Community Prevention and Treatment Initiative Phase 3: Childhood Obesity Prevention

Final Report, July 2009

FOUNDATION FOR HEALTHY COMMUNITIES

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Community Prevention and Treatment Initiative
Phase 3: Childhood Obesity Prevention
Final Report, July 2009

Beth Gustafson Wheeler, MS
Community Coordinator
Community Prevention and Treatment Initiative

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Introduction

In the fall of 2006, the Foundation for Healthy Communities initiated a childhood obesity prevention effort in Phase 3 of its work using the Community Prevention and Treatment Initiative (CPTI) Model. Funding was received from the Endowment for Health, Harvard Pilgrim Health Care Foundation, Northeast Cholesterol Foundation, Anthem Blue Cross and Blue Shield, New Hampshire Charitable Foundation, and the Alexander Eastman Foundation to support this multi-sector community prevention effort.

Rationale:

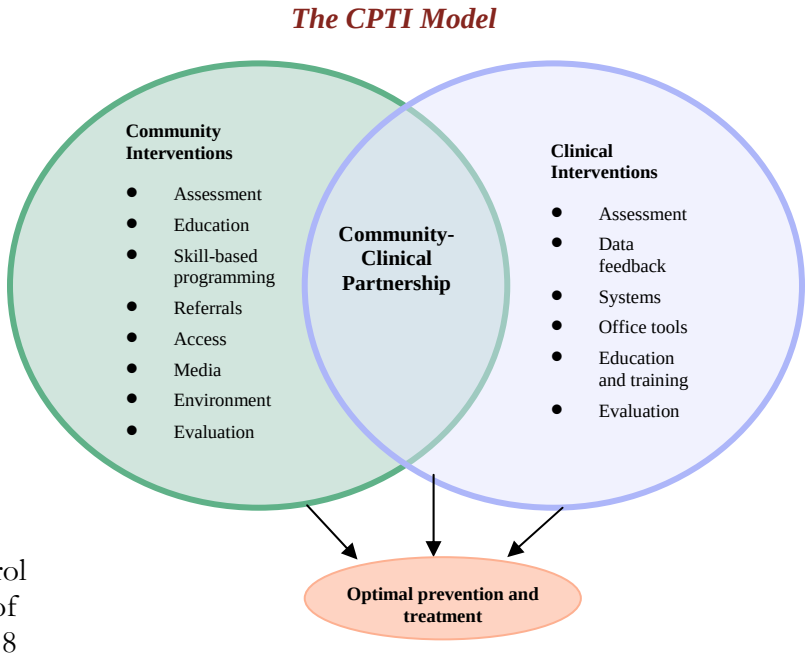
The findings of the 2003-2004 National Health and Nutrition Examination Survey (NHANES) show the prevalence of obesity in the past three decades has nearly tripled (6.5% to 18.8%) in young children (6-11 years) and more than tripled (5% to 17.4%) in adolescents (12-19 yrs).

In NH, the 2005 NH Youth Risk Behavioral Survey in children grades 9 through 12 showed that one quarter were overweight (above 85th but below the 95th percentile for BMI) or obese (at or above the 95th percentile for BMI). Further details show:

- 13.2% were overweight (US 15.7%); 11.4% were obese (US 13.1%)
- 57% did not meet current recommended levels of physical activity (60 minutes of moderate or vigorous physical activity on most days of the week)
- 24.5% watch 3 or more hours of television per day on an average school day

Project Description

The mission of Phase 3 is to prevent or reduce the problem of childhood obesity by implementing evidence-based/ promising practices and promoting linkages between community-based health promotion efforts and pediatric clinicians. The model we have used to accomplish our goals is the Community Prevention and Treatment Initiative (CPTI) model. While interventions are implemented in both community and clinical settings, emphasis is placed on the partnership between the two to accomplish the goals of the project. Phases 1 and 2 developed the CPTI model with a focus on cholesterol screening and treatment and promotion of physical activity. This work took place in 8 New Hampshire communities between 2004-2007. Results from this work may be found at www.HealthyNH.com.



Project Summary

Participants in the Childhood Obesity Prevention and Treatment Initiative have built a strong foundation in both the Mount Washington Valley Region (Conway, North Conway, Madison, Freedom, Ossipee, and Tamworth) and Derry/Londonderry communities. Partnerships formed have included organizations from several different sectors including healthcare, schools, recreation, and town.

When we first approached the Phase 3 communities, we were pleased to find an enthusiastic response to the project and a strong desire to participate. In contrast to cholesterol control and management, the issues addressed in Phase 1 and 2 CPTI projects, childhood obesity prevention was at the forefront for several participating organizations indicating a stage of readiness to implement strategies.

Mount Washington Valley Partners:
SAU 9 (specifically Conway and North Conway elementary schools), SAU 13, Ossipee Central School, MWV Health Care Associates, Saco River Medical Center, White Mountain Community Health Center, The Memorial Hospital, Conway Parks and Recreation, Ossipee Crossroads Child Care Center, Ossipee Recreation, Growing Tree Child Care Center, Mountain View Montessori School, WIC, UNH Cooperative Extension, and Conway Public Library.

Derry/Londonderry Partners:
Londonderry School District, Greater Derry Boys and Girls Club, YMCA of Greater Londonderry, The Upper Room, Derry Pediatrics, Londonderry Pediatrics, UNH Cooperative Extension, and the Greater Derry Area Health and Safety Council.

Utilizing the 2007 recommendations from the NH Childhood Obesity Expert Panel "Preventing Childhood Obesity: Promoting Physical Activity & Healthy Eating" and the Social Ecological Model, we provided the communities with a framework for developing their action plans for the two year project period.

In our past experience with the CPTI model, we have found that we "need to make it easier to do better". That said, the 2007 recommendations outlined practical, yet sometimes challenging, strategies for families, clinicians, schools, after school programs, and recreation centers. The necessary resources to accomplish the recommendations were also provided including 5210 tools and education materials, assistance with identifying evidenced-based and promising practices, and guidance with meeting and overcoming challenges.

The summaries provided in this report reflect both the commitment and the intensity that both communities brought to this project. True to the CPTI model, we have worked with both pediatric clinicians as well as with a variety of community organizations to plan and implement strategies.

Pediatric Primary Care

Over the last 2 years we have worked with primary care practices to implement the 2007 Expert Committee Recommendations on the Assessment, Prevention and Treatment of Child and Adolescent Overweight and Obesity[1].

[1] Barlow, S.E. and the Expert Committee. Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report. PEDIATRICS Vol. 120 Supplement December 2007, pp. S164-S192.

During the spring and summer of 2007 we completed baseline chart reviews, conducted baseline practice assessments, and started the clinical implementation. The practices worked towards and completed the following goals:

1. Calculate and classify BMI and document it in patient chart for all pediatric patients.
2. Assess physical activity and nutrition using the 5-2-1-0 patient survey.
3. Educate patients and their parents on physical activity and nutrition using the 5-2-1-0 goals.

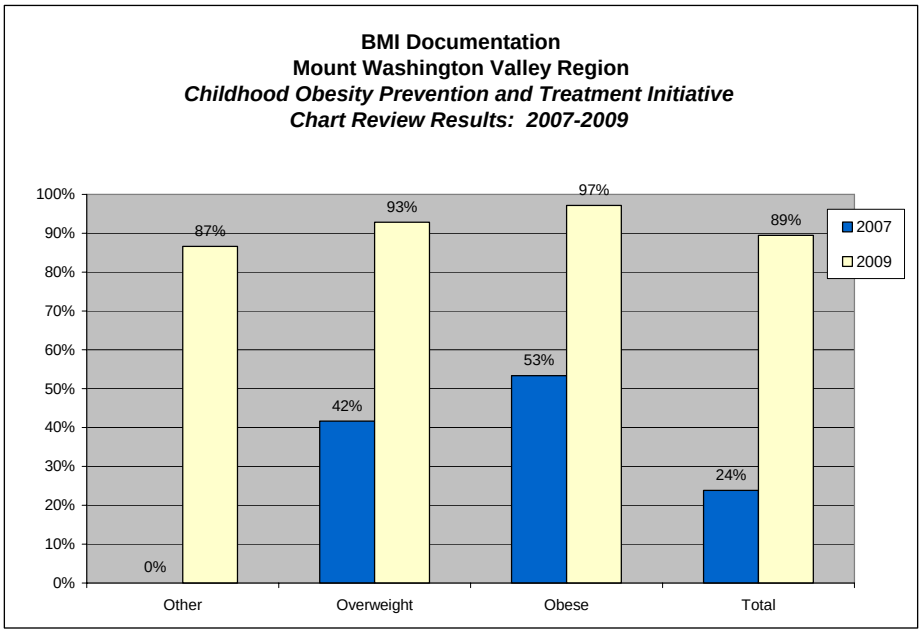
In the period between Fall 2007 to Fall 2008, the practices:

1. worked to ensure appropriate lab tests were ordered for those patients whose BMI fell into the overweight and obese ranges.
2. implemented follow-up visits for those patients whose BMI fell into the obese range and those patients with risk factors whose BMI fell into the overweight range. These follow-up visits are focused on reviewing lab test results and behavioral counseling, education, and goal setting with the parent and patient.
3. worked to ensure nutrition education referrals occurred as insurance coverage allows
4. attended three hour training in motivational interviewing techniques (to increase behavioral counseling skills for follow-up visits).

