





Tacoma-Pierce County Health Department's School Inspection Program, Data Collection and Analysis

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Presentation Outline

- What do we do?
- How do we do it?
- Why do it?
- What have we found?
- How can others benefit from what we do?




What do we do? The essentials of a School Program

- The School Advisory Board
- Plan Review
- Inspection & Data Collection
- Consultation




What do we do? School Advisory Board

- A place to showcase the Health Department's variety of programs
- A place to build relationships
- A place to learn about schools and what is important to them
- A place to connect people




What do we do? Plan Review

- Giving health and safety issues the best chance
- Consulting early with the design team
- Some things just take time
- A chance to explain the H&S perspective
- Represent Health Department's larger health goals



What do we do? Inspection and Data Collection

- Provide biannual inspection of all schools
- Health Data
- Ambient Data
- Interior Data
- Facility Data – Pre-inspection questionnaire




How do we do it? Inspection and Data Collection Health Data





How do we do it? Inspection and Data Collection Health Data

Building Health History						
Date	population	# absent	% absent	asthma #	asthma %	
10/10/08	440			32	7.3%	
10/6/08		40	9.0909			
10/7/08		34	7.7273			
10/9/08		49	11.136			
10/10/08		44	10			
				PC AVE		PC AVE
TOTALS		167	9.5%	7.5%		5.0%
		4				




How do we do it? Inspection and Data Collection Ambient Data

Ambient Conditions						
CO2	Max	RH%	Temp	Time		
369	1069	51.1	50.3	11:30		
387	1087	32.3	58.4	1:35		
Particle counts						
0.3	0.5	0.7	1	2	5	10 TOTAL Time
71958	3308		249	134	9	0 75658 11:30
39606	1800		170	101	7	1 41685 1:35



How do we do it? Inspection and Data Collection Interior data

Indoor Environmental Quality Data																
Time	room #nts	occupa				Particle counts					Actvst					
		CO2	CFM	Temp	RH %	0.3	0.5	0.7	1	2		5	10Total			
11:47	office	5	697	32.3	66.5	42.3	11505	686		107	103	30	6	12437	carpet	L
12:00	office	0	612	44	68	37.7	10053	716		124	198	69	22	11182	carpet	L
12:08	19	18	1372	10.2	71.9	48	10202	1154		369	558	102	27	12412	carpet	L
12:11	117	6	628	23.1	73	37	17412	1114		162	150	19	7	15864	carpet	L
12:15	library	1	570	53	69.9	32.7	14043	583		47	33	11	1	14718	carpet	L
12:17	14	0	526	67.9	69.2	35	15706	925		110	72	16	5	16834	carpet	L
12:20	12	26	978	17.4	70.7	41.8	16758	1049		165	171	32	9	19164	tile	L
12:27	10	0	760	27.2	70.8	36	14969	1060		190	215	20	4	16458	tile	L
12:58		29	910	19.6	72.1	37.3	16835	1598		467	580	93	32	19705	tile	M
1:02	4	0	467	110.4	69.4	35.6	10965	672		69	32	1	0	11436	carpet	L
1:06	mp1/2	2	620	42.4	70.5	35.5	11424	930		197	179	17	1	12748	tile	L
1:11	gym	350	826	23.2	69.2	40.1	11361	1886		748	1276	264	56	15591	wood	H
1:14	gym	50	544	60.9	69	33.7	10637	776		141	210	42	14	11820	wood	H
1:22	E-1	0	556	54.1	69.4	35.8	8989	608		80	85	14	0	847	carpet	L
12:58	E-2	17	2249	5.8	71.9	50.8	14674	2599		1211	1864	293	33	26497	carpet	L
12:49	E-4	23	1781	7.8	72.8	41.9	13228	1058		326	497	124	23	18256	carpet	L



How do we do it?

- Funding
- Attitude is everything!



Why do we do it?

- WAC 246-366 requirement.
- Make a difference for the community.
- Learn something about schools
 - What is normal?
- Use what we learn to make better schools



What have we found? Health Data

- Average rate of Absenteeism
• 7.4% n=850
- Average Rate of Student Asthma
• 5.7% n=212



What have we found? Absenteeism has a seasonal pattern

Season	Min	Ave	Max	Count
Fall	.9%	5.9%	17.6%	248
Winter	1.3%	7.4%	19.2%	201
Spring	.3%	8.5%	38.1%	337



What have we found? Absenteeism – grade level matters!

