# EvaluationGroup, LLC

**North Country**

**Norman, Mahnomen**

**& Polk Public Health**

**Evaluation Report**

**of**

**Statewide Health Improvement Program Activities:**

**Findings of School Health Index**

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Authored by

Garth Kruger, Ph.D.

EvaluationGroup,LLC \* 29337 310th Ave NW \* Warren, MN 56762

Tel (218) 437-8435 \* e-mail *gkruger@evaluationgroupllc.com*

**Methods**

Pre and post-test data assessing regional school health policy changes implemented through the SHIP grant over the past 3-4 years were collected using the School Health Index (SHI). A total of twelve school districts in Northwest Minnesota completed portions of the SHI both at the baseline (pre-test date November 2009 or October 2011) and post-test date 2 (May 2013). A previous follow-up period (post-test date 1) was examined during May 2011 and is reviewed fully in a previous report. Pre-test dates varied because districts in the North Country region completed the SHI during SHIP 1.0 whereas districts in the Norman/Mahnomen/Polk region completed them as part of a Carol M. White grant application process completed in October 2011 in conjunction with the Northwest Minnesota Council of Collaboratives.

The SHI components completed were Module 1 (School Health and Safety Policies and Environment) and Module 4 (Nutrition Services). These were selected because of their brevity and scope. Those completing the forms found it took less than 15 minutes to complete both modules, but each covered a wide variety of aspects pertaining to overall school health policies (for a complete listing of each item in Module 1 and 4 see Appendix A). The modules were completed by school nurses, administration and/or school food service personnel and returned to SHIP staff. In some instances SHIP staff met with school staff to work through the SHI.

**Table 1: SHI Administration Dates by School District**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Pre-Test Date** | **School District** |  | **Post-Test Date 1** | **School District** |  | **Post-Test Date 2** | **School District** |
| 1 | October-11 | Ada-Borup |  | -- | -- |  | May-13 | Ada-Borup |
| 2 | November-09 | Bagley |  | May-11 | Bagley |  | May-13 | Bagley |
| 3 | November-09 | Baudette |  | May-11 | Baudette |  | May-13 | Baudette |
| 4 | November-09 | Blackduck |  | May-11 | Blackduck |  | May-13 | Blackduck |
| 5 | November-09 | Clearbrook-Gonvick |  | May-11 | Clearbrook-Gonvick |  | May-13 | Clearbrook-Gonvick |
| 6 | November-09 | Kelliher |  | May-11 | Kelliher |  | May-13 | Kelliher |
| 7 | November-09 | LaPorte |  | May-11 | LaPorte |  | May-13 | LaPorte |
| 8 | October-11 | NCE |  | -- | -- |  | May-13 | NCE |
| 9 | October-11 | NCW |  | -- | -- |  | May-13 | NCW |
| 10 | November-09 | Nevis |  | May-11 | Nevis |  | May-13 | Nevis |
| 11 | November-09 | Park Rapids |  | May-11 | Park Rapids |  | May-13 | Park Rapids |
| 12 | November-09 | Solway/Bemidji |  | May-11 | Solway/Bemidji |  | May-13 | Solway/Bemidji |

Additional districts completed the SHI, however either pre or post-test data were unavailable. See Appendix B for a full list of the districts that took the SHI and their dates of completion. All data from completed SHI’s were entered into an Excel spreadsheet for analysis and analyzed using SPSS.

Average scores were computed for each item on the pre-test, post-test 1 and post-test 2 across all school districts. Scores for individual school districts may be made available upon request, depending upon need. Overall scores were also computed for both modules at each study interval to assess overall changes.

Each item on the SHI is scored by the reviewer using the scale below:

**0 = the policy or action is not in place**

**1 = the policy or action is under development**

**2 = the policy or action is partially in place**

**3 = the policy or action is fully in place**

**Results**

***Highest and Lowest Rated Items***

Not surprisingly, results from post-test 2 show the two lowest rated items were areas where little or no SHIP intervention took place. These were ‘fundraising efforts supportive of healthy eating’ and ‘professional development on asthma’. For both, these policies or actions were only in the development phase on the issues. These two items were also the lowest rated in the pre-test at 1.36 and 1.08 respectively. Of the remaining lower ranked policy items, each were scored at least partially in place (i.e. above 2.0 average).

