Accreditation Preparation & Quality Improvement Demonstration Sites Project

Final Report

Prepared for NACCHO by the Mascoma Valley Health Initiative, NH

November 2008
**Brief Summary Statement**

The Mascoma Valley Health Initiative (MVHI) is a non-profit public health organization located in the rural Mascoma Valley of New Hampshire. Using the NACCHO LHD Self-Assessment Tool for Accreditation Preparation and a quality improvement process, MVHI sought to address the need for improved education around healthy behaviors. By targeting elementary age children and their families, MVHI implemented a brief curriculum around nutrition as it relates to oral health.

**Background**

The Mascoma Valley Health Initiative is a non-profit public health organization located in rural Canaan, NH, with the mission of maintaining and improving the health and well-being of the people of the Mascoma Valley. Because the New Hampshire state government has not included local public health infrastructure, in 2001, a grant through the Robert Wood Johnson Foundation’s Turning Point Initiative established New Hampshire Public Health Network sites, to serve the needs of public health locally. There are currently 15 of these sites, serving approximately half of the municipalities in the state. The Mascoma Valley is a rural community of five towns (Canaan, Dorchester, Enfield, Grafton, and Orange), located in Grafton County New Hampshire. MVHI serves a total population of about 40,000, which includes the five Mascoma Valley towns, and eight additional towns in southern Grafton and northern Sullivan counties. Much of the work of MVHI is to implement programs into the community to improve public health, and to assist in linking individuals with those local and regional service organizations that can meet various health-related needs. While MVHI is not able to provide all 10 Essential Public Health Services, we see our organization as an integral part of the larger service-delivery network of organizations within our region. We were therefore interested to look most closely at how our service delivery could be augmented and improved using the quality improvement strategies of the Plan-Do-Check-Act cycle.

For this project, MVHI, and its project partners, Alice Peck Day Memorial Hospital, Dartmouth-Hitchcock Mascoma Pediatric Clinic, and the Mascoma Valley Regional School District, were interested in a project with direct implications for the health of the community. By working on this project, MVHI hoped to address the issue of health literacy by improving the existing curriculum within the elementary school around nutrition and oral health. In working with NACCHO, we sought to integrate the quality improvement model into our practice, and to gain insight into the far-reaching implications of QI through interactions with other sites around the country. Finally, because of our unique position as a non-profit public health organization within a state without a regionalized public health system, we hoped to learn about other models of public health service delivery that may ultimately help shape the face of public health in New Hampshire.

**Goals and Objectives**

**Goals:**
- To improve nutritional health of elementary students (K-4) of the Mascoma Valley.
- To improve student’s understanding of the role of nutrition in oral health.
- To integrate students’ parents into their nutrition decision-making

**Objectives:**
- To assess the level of knowledge of nutrition and oral health among students.
- To increase by 50% the number of students choosing the healthiest snack for your teeth out of three choices.
- To increase by 50% the number of students able to identify 9/10 healthy snacks

**Self-Assessment**

Because of the small size of the organization, MVHI had an intimate but comprehensive approach to the self-assessment. All employees directly involved in public health programming took part. Initially, each employee completed the assessment, followed by lengthy discussions about each essential service and their standards. The entire assessment process took approximately two weeks, including time to identify the standard/indicator to be address in the QI project. The most challenging part of the assessment was in identifying that area to be addressed. Because MVHI is a non-profit and not a state or local public health department, the scope of services provided by the organization is limited, as we are not mandated to carry out all 10 essential public health services. During the assessment, it was important to remain mindful of those responsibilities of public health, which MVHI is not equipped to fulfill, and that we rely on other organizations to fully serve the community’s public health needs. For example, we have no authority to enforce laws or to conduct outbreak investigations. Instead, we collaborate with health officers, police, fire, EMS, and others to ensure the quality delivery of all public health services.
## Quality Improvement Process

A fishbone diagram was created to assist in mapping the process of defining the problem and identifying possible solutions. Please see Appendix B for a copy of the diagram.

**Aim Statement:** To increase the knowledge of the relationship between diet/nutrition and oral health within an elementary school (k-4) population of children and their parents.

### 1. PLAN: What was the state of affairs when you began?

By using information gathered from an existing program within the school that focuses on oral health, we were aware that many children did not have access outside of the school to a dentist or to proper education on oral health. In addition, the oral health education done within the school setting did not address the link between nutrition and oral health. We saw this as a gap and sought to integrate information about nutrition as it relates to oral health into the school setting, hoping to reach both students and their parents.

**What change could be made that would result in improvement?**

Improvement theory: Integration of nutrition information into oral health curriculum will result in improved decision-making around food choices, the benefits of healthy snacks, and the importance of good nutrition for continued dental health.

We considered a number of possible solutions to increasing knowledge of nutrition and oral health within our population. After discussions with the school, we decided that the best way to approach this would be to provide information and assess knowledge within the context of an event at the elementary school. We had originally planned to pursue an intervention within the classroom. However, constraints of time and scheduling (in large part due to it

### 2. DO: How was the test implemented?

Throughout the planning stage, Lori Dacier of MVHI acted as a valuable resource regarding contacts at the elementary school, as well as assisting with logistics and planning. Dr. Kimberly Gifford from Dartmouth-Hitchcock Pediatric Clinic was available for meetings and attended the Fall Festival, along with Emily St. Germain from MVHI Together, these two implemented the intervention plan. Nancy DuMont, Community Benefits manager at Alice Peck Day hospital and administrator for the school-based oral health program, served as a consultant for the oral health piece, and provided resources and a dental curriculum on which to base the questions in our assessment. The largest obstacle we faced was in determining the exact venue to test our plan. We had originally planned to pursue an intervention within the classroom. However, constraints of time and scheduling (in large part due to it
being the beginning of the school year) limited our ability to do this. Because we were committed to working with the elementary population, we chose the Fall Festival event instead.