	Min	Ave	Max	Count
High Schools	1.3%	14.6%	38.1%	120
Middle Schools	1.3%	8.3%	20.6%	168
Elem Schools	.3%	5.7%	19.2%	558



What have we found? Asthma Rates – grade level matters!

	Min	Ave	Max	Count
High Schools	1.5%	7.1%	17.8%	28
Middle Schools	.9%	6.5%	13.3%	43
Elem Schools	.5%	5.2%	13.6%	140



What have we found? Outside Air

	Min	Ave	Max	Count
CO2	238	384	572	350
ASHRAE adjusted Temp	33.5	61.1	85	346
RH %	16.7%	46.8	85.4	344

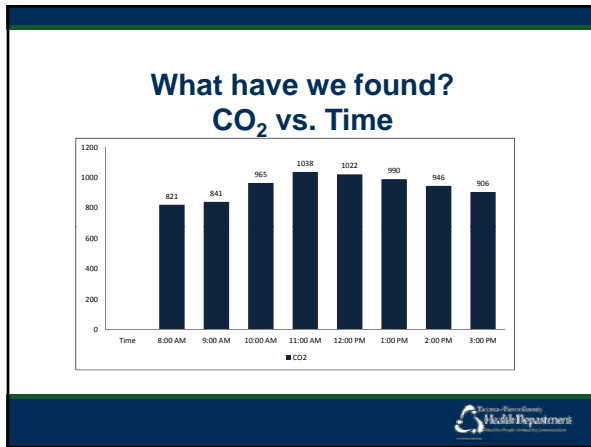


What have we found? Outside Air

	Min	Ave	Max	Count
Particles	1173	34377	180403	344
Total				
10	0	11	460	58
5	0	43	6497	344
2	14	324	4425	344
1	16	451	2936	344
0.7	27	645	7500	286
0.5	105	2809	24576	344
0.3	816	30212	158407	344

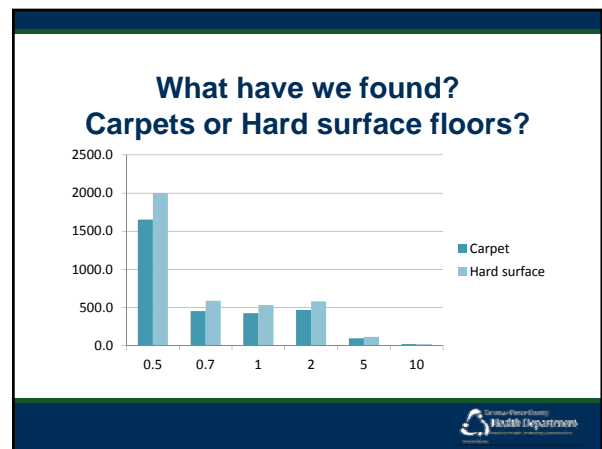
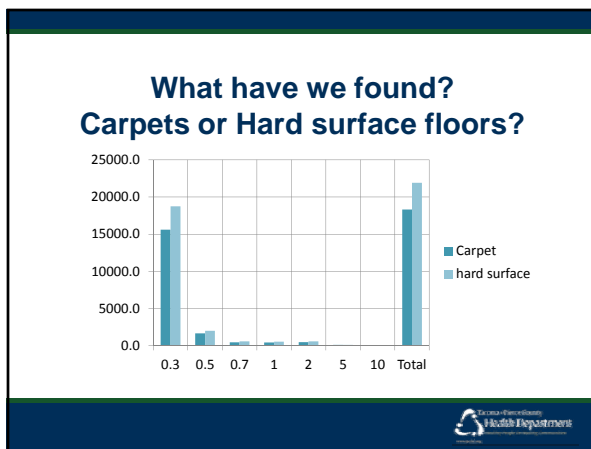
What have we found? Inside Air

