

## WVAND Child Nutrition Panel

### WV PRESCHOOL AND EARLY ELEMENTARY NUTRITION EDUCATION

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## Pre-School Project Overview

- **Project Goal** → To assess the effectiveness of pre-school nutrition education program (using a behavioral change and process-oriented perspective)
- Project was delivered in summer 2012 at 10 sites in 7 pilot counties: Grant, Hampshire, Mineral, Monongalia, Raleigh, Wayne and Wood
- Education was delivered by six paraprofessional nutrition outreach instructors
- Project was supervised by an RD
- A series of conference call training sessions prepared NOIs to recruit pre-school classrooms and teach the curriculum
- Only classrooms with at least 50% of students qualifying for free or reduced lunches were provided pre-school lessons
- Scripted lessons were taught daily over a one to two week period
- Evaluation methods:
  - teacher feedback questionnaire
  - qualitative survey of nutrition outreach instructors

## Why Pre-school Nutrition Education?

- Pre-school nutrition education helps children learn about the basic origins of food through books, posters, and hands-on experiences during formative years. Methods include:
  - Having circle time with books about food and fun.
  - Focusing on the basics- foods and farm to start.
  - Having formal and informal education (lessons and meal time conversation)
  - Engaging the senses- taste, touch smell and manipulating new foods.
- Pre-school children are a great age for nutrition education. They are still forming nutrition habits and also influence on family food purchase.
- Opportunities may exist for providing nutrition training opportunities for families too.



## Developing Healthy Habits

- ¾ of children in the US spend time in organized child care
- Child care setting is ideal for promoting early development of health behaviors
- Preschool children who are overweight are almost 5x more likely to be overweight as young adults
- 38% of children entering kindergarten in WV are overweight or obese



## The Curriculum- *Show Me Nutrition*

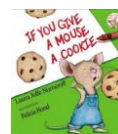
### Lesson Plans Included:

- Each lesson begins with a nutrition-related book.
- Each lesson had a behavioral and knowledge-based objective
- Lesson plans included:
  - Reading books about food and nutrition
  - Food tasting experiences
  - Hands-on nutrition activities (food art, coloring and other kinesthetic activities)
  - Didactic material on food safety, healthy food choices and the benefits of physical activity

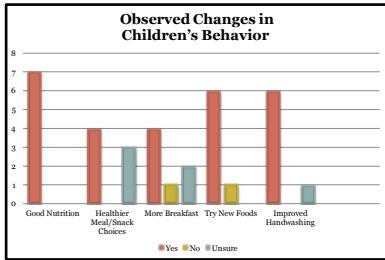
### Lesson Titles

- Germs, germs, germs\*
- Bread, bread, bread
- Juicy purple pepper
- Eating the alphabet\*
- From grass to milk\*
- It's a sandwich\*
- Bread and jam for Frances
- From wheat to pasta\*
- Jody's beans
- Little rabbit's tooth
- Handa's surprise

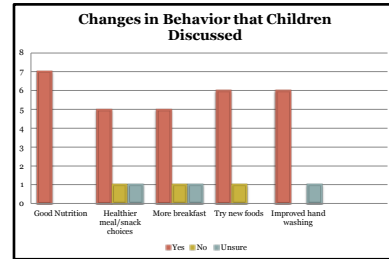
## Sample Books



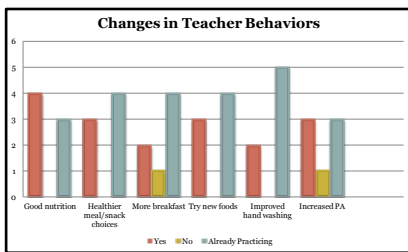
### Teacher Feedback Questionnaire



### Teacher Feedback Questionnaire (Cont.)



### Teacher Feedback Questionnaire (Cont.)



### Qualitative Teacher Feedback

**Please share any comments about changes children have made:**

- "A few children refused to try new foods until Burb's program, which provided them the opportunity to try...and they liked the new foods"
- "The children are more aware of the health benefits of eating nutritious foods"
- "The children will try their vegetables and tell their friends that eating their veggies are good for their hair, skin, and eyes"
- "The children are more aware of the health benefits of eating nutritious foods."