Our improvement theory was that integration of nutrition information into oral health curriculum will result in improved decision-making around food choices, the benefits of healthy snacks, and the importance of good nutrition for continued dental health. We decided to test our theory by creating an interactive game with questions related to nutrition and oral health. The questions were designed with information from the American Dental Association, and their “Dudley’s Classroom” dental curriculum. We had questions of varying difficulty to appeal to a broad range of individuals. We invited families to the booth to answer a question. We recorded the number of children who correctly answered at least one of the following questions: the first was how often they brush their teeth, and the second was to pick the healthiest snack from a selection of three. This was our pre-test. We were able to provide toothbrushes (both adult and child) as well as toothpaste samples to families who participated. In addition, we gave out individually wrapped pieces of sugar-free chewing gum with xylitol. We included a teaching point for parents about the benefits of xylitol in reducing bacteria in the mouth that promote decay.

3. CHECK: Did it work?
We collected data on the number of individuals who participated at the booth, both children and parents. In addition, we collected data on the percentage of individuals answering our questions correctly. Based on the responses to our two questions responses, we tailored our education to address those areas of deficient knowledge, providing teaching points on healthy snacks, and the importance of good oral health in relation to overall health (i.e., the link between oral health and chronic disease). Initially, the majority of children (~80%, 45/56) and parents (~60%, 24/36) were unable to verbalize the direct link between food choices and oral health. In addition, fewer than half of children reported brushing their teeth more than once/day. Following the education piece, children and their parents were asked to consider their own food choices, and how they can be improved to improve their oral health. At that point, a majority of children (37/52) and parents (could correctly identify the healthy snack from a selection of three. While this is very preliminary data, we concluded that our education did indeed result in an improved understanding of the relationship between nutrition and oral health.

4. ACT: What are the next steps?
Moving forward, the goal is to integrate an interactive educational piece on nutrition and oral health into the curriculum that is currently being taught in the elementary school guidance class. By gathering data at this first event, we were able to determine that there is a real need for continued education and reinforcement of the value of good nutrition as it relates to oral health. For this reason, and to ensure contact with all students in the school, the next step is to move into the classroom. At the same time, this event was successful, and allowed us to reach out to children and their parents, which is not possible in the classroom. For this reason, we envision continuing to have a presence at events like the Fall Festival, and others.

Results
MVHI considers the work we’ve done through the NACCHO Demonstration Sites Project as just the beginning of a continuing commitment to quality improvement for our practice and our community. Through this project, we found that there is not only a need for improved health education around nutrition and oral health, but also a desire on the part of many stakeholders to engage in this work. We are encouraged by the enthusiasm of so many to continue to address issues related to health education and healthy behaviors.

Lessons Learned
In undertaking a comprehensive self-assessment such as that for the NACCHO project, MVHI found it most helpful to elicit the input and feedback of all parties involved within the organization, with expertise in public health programming. As a current grantee for the Multi-State Learning Collaborative Phase III (MLC-III) project, MVHI will again look at the self-assessment tool, this time with the assistance of a large collaborative group, including members of the community who address those essential services of public health that MVHI currently is not able to address. In assessing our effectiveness as a public health organization, MVHI learned not only what our weak areas are, but also those services, which we carry out effectively. It was gratifying to be given the opportunity to delve into our work, to look closely our organization’s strategic plan, and to consider those areas where we are succeeding, in addition to those, which could be improved.
**Next Steps**
At this time, we have an engaged coalition of individuals from our school district, and others, who are interested in continuing the work we began through NACCHO. We envision ourselves refining the curriculum we put together, and integrating this into the elementary classrooms, to directly address the importance of good nutrition as it relates to oral health. We have the enthusiastic support of both the principal and the guidance counselor at the elementary school, and are planning to begin integrating our educational piece into the guidance curriculum beginning in the New Year.

With regard to supporting our preparations for national accreditation, MVHI continues to remain at the forefront of public health in New Hampshire. Because NH does not currently support a formalized regional public health structure, MVHI, though a non-profit, serves as the lead public health organization within our region. As New Hampshire moves towards a regionalized public health system, MVHI is poised to become the primary public health agency within our area. Our work on the NACCHO Demonstration Project, which is continuing through the Multi-State Learning Collaborative Phase III, has provided us with the opportunity to comprehensively assess both our region and our organization in terms of our public health assets and needs. The assessment lends us insight into areas to address in order to become fully prepared and eligible for national accreditation in the future.

**Conclusions**
By participating in the NACCHO Demonstration Sites Project, MVHI hoped to integrate quality improvement into our practice, while at the same time gaining a better understand of how public health service delivery can vary from location to location, and what the implications of these variations are for accreditation. In some ways, MVHI and the state of New Hampshire lag behind the rest of the country in terms of organized, and standardized public health entities. Without a regional public health system, it can be hard to ensure continuity of services, or to evaluate the work being done within the state. At the same time, as New Hampshire begins the process of public health regionalization, we stand to benefit from the experiences of other states, and to create a public health system that works for all citizens, and on all levels of organization. In this way, the insight MVHI gained from participation in this project goes behind an understanding of quality improvement. From a state-level, this project provided us with perspective to conceptualize the future of public health in New Hampshire.

**Appendices**
*Appendix A: QI Storyboard*
*Appendix B: Fishbone Diagram*