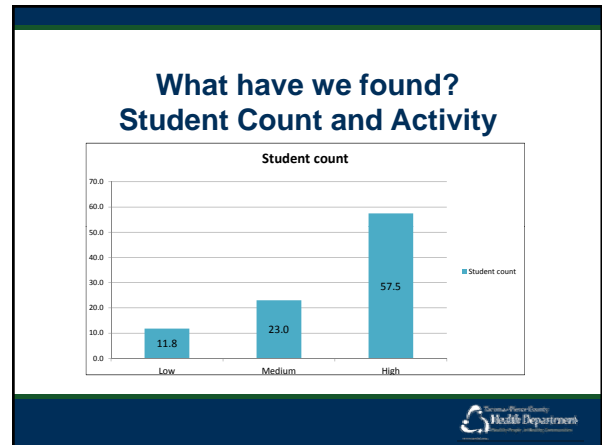
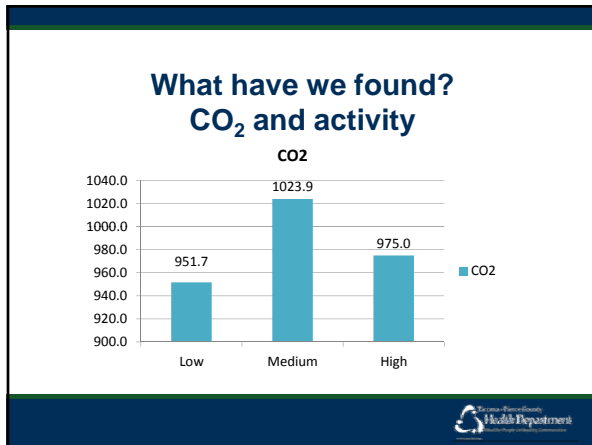
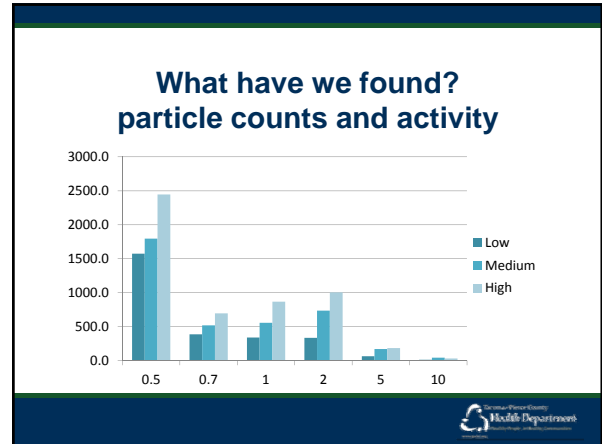
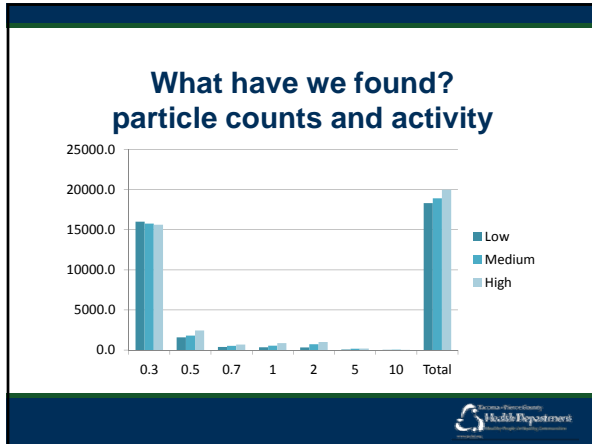
parameter	Level	General	counts	Classrooms	counts	portables	counts
CO ₂ in PPM	Min	370	2659	392	2103	403	219
	Ave	997		1058		1327	
	Max	3751		3751		4471	
Temp in degrees F	Min	54.6	2617	59.5	2072	65	207
	Ave	71.1		71.4		71.7	
	Max	83.0		83.0		78	
Relative Humidity	Min	5	2526	7.8	1993	24.9	181
	Ave	40.2		40.3		44.2	
	%	Max		73.9		71.3	
Ventilation Rate	% over	29%	2536	23%	2003	24%	190
	% under	29%		35%		43%	



What have we found? Indoor Air – particle counts

Particle size	0.3	0.5	0.7	1	2	5	10	Total
Outside	30212	2809	645	451	324	43	11	34277
Inside	16756	1805	574	454	448	88	19	19707
Portables	19404	2277	899	784	798	157	19	24260
Carpet	15513	1573	417	397	452	95	20	18072
Hard surface	16677	1789	451	421	443	88	17	19260
Fall	18065	1999	624	466	426	80	19	21438
Winter	15723	1664	450	416	450	92	-	18459
Spring	17750	1907	621	527	479	92	-	20596





How can others benefit from what we do?

- This is a template for a successful school program
- Working collaboratively with schools helps make in-roads for larger HD goals
- This information provides new resources to evaluate IAQ issues
- This information provides a resource for avoiding IAQ problems

Conclusions

- This data can assist us in looking at the school environment in many new ways
- Lots of further work and evaluation of the data is needed to tease out all that it can tell us
- This kind of inspection service is of value to schools, especially as more and more information shows the connection between health and learning