Summary of Key Results

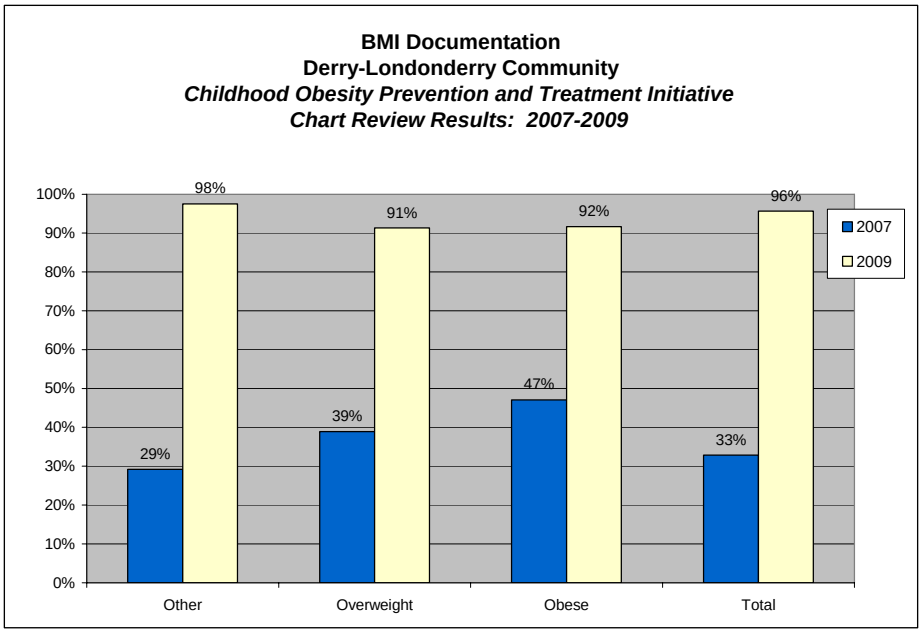
Our pre- and post- chart review results demonstrate a **significant increase in BMI documentation (Charts 1 and 2: MWV: 24%-89%; Derry/Londonderry: 33%-96%) and classification (MWV: 6%-74%; Derry/Londonderry: 7%-92%).** Most sites were on paper records and changed their well child forms to provide space for BMI and BMI percentile. This action itself provided the necessary prompting to calculate and classify BMI.

Chart 1



* Other categories refers to those patients whose BMI does not fall into the overweight or obese ranges, including those patients whose BMI falls into the healthy and underweight categories.

Chart 2



Other increases are seen in physical activity, nutrition, and screen time assessment and education. Increases in nutrition assessment were also observed and nutrition education, already scoring very high in 2007, remained at similar levels. The greatest increases were seen mostly in overweight and obese patients vs. those patients at a healthy weight (Charts 3-16).

Chart 3

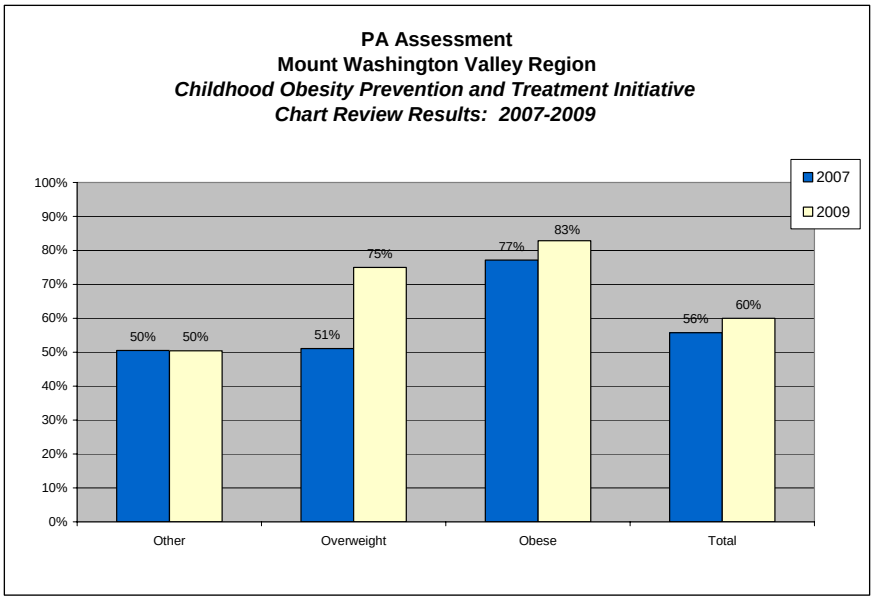


Chart 4

PA Advice
Mount Washington Valley Region
Childhood Obesity Prevention and Treatment Initiative
Chart Review Results: 2007-2009

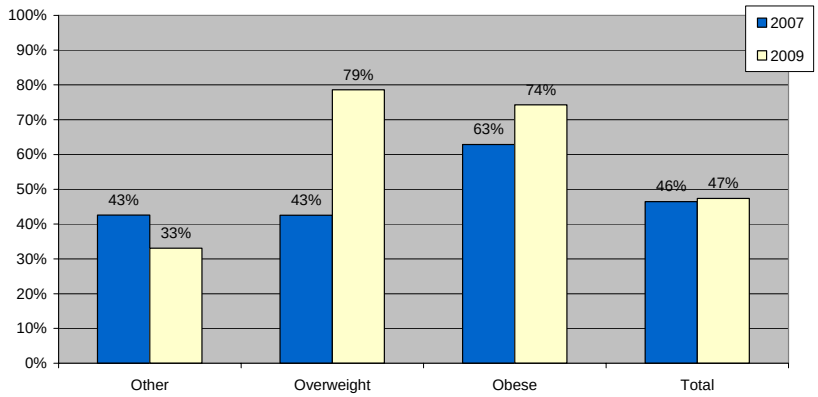


Chart 5

PA Assessment
Derry-Londonderry Community
Childhood Obesity Prevention and Treatment Initiative
Chart Review Results: 2007-2009

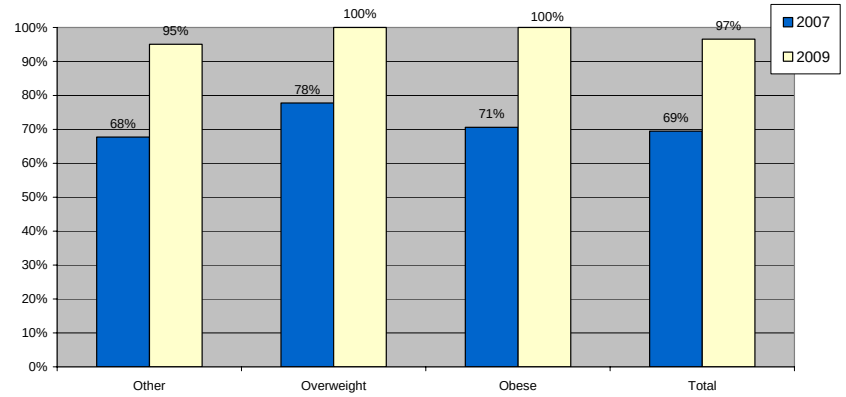


Chart 6

PA Advice
Derry-Londonderry Community
Childhood Obesity Prevention and Treatment Initiative
Chart Review Results: 2007-2009

