Recess Guidance Process Evaluation

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Program Background

The Utah Asthma Program (UAP) is part of the Utah Department of Health (UDOH) in the Bureau of Health Promotion and is funded by a grant from the Centers for Disease Control and Prevention (CDC). The state applied for and was granted funding in 2001 to develop state capacity to address asthma from a public health perspective, including providing leadership for, and coordination of, asthma awareness, access, and education. Program staff includes a part-time program manager, a part-time epidemiologist, and three full-time program specialists. Staff also has access to epidemiological consultation and support regarding the surveillance component of the program through the UDOH.

The program is responsible for guiding, developing, and implementing the Utah Asthma Plan and for bringing together resources and partnerships to address asthma throughout the state. The program goals are:

- Create an infrastructure to address asthma from a public health perspective;
- Create a public health assessment and monitoring system for asthma;
- Build partnerships and improve partner capacity; and
- Develop population-based strategies to improve asthma care and management.

Recess Guidance Background

The first Recess Guidance document was drafted in 2003 in response to confusion among schools and parents on recess practices on poor air quality days. During the first air quality and health summit, the Recess Guidance was created by area partners based on national air quality guidelines. After drafting the guidance, three studies were completed by UAP partner organizations in order to ensure appropriateness of the Recess Guidance and to substantiate cut-off values for the guidance. Two studies were completed to confirm that indoor air contained less particulate matter on days with poor air quality. Two more studies were completed to measure lung function among children after a 15-minute recess on days with poor air quality. Based on these studies, numerical guidelines were established.

After these studies were completed, focus groups were held in four school districts to discuss revisions to the Recess Guidance based on new EPA air quality standards. These focus groups included questions related to knowledge of air quality and the Recess Guidance; attitudes toward the two previously mentioned topics; and utilization of the Recess Guidance. School districts reported confusion because of differing messages from area agencies and connection between the “red, yellow, and green” air action days. In all but two of the districts, decisions on recess were made by principals. After the studies and focus groups, a second air quality and health summit was convened to address findings and make changes to the 2003 Recess Guidance. A revised Recess Guidance was disseminated in 2007 and is currently being used by the UAP.

Evaluation Purpose and Questions

The purpose of this evaluation was to identify whether the Recess Guidance is being used by schools and if schools are implementing it correctly. Through this evaluation, the Asthma Program is hoping to

identify strengths and weaknesses in the intervention to make it more effective. The evaluation questions are:

1. Is it being used properly? (somehow link responses to available air monitoring data)
2. Did they keep all the students in? Or do they use the three categories to allow most of the students to take outdoor recess?
3. Who makes decisions regarding recess on poor air quality days?
4. Where are schools getting air quality information?
5. What can be done to make the Recess Guidance better?

Methods

The survey instrument was constructed by the Evaluation Group, which consisted of Asthma Program staff members, Toni Carpenter, Andrea Jensen, Steve Packham, Barbara Walton and Michelle Hofmann. The questionnaire was constructed based on the evaluation questions mentioned earlier and included straightforward, multiple choice questions. The survey instrument contained 12 multiple choice questions and one free response. A simplistic design of the survey instrument was one criterion of the Evaluation Group so as to increase response rates. The survey was designed to be completed in about five minutes and was pilot-tested by Michelle Hofmann and Barbara Walton.

Next, the Utah Asthma Program completed the Utah Department of Health Institutional Review Board (IRB) form and submitted it under the exempt status because no personal identifiers were being collected, no sensitive information was asked, and no vulnerable populations were being accessed. After the IRB was approved, the survey was launched on Zoomerang in April 2010. The Internet link for the survey was sent to school superintendents first and then to school principals. The target audience for this survey was principals and superintendents in the areas of Northern Utah, the Salt Lake City area, and Utah County. Monitors in these areas collect daily $PM_{2.5}$ levels. Northern Utah includes monitors in Logan, Brigham City, and Ogden. The Salt Lake area monitors are in the Cottonwood, Southeast and Northwest areas. Utah County monitors are in Provo and Lindon. Several other monitors were identified in these three geographic areas and were used to look at the spread of poor air quality because data at these monitors are collected only every three days.

After the initial e-mail, a follow-up e-mail was sent to those principals who had not yet completed the survey. The results were then extracted from Zoomerang in an Excel file and analyzed using Excel. Because no demographic data were collected, most of the results were response numbers and percentages. There was enough information to identify district response rates and district response rates for question 5, letter E.

Results

The online survey was sent to public and charter school principals in Alpine, Cache, Canyons, Davis, Granite, Jordan, Logan, Murray, Nebo, Ogden, Provo, Salt Lake, and Weber school districts. The total sample size was 412 and about half of the total sample completed the survey. The response rates were much higher than the average for most Internet-based surveys, which average a 30-35% response rate. The response rates were also quite high considering that the survey was launched during the last month of school, which is a busy time of year. Table 1 lists specifics on the sample sizes in each geographic area.

