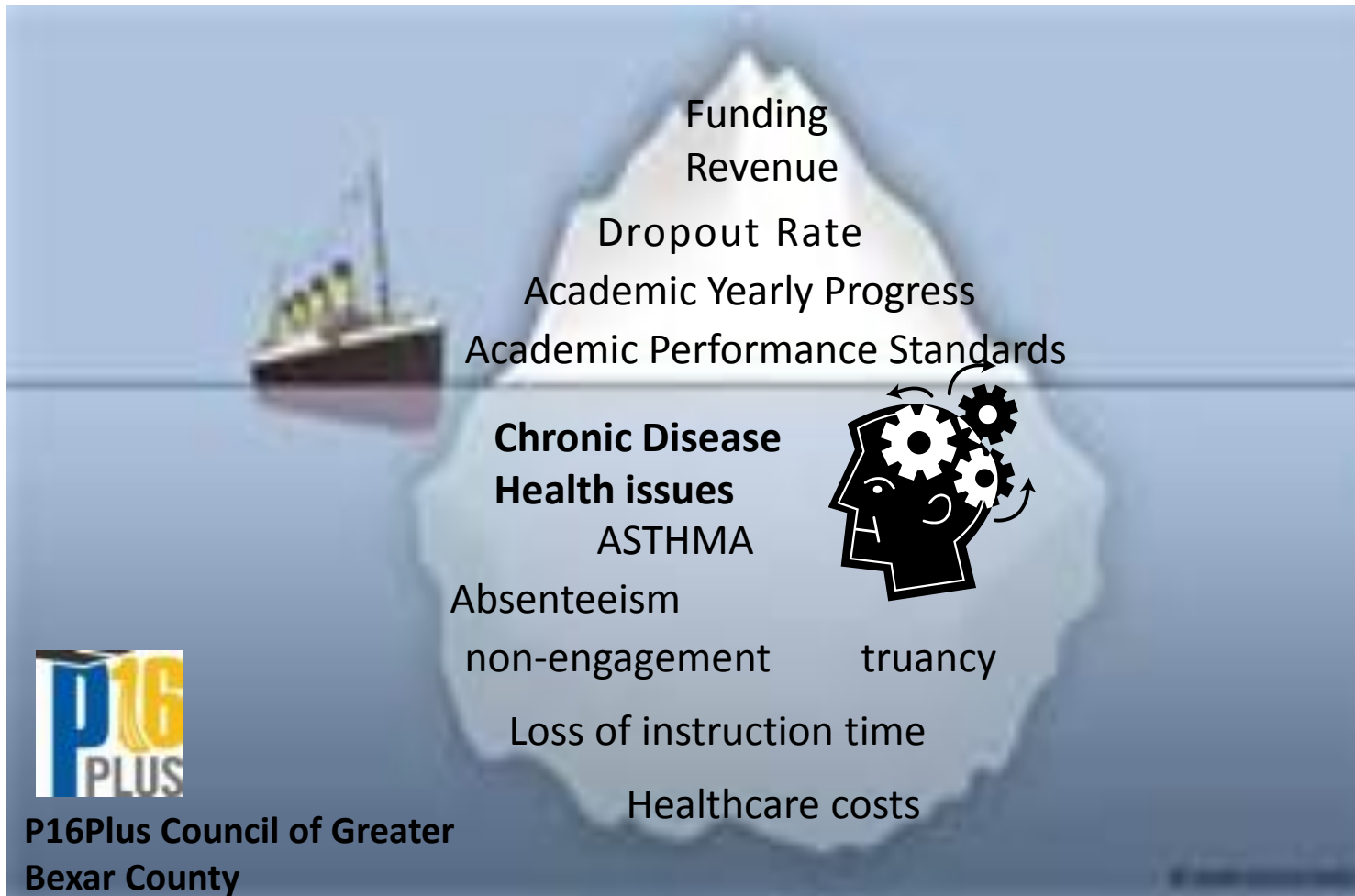
5,000 people visit the emergency room due to asthma

1,200 people are admitted to the hospital due to asthma

10 people ***die*** from ***asthma***

Asthma and allergies
strike 1 out of 4 Americans

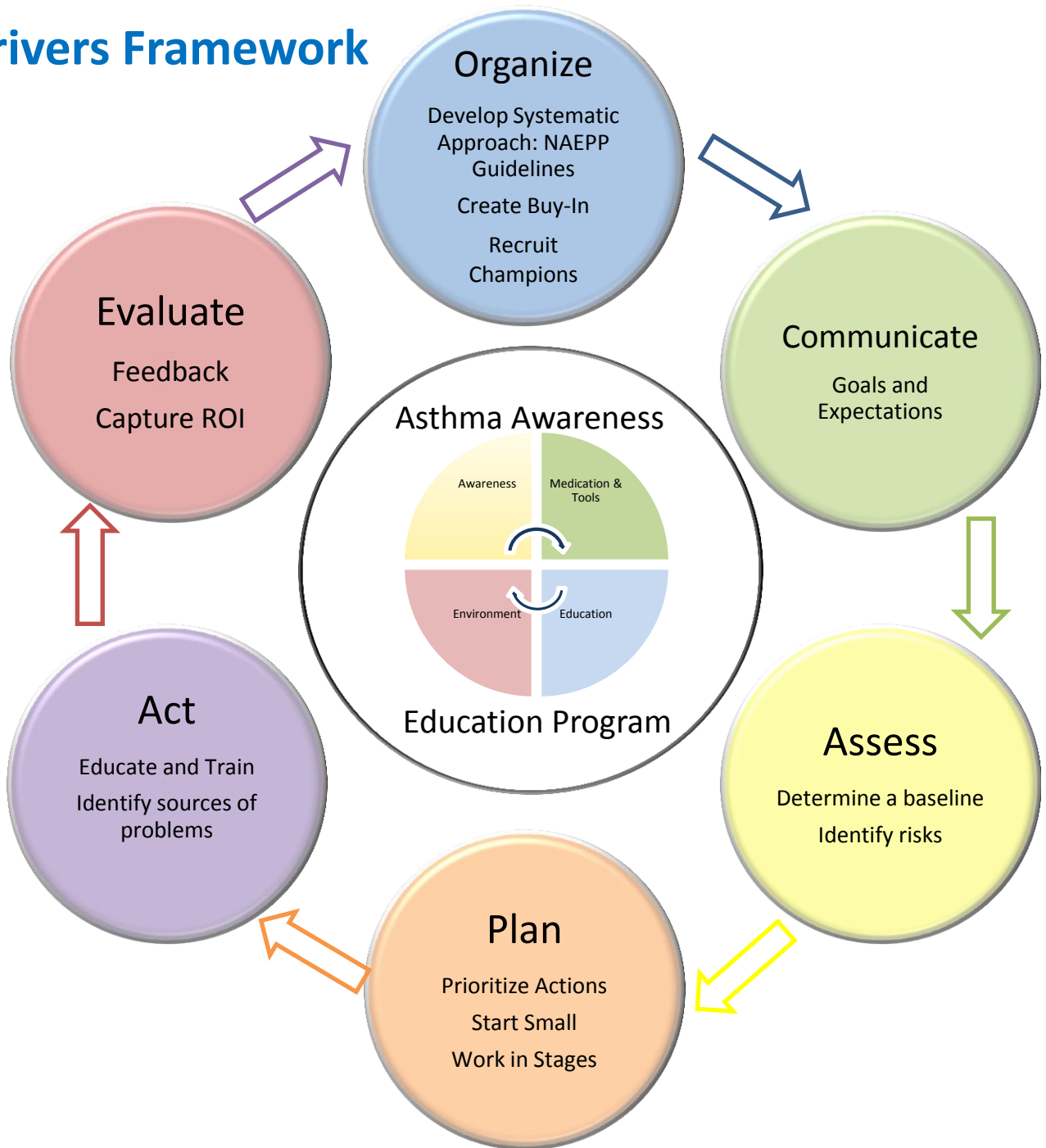




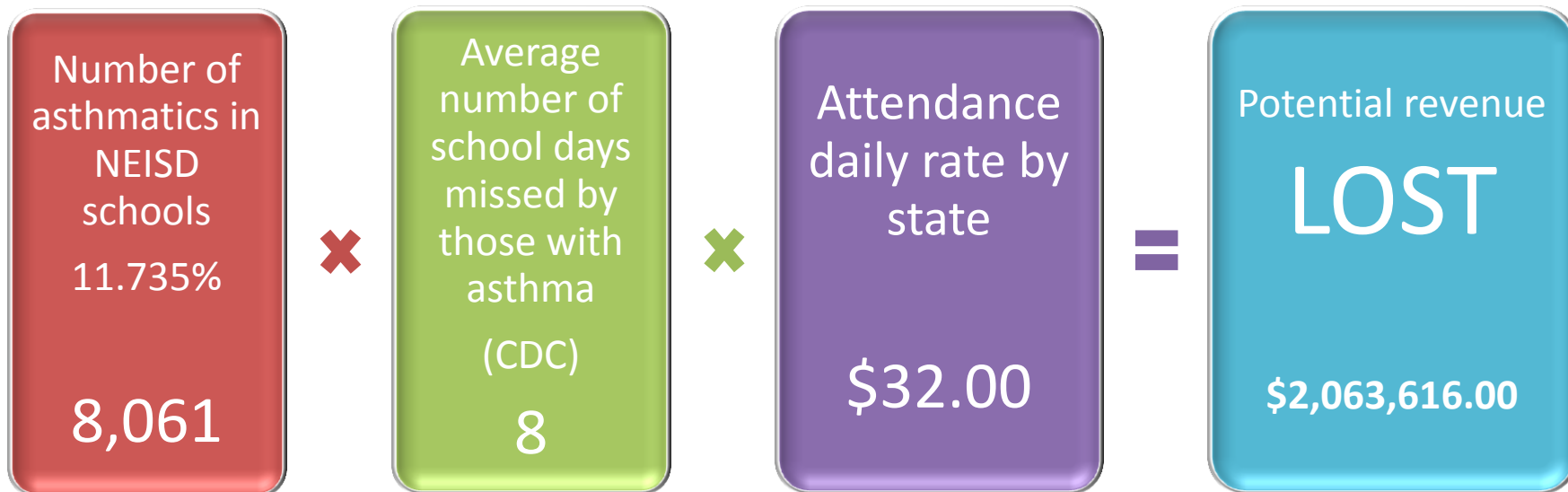
“NEISD expects more intellectually and in order to achieve this we must have healthy students,” “It is education’s responsibility to ensure children are able to excel. **A healthy child is an effective learner.**”

Dr Richard Middleton, NEISD Superintendent of Schools 1990 - 2011

Six Key Drivers Framework



Attendance Funding



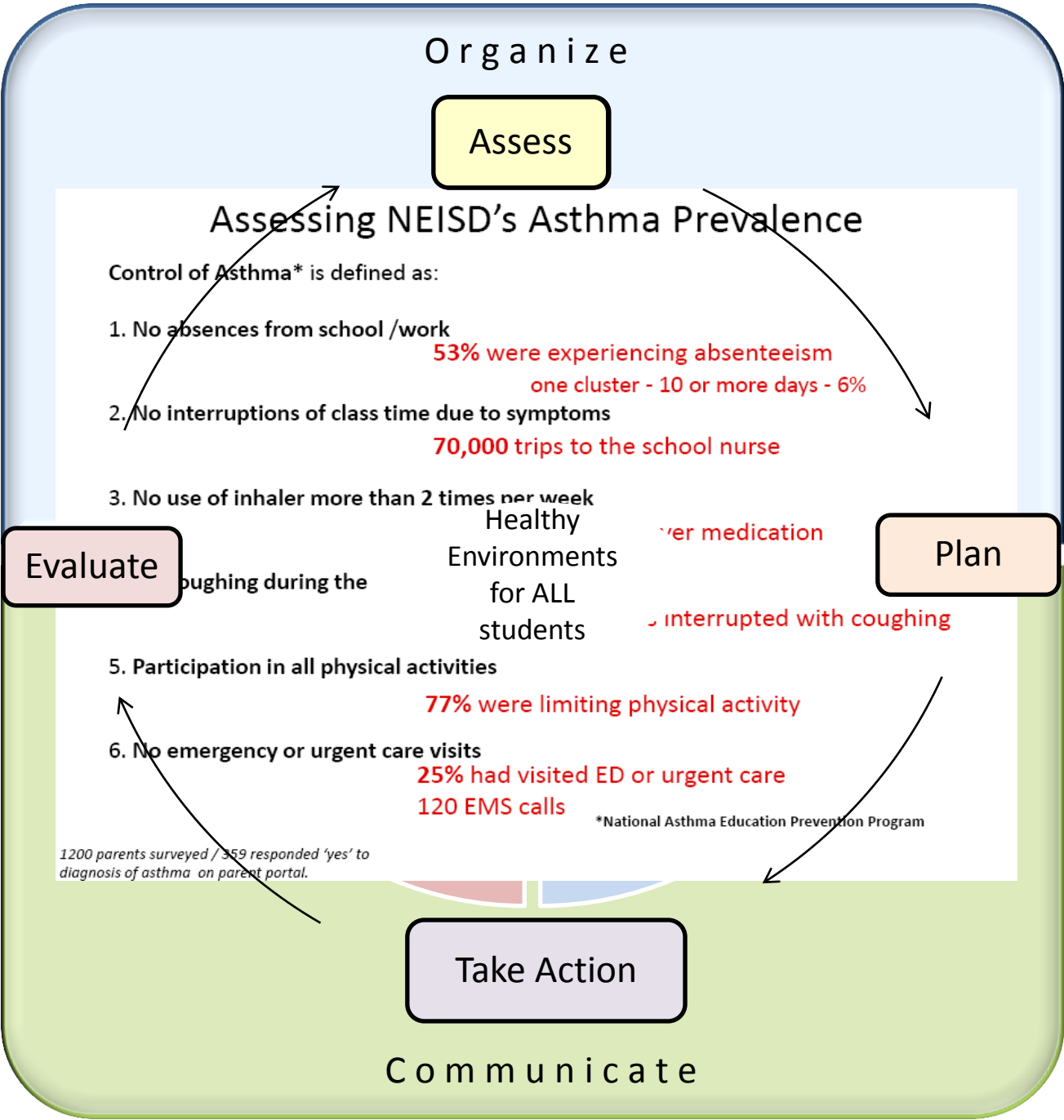
Asthma Awareness Education Program

The Asthma Awareness Education Program will address the needs of students and staff by creating a healthy environment and by providing technical and educational resources for the students and staff on air quality and asthma disease management.

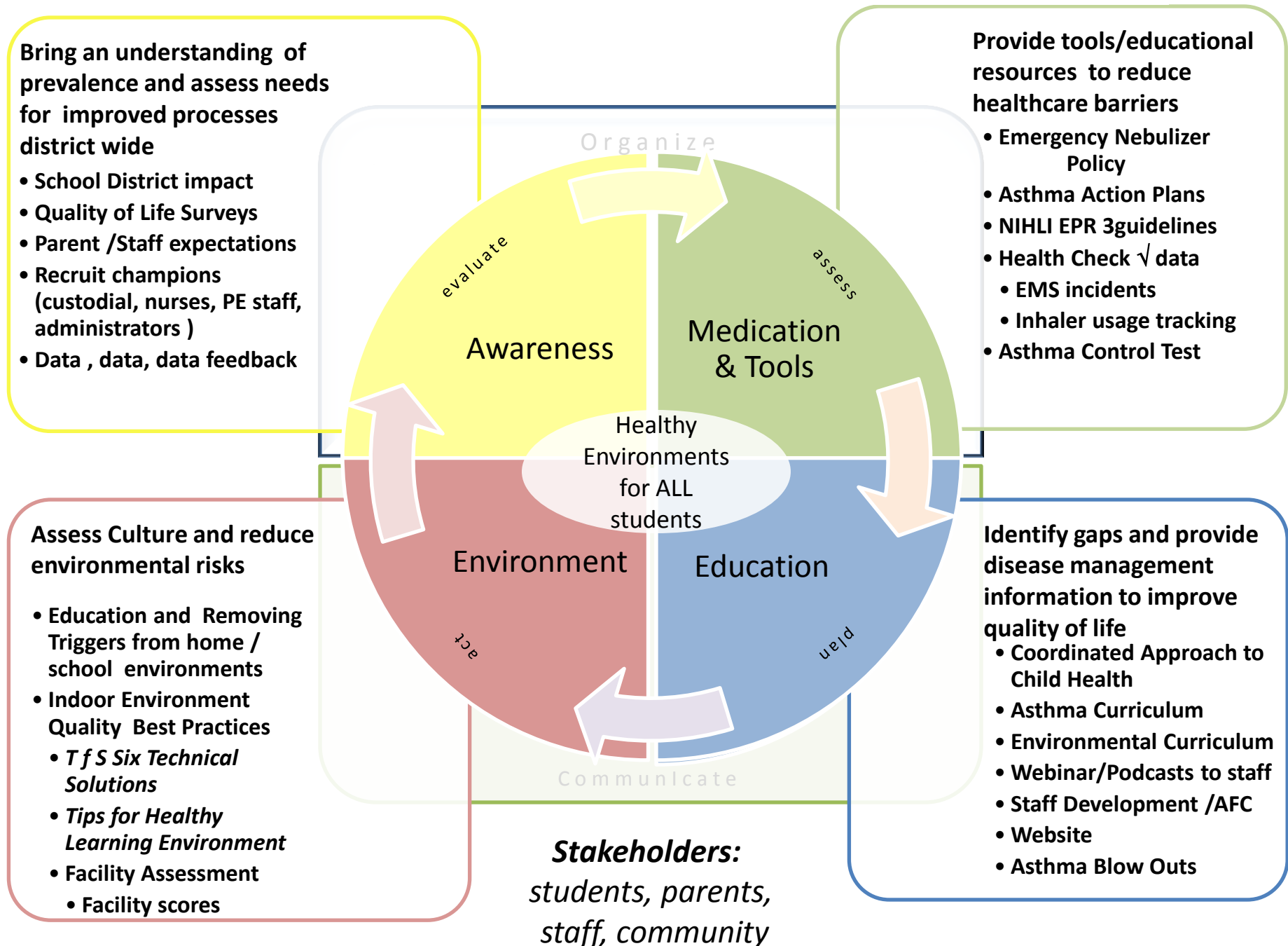
Our commitment to classroom indoor air quality and asthma management education results in higher student/staff productivity and attendance which benefit the district with increased state funding, lower healthcare costs, and increased student performance.

Healthier Children Learn Better.