One interesting finding suggests that while all districts are required by state mandate to have representative school health committees, not all appear to have that procedure fully in place (mean score=2.33). One explanation could be that while all schools have a committee, not all committees are representative of a diverse array of interests but more limited in scope.

1. ***Lowest Rated Items Module 1: Post Test 2***

|  |  |
| --- | --- |
| *Mean* | *Item* |
| 1.42 | Fundraising efforts supportive of healthy eating |
| 1.75 | Professional development on asthma |
| 2.09 | Restrict access to foods of minimal nutritional value |
| 2.17 | Restrict access to other foods of low nutritive value |
| 2.17 | Prohibit using food as reward or punishment |
| 2.33 | Representative school health committee |
| 2.40 | Prohibit using physical activity as punishment |
| 2.42 | Communicate school health and safety policies to students, parents, staff and visitors |

On module 4, few school districts had policies or procedures in place to offer appealing, low fat items outside the cafeteria in areas of the school such as vending machines, school stores and canteens, concession stands, special parties or events, and after-school programs. It is unclear why so few schools have chosen to add policies and procedures to enhance healthy food access in non-cafeteria areas, but food costs may play a role. Efforts focusing on collaboration between food service staff and teachers were on the average only minimally in place as well. These two items were also the lowest rated in the pre-test at 1.58 and 1.92 respectively.

While several schools in the SHIP efforts have been working on a la carte food offerings, many have not yet implemented those efforts as evidenced by a mean score of 1.33 (see Table B). Future SHIP efforts might consider focusing on assisting more schools in examining low cost or cost neutral ways to implement a la carte offerings to students.

Policies pertaining to the professional degree and certification of food service manager(s) were also rated as only partially in place on average. One reason for this could be the difficulty finding hiring qualified food service directors while another includes the cost associated with hiring more qualified personnel. Continuing to offer in-service and continuing education learning opportunities should remain an important part of SHIP work moving forward. Additional training/education could help ensure that the greatest efficiencies can be reaped from opportunities afforded schools through SHIP, schools’ budgets and other financial/grant opportunities.

One area for potential expansion of future SHIP efforts could also be to ‘promote healthy food and beverage choices’ (assuming those choices are available at the school). Barring additional choices, simply promoting more healthy foods via marketing messages can be an effective way to influence youth’s behavior. While the average of this item was generally higher at 2.5 out of 3, anything short of all schools possessing policies and procedures fully in place on this item should consider being addressed as promotion can be an easy and effective method for encouraging youth to eat healthful foods.

1. ***Lowest Rated Items Module 4: Post Test 2***

|  |  |
| --- | --- |
| *Mean* | *Item* |
| 1.33 | Sites outside cafeteria offer appealing, low fat items |
| 2.00 | Collaboration between food service staff and teachers |
| 2.08 | A la carte offerings include appealing, low-fat items |
| 2.33 | Degree and certification of food service manager |
| 2.50 | Promote healthy food and beverage choices |

The areas of greatest policy strength included prohibition of tobacco use among students, staff, visitors and any forms of tobacco advertisement. These three items were also the highest rated in the pre-test.

1. ***Highest Rated Items Module 1: Post Test 2***

|  |  |
| --- | --- |
| *Mean* | *Item* |
| 3.00 | Prohibit tobacco use among students |
| 3.00 | Prohibit tobacco use among staff and visitors |
| 3.00 | Prohibit tobacco advertising |
| 2.92 | Adequate physical activity facilities |
| 2.92 | Written policies for self-carry and self-administration of medications |
| 2.92 | Safe physical environment |
| 2.91 | Written crisis response plan |
| 2.83 | No tolerance for harassment or bullying |
| 2.83 | Recess |
| 2.83 | Enforce tobacco-use policies |
| 2.83 | Maintain safe physical environment |

Nutrition policy strengths suggested by Module 4 included fully in-place breakfast/lunch programs and low-fat/skim milk availability. Professional development opportunities for food service managers were also reported as in-place at most locations. This finding may have been due in part to SHIP offerings of multiple trainings for school food service workers. Finally, the inclusion of meals that incorporated appealing, low-fat items were also rated as in place in most school districts.