Table 1: Respondent Sample

	Number responded	Area sample size	Percent
Total Sample	205	412	50%
1. Utah County	36	88	41%
2. Salt Lake Area	123	212	58%
3. Northern Utah	26	62	42%
4. Charter Schools	17	76	22%

Based on the questions asked, the survey results regarding school officials' familiarity with the Recess Guidance and the number of days the students were kept inside are listed in Table 2. It is interesting to note how many days students were kept inside during the 2009-2010 school year, though few schools track the actual days and so these are mostly estimates by school principals.

Table 2: Questions 1-7

	Yes	No	Percent (yes)
Q1: Are you familiar with the Recess Guidance for schools?	173	32	84%
Q2: Do you track # of days inside for recess due to poor air quality?	43	161	21%
Q3: Who makes the decision?			
A) Superintendent	2		1%
B) Principal	175		85%
C) Nurse	0		
D) Other	28		14%
Q4: Were students ever kept inside for recess last winter because of poor air quality?	192	12	94%
	Number of schools		Percent
Q5: How many days were students kept inside?			
• 0 or not answered	21		10%
A) 1-2	30		15%
B) 3-4	44		21%
C) 5-6	45		22%
D) 7-8	28		14%
E) more than 8	35		17%
Q6: How many days were **all** students kept in?			
A) 1-2	66		30%

B) 3-4 C) 5-6 D) 7-8 E) I don't know	50 29 22 38		24% 14% 11% 19%
Q7: How many days were only respiratory sensitive students kept in? A) 1-2 B) 3-4 C) 5-6 D) 7-8 E) I don't know	 19 35 30 45 76		 9% 17% 15% 22% 37%

In question 5, letter E, those 35 schools that kept students inside for recess on more than eight days represent 9.7% of schools in the Northern Utah area, 10.8% of schools in the Salt Lake area, and 4.5% of schools in Utah County. In the past few years, schools in Northern Utah and the Salt Lake area kept the students inside for more days, which is correct, as they have had more days of poor air quality. However, they don't have anywhere near eight days of poor air quality, which will be described more in the next table.

Based on inconsistencies in the questions that were asked as to which specific students were kept inside on days of poor air quality; it is being extrapolated that most schools are keeping all students inside on days of poor air quality.

Table 3 contains data from the Department of Environmental Quality on days during the winter of 2009-2010 when the $PM_{2.5}$ levels exceeded the standard of 35 ug/m^3 and when they exceeded the 55 ug/m^3 and 90 ug/m^3 marks. As mentioned earlier, when $PM_{2.5}$ levels exceed 55, respiratory-sensitive and respiratory-compromised children should stay inside. When $PM_{2.5}$ levels exceed 90, all students should be kept inside.

Table 3: Poor Air Quality Data for the 2009-2010 School Year

	Days standard was exceeded	Days over 55	Days over 90
Northern Utah	11	3	0
Salt Lake Area	14	5	0
Utah County	6.5	1.5	0

At no point during the 2009-2010 school year were there any days in any of the districts where all students needed to be kept inside for recess. This is something that will need to be addressed in further interventions involving the Recess Guidance.

Further information from the survey included requirements for children to stay inside for recess, the frequency and timing used to check air quality, and the sources used to identify air quality levels. These results are found in Table 4.

Table 4: Questions 8-12

	Number of schools	Percent
Q8: Requirements to stay in?		
A) Doctor's note	8	4%
B) Parent note	72	35%
C) Nurse recommendations	7	3%
D) Asthma Action Plan	35	17%
E) Other (Please specify)	81	40%
Q9: Tool used to make decision?		
A) The red, yellow, and green air action days	71	35%
B) The $PM_{2.5}$ thermometer	106	52%
C) Not sure	5	2%
D) Other	20	10%
Q10: Times per day air quality checked?		
A) Once	56	28%
B) Twice	56	28%
C) Several times a day	78	39%
D) Never	11	5%
Q11: Timeframe during day when checked?		
A) Before school starts	86	
B) Just before recess	145	
C) At lunch time	87	
D) Never	6	
E) Other	24	
F) A only	21	
B only	66	
C only	2	
G) A and B	8	
H) A and C	6	
I) B and C	30	
J) A, B, C	42	
Q12: Where do you look for air quality information?		
1-DEQ	37	

2-Website 3-utahairquality.com/ 4-e-mail 5-UDOH 6-News/Website/KSL 7-Other • Weather Bug • Newspaper • Wunderground • AQI Webpage • School District Website	76 17 10 8 10 34	

The last question in the survey asked for respondents' suggestions on improving the Recess Guidance. Most of the respondents answered this question and responses varied, but generally fell into three categories: information dissemination, general frustrations/confusion, and location of monitors. Below is a word cloud showing some of the general responses. The larger the word, the more often it was mentioned in responses to the last question. Some of the larger words mentioned are the red and yellow air action days; confusion; more information; and the valley vs. the bench areas.