Six Key Drivers
at Work



NEISD Four Components of Control: Planning and Action Implemented



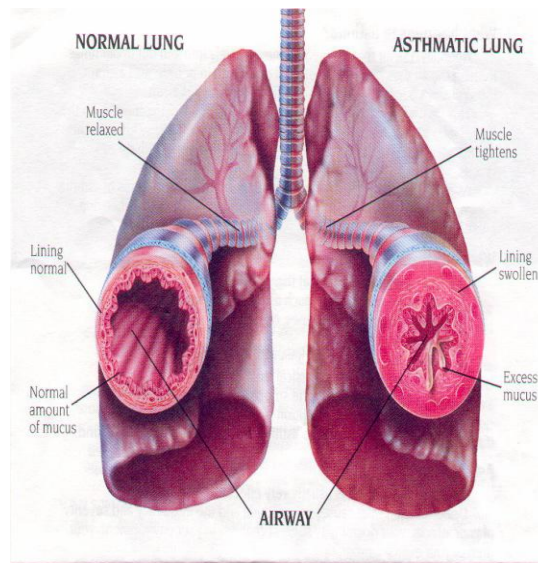
Asthma is...

Environment

"Inducers"

Dust mite, cat dander,
Cockroach, mold,
ETS

Genetics



Asthma
Symptoms

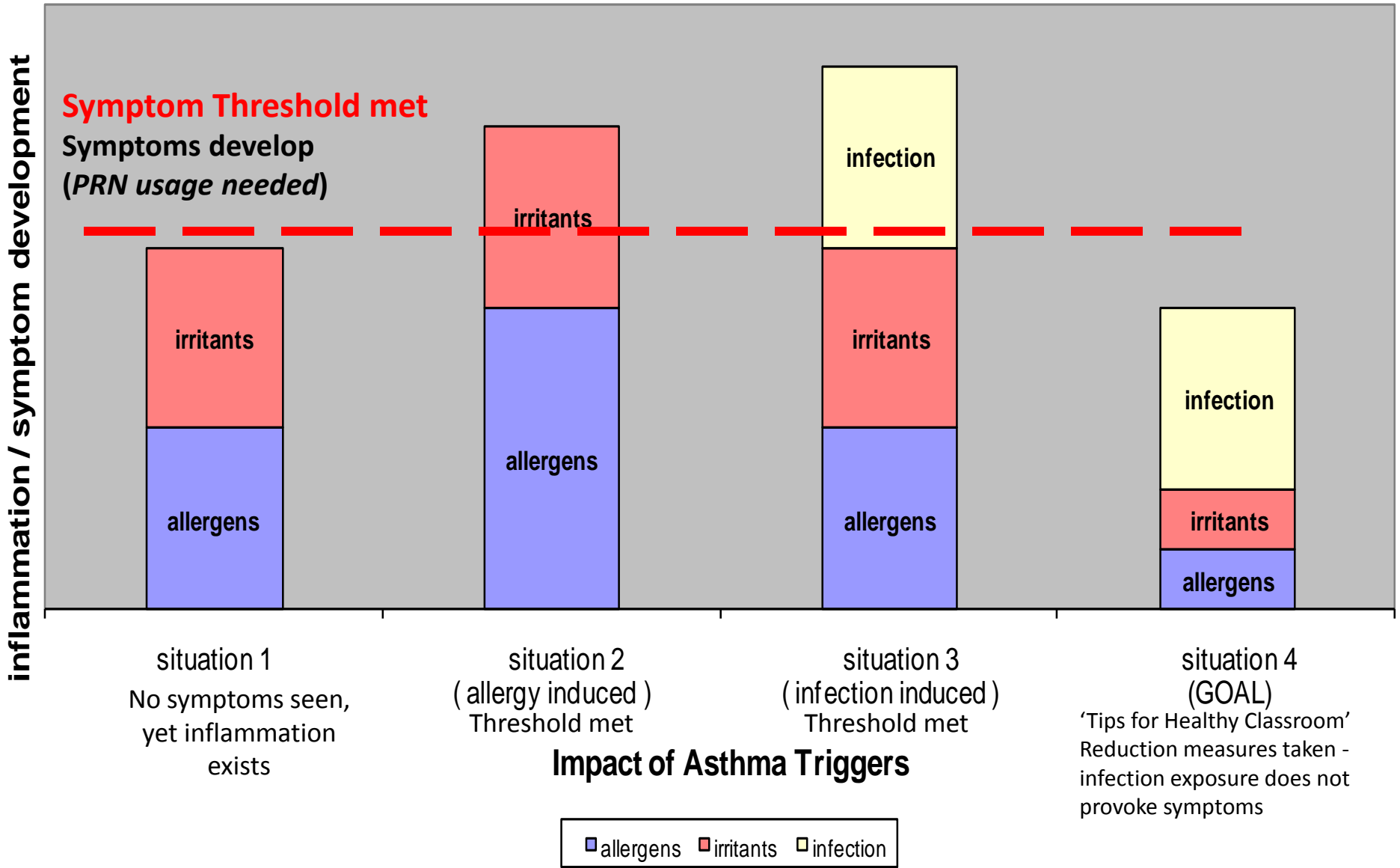


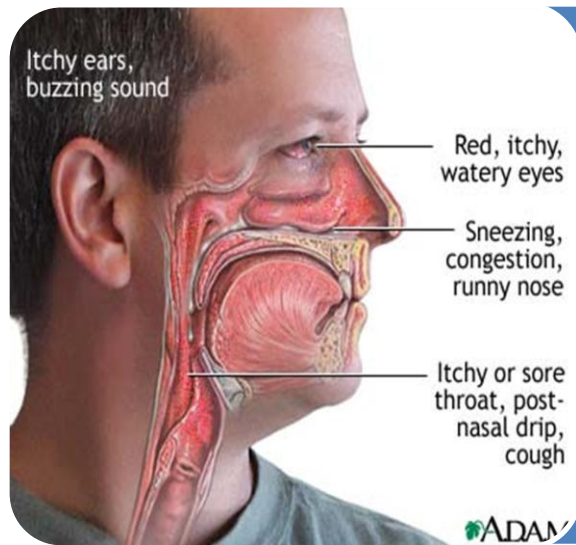
"Our genes may load the gun, but the environment pulls the trigger."

-- Ellen Silbergeld, Ph.D.

Symptom Threshold

Cumulative Effect of Environmental Asthma Triggers



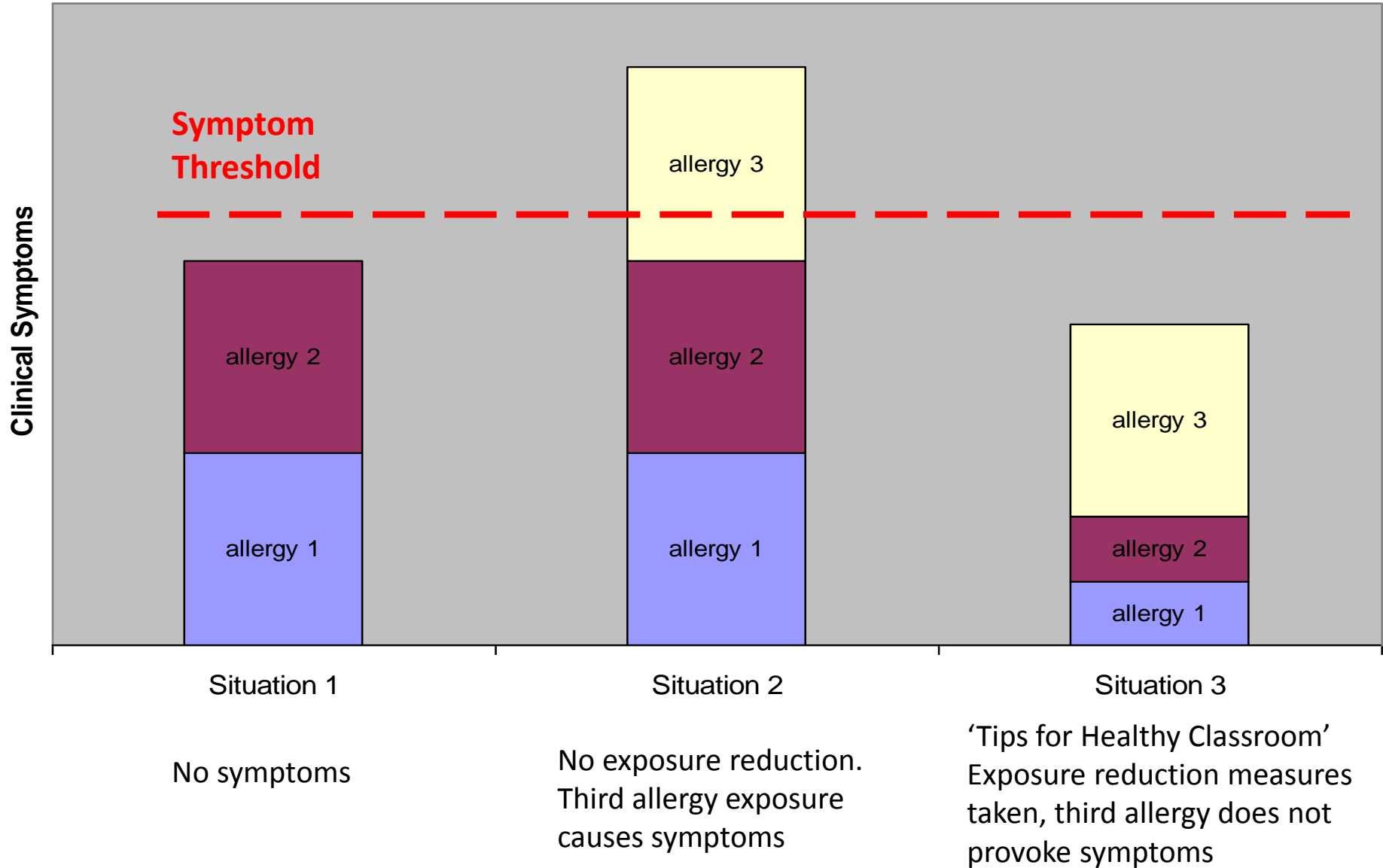


Prevalence - Allergy

An estimated over 50 million Americans suffer from all types of allergies (1 in 5 Americans)

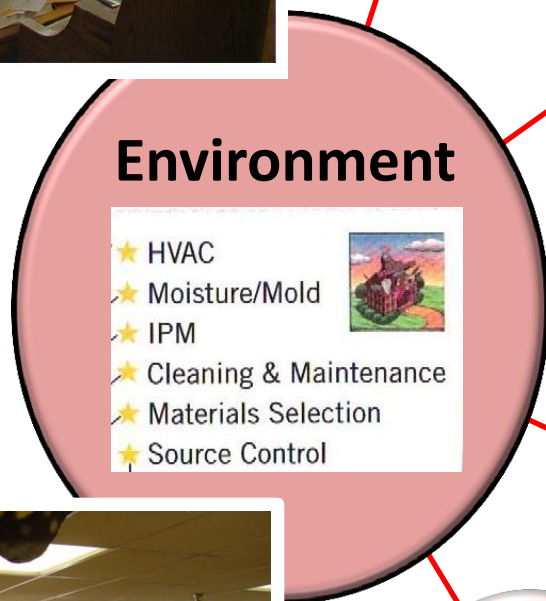
- Allergy prevalence overall has been increasing since the early 1980s across all age, sex and racial groups
- Allergy is the 5th leading chronic disease in the U.S. among all ages
- 3rd most common chronic disease among children under 18 years old
- Approximately 10 million people are allergic to cat dander, the most common pet allergy
- The most common indoor/outdoor allergy triggers are: tree, grass and weed pollen; mold spores; dust mite and cockroach allergen; and, cat, dog and rodent dander
- An allergic reaction can produce the same symptoms in response to substances that are generally harmless, like dust, dander or pollen

Symptom Threshold : Allergy



Most individuals are sensitive to more than one allergen

Custodian's Nightmare



- Department of Environmental Health
- Recruit Champions - Custodians
- Six Key Drivers 'Tools for Schools' program
- Six Technical Solutions

- Create Asthma Friendly Campus
- Facilities trades cross-training
- Custodial training
- Administrators awareness
- Staff development

- Inhaler usage
- IAQ symptoms
- Walk thru
- Facility Assessments
- Attendance
- Work Order system

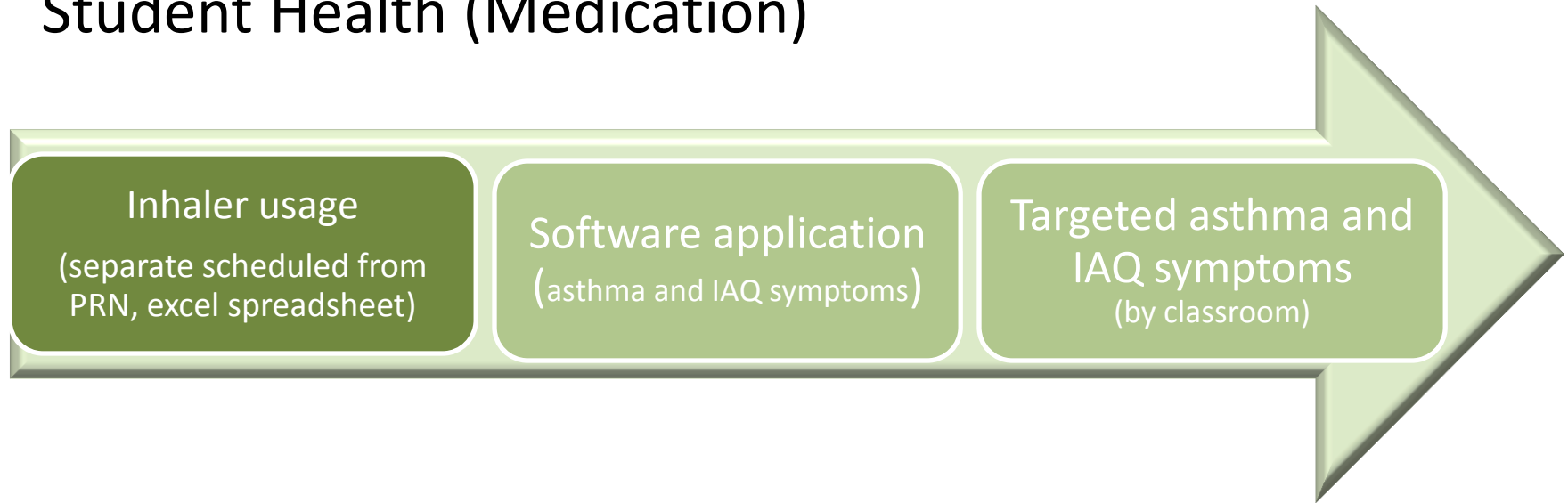
- Agreed upon District Standards
- "Tips" for healthy classroom
(Technical Solutions for teachers)
- Green Cleaning Program
- Anti Idling
- Hand Hygiene
- Filter Crew
- Air Quality Health Alert monitoring

- Administrators
(campus & facilities)
- Teachers
- Website/ Webinars/ Podcasts

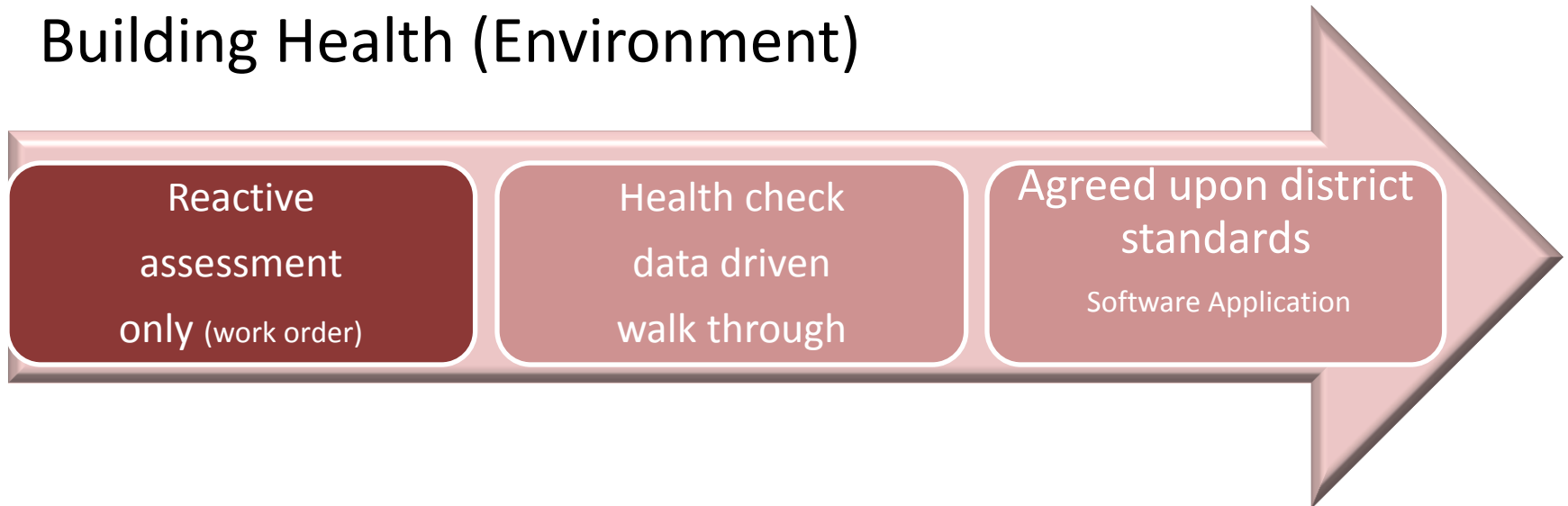


Assessment Driver - 2006 to 2012

Student Health (Medication)



Building Health (Environment)



NEISD Health Check v data collection program – assess/evaluate

Campus Name	Scheduled Inhalers	PRN Inhalers	Scheduled Nebulizers	PRN Nebulizers	Emergency Albuterol	Head Ache	Cough	Lung Congestion	Fever	Burning Eyes	Itchy Eyes	Nose Congestion	Nose Running	Scratchy Throat
	Asthma					IAQ								

CAMELOT E.S. student population 576 – 15% asthma prevalence rate

November Entire Month	268	62	0	0	0	41	22	1	14	0	4	9	5	0
Week 1 - (01 Nov 2010 - 06 Nov 2010)	77	15	0	0	0	14	8	1	4	0	2	5	3	0
Week 2 - (07 Nov 2010 - 13 Nov 2010)	81	15	0	0	0	11	3	0	4	0	2	2	1	0
Week 3 - (14 Nov 2010 - 20 Nov 2010)	89	24	0	0	0	9	7	0	5	0	0	1	1	0
Week 5 - (28 Nov 2010 - 30 Nov 2010)	21	8	0	0	0	7	4	0	1	0	0	1	0	0

TUSCANY HEIGHTS E.S. student population 875 – 10% asthma prevalence rate

November Entire Month	78	23	0	2	0	76	18	1	9	0	1	0	0	0
Week 1 - (01 Nov 2010 - 06 Nov 2010)	15	6	0	0	0	13	10	0	2	0	0	0	0	0
Week 2 - (07 Nov 2010 - 13 Nov 2010)	22	7	0	0	0	27	3	0	2	0	1	0	0	0
Week 3 - (14 Nov 2010 - 20 Nov 2010)	29	9	0	2	0	25	5	1	4	0	0	0	0	0
Week 5 - (28 Nov 2010 - 30 Nov 2010)	12	1	0	0	0	11	0	0	1	0	0	0	0	0

Environmental Assessment

Assessment score of each classroom based on predetermined, agreed upon standards by area:

- 100 – (acceptable) no action required
- 50 – (ok) room for improvement
- 0 – (concern) education/action needed (work order generated)

Five possible areas:

Occupant

clutter, stuffed animals, plants, furry animals, blocking of ERUs etc

Custodial

high touch cleanliness, dust practices, infection control measures, etc

Facilities

plumbing leaks, HVACs, exhaust fans, grounds, pests, etc

Chemical Storage (NIOSH high school lab standards)

Air Summaries

Particle counts, CO2 levels, humidity

Average score for each classroom and overall campus score.