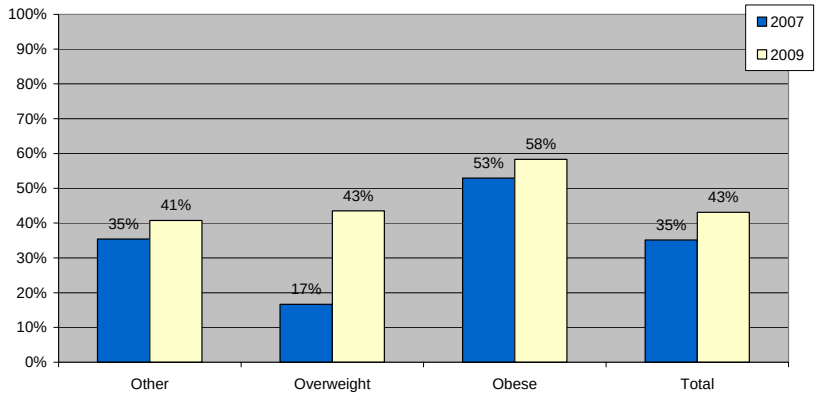


Chart 7

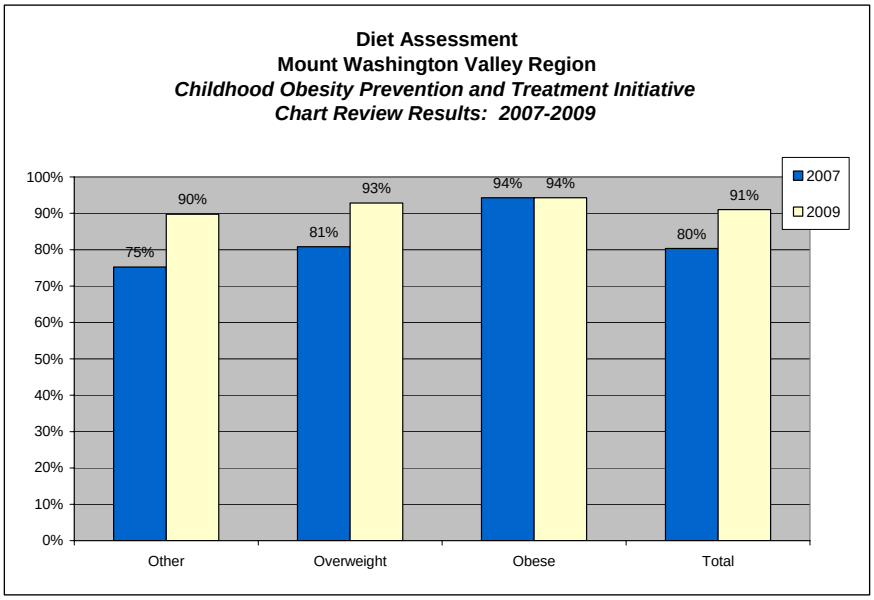


Chart 8

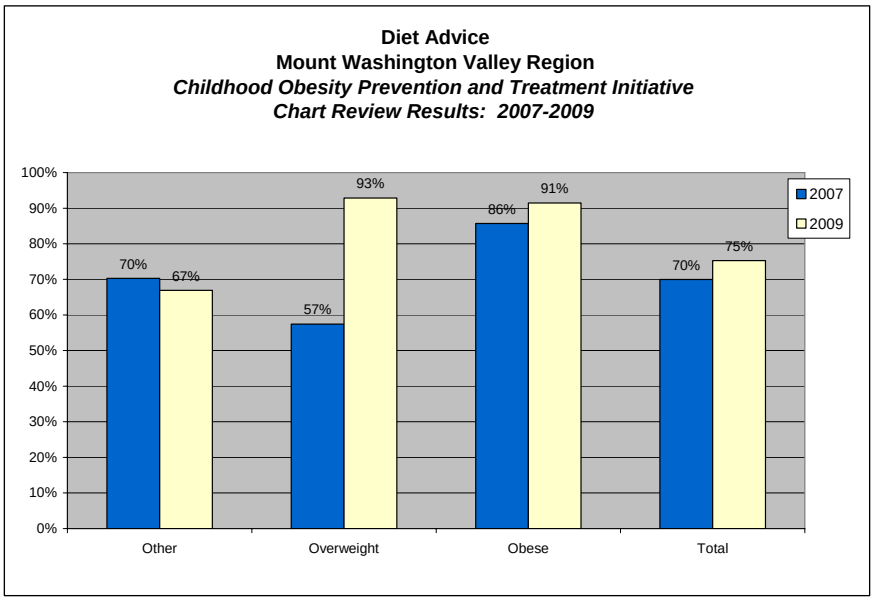


Chart 9

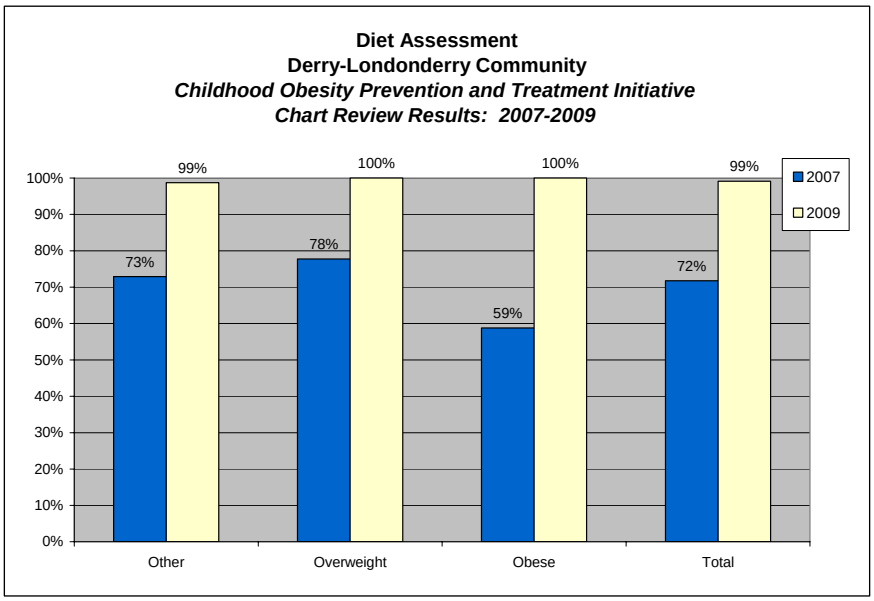


Chart 10

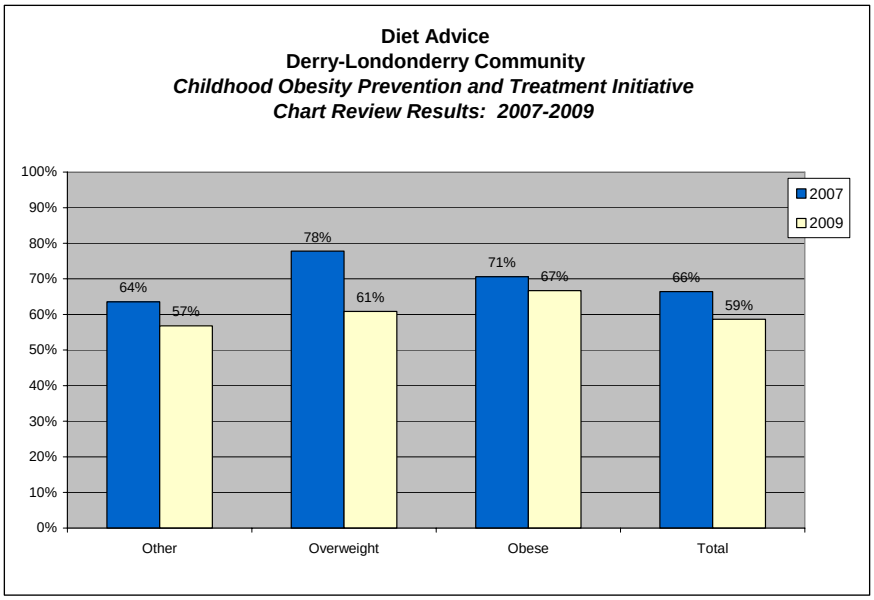


Chart 11

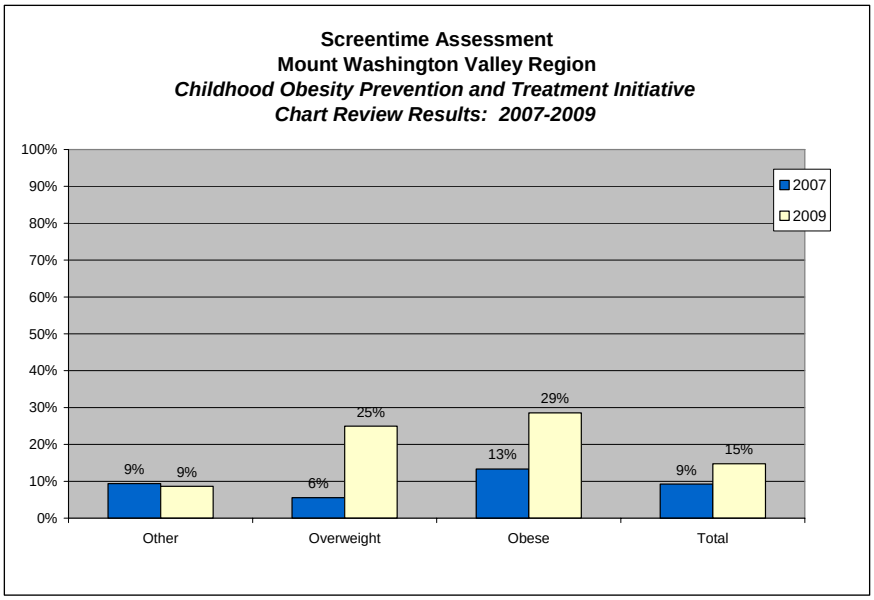


Chart 12

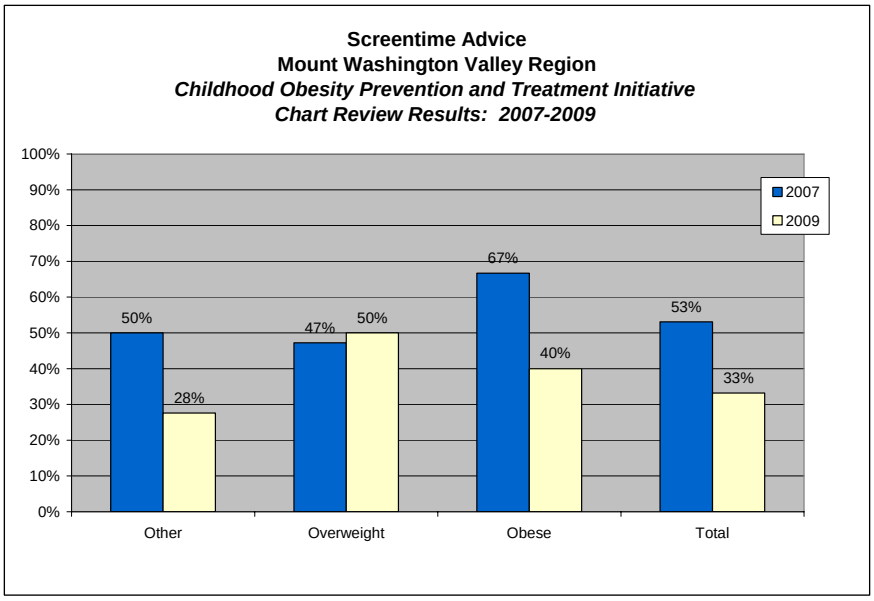


Chart 13

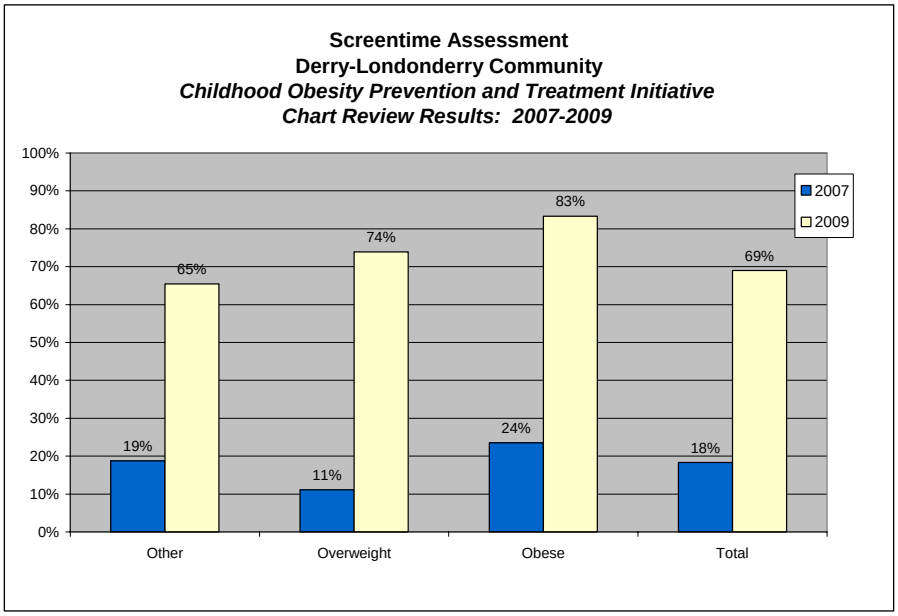
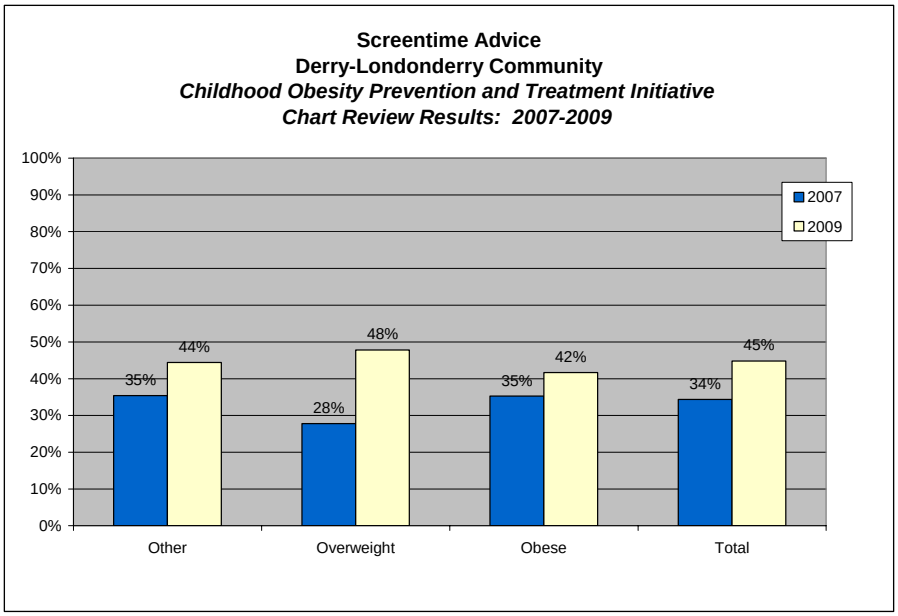


Chart 14



The 5-2-1-0 message proved to be a useful message and tool. It became their primary vehicle for delivering healthy eating and active living education in the practices. Physicians readily adopted it and reported that it was useful because it was succinct, easy to remember, catchy, and 5-2-1-0 represented four of the most important goals for preventing childhood obesity. Several also commented that with the schools and other community organizations also promoting it, patients were more open and attentive to the education, often engaging in more meaningful discussions. They also reported reinforcement by the community in their education where the message was being used in several organizations.

Discussions with overweight and obese patients and/or their parents increased dramatically (Charts 15 and 16: MWV: 17%-54%; Derry/Londonderry: 29%-37%). Most physicians, but not all, reported an increase in skills and comfort in addressing weight management issues. BMI

gave physicians a clinical measure to present (with or without BMI growth charts) that made it more comfortable. Dr. Laracy from Saco River Medical Center in Conway stated that parents did not mind hearing about BMI anymore speculating that this may be because it is becoming a regular part of their conversation with patients and therefore more acceptable.