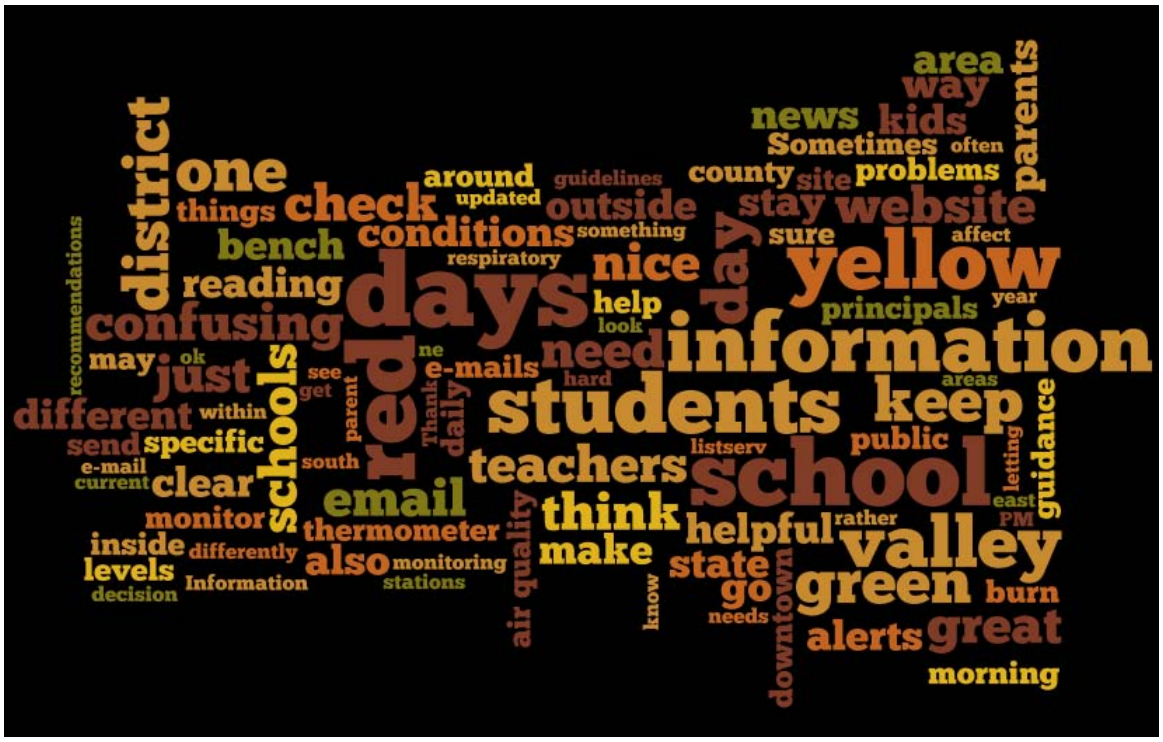

Table 5 contains the full responses organized into the three categories. The responses were grouped using the Bryman's Four Stages of Coding. This form of coding includes: reading through looking for major themes; marking themes and codes; reviewing and grouping codes; and relating theoretical ideas and identifying significance.

Table 5: Suggestions from Question 13

Info dissemination/Suggested ideas	General confusion/Frustrations	Geographic location/Monitors
Take into consideration that the air quality inside the school is often as bad/worse than outside.	Coordinate air quality ratings with news media. The red/green days don't coordinate well at all.	Make it public information that geographical location can affect the air quality differently
The listserv e-mails give you only green, yellow, red information. It would be nice if you had a "recess guidelines listserv" in which an e-mail would be sent out anytime PM 2.5 gets to 35, 55, or 90.	I've been using the wrong website for years. The one that has the 24-hr. average should be taken down. I just switched to the “up to the hour” website this year.	The site sometimes hasn't been adjusted or updated because it has changed drastically within minutes.
Inform parents and send more information to teachers, principals and schools.	It would be lovely if the state would use a different level system for "no burn days." All the red, yellow, green colors get confused with each other! It's hard to convince a parent that we are "green" for air, but "yellow" for burn to prevent worsening air quality!	In Utah County, the air quality is taken at University and Center in Provo. I am at the mouth of the canyon in Spanish Fork, with lots of wind. It’s hard to think that the air quality is the same, but since that is what is advertised we have to live by the red, etc.
Update the numbers more often, especially around lunch time	It would be great to have an e-mail sent in the morning letting us know the air quality.	Monitor south county, too. With our strong winds in the canyons, our days can be different from Lindon or even Provo.
One clear document from one clear authority, handed down through the USOE to the superintendents and then to the principals.	We need to know early in the day if there is poor air quality.	Local condition differ from downtown conditions. It would be helpful to have more localized reporting and just once source.
Create a Windows 7 desktop gadget which shows the current conditions and recommendations.	There were some days this year when we were unable to access current information online. It would also be helpful if the guidelines were more broadly advertised to the public, rather than simply having the green, red, and yellow alerts. This can be confusing to our patrons when PM2.5 levels are healthy, but the alerts don't correlate.	It would be nice to have more measuring devices in our town. Our school is located up on the bench of the valley, and I think the device for reading air quality is down in the bottom of the valley by the airport.
Educating the public on the policy.	Show us the particulate count that matches with the red, yellow, green.	Please get a monitoring site in Ogden Valley.
Work through the district or USOE.	The guidance for schools has a thermometer	It would be nice if the air quality had