CAMPUS ENVIRONMENTAL ASSESSMENT

Welcome, Diane Rhodes
Help | Sign Out

Indoor Air Quali
Welcome Diane Rhode

[Home](#)

Campus: WEST AVENUE E.S.

InspectedBy: NICHOLAS KELLAR

[Back to Inspection/](#)

Room Assessment(s):

RoomNo ▲	InspectedDate	Average Scores					Average	
		TeachingEnv	Custodial	Facility	ChemicalStorage	AirSummary		
		95	86	100	-N/A-	88		
2	2/23/2012	100	100	100	-N/A-	-N/A-	100	View
2	1/25/2012	100	81	100	-N/A-	-N/A-	94	View
3	2/23/2012	95	94	100	-N/A-	-N/A-	96	View
3	1/25/2012	100	75	100	-N/A-	-N/A-	92	View
4	2/23/2012	95	100	100	-N/A-	-N/A-	98	View
9	2/23/2012	91	95	100	-N/A-	-N/A-	95	
9	1/19/2012	55	79	100	-N/A-	-N/A-	78	
16	2/24/2012	95	88	100	-N/A-	-N/A-	94	
16	1/25/2012	86	83	100	-N/A-	-N/A-	90	

Second Floor



NUMBER of CATEGORIES IDENTIFIED PER ROOM

1 CATEGORY

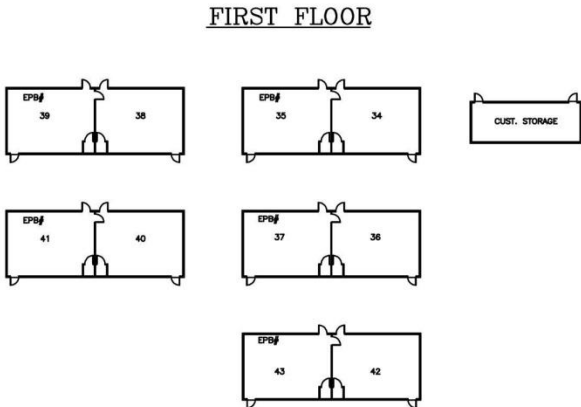
2 CATEGORIES

3 CATEGORIES

4 CATEGORIES OR MORE

DIRECTION OF AIRFLOW

List of Categories Include: Teaching Environment, Custodial, Facility, Chemical Storage, Air Summary, and Health Check Data



Categories

- Classroom
- Custodial
- Facility
- Chemical Storage
- Health Check
- Air Summary (Airflow)



Second Floor

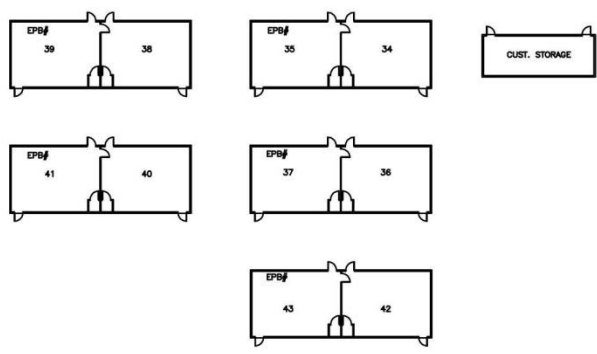


NUMBER of CATEGORIES IDENTIFIED PER ROOM

Yellow	1 CATEGORY
Orange	2 CATEGORIES
Red	3 CATEGORIES
Dark Red	4 CATEGORIES OR MORE
Blue Arrow	DIRECTION OF AIRFLOW

List of Categories Include: Teaching Environment, Custodial, Facility, Chemical Storage, Air-Summary, and Health Check Data

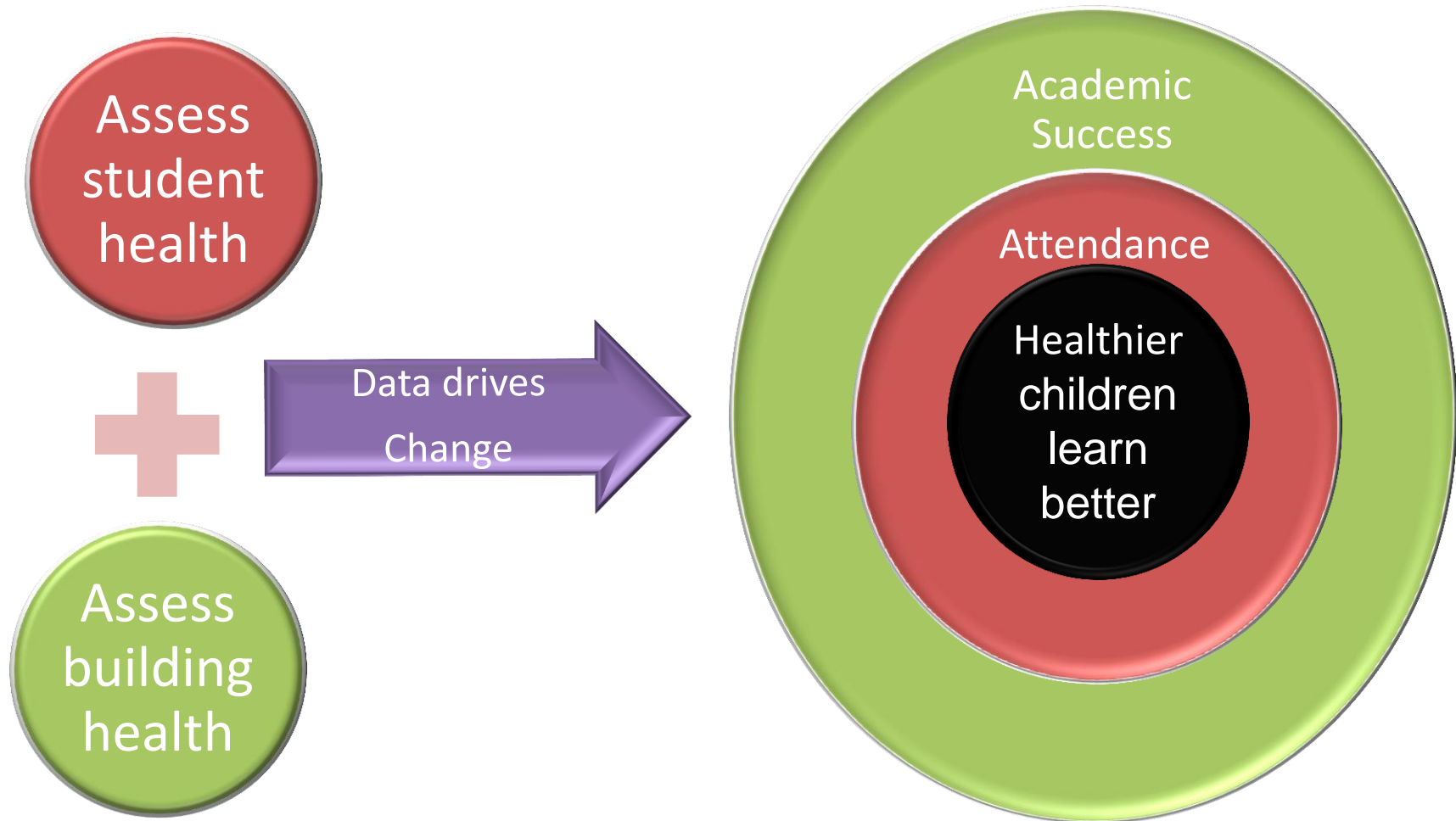
FIRST FLOOR



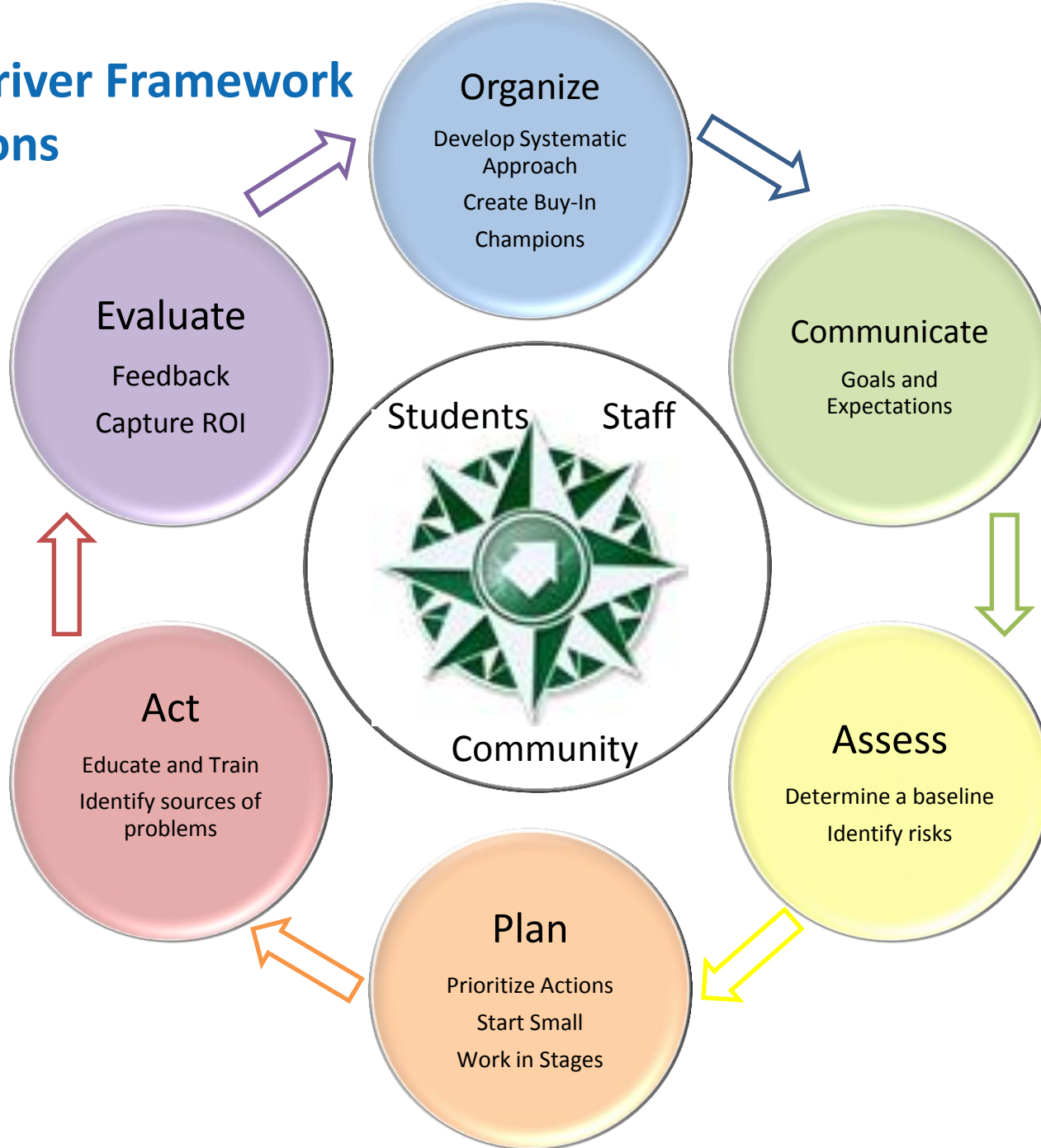
Categories

- Classroom
- Custodial
- Facility
- Chemical Storage
- Health Check
- Air Summary (Airflow)

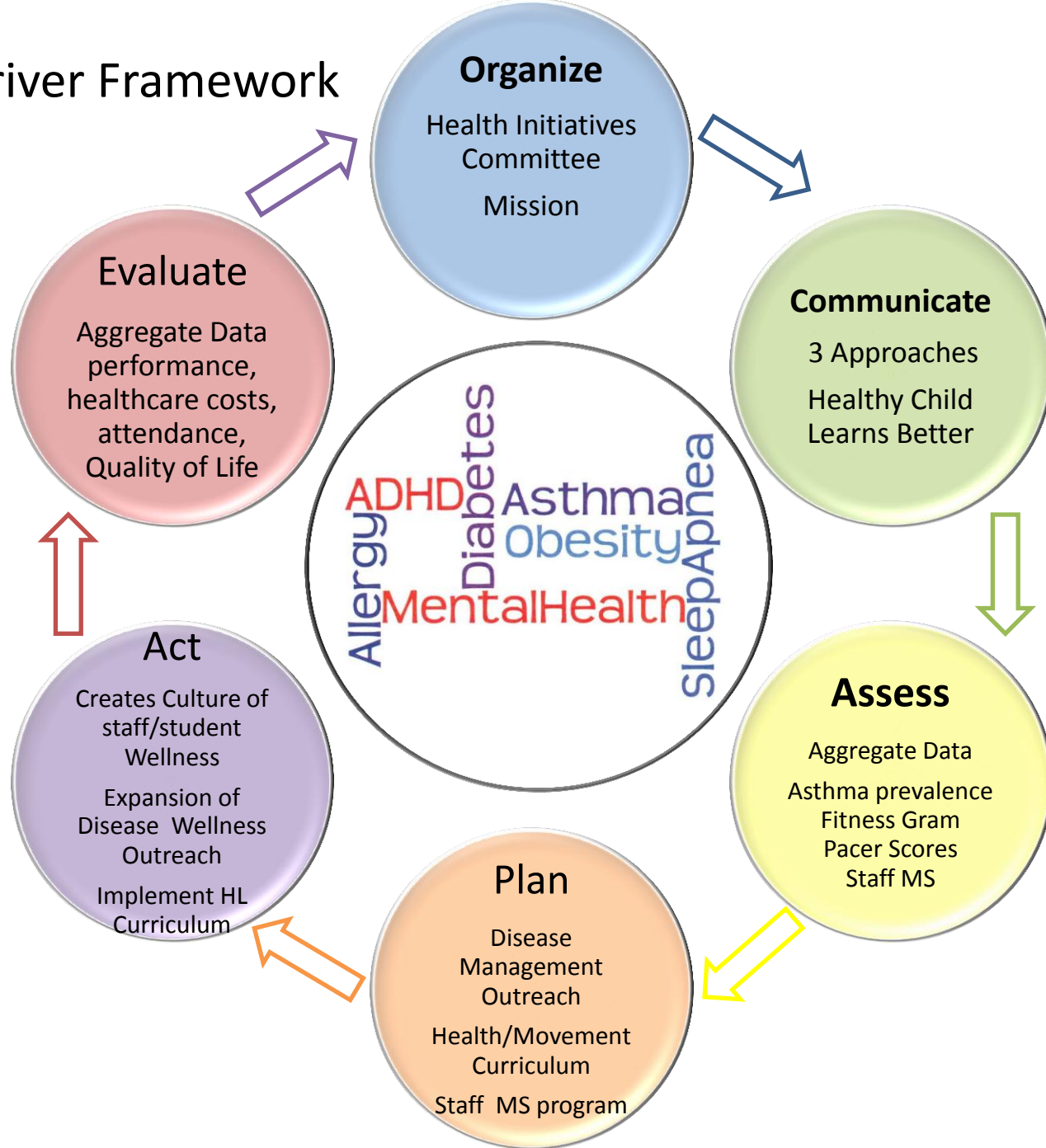




Six Key Driver Framework Adaptations



Six Key Driver Framework



Wellness – Three Approaches

Disease Management*

Students

Families/Community

Employee

Physical Activity

Students

Families/Community

Employee

Healthy Lifestyle

Students

Families/Community

Employee

**Asthma*

**Diabetes*

**Mental Wellness*

**Metabolic
Syndrome*

Better Practices

Improve Quality of Life

Decrease absenteeism
Decrease work time missed

Increase Capacity to

LEARN

Increase Productivity



North East Independent School District Health Initiatives Committee

Mission Statement: The North East Wellness Committee strives to foster a culture of health and wellness that will positively impact learning and productivity. We will motivate the NEISD community to value all aspects of wellness for the purpose of creating a strong educational environment. In doing so, we will empower individuals with the tools to function at their peak performance levels.



Organize

NEISD established the Health Initiatives Committee to provide a collaborative approach to the District's Wellness goals to benefit students and staff in hopes to improve student/staff productivity and attendance which benefit the district with increased state funding, lower healthcare costs, and increased student /staff performance.

Purpose: Provide tools for students, families, community, and staff to take an active role in their personal health and wellness.

Vision: To educate and motivate the North East Independent School District community to dedicate themselves to the pursuit of a healthy lifestyle.

Departments Represented:

Nutrition Services
Health Services
Employee Benefits

Facilities Maintenance/Support
Physical Education/Health

Environmental Health
Risk Management
Curriculum Compliance

Assess

Assess the health issues that impact the health and quality of life of students and staff.

- More than 61 percent of Texas adults and 40 percent of children are considered overweight or obese¹.
- A child who is obese by age 12 has more than a 75 percent chance of becoming an obese adult¹.
- Co-morbidities of obesity include type-2 diabetes, fatty liver disease, increased asthma severity, hypertension (high-blood pressure), sleep apnea, gallstones, gastroesophageal reflux, and osteoarthritis.

Aggregate Data was gathered on students/staff to assess health/wellness educational needs. Results indicated the following:

- District Asthma Prevalence rate of 11%
- District Pacer Score (measurement of cardiovascular health) Average: 50.39% of NEISD students achieving healthy fitness zone
- District Overall Fitness Gram Scores Average: 77% of NEISD students achieving healthy fitness zone
- District Overall BMI Scores Average: 75% of NEISD students reaching healthy fitness zone
- 17% of the 2200 staff members screened were identified as having 3 of the 5 risk factors for Metabolic Syndrome

Plan

Plan short and long term goals utilizing current data and assessments.