Chart 15

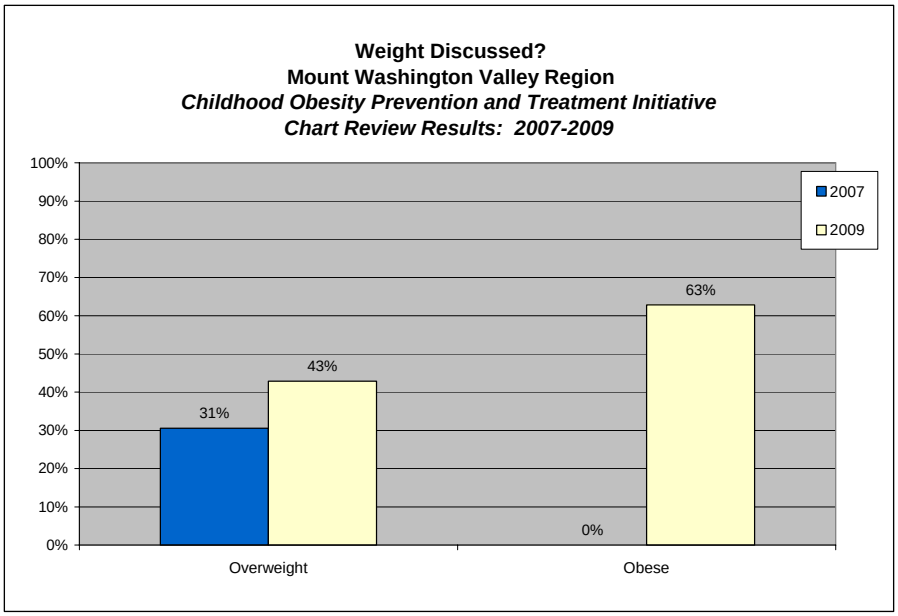


Chart 16

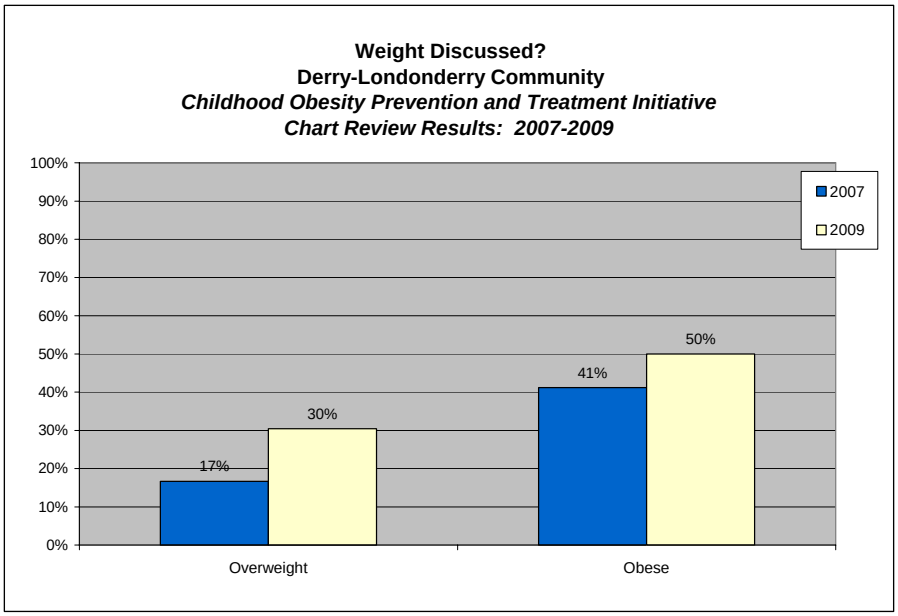


Chart reviews show that follow-up visits for overweight and obese patients increased in MWV practices (5%-14%) but decreased in the two Derry/Londonderry practices (3% to 0%). Post project interviews with pediatric primary care providers reflected a discrepancy between provider perception regarding their practices and data we found in the charts. Several of the practices, most significantly in the MWV practices, expressed concern over our results and communicated to us that they did provide significantly more follow-up than the data from the chart reviews reflected. Other providers were not surprised by the data reporting they did not feel it was always necessary to schedule follow-up visits, particularly when many of their patients were not

ready to make changes in their health behaviors. Further, questions regarding the rationale for ordering labs for overweight and obese patients affected the third objective of follow up visits- to discuss lab results.

The 2007 Expert Committee Recommendations on the Assessment, Prevention and Treatment of Child and Adolescent Overweight and Obesity recommend that lipid panels are completed for all patients with a BMI $\geq$ 85th percentile and blood glucose levels for all patients 10 years and older with a BMI $\geq$ 85th percentile. **Our evaluation showed that labs ordered increased slightly in both communities (Lipid Panels: MWV: 6% to 21%; Derry/Londonderry: 3% to 9% and Blood Glucose: 6% to 16%; Derry/Londonderry: 0% to 3%).** Two practices in the MWV region felt that we missed the labs in our review. They have a written protocol to order them according to the 2007 recommendations and are confident that they consistently follow it.

What is important to note however, is that labs were seen by some physicians as important; others, not important. Several physicians reported that they do not order labs for overweight or obese patients unless they have a family history of hyperlipidemia. Reasons were similar among them and centered primarily on the idea that they would not treat their overweight/obese patients differently if they knew the numbers. If the patients had a family history of hyperlipidemia, however, they would order the labs and refer them to a lipid specialist if elevated.

In our final meetings with the practices we presented their results from 2007-2009. We felt it important to note to them and now in this report that these results are only as accurate as the documentation completed in the chart. If an item was not documented (or documented in a way we could not interpret or find in the chart), then we were unable to count it. Several of the practices expressed concern over our results and communicated to us that they did provide significantly more education, follow-up, weight discussions, and labs than we found in our reviews. While our experience with quality initiatives tells us that practices often overestimate their performance, we do feel compelled to believe that some of these results may be lower than what is actually happening in the practices. Periodic meetings with the practices found them excited and enthusiastic about the progress they were making in their practice patterns and protocols. We have highlighted with the practices the importance and value of documentation. Not only for our evaluation, but most importantly for their own information and referral during future visits with their patients (i.e. where the patient is now regarding health behaviors, what education was provided, knowing what goals have been set, patient readiness, etc.). As a result of our findings and discussions, both MWV Healthcare Associates and Saco River Medical Center are looking into ways to improve documentation by making changes to well child forms and/or utilizing child weight management forms.

A challenge, as expected, has been in eliciting behavior changes in families. In Winter 2008 we offered two trainings in motivational interviewing (MI) techniques and asked that at least one practice physician and one clinical support staff attend. Our intention was to increase provider comfort, confidence, and effectiveness when talking about weight issues and counseling patients in behavior change. The MI training was not as well attended as anticipated but a physician representative from 4/5 practices and clinical support staff from 3/5 practices attended. Every practice had at least one representative at one of the two trainings offered. Physician and staff time were reported as barriers to attending the training. While we contemplated offering lunch time workshops as an alternative, our MI consultant advised us against it and communicated that it could alter the effectiveness of the sessions (extended periods of time are necessary to practice and learn skills). Provider feedback leads us to recommend that future projects schedule MI training in lunch and learn formats. Introduction to MI accomplished via webinars with further skill training during

lunch and learn sessions may be a more effective and efficient format for training primary care providers.

We are currently conducting a survey of participating providers to measure physician perceptions regarding skill, comfort, and practice patterns. While the results of the survey are still pending, information from our final key informant interviews reflect an increase in physician comfort addressing overweight and improvements in practice patterns. Providers from all practices reported in our final interviews being pleased with the project both in terms of process and program components.

One final challenge we met with was the death of one of our main project champions and spokespersons Dr. William Tombari of Derry Pediatrics. As a result, the practice dropped out of the project for the final 12 months. The other primary care practitioners in the practice absorbed his patients and were met with time constraints, unable to meet with us and unable to focus on the project objectives. We did find in our final evaluation however, that several of the strategies implemented (BMI documentation, classification, physical activity and nutrition assessment, etc.) became part of their daily routine and protocols.