1. ***Highest Rated Items Module 4: Post Test 2***

|  |  |
| --- | --- |
| *Mean* | *Item* |
| 3.00 | Breakfast and lunch programs |
| 3.00 | Low-fat and skim milk available |
| 2.92 | Variety of foods in school meals |
| 2.92 | Professional development for food service manager |
| 2.92 | Clean, safe, pleasant cafeteria |
| 2.83 | Meals include appealing, low fat items |

Pre-test/post-test2 paired mean comparisons on SHI items were significance tested. Results revealed that significant changes in mean scores were made on each of the items listed in the table below.

1. ***Greatest Mean Change on Items***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Item Number** | **Item** | **Pre-mean** | **Post-mean** | **Mean Diff.** | **t** | **p-value** |
| M4N2 | Variety of foods in school meals | 2.33 | 2.92 | .59 | -2.54 | p<.05 |
| M1A1 | Written policies for self-carry and self-administration of medications | 2.45 | 3.00 | .55 | -1.93 | p<.10 |
| M1PA3 | Adequate physical activity facilities | 2.50 | 2.92 | .42 | -1.82 | p<.10 |
| M1S6 | Staff development on unintentional injuries, violence and suicide. | 1.90 | 2.50 | .60 | -1.76 | p<.10 |
| M1T3 | Enforce tobacco-use policies | 2.50 | 2.83 | .33 | -1.73 | p<.10 |
| M4N10 | Collaboration between food service staff and teachers | 1.88 | 2.38 | .50 | -1.00 | ns |

Of note is the strong positive and significant change in the variety of foods being offered in schools across the seven-county SHIP region. One contributing factor may be SHIP related efforts including farm to school initiatives, community gardens, and the training of scores of area farmers to grow and distribute locally grown produce. This statistical evidence helps substantiate the numerous success stories experienced and shared across the region over the past four years.

It is also noteworthy that two of the items (M1A1 and M1S6) were not a direct focus of SHIP efforts yet progress in these areas was evidenced. Several possible explanations exist for these changes. First, pre-test scores could have been low enough that significant opportunity existed for substantial changes to be made across a range of schools. Second, the notion that a rising tide floats all boats suggests that as a result of a focus on increasing healthy foods and physical activity, a broader focus on overall health was engendered in those school staff working on SHIP concerns. Thus, expansion of health policy conversations exist related to areas of focus outside the boundaries of SHIP. Third, additional grant opportunities and in-school initiatives were implemented in many schools during this timeframe. In at least three of the participating SHIP schools, the Carol M. White physical education grant began activities.

1. ***Overall Score Changes on Module 1 and 4 Over Time***

Figure 1 below shows that over the past four years there was an incremental increase overall in the scores on the SHI. This is a positive finding indicating that overall SHIP efforts have been leading to changes in school policy environments. Module 4 (nutrition) showed the greatest extent of change from the pre-test period (M=80.6) to post-test 2 (M=85.8), t = -1.53, p<.15. And while these changes are not statistically significant, 1) they approach the level of significance and more importantly 2) they appear to be significant from a practical perspective in that they evidence direct changes in the extent to which policies and procedures are in place in school districts.

The overall scale score findings shown in Figure 1 also show that during the initial follow-up phase, many of the scores decreased, and some substantially on some questions from Module 4 (i.e. things ostensibly got worse). For example, the baseline score for the item 'meals include appealing, low fat items' was 2.7. At follow-up, the mean score decreased to 2.5. Other items where decreases in scores occurred included: 'preparedness for food emergencies’, ‘promotion of healthy food and beverage choices’, and ‘collaboration between food service staff and teachers.’ These seemingly negative findings suggested that one of several things was happening:

1) A number of schools actually had their meal quality (and other nutrition services) decrease or degrade during the data collection timeframe;

2) The assessments of nutrition services changed as a result of increases in staff knowledge;

3) In certain cases two different raters were used and scored responses differently.

It appears that no more than two schools had different raters between pre and post assessment, leaving open the strong possibility that increases in staff knowledge through trainings and interactions with SHIP staff and sensitivity to the issue of healthfulness may be likely accounting for the negative direction in some scores; or

4) School personnel collecting data about their respective environments may have been more favorable in their assessments prior to their involvement with the full extent of SHIP services.