- Disease Management Community Outreach Asthma Blow Out events: locations identified based on health needs of high school cluster/community
- Employee Benefits to make improvements based on data collected on staff needs, feedback, and cost effectiveness.
- Wellness, Technology, and Accountability: targeted Superintendent's NEISD Goals for Change
- Healthy Lifestyles Curriculum development as a health course requirement for all students during freshman year and required for graduation
- Voluntary Metabolic Syndrome Lifestyle program offered to employees who meet 3 of the 5 risk factors of Metabolic Syndrome
- Raise Awareness of 8top 2048 – projected year when all Texas adults will be overweight/obese if we continue with current obesity growth rates



NEISD Approach To Wellness

Wellness – Three Approaches



Coordinated Approach To Child Health



Selected Resources

Wellness in NEISD Landing Page
<http://staff.in.luned.net/wellness/index.html>

CATCH Texas
<http://www.sph.utexas.edu/catch/>

Asthma Awareness Education Program
<http://staff.in.luned.net/wellness/asthma.html>

Texas Education Agency: News Releases Online
March 8, 2011 "Physically fit students more likely to do well in school, less likely to be disciplinary problems. Study of more than 2.4 million Texas students found that students who are physically fit are more likely to do well on the state's standardized tests and have good school attendance."
<http://dhsr.texas.gov/press/030811news03.htm>

¹Fast Facts & Insights on the Obesity Crisis. Texas Children's Hospital | Texas Children's Hospital | Baylor College of Medicine

Act

Take action to create a culture of wellness systemically for students and staff.

- Coordinated Approach To Child Health and "Growthwise" (potential pilot) of a science-based curriculum taught in the classroom that includes physical activity, movement and food nutrition education to help students make healthier choices.
- Committees on Wellness in NEISD
 - Wellness in Schools Committee (Campus Representative, CATCH team)
 - Employee Wellness Committee
- Four Component Disease Management events: using Asthma Blow Out model (now includes Asthma, Diabetes, Mental Wellness, and Metabolic Syndrome)
 - Awareness Medication Environment Education
- Healthy Lifestyles Curriculum – NEISD Board approved 10/2009 for 2010-2011 year
- Employee Health – Flu Shots, BCBS Incentives, Fitness Center (Broadway Location)

Evaluate

Continue to track and monitor assessment aggregate data by incorporating new technology² by looking at the 'whole person' in order to evaluate and target health and wellness educational initiatives and interventions to improve health outcomes of students and staff. Some data collection measures include:

Student:

- NEISD Health Check (* NEISD created student health software program)
- Quality of Life Surveys (asthma control)
- Student Attendance – tracking environmental health impact on students
- Overall Campus Fitness Gram and Pacer Test data to evaluate programs and to target campuses with increased prevalence and offer program interventions
- Overall Campus Performance data and evaluating how health/fitness impacts student performance

Staff:

- Insurance Costs – providing wellness programs to control/reduce healthcare costs
- Staff Health Screenings (BMI, HDL, LDL, Triglycerides, Glucose, Waist Circumference, Blood Pressure) to bring awareness to employees of possible health risks in order to proactively provide tools to reduce their health risks

Communicate

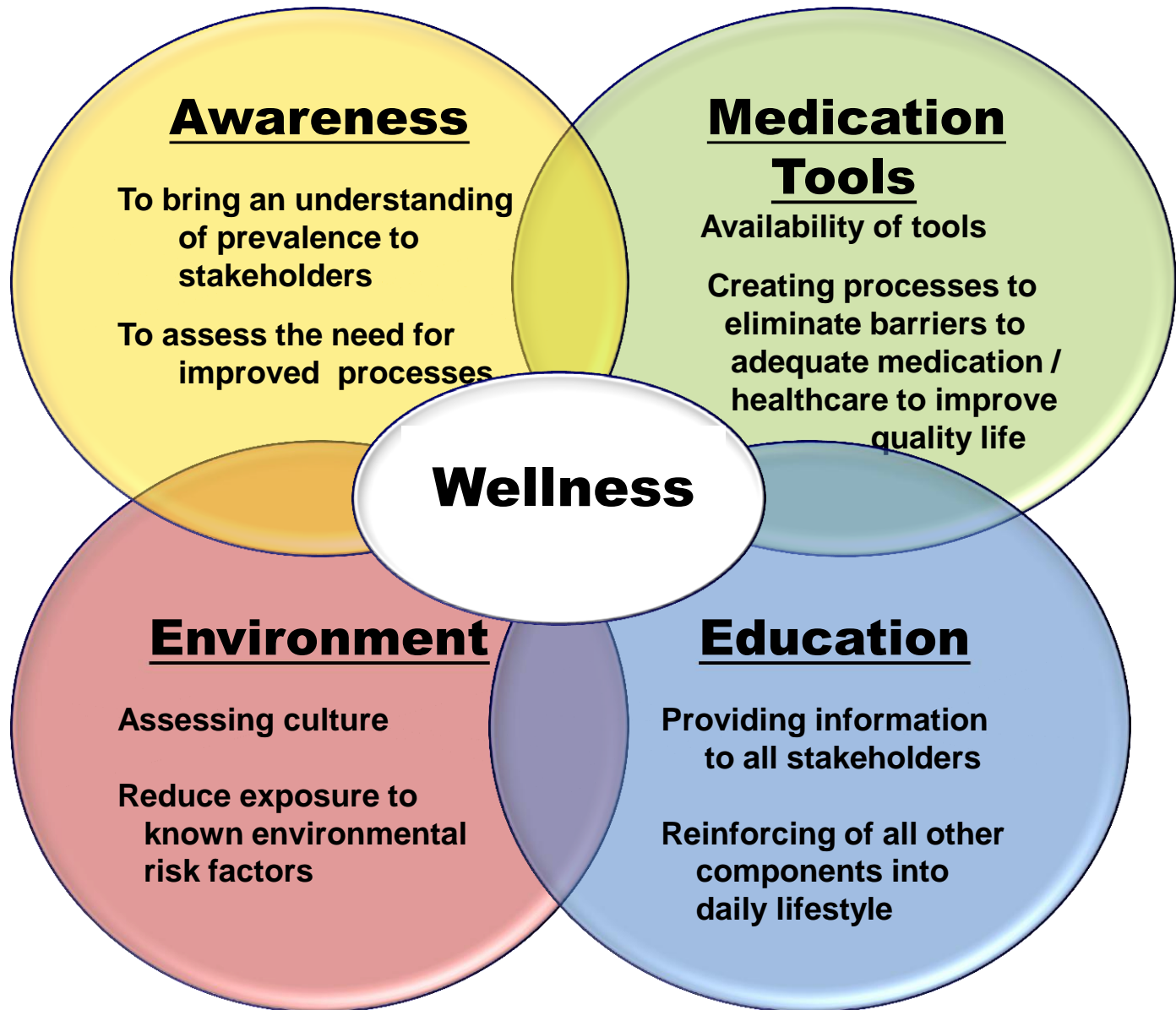
Share Wellness program's intent, activities, results, and next steps with NEISD's entire school community and engage our community as participants and program supporters.

- Wellness in NEISD Landing Page access on district website
- Raise Awareness to district staff/employees
- Promoting success and continuation of Metabolic Syndrome Program
- Community Outreach Events for Disease Management

Share our Wellness program beyond the borders of the NEISD community.

- NEISD was an invited presenter to share our Wellness Program at the Texas Association of School Business Officials convention (TASBO)
- NEISD was an invited presenter to share our Wellness Program at the American Association of School Administrators national conference (AASA)
- Provided testimony to the Texas House Public Education Committee on our Healthy Lifestyles Curriculum as possible state-wide model

NEISD Four Components - Community Outreach



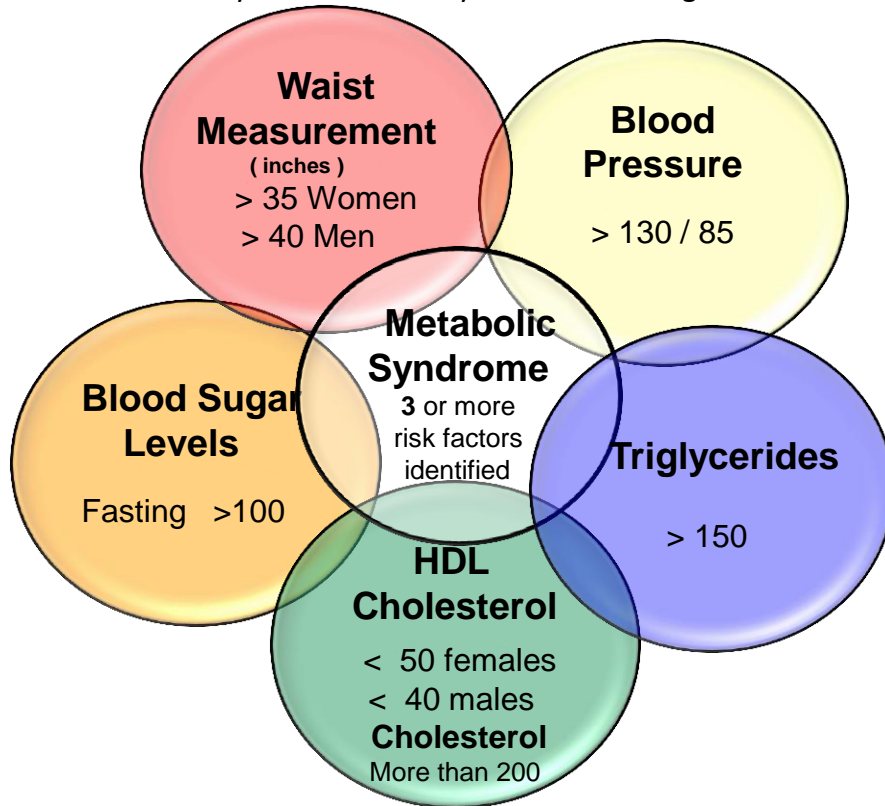
Stakeholders: students, parents, staff, community

Know Your Numbers

Employee and Community Screenings

KNOW YOUR NUMBERS:

Record your numbers as you visit screening booths



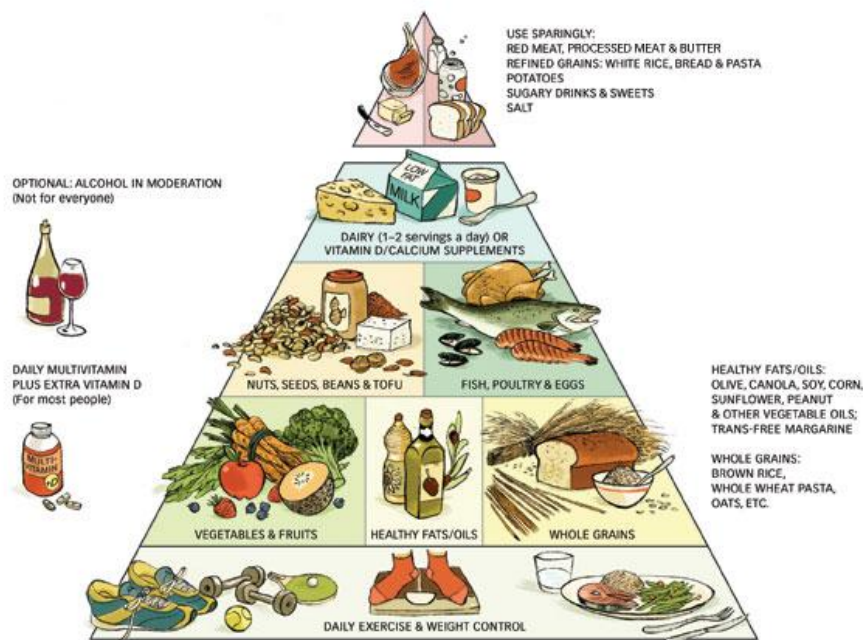
North East Independent School District Health and Wellness Education Fair

Metabolic Syndrome is a condition that is known to increase your chances for Heart Attack, Diabetes, Stroke, and other diseases. Having 3 of the 5 identified risk factors increases your risk for Metabolic Syndrome. These risk factors are: HDL (part of total cholesterol), Blood Pressure, Waist Measurement, Glucose, and Triglycerides (derived from Total Cholesterol).

Employee Metabolic Syndrome Program

THE HEALTHY EATING PYRAMID

Department of Nutrition, Harvard School of Public Health



For more information about the Healthy Eating Pyramid:

WWW.THE NUTRITION SOURCE .ORG

Eat, Drink, and Be Healthy
by Walter C. Willett, M.D. and Patrick J. Skerrett (2005)
Free Press/Simon & Schuster Inc.



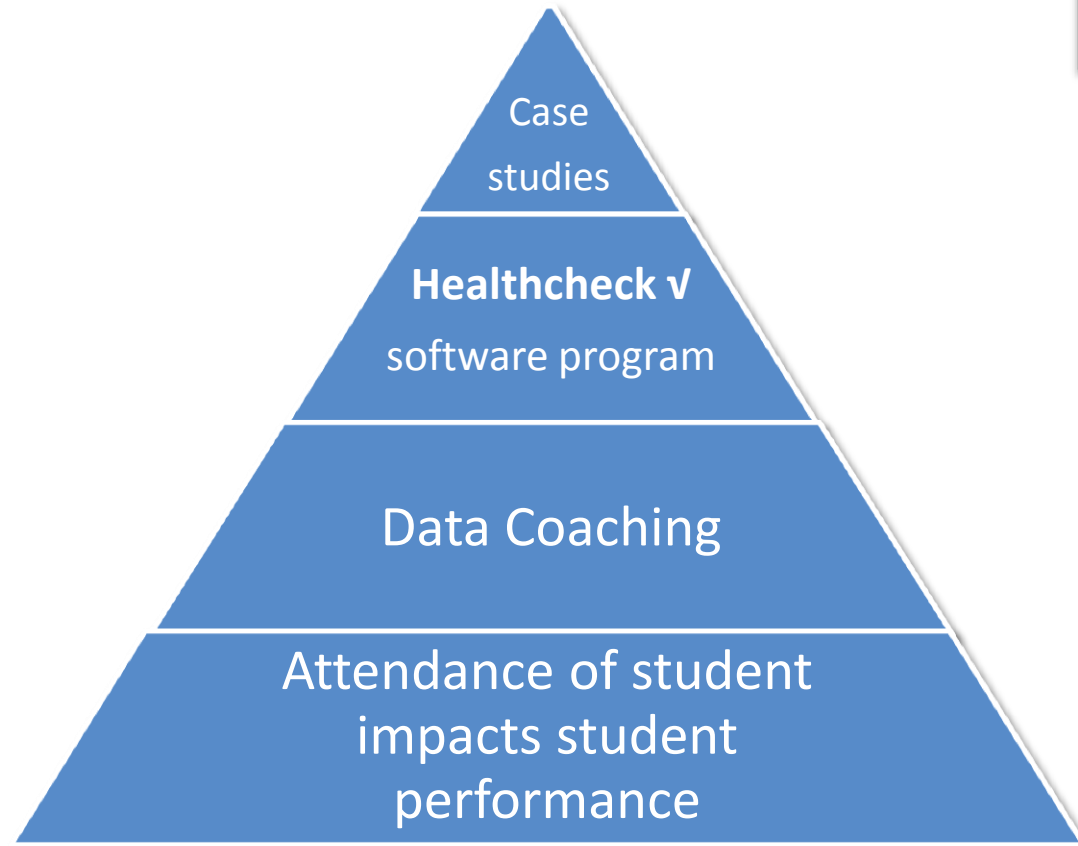
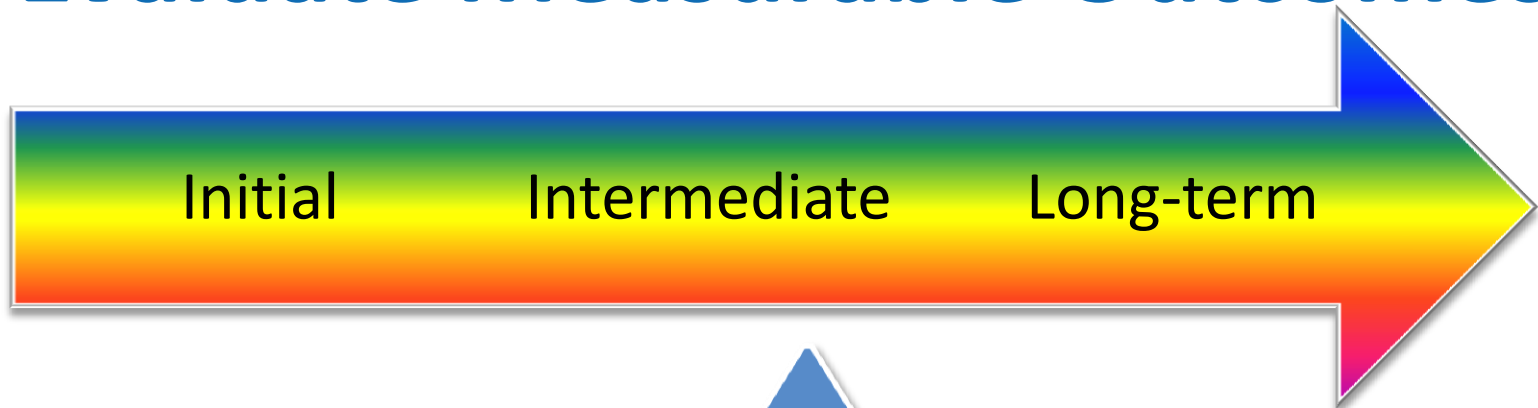
Healthy Lifestyles Course Dynamics

Overarching Themes



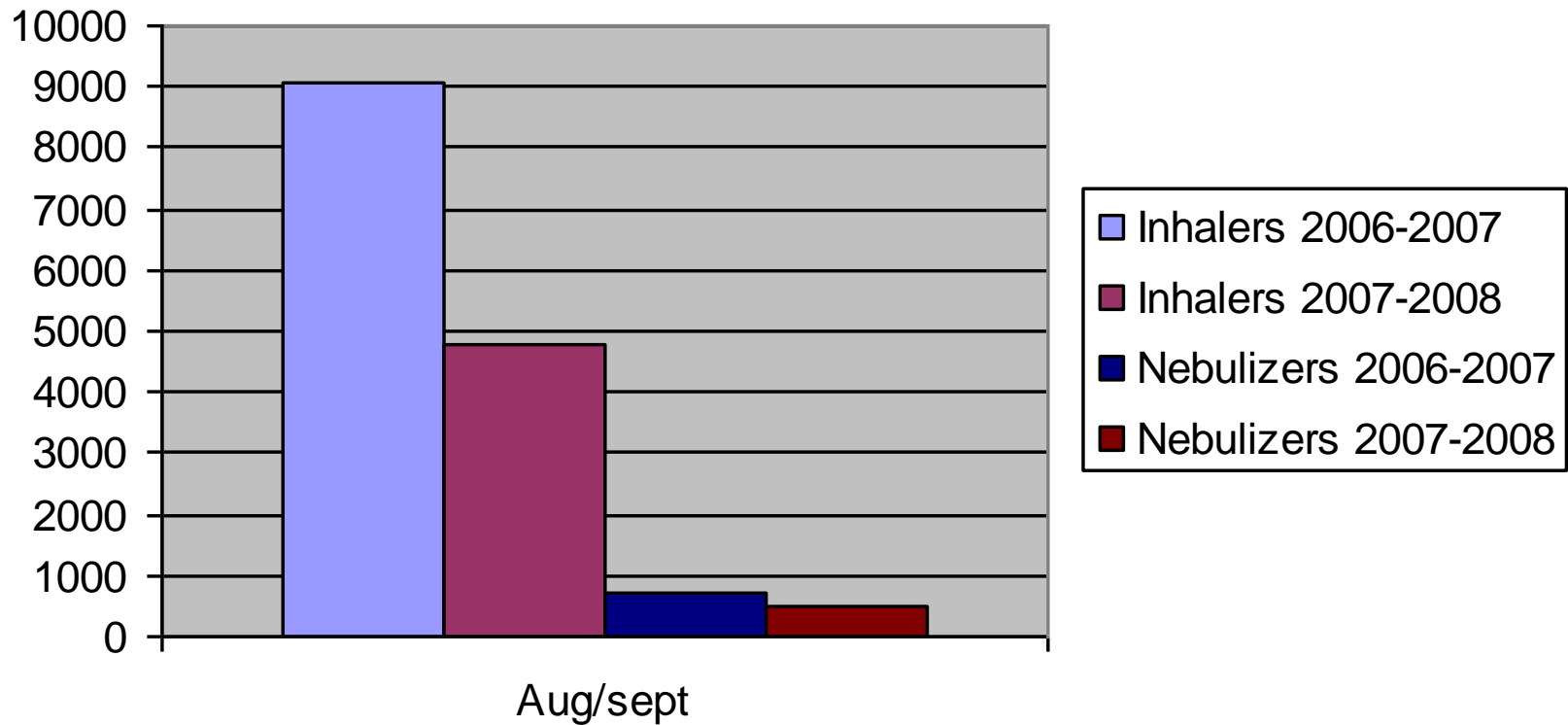
Healthy Lifestyles is an all encompassing freshman-level wellness course that ensures all students obtain the knowledge and skills to make healthy lifestyle decisions to last a lifetime. The course is designed to include a classroom and a physical activity lab component.