**Please list any additional comments regarding things you really enjoyed or any ideas you may have that would allow us to improve the nutrition education program:**

- "I thought it was great and very engaging...absolutely would be interested in the program next year"
- "The kids really enjoyed the program. I enjoyed it too. They learned a lot from it. I did too"

### Qualitative NOI Feedback

**Please provide any feedback which you feel is valuable with regard to teaching the curriculum:**

- "I found it very helpful that the "questions" and comments in the curriculum matched so nicely to the story books. Not only did we read a story, we could check for understanding by using the curriculum"
- "I think that the food demos need to be a smaller amount. It was right before lunch and the children didn't want to eat their lunch after"

**Please provide any feedback which you feel is valuable with regard to having enough time to fully cover the information in the lesson:**

- "The pre school provided me as much time as I needed to carry out and fully cover the information in the lesson. However, I did discover that the attention span for pre school fell short of the time I was present. You can only provide them with so much information and direction before they need time to process"

### Next Steps

- Expand the pilot to include more counties statewide
- Collaboration between the WV Head Start program and FNP
- Recruiting preschool parents for FNP's adult class series to promote greater behavioral change.
- Increase the number of lessons taught per series
- Strengthen the program evaluation

## Early Elementary Program Overview

- **Project Mission:** To stimulate behavioral change related to healthy eating and physical activity by creating multiple opportunities to learn and practice program goals.
  - Make half your plate fruits and vegetables, make at least half your grains whole grains, and choose fat-free or low-fat dairy products every day.
  - Be physically active every day as part of a healthy lifestyle.
  - Avoid oversized portions.
  - Balance caloric intake from food and beverages with calories expended.
- **Target Audience:** Primarily K-2 students in five counties.
  - In 2012, NEP served 4,345 students.
  - 32 schools participated.
- Nutrition education delivered by 5 Registered Dietitians, 1 Nutrition Educator, and 10 Dietetic Interns
- Only schools with at least 50% of students qualifying for free or reduced lunches were provided nutrition education.
- Educators provided instruction in classroom settings for 30 minutes a week over an eight week period.
- **Evaluation Methods:**
  - Pre/Post Testing of Participants
  - Teacher Surveys
  - Focus Groups

## Marshall's NEP Curriculum Overview

- Adapted from Missouri's **Show Me Nutrition** curriculum
- Eight 30 minute lessons
  - Germs
  - MyPlate Overview
  - Grains
  - Vegetables
  - Fruits
  - Dairy
  - Protein
  - MyPlate Review



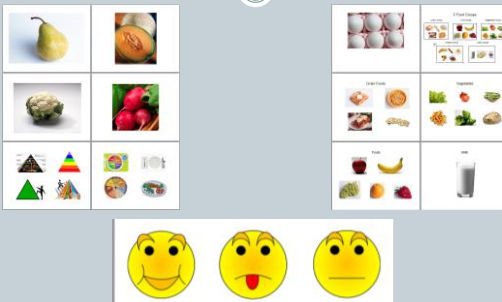
## Evaluation Challenges

- School-based nutrition education programs impact childhood obesity rates by promoting changes in young children's dietary and physical activity behaviors.
- Age appropriate tools to evaluate nutrition knowledge, attitude, and behavior changes in K-2<sup>nd</sup> grade children are limited.
- Initially, a tool adapted from surveys designed for older children, was tested in K-2 classrooms but was deemed inappropriate for young children with limited attention spans and reading capabilities.
- Literature reviews yielded no examples of appropriate evaluation tools; therefore, the research team decided to create new assessment tools, which were pilot tested in 2012.