	that goes to above 90 ug/m3. The air quality site where you check daily only goes to, I think it is 70. It becomes confusing.	different readings for around the valley so we could have a more accurate reading for the suburbs of SLC.
Better education of teachers to improve their view of why this is necessary might help, too.	Easier and quicker way. Conflicting information on whether it is red, yellow, orange, or green.	As it is right now, my conversation with the state air quality folks have just one monitor for Utah County in downtown Provo/BYU. We are on the west side of the lake and our air quality can be quite different from Provo's.
Providing a thermometer for the ozone levels as well.	Yes - I realize you may not have control over this, but if you're ever in a setting to mention to news people to keep the hype down a bit. We have plenty of fine air days that kids can go outside but parents are calling repeatedly b/c they heard "red" day on the news and the weather forecasters are saying to keep everybody in. For the most part, most kids need to be outside playing!!	Get air quality stations in several areas to address specific school needs.
Maybe a newsletter, also translated into Spanish, explaining air quality and Recess Guidance for schools.	News stations should be very careful as they make air quality recommendations because every area of the state is not the same even within the same county. We have many problems with parents who see an air quality warning and assume that air everywhere is a problem.	Our east bench school can have clear skies and the air quality Web site is reading a yellow burn day. Also, the air quality can be a yellow burn day and the east bench's air is much dirtier than down in the valley.
The district needs a policy that all schools adhere to.		

Conclusion

The results from this survey show several areas where school officials still need further instruction or clarification. Also, there seems to be an overall feeling of confusion or frustration, especially between the Recess Guidance and the "red, yellow, green" air action days. Many of the principals did report that they were grateful for the guidance and use it regularly. However, based on the number of days that students were kept inside for recess when compared with the days of poor air quality, schools are being too conservative and keeping all students inside too often. It is exciting to see that air quality is an important issue on the minds of the school officials and that most decisions about recess are made by principals or principals in combination with the school nurse. This will assist in targeting future interventions and course corrections associated with the Recess Guidance. Also, it was good to see that many principals are checking air quality levels throughout the day.

Limitations

There are several limitations to this evaluation, but the two primary areas were lack of demographic data and estimates by the respondents. The data gathered in the survey represented estimates for 79% of the survey participants. However, even with estimates, the rates of keeping kids inside for recess were higher than necessary. The lack of demographic data limits the analyses, although data collected and analyses run sufficiently answered the evaluation questions.

Recommendations

Based on the results of the survey and presentations on the evaluation results, several recommendations have been made for improvement. Principals listed various suggestions that can be found in the table listed earlier in this document. In general, it appears that there continues to be confusion between the "red, yellow, and green" air action days and the Recess Guidance. Also, there must be a better breakdown of which students should be kept inside, as it appears that at most times, all students are kept inside. Specific suggestions include:

1. Schools need further information on Recess Guidance usage. School principals need to receive further training on how to use the DEQ Web site in conjunction with the Recess Guidance.
2. The media needs to be trained on the importance of explaining that the air action days aren't meant to be health advisories, and that they should support and promote the use of the DEQ Web site to monitor air quality. The public needs to track the $PM_{2.5}$ levels in order to identify days that aren't healthy for outdoor activities.
3. Perhaps a breakdown of two groups should be created to assist in deciding who should stay inside for recess. It has been suggested that all respiratory-sensitive students be kept in once the standard (35 ug/m^3) has been exceeded and that all other students aren't to be kept inside unless $PM_{2.5}$ levels reach 90 ug/m^3.
4. Another suggestion is to match materials. For example, the DEQ thermometers only go up to 70 ug/m^3, but the Recess Guidance goes to 90 ug/m^3. These two should be made similar in order to decrease confusion.
5. The final suggestion was to have principals track the number of days that students are kept inside because of poor air quality.