Evaluate Measurable Outcomes



Results After First Year

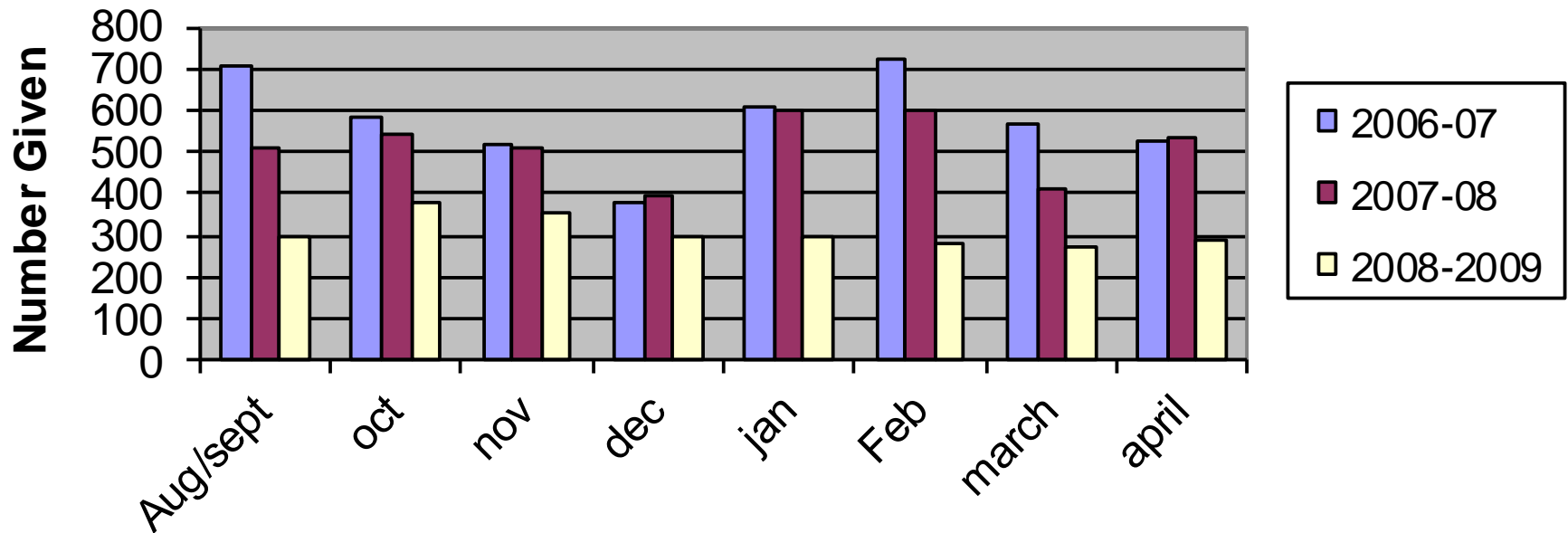
Comparison of Inhalers/Nebulizers



Results of student Inhaler/ Nebulizer Usage after initiating 'Tips for a Healthy Classroom' and 'Asthma Trigger Education' began being communicated to staff and awareness information to parents. Data comes from the time period of first six weeks of school, which is when 'most problematic' allergy seasons are dormant.

Nebulizer Trends Over Past Three Years

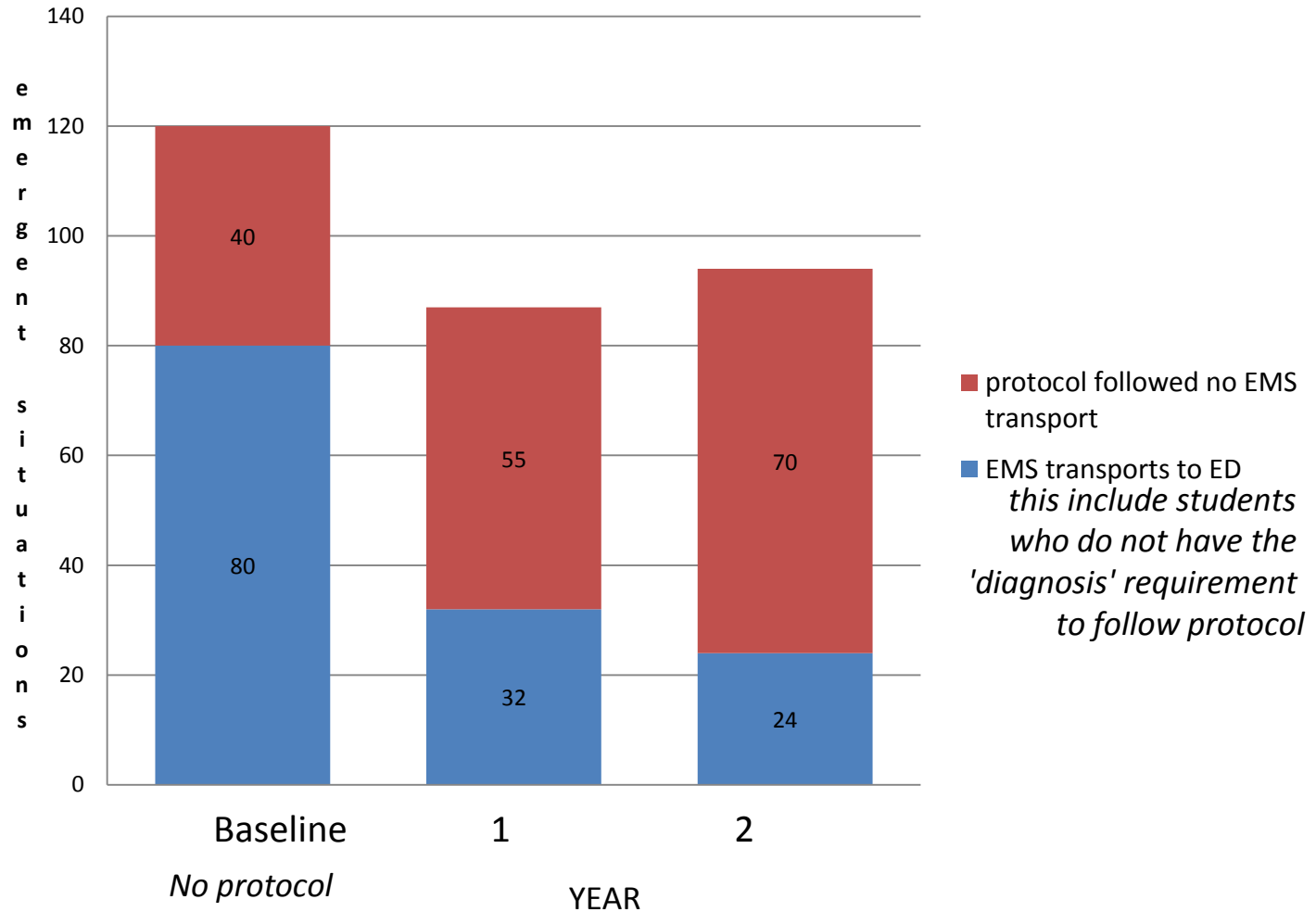
Nebulizer Usage



Comparing three years during same time frame : Aug – end of April data

Emergency Nebulizer Protocol

Initial Impact



Green Cleaning Program

Improved attendance of custodial staff due to less respiratory related illnesses.

Overtime costs reduced by 21.49% -

- \$ 157,000 savings

Eliminated the need for temporary hires to cover employee absenteeism –

- \$ 470,000 savings

Supply costs reduced by 27.54% -

- \$ 328,000 savings



Asthma/Allergy Triggers

Stuffed things
 Carpet
 Over populated
 Clutter
 High Particle counts
 Odors/Smells
 Mold
 Infection Control
 Pests
 Passive Transmission
 of allergens
 Dust mite
 VOC's

EPA Technical Solutions

HVAC

Moisture/Mold

IPM

Cleaning & Maintenance

Materials Selection

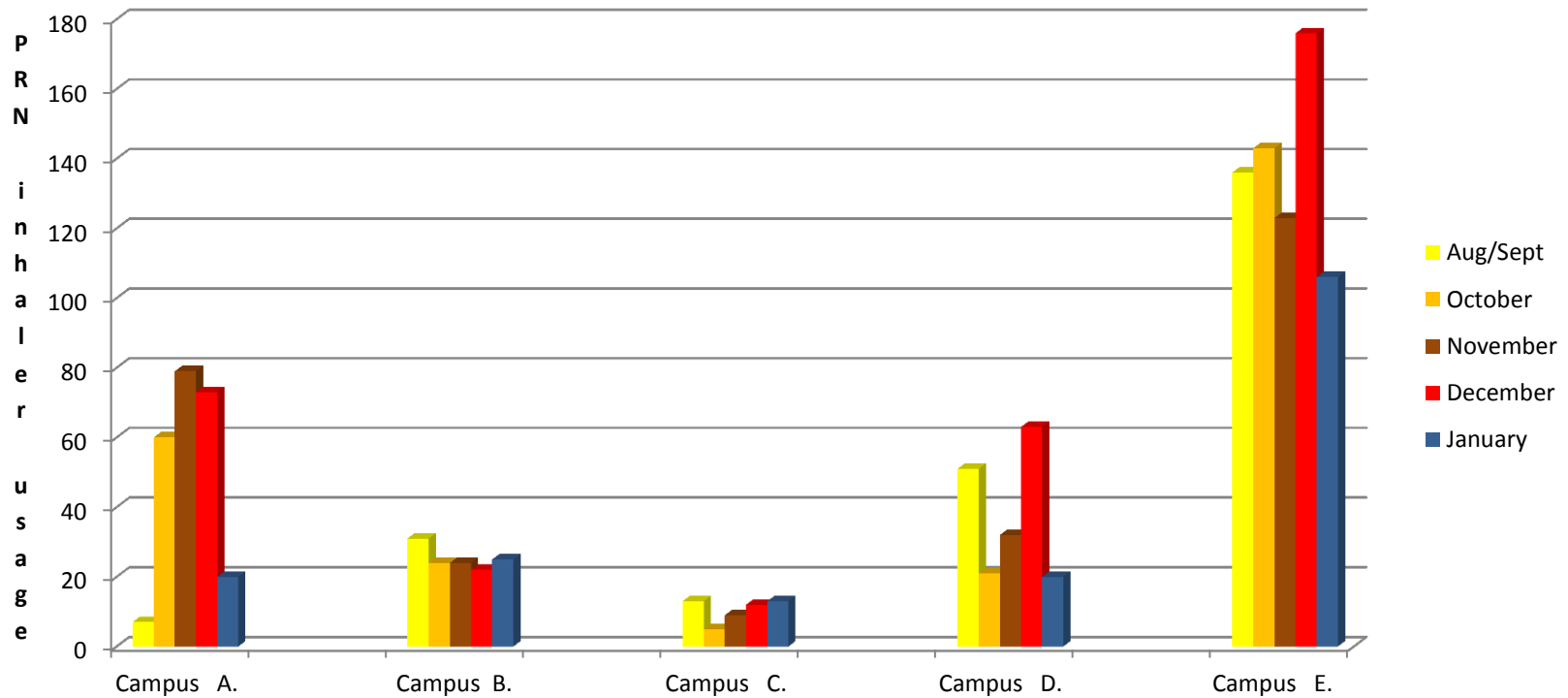
Source Control



Elementary Campus Comparison

Tips for Healthy Classroom Air

(similar size, area, building age, demographics)
can you identify which campus was NOT
following best practices



Campus E Walk Through Assessment:

Clutter, unable to clean effectively..... DUST filled environment



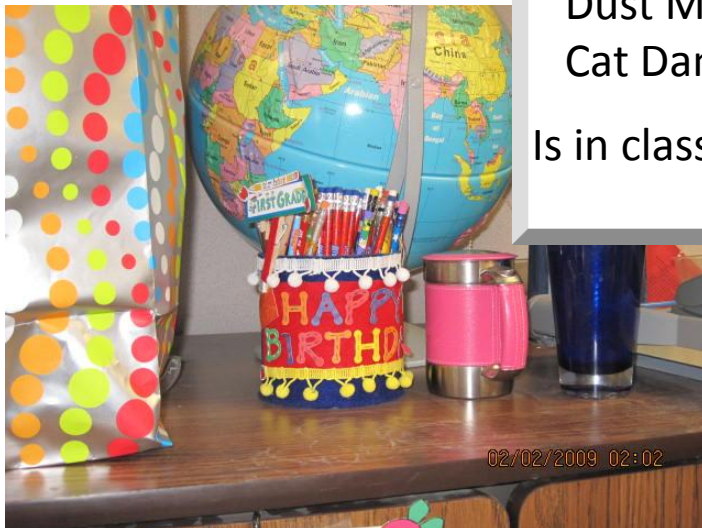
Did you know that....

Cockroaches

Dust Mites

Cat Dander

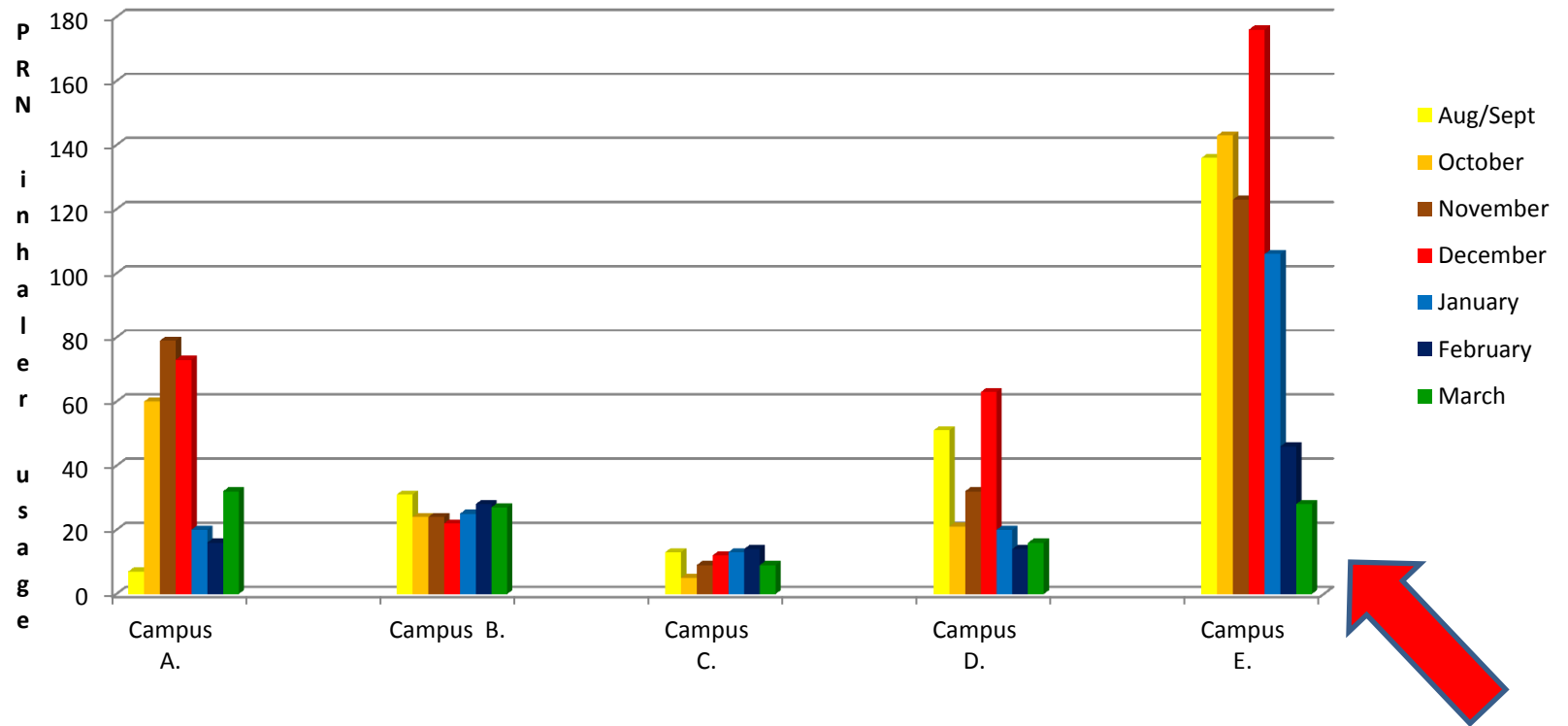
Is in classroom dust?