Upon further reflection and discussion, the most likely explanation for decreases in scores at the first follow-up appears to have been #2. That changes in awareness and knowledge of both healthy foods and the SHIP program efforts likely caused raters to think more critically and reflectively about the overall health of their environments. Coupled with variability that inevitably comes with a change in raters at several of the schools, we believe that most of this discrepancy can be identified.

**Figure 1**



**Recommendations and Future Opportunities**

Based on the findings obtained from our long-term analysis of the SHI, future SHIP efforts should consider the following efforts:

* SHIP efforts with schools should explore the possibility of enhancing collaborative efforts between food service staff and teachers. Currently efforts like this are only minimally in place.
* Continue food service worker training and education opportunities. Highly trained school food service staff enhance the overall quality of food system serving youth.
* Explore including in future SHIP efforts greater emphasis of the marketing and promotion of healthier food and beverage choices (assuming those choices are available at the school).
  + Barring being able to provide additional healthy food choices, simply promoting more healthy foods via marketing messages can be effective.
* Work with schools to identify policies and processes such that they can begin to offer at a minimum a limited range of healthy food options in locations such as vending machines, concession stands, and after-school programs.
* Explore ways to assist more schools in examining low cost or cost neutral ways to implement some a la carte offerings to students.
* Identify ways to continue to the conversation about broader aspects of health, not just healthy eating and physical activity.
  + Include mental health, bullying, links to family resources, expanding the role of public health within schools.
  + Now that relationships are established, explore additional venues for continued partnership.
* Continue to support tobacco cessation in schools/on school grounds by acting as a resource.
* Continue to explore additional grant/funding opportunity partnerships with schools such as the Carol M. White Physical Education Program (PEP) grant.
  + The PEP grant provides grants to Local Education Agencies and community-based organizations (CBOs) to initiate, expand, or enhance physical education programs, including after-school programs, for students in kindergarten through 12th grade. Projects must be designed to help students meet its State’s physical education standards by undertaking instruction in healthy eating habits and good nutrition and at least one of the authorized physical fitness activities. Physical fitness activities include: 1) fitness education and assessment, 2) physical activities designed to enhance the physical, mental, and social or emotional development of every student; 3) opportunities to develop positive social and cooperative skills through physical activity; 4) opportunities for professional development for teachers of physical education.
  + As part of the PEP grant, applicant organizations are required to complete Modules 1-4 of the SHI. The applicant uses the results of the SHI to develop a School Health Improvement Plan focused on improving needs identified by the SHI, and design an initiative that addresses their identified gaps and weaknesses.
  + The grant typically solicits applications in mid-February each year and provides from $100,000- $750,000 per project year up to 36 months. To learn more, go to <http://www2.ed.gov/programs/whitephysed/applicant.html>

**Appendix A: School Health Index (SHI) Modules 1 and 4**

|  |  |  |
| --- | --- | --- |
| **Item** | **Item Name** | **Item Number** |
| Representative school health committee | cc1 | 1 |
| Written school health and safety policies | cc2 | 2 |
| Communicate school health and safety policies to students, parents, staff and visitors | cc3 | 3 |
| Connectedness to school | cc4 | 4 |
| Overcome barriers to learning | cc5 | 5 |
| Enrichment experiences | cc6 | 6 |
| Safe physical environment | s1 | 7 |
| Maintain safe physical environment | s2 | 8 |
| No tolerance for harassment or bullying | s3 | 9 |
| Active supervision to promote safety | s4 | 10 |
| Written crisis response plan | s5 | 11 |
| Staff development on unintentional injuries, violence and suicide | s6 | 12 |
| Recess | pa1 | 13 |
| Access to physical activity facilities outside school hours | pa2 | 14 |
| Adequate physical activity facilities | pa3 | 15 |
| Prohibit using physical activity as punishment | pa4 | 16 |
| Prohibit using food as reward or punishment | n1 | 17 |
| Fundraising efforts supportive of healthy eating | n2 | 18 |
| Restricts access to other foods of low nutritive value | n3 | 19 |
| Restrict access to foods of minimal nutritional value | n4 | 20 |
| Hands washed before meals and snacks | n5 | 21 |
| Prohibit tobacco use among students | t1 | 22 |
| Prohibit tobacco use among staff and visitors | t2 | 23 |
| Enforce tobacco-use policies | t3 | 24 |
| Prohibit tobacco advertising | t4 | 25 |
| Written policies for self-carry and self-administration of medications | a1 | 26 |
| Professional development on asthma | a2 | 27 |
| Implement indoor air quality practices | a3 | 28 |
| Implement integrated pest management practices | a4 | 29 |
|  |  |  |
| **Module 4** | **Item Name** | **Item Number** |
| Breakfast and lunch programs | n1 | 1 |
| Variety of foods in school meals | n2 | 2 |
| Low-fat and skim milk available | n3 | 3 |
| Meals include appealing, low fat items | n4 | 4 |
| Food purchasing and preparation practices to reduce fat content | n5 | 5 |
| A la carte offerings include appealing, low-fat items | n6 | 6 |
| Sites outside cafeteria offer appealing, low fat items | n7 | 7 |
| Promote healthy food and beverage choices | n8 | 8 |
| Adequate time to eat school meals | n9 | 9 |
| Collaboration between food service staff and teachers | n10 | 10 |
| Degree and certification of food service manager | n11 | 11 |
| Professional development for food service manager | n12 | 12 |
| Clean, safe, pleasant cafeteria | n13 | 13 |
| Preparedness for food emergencies | n14 | 14 |