Lessons Learned:

1. *Tools assist with strategy implementation:* Having the 5-2-1-0 assessment, education, and tracking tools were an important part of moving the practices forward. Physicians and staff found the tools useful and have fully integrated them into their practice.
2. *Shorter, more frequent trainings in Motivational Interviewing (MI)*: While it is agreed that these techniques have potential to be helpful in patient education and counseling, several physicians would not commit to the training. Time constraints, lack of understanding of benefits, and lack of self efficacy were all noted as barriers. Most notably, the time it takes to become proficient in MI can be lengthy. We attempted to first provide one, 3 hour session to gain basic skills and planned to possibly follow up with an intermediate level session. While the feedback was positive for the initial MI trainings, they felt that a more convenient and efficient approach was needed. They reported that lunch and learns would work out better for their schedules and would increase participation. While our consultant advised us against a lunch and learn approach, we feel it would be worth testing the effectiveness of a series of lunchtime learning sessions (1.5 hours each). It could increase participation while gaining skills for practical application. When presented with this idea, the pediatricians thought this would work better for their practices.
3. *Documentation is key to accurate evaluation:* Without proper documentation it was difficult to accurately evaluate the project. Admittedly, practice documentation should be about the value it adds to the practice. It can inform the practice on progress made on objectives, where patients stand in terms of health behavior and readiness to make changes, and what has been counseled and recommended in past visits. A stronger focus on making these measures part of a well child form can assist practices in this documentation.
4. *Interviews with practicing physicians show they vary in beliefs, skills, and confidence levels and therefore differ in their desire and willingness to implement strategies.* We found that within practices and between practices, strategies differed as we progressed through Stage 2(Fall 2007-Fall 2008). Ordering recommended labs, scheduling follow up visits, and participating in motivational interviewing varied between providers and practices.

Community Organizations

Summary of Major Accomplishments

Goal: Increased capacity for physical activity programming in organizations who serve children

1. Brought together partners in both the Derry/Londonderry communities and the MWV Region to work on a common goal with a common message – 5-2-1-0.
2. 5-2-1-0 message saturation at all Londonderry Elementary and Middle Schools and all schools in Conway and North Conway (SAU 9), SAU 13, and in the Ossipee community (part of SAU 49).
3. CATCH Kids Club training of 71 after-school staff and program directors in the Derry/Londonderry and the Mount Washington Valley Region.
4. CATCH Kids Club implementation in 18 sites in Derry/Londonderry and the Mount Washington Valley Region. Full saturation of elementary after school programs in Conway, North Conway, SAU 13, Ossipee, and the Londonderry School District.
5. 3 schools in the Mount Washington Valley Region piloted and have now committed to using Take 10! an evidence-based, curriculum-based energizer program providing kids with 10 minute bouts of physical activity during class time—all while learning a lesson (in English, Math, Science, History, etc.). Madison Elementary has committed to all 5 grades (1-5) using Take 10!
6. Provided assistance and guidance to the Londonderry School District Wellness Committee with the implementation of the CDC School Health Index. Results of this assessment demonstrated improvement opportunities were present in physical activity, food services, foods served in classrooms, and family and community involvement. This report assisted the group in planning implementation strategies that align with their philosophy and readiness to change.
7. Ossipee Recreation, and Ossipee Central School, in partnership with the Upper Valley Trails Alliance, implemented the first Winter Passport Program outside of the Upper Valley Region in Ossipee, NH. Over 140 students participated in 2008 and over 300 students in 2009!
8. In an effort to address summer activity levels, Ossipee Recreation and Schools Out after school program joined efforts to bring CATCH Kids Club to the summer programs. Schools Out developed a CATCH Kids Summer Activity Book for kids to take home to do CATCH Kids Club activities with their friends and family. Ossipee Recreation also incorporated the book into their summer program.

Goal: Provide more supportive environments for healthy eating:

9. Vending machine changes at Derry Boys and Girls Club. They are now serving only healthy snacks and beverages in vending machines.
10. Implemented a child-centered high impact intervention for increasing healthy snack consumption in the schools. "Health Snack Checks/Campaigns" were implemented in 3/5 elementary schools in SAU 9, all 3 elementary schools in SAU 13 and 2/3 elementary schools in Londonderry with great success! School nurses started with healthy snack education in the classroom, followed by healthy snack/healthy eating checks during snack and meal times. Positive reinforcement was provided to those with healthy snacks, and at times incentives such as "healthy snack stickers" were awarded. School nurses also took pictures of the children with their healthy snack and posted it on a bulletin board highlighting healthy snackers. Subjective feedback from the schools report increased healthy snack consumption and demand from children. Schools prefer this method as it is not a top down strategy but rather the healthy changes "bubble up" from the students.
11. Initiation of non-food reward systems in SAU 9 and 13 and in the Londonderry School District. Continues to need more widespread implementation in the classrooms.
12. Changes in school lunch menus including more whole grain offerings, switch from whole milk to low fat milk, and an increase in salad bars.
13. Universal use of 5210 for physical activity and healthy eating assessment and education.
14. Partnered with NH State Department of Education to assist SAU 13 in reviewing difficult food service issues and developing an action plan for menu improvement, staff development, and community education.

After School Programs

From Summer 2007 through Spring 2009, with the support of Harvard Pilgrim Health Care Foundation, we implemented CATCH Kids Club into 18 new sites across the two communities (including 2 sites in Ossipee). CATCH Kids Club (CKC) is an evidenced-based after-school, summer, and community recreation program designed to equip children with knowledge, skills, self efficacy, and intentions to make healthy dietary and physical activity decisions. We chose CKC not only because it is an evidence-based program, but because it is different from other activity programs. CKC uses low/no competition, non-elimination games that maximize activity time and minimize sedentary time. It provides a positive atmosphere for activity where kids do not have to be concerned about low skill levels, always being "out", being the "last one picked", or not winning. It is about fun and creative play. See attachment *CKC- info summary for NH* for more details.

Evaluation

In Fall of 2008 and Winter 2009, we conducted site observations that included evaluation of physical activity time and intensity, staff skills, and key informant interviews. Findings include:

- All sites but one conducted activities that provided children with moderate to vigorous activity for at least 50% of activity time and that moderate to vigorous activity time lasted at least 20 minutes. Total activity time ranged from 28 to 46 minutes with an average total activity time of 38 minutes. Average time spent in moderate to vigorous activity was 23 minutes.
- Observations and interviews found that children enjoy CKC activities and the staff enjoyed the structure it brought to their programs.
- As reported in 2004 when we first introduced CKC in NH, staff members reported that children who did not normally participate in activity time were motivated by the CKC games and are now regular participants in activity time.

We also successfully piloted a pre- and post-child survey in 5 of our 16 sites. While findings vary between the 5 sites who completed the survey, results from our evaluation demonstrate increases in physical activity and healthy eating:

- Three Project Succeed programs (Conway/North Conway) increased physical activity time by an average of 28 min/day.
- Derry Boys and Girls Club reported an increase in the percentage of children who reported accumulating at least one hour of physical activity/day (61% to 83%).
- Three Londonderry YMCA after school sites demonstrated an increase in the percentage of children who got 2 hours or less of screen time (89% to 97%).
- Results from the Ossipee Schools Out CATCH Kids Snack Club show:
  - the percentage of children who report <u>not drinking</u> soda/sugary drinks increased from 8% to 32%.
  - the percentage of children who reported drinking 3 or more glasses of fat-free or skim milk each day increased from 31% to 50%.

We did find that several sites did not feel that the results of the child surveys were reliable. Staff felt that the children were only providing the answers that "we wanted to hear" and not what their actual behaviors were at that time. They also felt that the third graders were too young to do the survey with accuracy. We suggest using the survey with 4th graders and having an outside person go to each of the sites to perform the evaluation. This may increase the number of sites who complete the evaluation and provide a non-biased individual to lead the evaluation with the children.

Through staff questionnaires we learned:

- Staff feel that children participating in CATCH Kids Club are more physically active as a result of the program
- Children participating in CATCH Kids Club spend more time in moderate to vigorous physical activity than before the program was implemented.
- It is "safe to exercise in CATCH Kids Club." Children are building their skills and are more comfortable taking part in physical activity.
- CATCH Kids Club is important to their organizations and it will help them prevent chronic diseases in children.

Lessons Learned:

1. *There are several barriers to implementing the CATCH Kids Club nutrition curriculum and/or activities.*
   - Many of the sites we worked with acquire their snacks from their schools' Food Services Departments. While sites such as Project Succeed in Conway did connect with the food service department to request healthier snacks, they have little control over what they actually receive.
   - The CKC nutrition curriculum includes activities for kids to learn to make healthy snacks. Many sites did not feel that after school was a great setting for this unless it was part of a "club". Ossipee's School's Out is a perfect example of this. They created a CATCH Kids Snack Club as part of the project. This ran in parallel to the CATCH Kids Club so not everyone got the benefit of the CKC nutrition curriculum.
2. *Strong director support is vital*

   We felt that without strong support from the program director it was difficult to engage the staff and help them realize the important role they play in fighting childhood obesity. While the training may have provided them with the skills to lead CKC, we suspect that they did not perceive themselves and/or the program as being important contributors to child health. New programs should measure confidence/importance in staff and address these areas with program directors.
3. *Routine staff training is an essential element of program success and sustainability.*

   Recent site observations show that routine staff training is a vital component of achieving proper implementation and program effectiveness. Staff turnover was a fairly significant issue, as was program staff readiness and interest in conducting CKC. The Londonderry YMCA programs, for instance, faced a high level of staff turnover (including the program director, our main champion). As a result, the program was getting lost and new staff were not aware of the CKC program. Further improvements are needed to:

   - increase contact and communications with sites
   - increase and maintain staff skills.
   - improve staff perceptions and knowledge regarding physical activity and healthy eating.
   - maintain use of CATCH philosophical objectives (low/no competition, inclusive/non-elimination games).