- Abramsom, S.L., Turner-Henson, A., Anderson, L., Hemstreet, M. P., Bartholomew, L. K., Joseph, L. M., Tang, S., Tyrrell, S., Clark, N. M., and Ownby, D. (August 2006). Allergens in School Setting: Results of Environmental Assessments in 3 City School Systems. *Journal of School Health*, 26(6), 246-249.

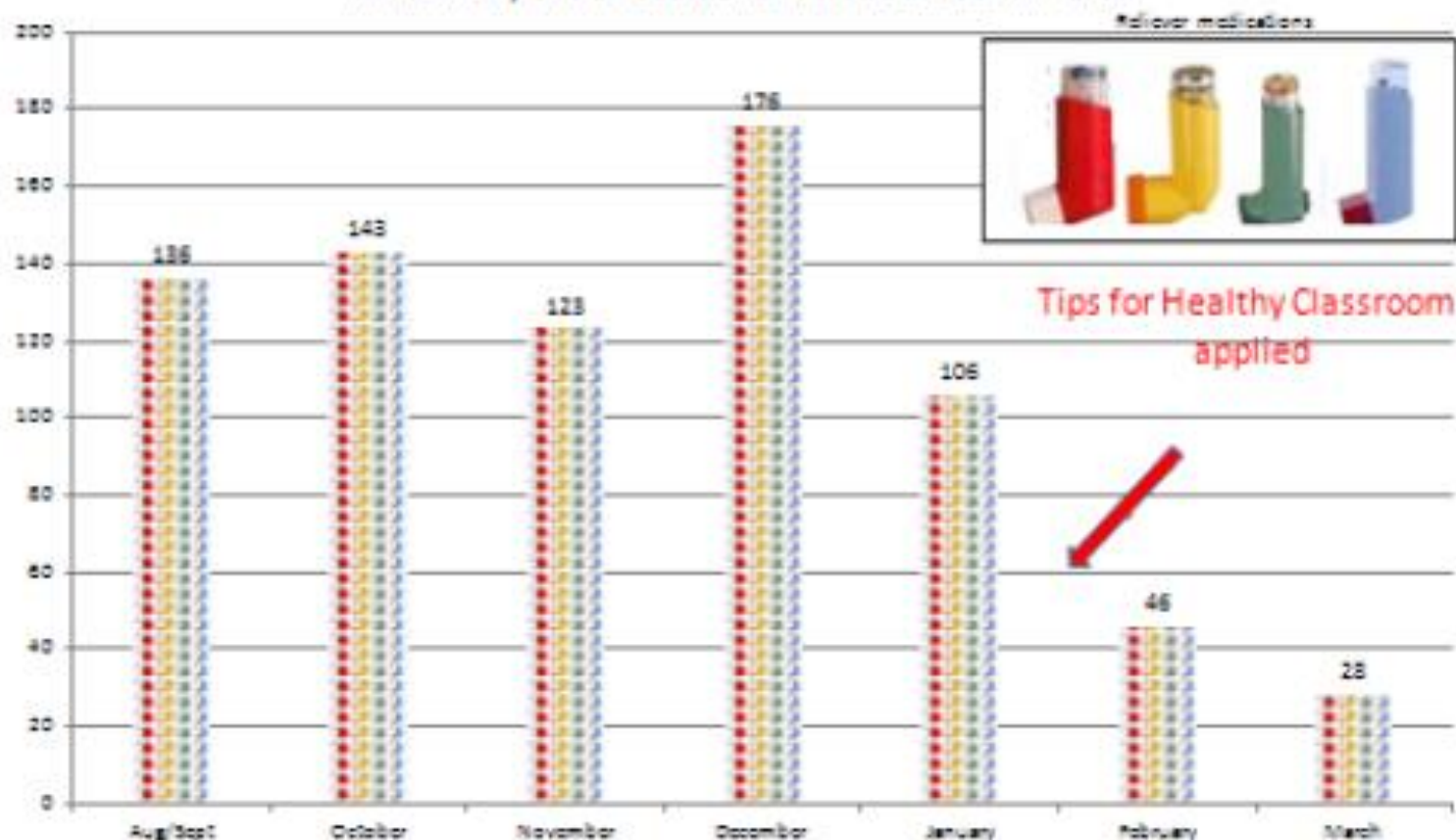
Benefits to Campus E Over Next Two Months

After Utilizing 'Tips for Healthy Classroom' Best Practices



Closer Look at Campus E's clinic visits for PRN inhaler usage.

Benefit seen after applying **Tips for Healthy Classroom**
Greater than 50% decrease in PRN (for symptoms) inhaler usage
In February and an additional 40% decrease in March



Environmental Intervention

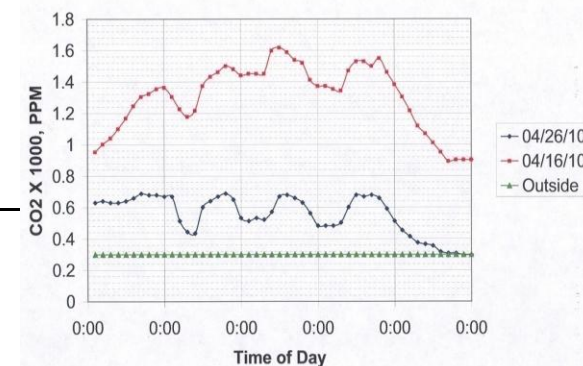
- Environmental assessment found that
 - overuse of aerosolized fragrances in dressing room
 - outside ventilation air unit was not in service.

Actions:

- Restoring outside air unit to service provided dilution air to reduce asthma triggers
- fragrance overuse education addressed by trainers in dressing room

Results: Reduction in PRN usage

<u>Month</u>	<u>School Weeks</u>	<u>PRN Inhaler Use</u>	<u>Notes</u>
January	4	17	Outside Air Stopped on 1/19
February	4	41	
March	4	41	
April 5 to 9	1	8	Health check ✓ Software Implemented
April 12 to 16	1	17	
April 19 to 23	1	11	Environmental Assessment performed
April 26 to 30	1	7	Outside Air Restored / Trigger Education
May 3 to 7	1	2	
May 10 to 14	1	5	
May 17 to 21	1	5	

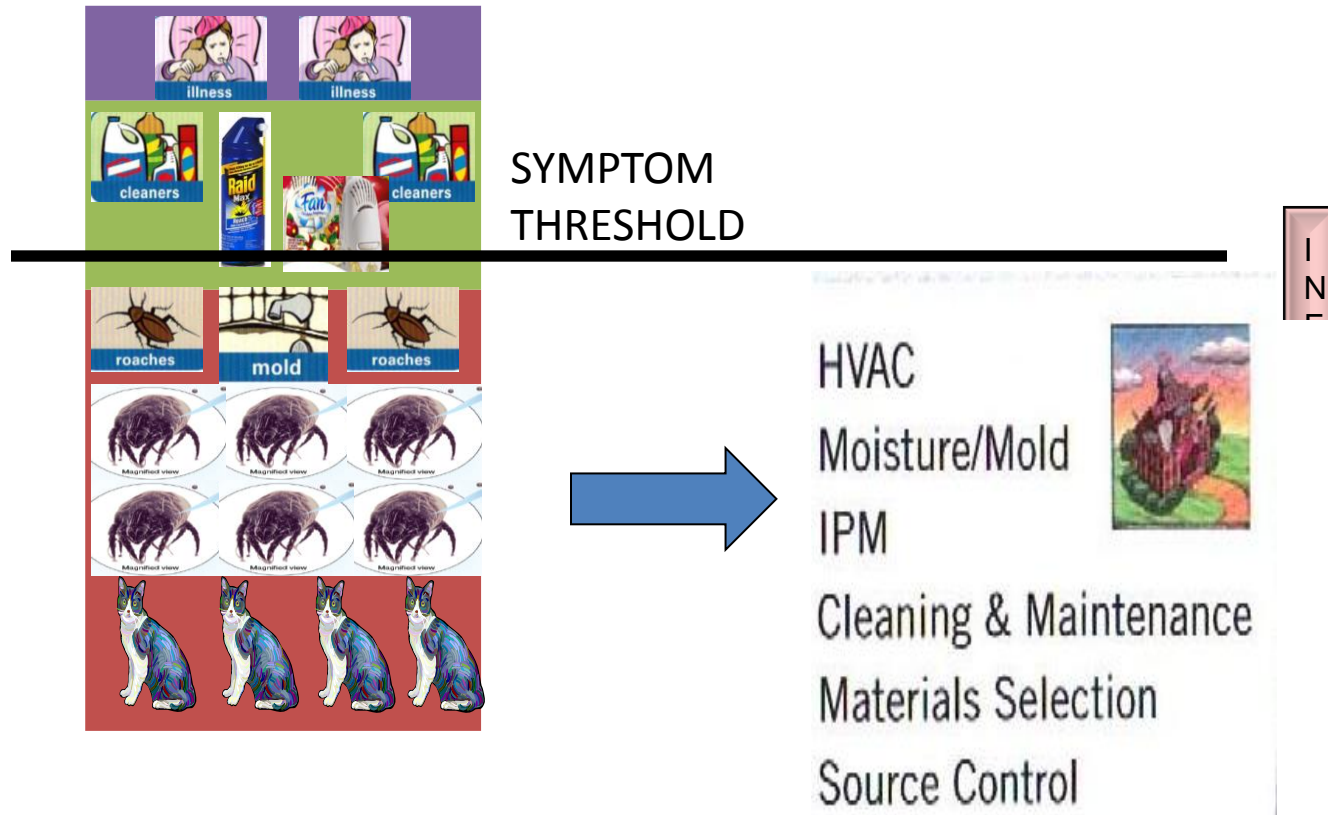


What Did We Really Do?

SYMPTOM THRESHOLD

■ allergens ■ irritants ■ infection

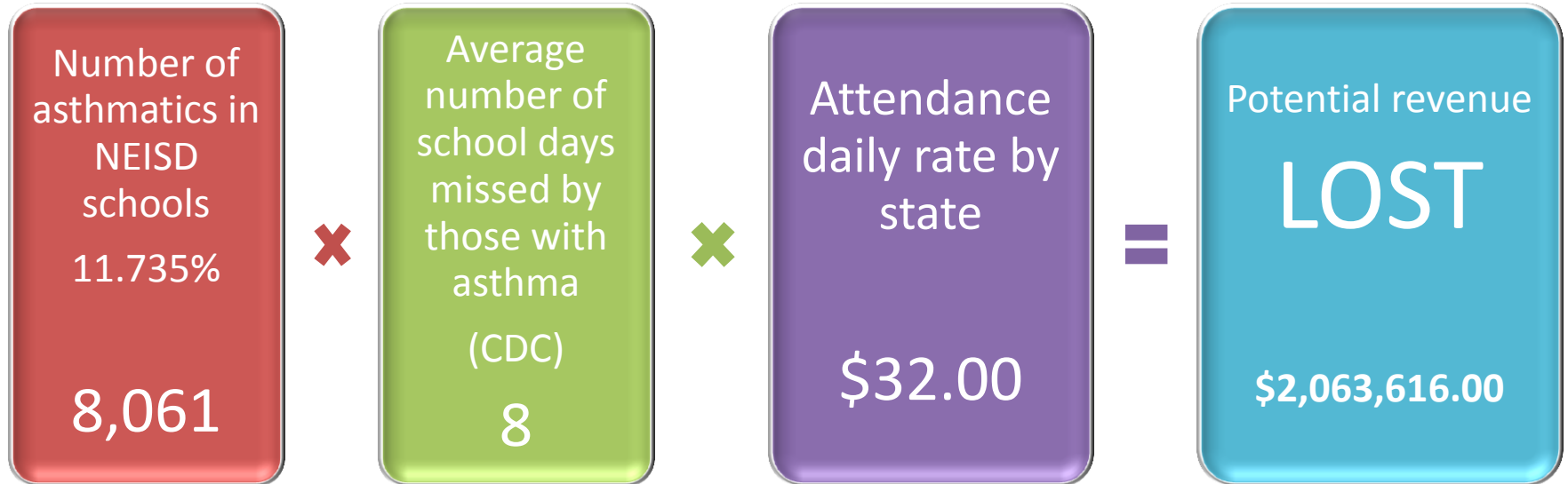
INFLAMMATION



Attendance Funding



Gains / Benefit



Benefits possible when Asthma /Allergy Control Environmental measures applied:

Reducing average number of schools days missed

due to asthma **by 50%.....**

\$ 1,031,808.00

Improving all asthmatics' attendance by only **ONE** day....

\$ 257,952.00

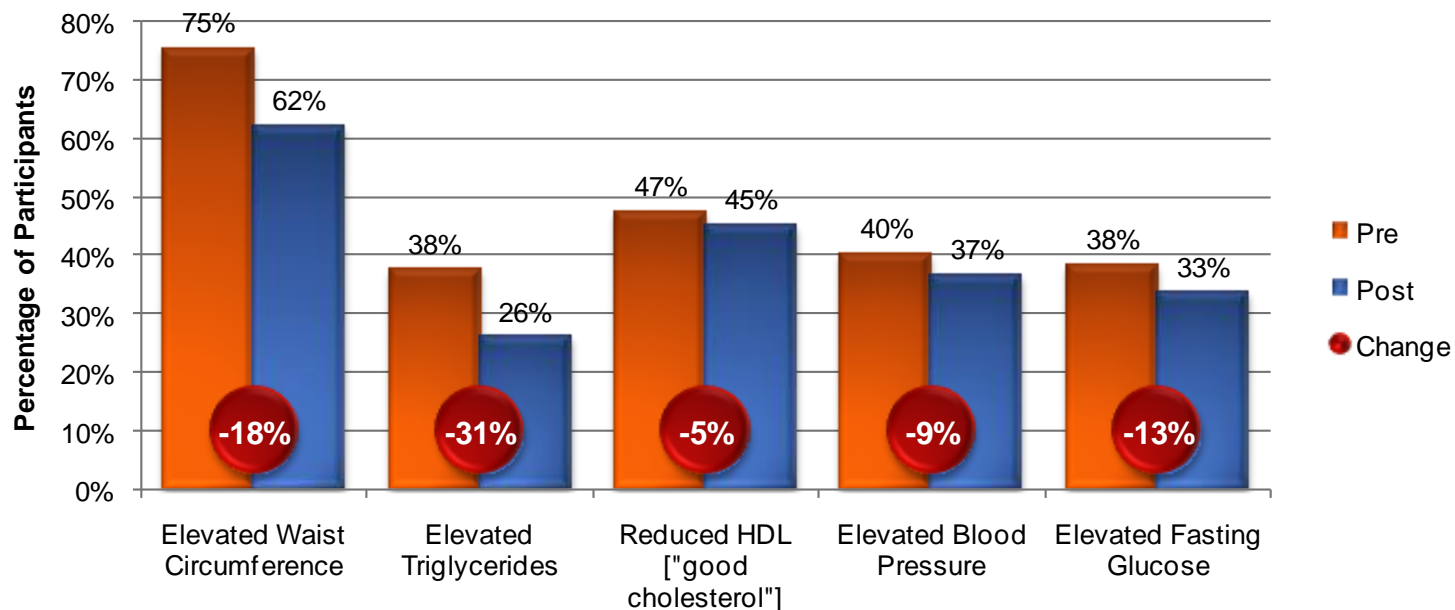
Healthy Lifestyles evaluation measurable in student benefits compared to the previous school year

- The ninth grade **attendance rate district-wide** showed a **2.3 percent gain**
- **79 fewer discipline incidences** in controlled substances
- **25 fewer in alcohol**
- **9 fewer in tobacco products**
- The **FITNESSGRAM®** scores showed a **15 percent gain in students passing all six test assessments**

Employee Wellness Clinical Lab Improvement

All NEISD Participants
Prevalence of Specific Risk Factors

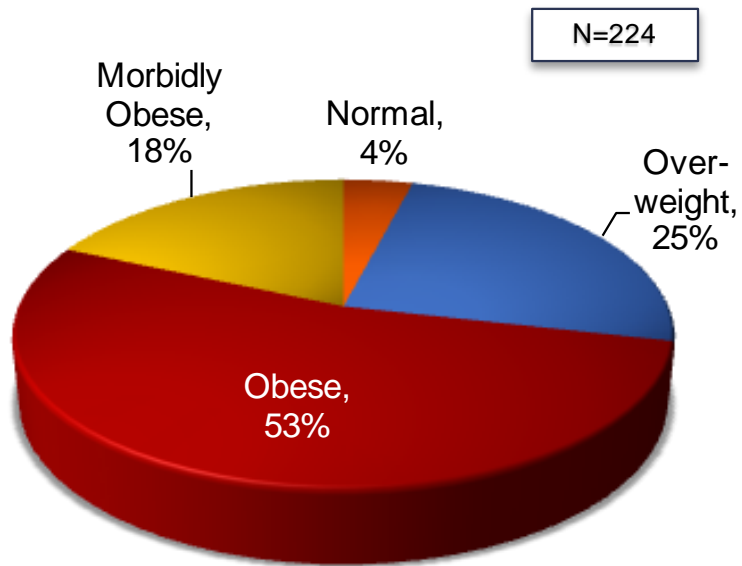
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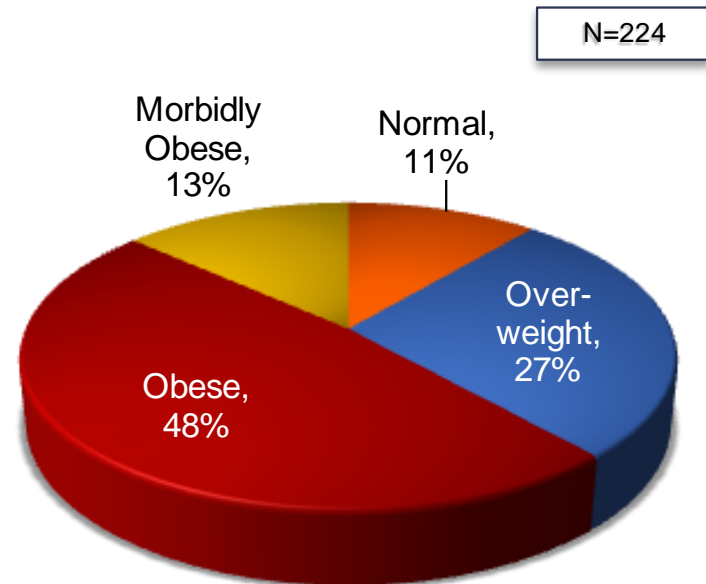
Pre & Post BMI