**Appendix B: List of School Districts Completing SHI Modules 1 and 4 by Date Completed**

|  |  |  |  |
| --- | --- | --- | --- |
| **Number Participating** | **School Health Index Survey Participant** | **Date** |  |
| 1 | Bagley | November, 2009 |  |
| 2 | Baudette | November, 2009 |  |
| 3 | Blackduck | November, 2009 |  |
| 4 | Clearbrook-Gonvick | November, 2009 |  |
| 5 | Kelliher | November, 2009 |  |
| 6 | LaPorte | November, 2009 |  |
| 7 | Nevis | November, 2009 |  |
| 8 | Park Rapids | November, 2009 |  |
| 9 | Solway | November, 2009 |  |
|  |  |  |  |
| **Number Participating** | **School Health Index Survey Participant** | **Date** |  |
| 1 | Bagley | May, 2011 |  |
| 2 | Baudette | May, 2011 |  |
| 3 | Blackduck | May, 2011 |  |
| 4 | Clearbrook-Gonvick | May, 2011 |  |
| 5 | Kelliher | May, 2011 |  |
| 6 | LaPorte | May, 2011 |  |
| 7 | Nevis | May, 2011 |  |
| 8 | Park Rapids | May, 2011 |  |
| 9 | Solway/Bemidji | May, 2011 |  |
|  |  |  |  |
| **Number Participating** | **School Health Index Survey Participant** | **Date** |  |
| 1 | Ada-Borup | October, 2011 |  |
| 2 | Climax | October, 2011 |  |
| 3 | Fertile | October, 2011 |  |
| 4 | Greenbush-Middle River | October, 2011 |  |
| 5 | Grygla | October, 2011 |  |
| 6 | Lancaster | October, 2011 |  |
| 7 | Mahnomen | October, 2011 |  |
| 8 | NCE | October, 2011 |  |
| 9 | NCW | October, 2011 |  |
| 10 | Oklee | October, 2011 |  |
| 11 | Plummer | October, 2011 |  |
| 12 | RLF | October, 2011 |  |
| 13 | Tri-County | October, 2011 |  |
|  |  |  |  |
| **Number Participating** | **School Health Index Survey Participant** | **Date** |  |
| 1 | Ada-Borup | May, 2013 |  |
| 2 | Bagley | May, 2013 |  |
| 3 | Baudette | May, 2013 |  |
| 4 | Bemidji | May, 2013 |  |
| 5 | Blackduck | May, 2013 |  |
| 6 | Clearbrook-Gonvick | May, 2013 |  |
| 7 | Crookston | May, 2013 |  |
| 8 | Fisher | May, 2013 |  |
| 9 | Fosston | May, 2013 |  |
| 10 | Kelliher | May, 2013 |  |
| 11 | LaPorte | May, 2013 |  |
| 12 | NCE | May, 2013 |  |
| 14 | Nevis | May, 2013 |  |
| 15 | Norman County West | May, 2013 |  |
| 16 | Park Rapids | May, 2013 |  |
| 17 | W-E-M | May, 2013 |  |