   An increase in staff training, including refreshers, is highlighted as an important component to the sustainability and continued effectiveness of the program.

4. *There are barriers to reaching every child in an after school program:*
    - *Many after school programs break up students to different enrichment programs.* Programs such as Project Succeed and School's Out break students into 6-8 groups who participate in 8 week "enrichment programs". Kids sign up for these programs based on their interests. We worked with these sites to provide CKC as a "transitional" activity between homework and the clubs. It worked at one Project Succeed site but others found that it took too much time away from another critical component (homework, snack, club). Several opted to offer CKC as an enrichment program/club only, which was not our intention. We need to expose all children to the positive activity environment that CKC offers. Only then will they understand, and perhaps gain an interest in participating in CKC. When offered simply as a club with no exposure to the actual program, we may not be reaching the "hard to reach" kids who are hesitant to participate in any physical activity (due to competition, lack of skill, fears of being "picked last", etc.).
    - *Programs with a high number of students experienced difficulties offering CKC to every child.* We worked with *p*rograms that had a large after school population (>40 children) to set up schedules that ensured that each grade level would be exposed to CKC at least 2 times per week. This was a difficult task that required changes in schedules and routines.

This spring, we are introducing the 2009 CATCH Kids Club Pilot Project. This pilot project was designed to understand the feasibility of a statewide effort to bring CATCH Kids Club to after school sites in NH while taking further steps to ensure the programs effectiveness and sustainability. Our partners in this effort include NH Parks and Recreation Association; Boys and Girls Clubs of NH; Plus Time; and YMCA. The Harvard Pilgrim Health Care Foundation is the funder for this new work.

The goals of this project focus not only on physical activity behaviors of children, but also on the culture of the program in terms of staff perceptions and skills. Staff and site support through a new CKC network will be a main focus. See attached for more details: *CATCH Kids Club Pilot Summary-General.*

With the CKC support network in place, our hope is that it will facilitate the growth, effectiveness and sustainability of all NH CKC sites, including the 16 programs implemented as a result of this project.

Schools

Schools in both the Mount Washington Valley Region (Conway, North Conway, Madison, Freedom, Ossipee, and Tamworth) and Londonderry have enthusiastically implemented strategies to increase physical activity and healthy eating. They have adopted simple, easy strategies with potential for high impact:

General:

- 5-2-1-0 promotion via posters, parent handouts, bulletin boards, etc.
- Utilizing family nights, open houses, parent-teacher nights, newsletters to promote 5210 and healthy snacks.

Healthy Eating:

- School nurses are implementing Healthy Snack Campaigns. Focus is on positive reinforcement for healthy snacks using stickers or putting their picture up on a bulletin board to show

examples of healthy snacks. Having their picture on the board in particular appears to be an exciting incentive for the children and has been effective at increasing the demand for healthy snacks at school and at home. Teachers are commenting at how they receive comments/calls from parents asking why their children are asking for healthy snacks instead of chips or cookies!

- Pine Tree School's Healthy Snack Cookbook distributed to all families. Parents, students, and staff submitted favorite healthy snack recipes and students drew illustrations.
- Teachers and school nurses have brought in different healthy foods for kids to try during snack time.
- Farm stands at open houses and parent nights
- Food Service changes
  - SAU 9 has switched to whole grain rolls, pasta, and rice.
  - SAU 13 has gone from whole milk to low-fat/skim milk only; ordering more whole grains; offering more vegetables.

In final meetings with the MWV schools and the Londonderry School District, the partners were more than willing to discuss their successes implementing healthy eating and active living strategies within their schools. Providing positive reinforcement to the students for healthy eating appears to be a high impact strategy. The demand for healthier snacks and fruits and vegetables from the students is increasing. The result, they reported, are changes "bubbling up" from the kids themselves. Parents and teachers have reinforced their suspicion: this "demand" is spreading from the classroom, to the school cafeteria, and to home.

Food service staff members from both SAU 9 and 13 asked for assistance in modifying lunch menus to provide healthier fare while meeting the challenge of a shrinking budget and higher food costs. We partnered with the HEALthy Schools Initiative (formerly Changing the Scene), the NH School Health Association, and the State Department of Education to help the districts assess their food service departments and develop action plans.

- SAU 9 Food Services is dedicated to improving the school lunch menu and, as with many Food Service Departments across the State, has had its share of challenges. Increases in the cost of food and decreases in the budget have slowed efforts. Nevertheless, finding ways to bring in more fresh produce has become a main goal of the SAU 9 Food Service staff in Conway and North Conway and this district has champions who have contributed to several changes in the lunch menu:
  - Students and staff of SAU 9 are seeing more whole grains in the form of brown rice, rolls and other breads, pasta, etc. Further improvements include lower fat cheeses, more turkey for meat items, and lower sugar cereals.
  - Pine Tree Elementary has been working with local farms to bring in more fresh produce.
  - The school nurse at John Fuller organized a school garden project during the spring and summer of 2008. They used the produce in the fall of 2008 to supplement their lunch menu.
- The Food Services Department at SAU 13 had a challenging couple of years. They were receiving multiple complaints about the lunch menu from multiple sources, including parents and staff. The result was an overwhelming amount of feedback to respond to and a difficult task of prioritizing and thus moving forward with improvements. It was clear that an intervention was needed to help the SAU Food Services Director and Administration identify priorities and develop an action plan to move forward with meaningful improvements.

  We therefore served as a catalyst for change and helped them research several options: the HEALthy Schools Initiative (formerly Changing the Scene), the NH School Health Association, and the Department of Education. After meetings with all three, they chose to work with the

Department of Education, with the knowledge that they would soon be receiving their food services evaluation.

- In fall of 2008 we partnered with Elaine Van Dyke at the Dept. of Education to provide them with the guidance they needed. SAU 13 received an evaluation by the State and found that their lunch menus met the USDA guidelines for nutrients. With results in hand, we assisted them in identifying opportunities for further improvement and an action plan was developed (see attached *Food services 2009 action plan*). Included in this action plan are not only goals for foods offered, but goals to increase staff training, develop a formal process for complaints, and community/parent education.
- A major opportunity was identified for increasing community/parent education. We discovered several misperceptions in the community regarding the healthfulness of the school lunch menu. That said, we felt that it was important that the school community understand the USDA guidelines and that the district lunch menus did indeed meet these parameters. We also discovered that current communications on menus could be more descriptive to demonstrate how healthy the items actually were. For instance, lunch menus will now include more detailed descriptions such as "whole grain bread" vs. "bread" and "baked white meat chicken nuggets" vs. "chicken nuggets", "whole grain macaroni and cheese" vs. macaroni and cheese". Lastly, announcements of improvements made to the menu or lunch experience will also be communicated.
- SAU 13 will also be working with the National Food Service Management Institute at the University of Mississippi to conduct a three day evaluation of food service programs by a highly qualified and independent consultant. These consultants can spend intense quality time with food service director, school administration, and superintendent offices and write an action plan that is approved by the administration.