NEISD

Pre BMI Category Distribution



Post BMI Category Distribution



BMI Categories Defined

- Normal: BMI ≥ 18.5 and BMI < 25
- Overweight: BMI ≥ 25 and BMI < 30
- Obese: BMI ≥ 30 and BMI < 40
- Morbidly Obese: BMI ≥ 40



Texas Accountability Ratings

Texas Rating	2007	2008	2009	2010	2011***
Exemplary	9	19	28	24	16
Recognized	28	28	25	30	24
Acceptable	23	15	11	8	25
Unacceptable	1	0	0	0	0

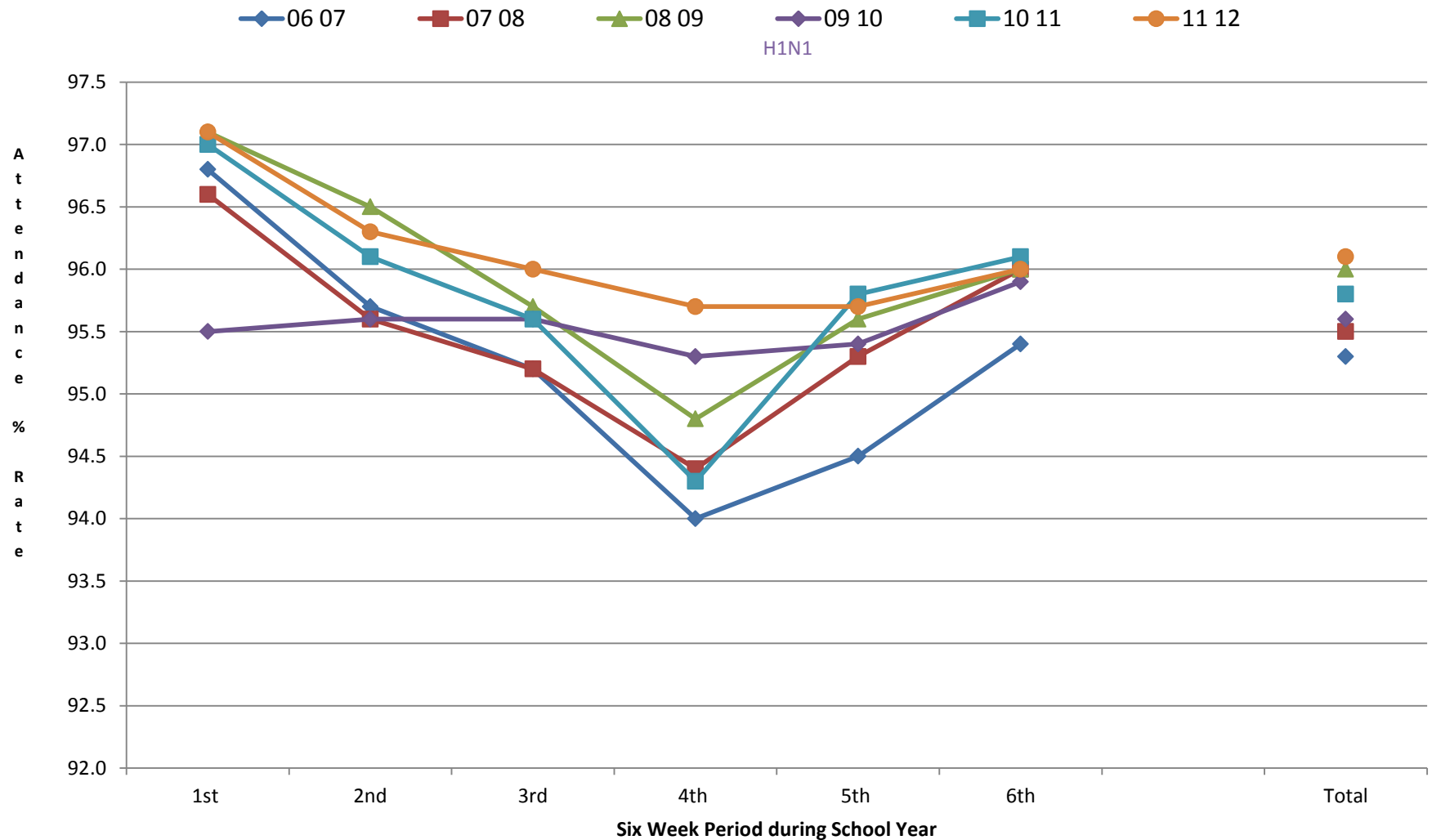
NEISD achieved the “Recognized” District Rating for the FOURTH year in a row.

***Among the notable changes in this year’s rating system was the system rated more students than in previous years.

For example:

- All tested special education students are now factored into the formulas, which was not the case in years prior.
- Commended and English Language Learners (ELL) performances are also new factors used in determining campus and district ratings. (Percentage floor of achieving / passing must be reached)
- Standards for the academically acceptable rating increased for math and science by five points each.

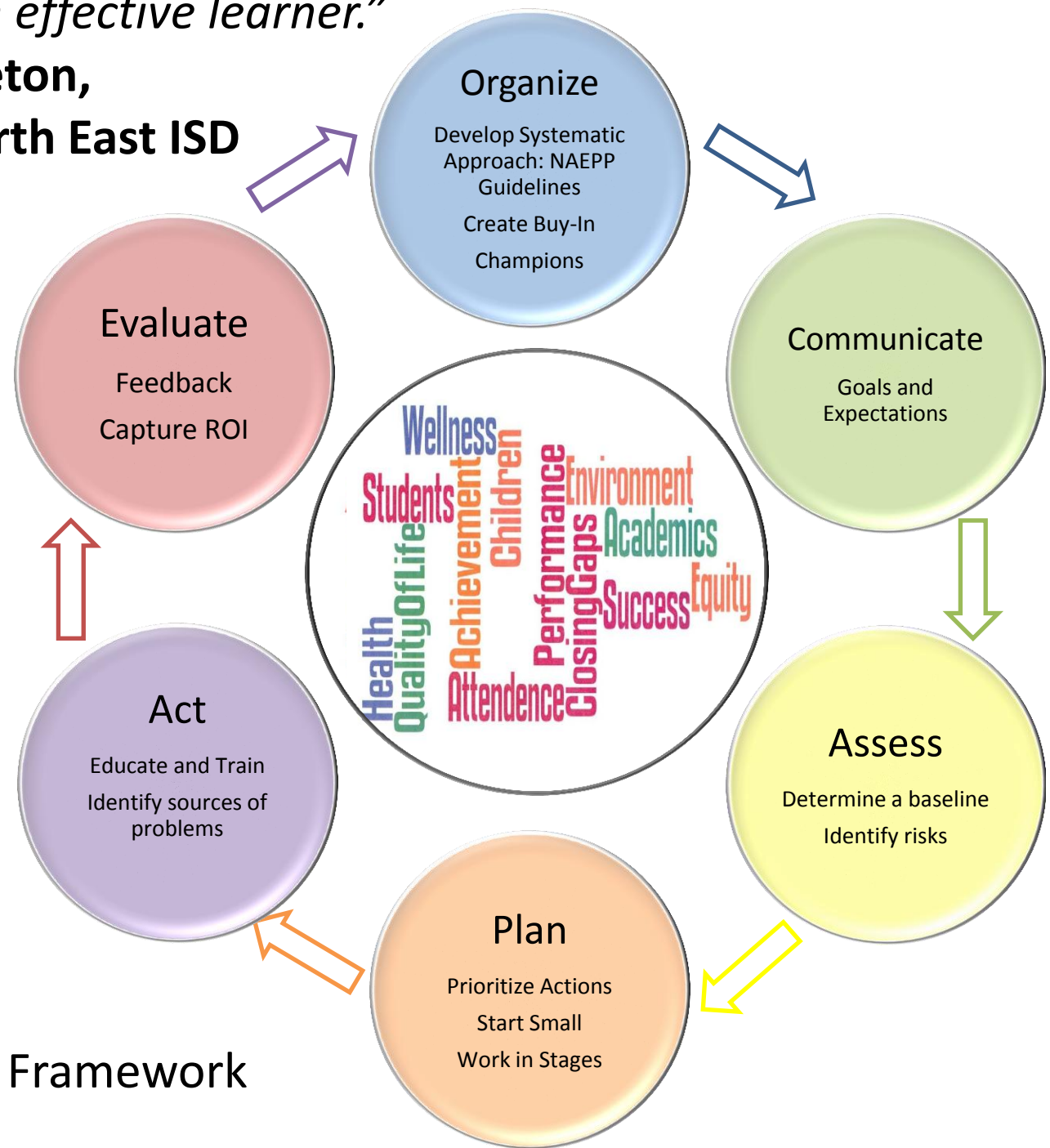
Financial Impact of Environmental Health: Increase ADA



"A healthy child is an effective learner."

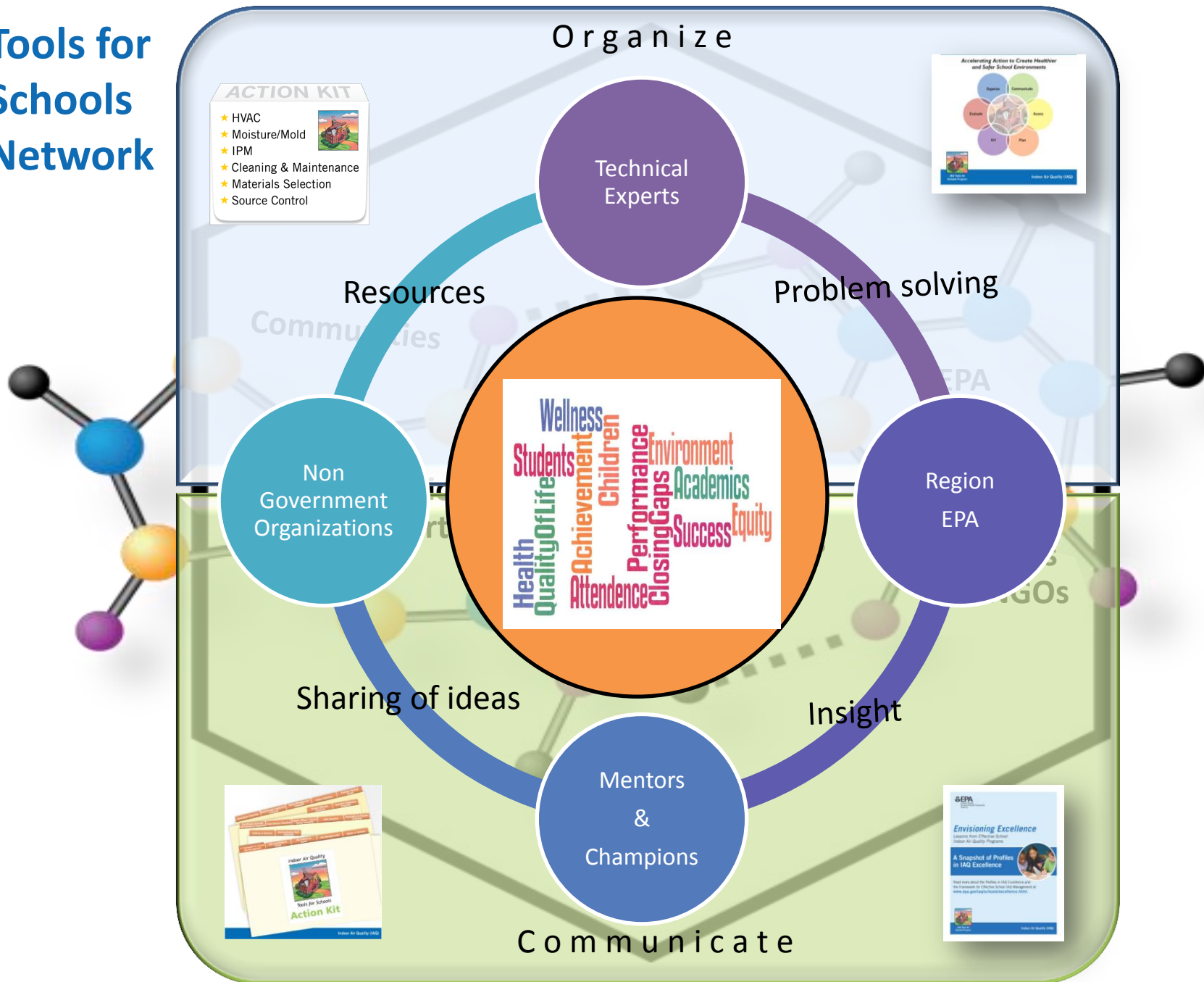
~ **Dr. Richard Middleton,**
Superintendent, North East ISD

- System that gathers relevant data/information
- **Data drives change**
- Performance
- Attendance
- **Healthier Children Learn Better**
- **Healthier Employees perform better**

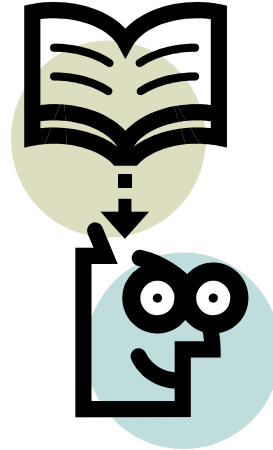


EPA Six Key Driver Framework

Tools for Schools Network



Create an environment conducive to
learning



Healthier children learn better...
and come to \$chool



References

- Abramsom, S.L., Turner-Henson, A., Anderson, L., Hemstreet, M. P., Bartholomew, L. K., Joseph, L. M., Tang, S., Tyrrell, S., Clark, N. M., and Ownby, D. (August 2006). Allergens in School Setting: Results of Environmental Assessments in 3 City School Systems. *Journal of School Health*, 26(6), 246-249.
- EPR 3. Export Report Panel 3: Guidelines for the Diagnosis and Management of Asthma (EPR 3 2007). NIH Publication No. 08-4051. Bethesda, MD, U.S. Department of Health and Human Services; National Institutes of Health; National Heart, Lung, and Blood Institute; National Asthma Education and Prevention Program, 2007.
- March, Aaron G. (Fall 2011). Fixing Asthma Care in the U.S. *Allergy and Asthma Today*, 9(3), 31-32.
- United States Environmental Protection Agency. December 6, 2012. *Envisioning Excellence: IAQ Strategies in Action (PDF)*. . Retrieved January, 2012, from <http://epa.gov/iaq/schools>.
- United States Environmental Protection Agency. February 6, 2012. *IAQ Tools for Schools Action Kit*. Retrieved January, 2012, from <http://epa.gov/iaq/schools>.
- United States Environmental Protection Agency. December 6, 2012. *Improved Academic Performance. Evidence from Scientific Literature*. Retrieved January, 2012, from <http://epa.gov/iaq/schools>
- United States Environmental Protection Agency. December 6, 2012. *Solutions to Common Issues. IAQ Design Tools for Schools*. Retrieved January, 2012, from <http://epa.gov/iaq/schools>.
- United States Environmental Protection Agency. December 6, 2012. *The Indoor Air Quality Tool for Schools Approach: Providing a Framework for Success (PDF)*. Retrieved January, 2012, from <http://epa.gov/iaq/schools>.
- United States Environmental Protection Agency. December 6, 2012. *Managing Asthma in the School Environment*. Retrieved January, 2012, from <http://epa.gov/iaq/schools>.
- Texas Department of Health and Human Services . Awards for Excellence in Texas School Health. <http://www.dshs.state.tx.us/schoolhealth/awardwinningprograms.shtm>

Beyond IAQ Management

North East Independent School District Wellness Program

Six Key Drivers of NEISD Wellness Program



Takes a proactive and holistic approach to student and staff health by focusing on disease management, physical activity and healthy lifestyles.



North East Independent School District

Wellness Program

Organize: NEISD established the Health Initiatives Committee in order to meet the district's goals of improving student and staff productivity and attendance.

Assess: Aggregate data was gathered on students/staff to assess their health/wellness educational needs. (For example: *asthma prevalence rate, healthy fitness zone levels, etc.*)

Plan: Plans short- and long-term goals, including community outreach events, healthy lifestyle curriculum in health courses, etc.

Act: Educates students on physical activity, movement and nutrition in order to help students make healthier choices.

Evaluate: Tracks and monitors assessment aggregate data, and evaluates health and wellness initiatives and interventions.

Communicate: Shares program's intent, activities, results and next steps with community on the website and at events.



Q&A Discussion

How can you envision using the Framework in your work?