Physical Activity:

- "Get Caught Being Active" campaign in Londonderry School District. Pictures taken of kids being active and posted on bulletin boards. Provides recognition and positive reinforcement for kids to be active. Everyone wants to be on the board!
- Take 10! implementation at Madison Elementary (Grades K-5), K.A. Brett Elementary (Grades 1-4), and Pine Tree Elementary (Grade 1). Take 10! is a curriculum based energizer program that gets kids moving during class time for at least 10 minutes…all while learning subject matter. Research conducted with Take 10! demonstrated increases in moderate to vigorous physical activity, energy expenditure, and physical activity time. Energy expenditure per session averaged from approximately 25 to 37 Kcal. Researchers reported "Although a relatively low number of Kcal were used per session, students who performed 5-10 sessions per week conceivably could be expected to burn 150-300 Kcal per week through Take 10! sessions. The accumulated energy expenditure may create a long-term impact on developing overweight and obesity. Moreover, multiple 10-minute periods of moderate to vigorous physical activity can accumulate through sessions like Take 10!, helping children achieve the recommended 60 total minutes per day and discouraging extended periods of inactivity in the classroom." Teachers using Take 10! in our project have reported the following in Teacher Implementation Surveys:
  - They implemented Take 10! 2-3 times/week, although they reported it is possible to implement one Take 10! session per day.
  - Take 10! activity breaks help students refocus during long academic blocks.
  - Take 10! effectively integrates academics and physical activity and is helpful in reinforcing academic concepts.
  - They will continue to implement Take 10! in the next school term
  - They would recommend Take 10! to another teacher or school

- Participation in Walk NH 2007-2008

Lessons Learned:

1. *Developing new policies is not always the most effective strategy:* Londonderry School District is a firm believer in letting change come from the students and staff. Instead of refining policies, the school district wellness committee was committed to increasing physical activity and healthy eating by developing an atmosphere where it would be welcome, acceptable, and necessary. Their approach was not solely through policy but through education and supportive programs…making activity and healthy eating the easier choice.
2. *Small steps that have the potential for high impact can go a long way at a school.* High impact strategies need to be easy to implement and take little time or they run a high risk of not being accomplished. Further, staff members whose work will be impacted by the strategy need to be ready to make the change. In our project, we chose to work on five main strategies that fit these criteria:
    a. 5-2-1-0 education campaign
    b. Healthy snack/vegetable campaigns
    c. Take 10! activity program
    d. Food service assessment and action plans (both SAU 9 and 13 welcomed this strategy, although Londonderry was not ready to take this step)
    e. Working with after school programs to take on a larger role with physical activity.
3. *Some school personnel do not realize the impact they can make with the students.* Many did report in interviews that they were concerned that while they promoted healthy foods at school, families were not supporting these messages and habits at home (due to access and affordability issues). We emphasized to school staff that they can provide a supportive healthy environment for children 6-9 hours a day and that adds up to a significant amount of time to contribute to the health of children!

Challenge:

One area that we had difficulty in was the engagement of the Derry School System. We met with the superintendent at the beginning of the project. However, follow-up calls and requests for meetings were not answered and led us to the conclusion that they were not interested in participating. However, we did explore 2 alternative approaches:

1. We went to the after school programs. After school programs may have more room to make an impact both for the children and for their programs. We worked with Jane Cuthbert of the Derry Extended Day Program who offers after school programming in 3 Derry elementary schools to implement CATCH Kids Club. While she has very large programs (70+ children each) we worked with her for a year to meet her unique needs and devise a plan to find an acceptable format that uses staff effectively and efficiently while meeting the needs of the children.
2. We sought the assistance of Public Health Network Director. We met with school nurses to introduce 5-2-1-0 and potential partnership opportunities. Attempted re-engagement in the fall met with little result. They felt they had too much on their plate to work on the project.

Pre-School/Child Care Centers

In Fall 2008 we approached 3 child care centers to promote 5-2-1-0. They agreed to pilot a 5-2-1-0 message campaign with students and their families as well as to teach a short nutrition curriculum, *Creative Pockets Kit*, from the Produce for Better Health.

Ossipee Crossroads Childcare, Ossipee NH:

- Did snack making activities out of a book and sent recipes home to parents.
- Worked with Meals on Wheels to provide healthy lunches for students.
- Conducted puppet shows with healthy foods
- Tailored the CATCH Kids Club activities and ran activity sessions with pre-schoolers daily.
- Used Fruit and Veggie Dance CD's to promote activity with pre-schoolers

Growing Tree Child Care, Conway NH:

- 5-2-1-0 education to parents and students (5-2-1-0 bulletin board, 5-2-1-0 education handouts, goal trackers)
- Fruit and Vegetable challenge: Eat a Rainbow! Taking pictures of children eating healthy foods and posting it up on "rainbow" bulletin board.
- Taught nutrition using Creative Pockets Kit and Smart Fruit and Vegetable Songs CD.
- Used Rae Pica's Moving and Learning book to lead age appropriate physical activities with children. They have found the book to be "so helpful, incredible" in providing physical activity to the children in the winter.
- Librarian comes two times a month with a physical activity or healthy eating book to read to the children.

Mountain View Montessori Center, North Conway, NH

- 5-2-1-0 education to parents and students (5-2-1-0 bulletin board, 5-2-1-0 education handouts, goal trackers)
- Teaching about nutrition using Creative Pockets Kit and Smart Fruit and Vegetable Songs CD.
- Created a Healthy food calendar
- Currently working on raising funds for a "natural playground" to promote outdoor activity.

Lessons Learned:

1. *Child Care Centers want to be involved in healthy eating and active living initiatives.*
2. *Keeping kids active in winter months can be a challenge.* Having resources to help teachers lead movement activities indoors (small spaces) can be very helpful. Further work should involve training for teachers to lead physical activity with pre-school children.
3. *Age appropriate nutrition lessons with props is helpful in delivering healthy eating messages.*

The Community-Clinical Connection

Community partners have enthusiastically adopted 5-2-1-0 and are encouraged by the spread of 5-2-1-0 throughout their communities. Children and families are hearing 5-2-1-0 not only at their pediatrician's office, but at school, the hospital, library, resource centers, after school programs, recreation centers, etc. We have been informed by several physicians and school personnel that hearing children tell them about 5-2-1-0 makes them feel that they ARE part of a larger project and are indeed getting the message across. The children's connection with 5-2-1-0 has helped facilitate the education and counseling process-- perhaps because it is familiar to the patient and 5-2-1-0 is considered to be a "fun" message.

Physicians and school nurses also reported to us in site interviews that they were part of this project because it was a community-wide initiative. They do not want to be the only organizations

providing a message or a strategy without the support of the greater community. They have been pleased by the progress of the project but believe that more needs to be done with furthering parent involvement and more attention to access issues (healthy food and places to be active).

Final Comments

This project has contributed significantly to our knowledge of engaging communities in childhood obesity prevention efforts. While we assisted partners in each community in implementing evidence based or promising practices, there are "collateral issues" that need to be addressed for these practices to be truly effective.

1. *Community organizations need support and a belief that "this is important" from the top.* Strategies are much more difficult to implement if the superintendent, principal, program director, CEO, Medical Director, does not support it and help make it happen. We found that while we had community champions and "sparkplugs", we needed those who could lead directly and influence an organizations policy or environment. We strongly recommend that we not only talk with organization leaders and administration at the beginning, but we get their firm commitment to help initiate change. Knowing their readiness for engagement and perceived importance of the project is vital to accomplishing this.
2. *The implementation staff has to believe "this is important" and have the skills to make it happen.* Likewise, the doctors, clinical staff, after school leaders, teachers, etc. have to believe that they play an integral part in their patients' and/or students' health and feel confident that they have the skills to implement strategies. While our project focused on the skills of staff with trainings, we did not measure perceptions of confidence/importance. We strongly recommend that these areas be addressed to inform future work.

In summary, this project has grown considerably since Spring 2007 and continues to grow as everyone builds upon a series of small successes. While some interventions will be sustained, there may be some that do not. The strategies implemented in the pediatric primary care practices have been embedded within protocols and are likely to experience the greatest sustainability. Changes in the schools will vary. While some specific strategies may not be sustained (i.e. Get Caught Exercising), it is important to note that environments have improved and can continue to improve as the cultures are changing. Body Mass Index (BMI) is now a more acceptable measure to discuss with parents; lunch menus have improved their options to offer healthier fare; parents are demanding healthier lunches; children are experiencing and beginning to demand healthier foods; after school programs are understanding their role in child health and will soon be part of a CKC network to support and share ideas; and child care centers are learning their role in healthy eating and active living.

During each phase of CPTI we have learned a great deal about the scope of implementing a social-ecological model. The most valuable lessons learned in the last six years have to do not only with individual readiness, but with organizational and community readiness to make changes. There will always be champions and 'sparkplugs" but having the belief that "this is important" from key stakeholders and key organizations, plus their firm commitment, is critical. This includes everyone from the parents, to staff, to physicians, to administrators. Changing their beliefs and helping them understand both the importance of issues and the important role they play is challenging. It takes perseverance and patience. And it is critical to success and sustainability.