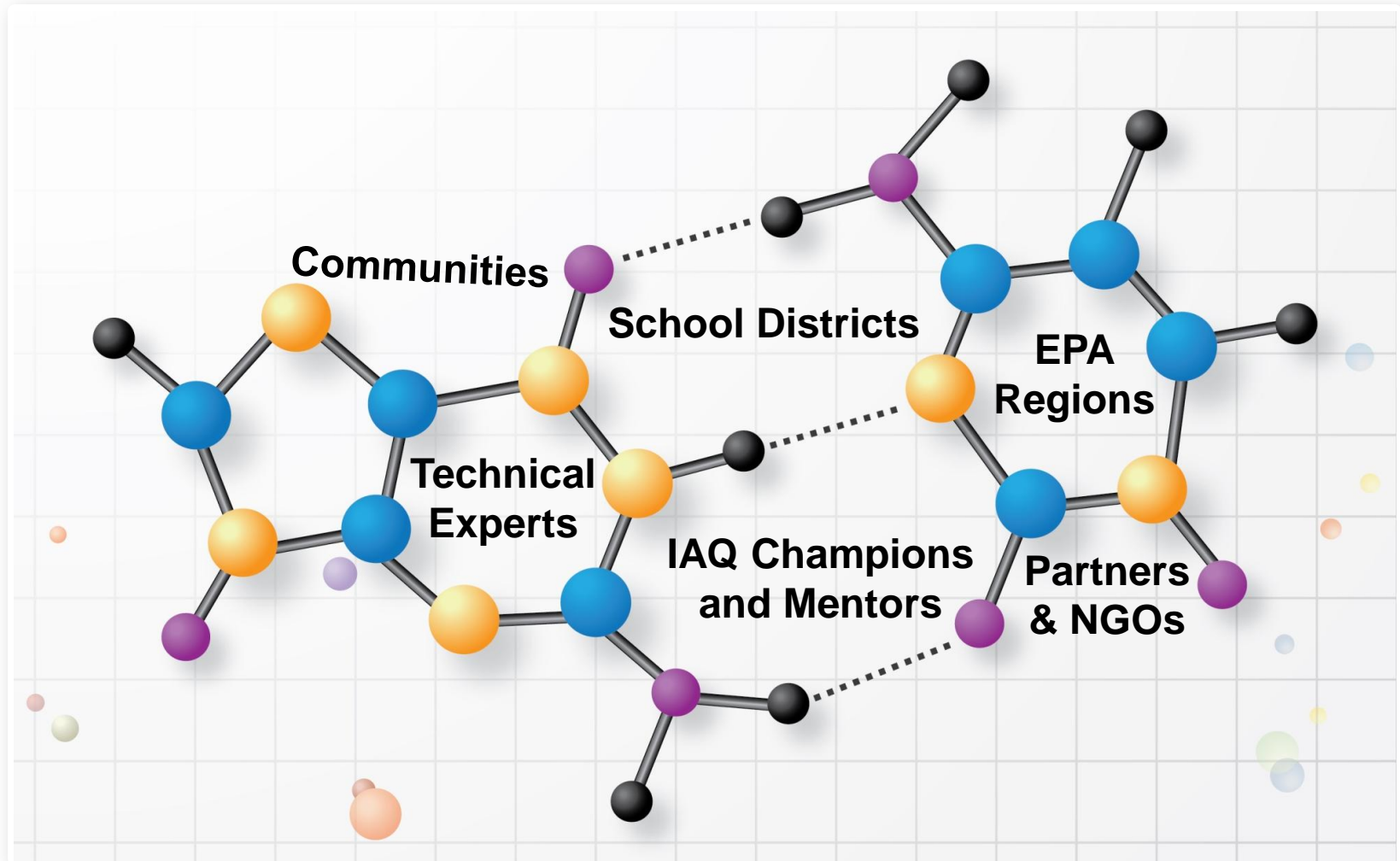


Q&A Discussion

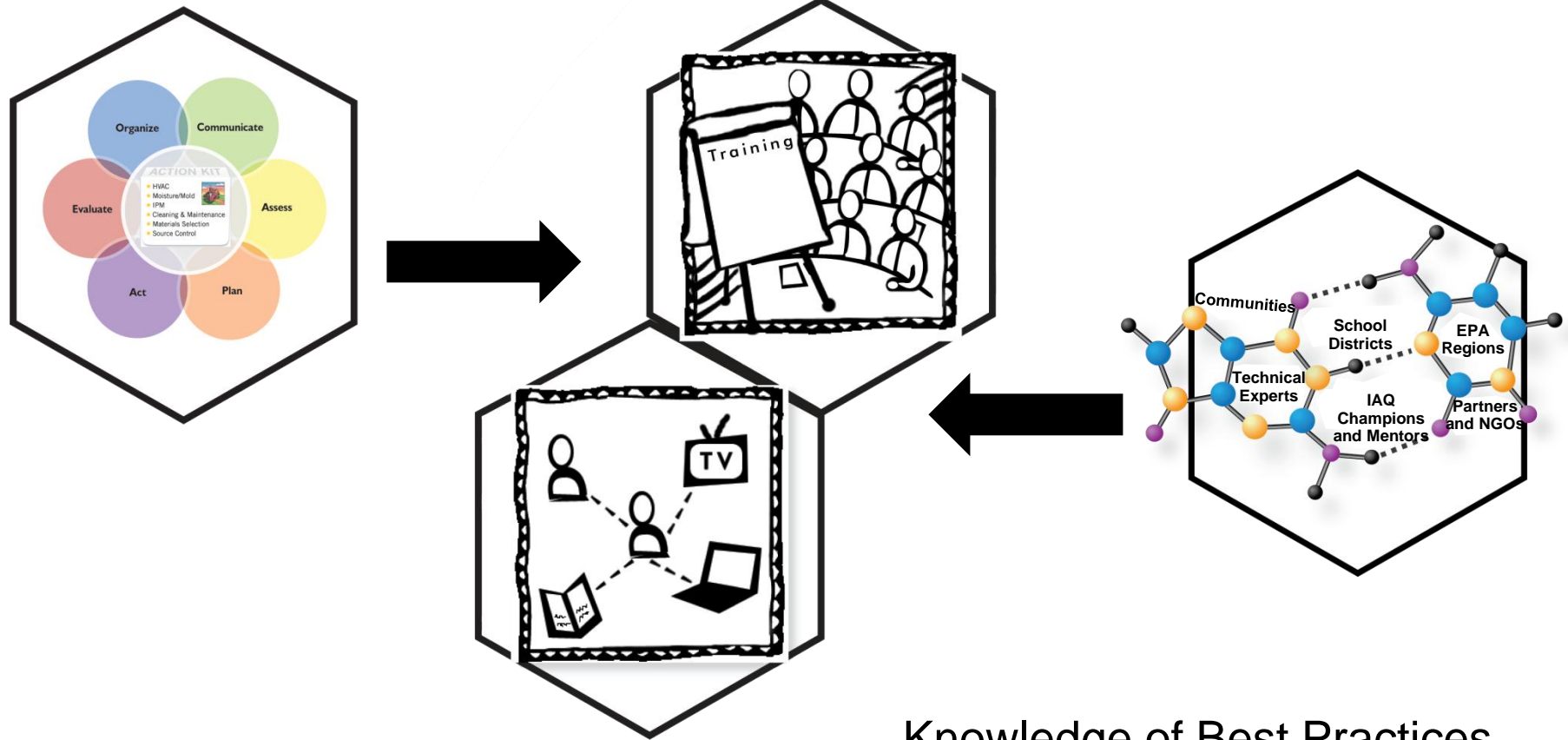
Ask the speakers your questions!



National Schools Network — Connections to Spur Action



National Schools Network: Three Platforms

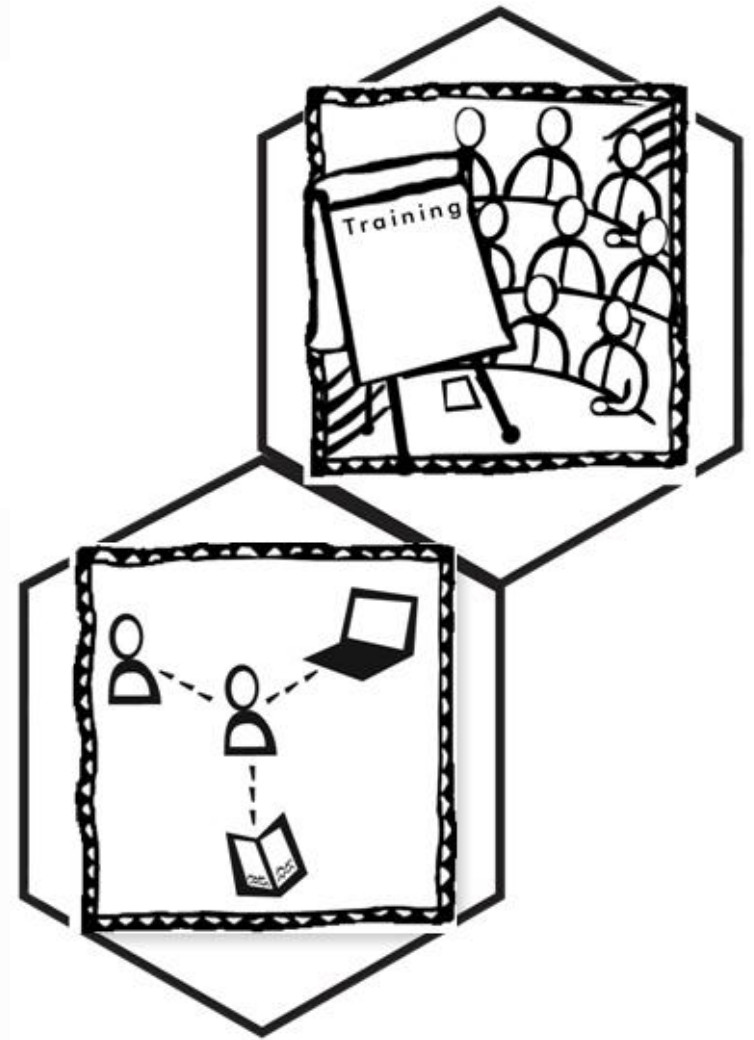


Knowledge of Best Practices
Network Members
Action Learning System



Keep in Touch!

- **Mentorship**
- **Webinars**
- **Email and Newsletter Updates**
- **Email Discussion List**



Resources

IAQ Tools for Schools Guidance: www.epa.gov/iaq/schools

Stay Connected:

<http://epa.gov/iaq/schools/connect.html>

- Connector e-newsletters and emails.
- Email Discussion List.
- Calendar of Events.
- Webinars archives and resources.
- Videos and podcasts.

Green Ribbon Schools:

EPA's *IAQ Tools for Schools* guidance is prominently featured as one of the recommended resources that schools can use to help meet the award criteria.



EPA United States Environmental Protection Agency

Advanced Search A-Z Index

LEARN THE ISSUES SCIENCE & TECHNOLOGY LAWS & REGULATIONS ABOUT EPA

IAQ Tools for Schools

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A to Z Site Index

Frequently Asked Questions

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Get the Action Kit

Health and Achievement

Find an IAQ Champion

Stay Connected

Symposium

You are here: EPA Home » Air » Indoor Air » IAQ Tools for Schools » Stay Connected

Connect • Learn • Share

Join the Network E-Newsletters Webinars Email Discussion List Videos

National Schools Network

Join the **National Schools Network** and collaborate with others who are working together to create healthy schools nationwide.

Use the resources below to connect to this collaborative learning effort.

E-Newsletters

The Schools Connector e-newsletter provides news and information from leading IAQ experts and school faculty. [View the latest Connector e-newsletter](#)

Sign Up

Webinar Presentations and Resources

View and download resources from technical Webinars that feature experts and school districts on a range of indoor environmental quality topics. [Access Webinar Presentations.](#)

Discover how to properly manage radon in your schools. **Webinar: Radon in Schools: What You Need to Know** (August 24, 2011)

Email Discussion List

The email discussion list gives you the power to connect directly to other stakeholders in the healthy school environment movement. [Read about and participate in the current discussions!](#)

Sign Up

Do you have questions about the Schools Connector email discussion list? Email the coordinator at IAQTSConnector@cadmusgroup.com.

Multimedia

Tiffany Delcour, the Indoor Air Coordinator at Louisiana Recovery School District, speaks about how the district is making a positive difference in addressing asthma in its schools and promoting overall environmental health. [Watch the Video](#) (09/17/09, 0:03:15, 0.0 kb, Get the free media player | Transcript)

[Explore the collection](#)

© Top of Page

IAQ Tools for Schools Action Kit
IAQ Design Tools for Schools
Develop Your Program
Health and Achievement

Technical Solutions
Academic Performance
Asthma
Case Studies

IAQ Champions
Webinars
E-Newsletters
Multimedia

Connect to the Hubweb
Publications Resources
Lesson Plans
Indoor Air Quality

Thank you!





The *Indoor Air Quality Tools for Schools* Approach: Providing a Framework for Success

EPA's *IAQ Tools for Schools* Program has been implemented successfully in tens of thousands of schools nationwide. The Framework for Effective School IAQ Management synthesizes the accumulated learning of more than 800 schools involved in a national survey of IAQ management practices; 200 applicants for *IAQ Tools for Schools* awards; and in-depth interviews, site visits and analysis of the five faculty school districts. The Framework provides a common language to describe the drivers of IAQ program success; detailed guidance on the proven strategies, organizational approaches, and leadership styles that are fundamental to program effectiveness; and a clear vision of the pathway to school IAQ excellence. Its highly flexible and adaptable structure allows any school, regardless of location, size, budget or condition, to use the Framework to launch, reinvigorate and sustain an effective IAQ management program.

The Framework: Key Drivers

The Six Key Drivers are the essential elements of effective and enduring IAQ management programs. Applying a cycle of continuous assessment, planning, action and evaluation, the Six Key Drivers work synergistically to deliver effective school IAQ management programs. The Six Key Drivers are:

- ▶ **Organize** for Success.
- ▶ **Communicate** with Everyone, All the Time.
- ▶ **Assess** Your Environments Continuously.
- ▶ **Plan** Your Short- and Long-term Activities.
- ▶ **Act** to Address Structural, Institutional and Behavioral Issues.
- ▶ **Evaluate** Your results for Continuous Improvement.

The Framework: Technical Solutions

The Six Technical Solutions define the most common issues that schools need to address to effectively manage IAQ risks. When addressed systematically and aggressively, an IAQ program that focuses on the Six Technical Solutions will deliver a healthier school environment. The Six Technical Solutions are grounded in the *IAQ Tools for Schools* Action Kit, the Center for Disease Control's School Health Policies and Programs Study and the management practices of leading school IAQ programs. The Six Technical Solutions are:

- ▶ Quality **HVAC**.
- ▶ Control of **Moisture/Mold**.
- ▶ Strong Integrated Pest Management (**IPM**).
- ▶ Effective **Cleaning & Maintenance**.
- ▶ Smart **Materials Selection**.
- ▶ Aggressive **Source Control**.

The Framework in Action

The *IAQ Tools for Schools* Framework: Six Key Drivers and Six Technical Solutions is designed to promote the proven approaches and strategies for IAQ management that advance environmental health in schools. This Framework can help everyone involved in your IAQ program understand the overarching purpose of the work your team does every day and how those day-to-day tasks translate into significant environmental health achievements in your schools. The tools and materials provided in the Action Kit will help you put the Six Key Drivers and Six Technical Solutions into action in your school district.



<http://www.epa.gov/iaq/schools/excellence.html>



The Framework for Effective School IAQ Management: Six Key Drivers

ORGANIZE

- Develop Systematic Approach
- Identify Existing Assets
- Design Standard Operating Procedures
- Empower an IAQ Leader
- Build an Effective Team
- Create Champions
- Secure Senior Buy-In

COMMUNICATE

- Share Your Goals
- Make IAQ Meaningful
- Be Transparent & Inclusive
- Communicate Results

EVALUATE

- Solicit Feedback
- Capture Return on Investment

ASSESS

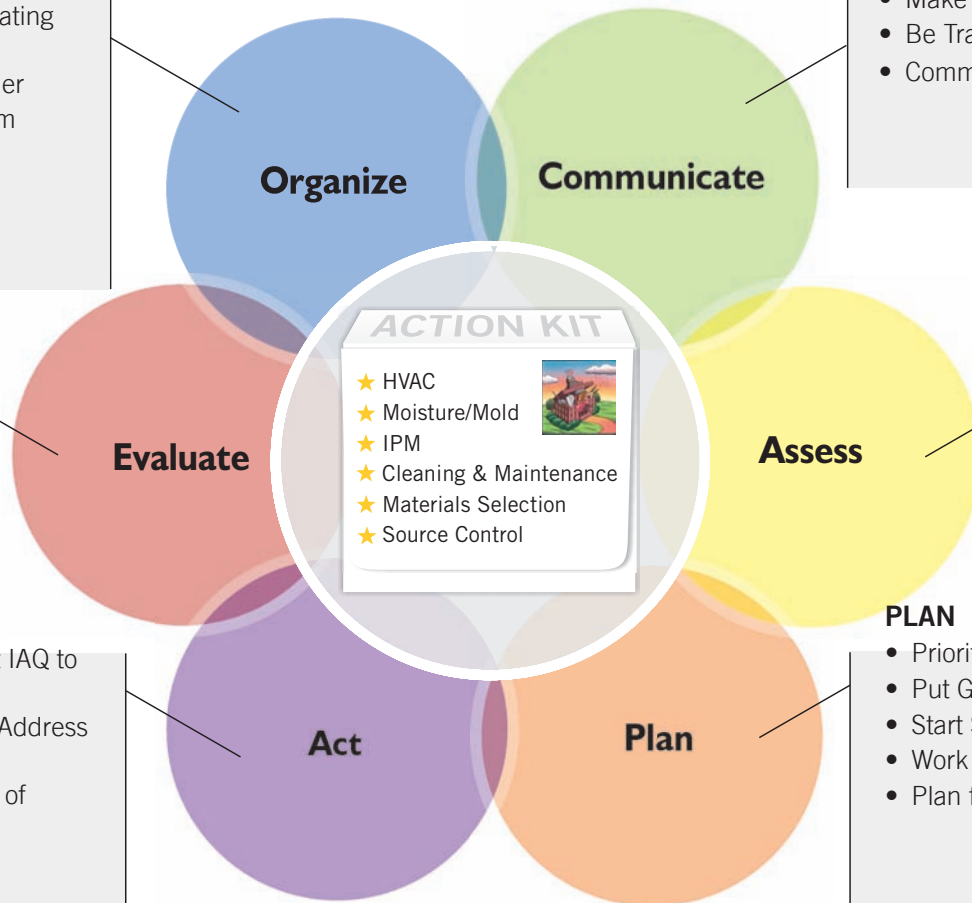
- Walk the Grounds
- Listen to Occupants
- Use Technology
- Determine a Baseline
- Keep Customers Satisfied
- Identify and Prevent Risks

ACT

- Educate Staff About IAQ to Change Behavior
- Train Occupants to Address IAQ Risks
- Address the Source of Problems

PLAN

- Prioritize Actions
- Put Goals in Writing
- Start Small
- Work in Stages
- Plan for the Future





The Framework for Effective School IAQ Management: Six Technical Solutions



Quality HVAC

- Inspect HVAC systems regularly
- Establish a maintenance plan
- Change filters regularly and ensure condensate pans are draining
- Provide outdoor air ventilation according to ASHRAE Standard or local code
- Clean air supply diffusers, return registers, and outside air intakes
- Keep unit ventilators clear of books, papers, and other items



Control of Moisture/Mold

- Conduct routine moisture inspections
- Establish mold prevention and remediation plan
- Maintain indoor humidity levels between 30% and 60%
- Address moisture problems promptly
- Dry wet areas within 24-48 hours



Strong Integrated Pest Management (IPM)

- Inspect and monitor for pests
- Establish an IPM plan
- Use spot treatments and baits
- Communicate with occupants prior to pesticide use
- Mark indoor and outdoor areas treated with pesticides



Effective Cleaning & Maintenance

- Conduct routine inspections of school environment
- Develop a preventative maintenance plan
- Train cleaning/maintenance staff on protocols
- Ensure material safety data sheets (MSDS) are available to staff
- Clean and remove dust with damp cloth
- Vacuum using high-efficiency filters



Smart Materials Selection

- Maintain products inventory
- Develop low-emitting products purchasing and use policies
- Use only formaldehyde-free materials
- Use only low-toxicity and low-emitting paint
- Select products based on product rating systems
- Use least toxic cleaners possible (only those approved by the district)



Aggressive Source Control

- Conduct regular building walkthrough inspections
- Test for radon; mitigate if necessary
- Implement a hazardous materials plan (use, label, storage and disposal)
- Establish a school chemical management and inventory plan
- Implement Smoke-Free policies
- Establish an anti-idling school bus policy
- Use walk-off mats at building entrances
- Conduct pollutant-releasing activities when school is unoccupied