## Survey Development

- Program goals and curriculum were reviewed to determine appropriate objectives to measure.
- Nutrition knowledge, attitude, and behavior objectives were selected.
- Educators with expertise in young children were consulted to review questionnaires and provide feedback on delivery methods.
- To maintain continuity, pre and post tests were developed for Kindergarten through 2<sup>nd</sup> grade utilizing similar format and delivery methods.
- Number of questions varies from 18 – 25.
- **Survey Construction:**
  - Identification of fruits, vegetables, MyPyramid, and MyPlate
  - Identify benefits of various food groups
  - Behavior questions related to food consumption, handwashing, and physical activity
  - Attitudinal questions answered using a 3-point facial scale

## Pre/Post Test Pictures



## Pre/Post Test Implementation

- Pre tests verbally administered prior to 1<sup>st</sup> nutrition lesson and post tests within 2 weeks of the last lesson.
- Both administered by the research team, who are trained nutrition professionals.
- Flip chart notebooks with pictures were utilized to assist students with question/response comprehension and to test food recognition.
- Children were taken from classrooms and met with researchers one-on-one.
- Surveys were administered in 20-30 minutes per classroom with little disruption to the school day.

## Kindergarten Results

	Pre Assessment	Post Assessment
Correctly ID Banana	677 (97.7%)	710 (99.0%)
Correctly ID Kiwi	133 (19.2%)	375 (52.2%)
Correctly ID Broccoli	580 (83.7%)	673 (93.7%)
Correctly ID Sweet Potato	73 (10.5%)	320 (44.6%)
Correctly ID MyPyramid	496 (71.6%)	681 (94.8%)
Correctly ID MyPlate	507 (73.2%)	677 (94.3%)
Understand Function of Protein Foods	214 (30.9%)	349 (48.0%)
Know Bread's Food Group	363 (52.4%)	493 (68.7%)
Use Soap and Wash Hands for 20 Seconds	510 (73.6%)	647 (90.1%)
Active Daily	609 (87.9%)	676 (94.2%)
Consume Grain Regularly	193 (27.8%)	209 (28.9%)
Consume Vegetables Regularly	193 (27.8%)	258 (37.3%)
Consume Fruit Regularly	323 (46.6%)	340 (47.4%)
Consume Milk Regularly	343 (49.8%)	433 (60.3%)
Consume New Foods Regularly	162 (23.4%)	186 (25.9%)
Positive Attitude Toward Trying New Foods	551 (79.5%)	589 (82.0%)
Positive Attitude Toward Physical Activity	437 (63.1%)	604 (84.1%)

## Kindergarten Results Summary

- 693 students completed a pre assessment, and 718 completed the post test.
- Recognition of fruits and vegetables increased after the intervention.
- Knowledge of MyPlate concepts improved.
- At post test, 90.1% reported using soap all the time when washing their hands (16.5% increase).
- Students choosing foods from all food groups daily increased after intervention.
- Attitudes toward eating healthy and physical activity improved after participation in NEP.

## First Grade Results

	Pre Assessment	Post Assessment
Correctly ID Pear	562 (84.4%)	614 (91.5%)
Correctly ID Cantaloupe	45 (6.8%)	170 (25.4%)
Correctly ID Cauliflower	143 (21.5%)	337 (50.2%)
Correctly ID Radish	77 (11.6%)	236 (35.3%)
Correctly ID MyPyramid	404 (60.7%)	640 (95.4%)
Correctly ID MyPlate	222 (33.3%)	634 (94.5%)
Understand Function of Protein Foods	135 (36.8%)	291 (43.4%)
Understand Function of Fruits/Vegetables	135 (20.3%)	398 (59.3%)
Understand Function of Dairy Foods	358 (51.4%)	351 (47.8%)
Understand Function of Grain Foods	496 (69.5%)	562 (82.2%)
Know Egg's Food Group	240 (36.0%)	260 (38.7%)
Use Soap	637 (95.6%)	657 (98.1%)
Wash Hands for 20 Seconds	539 (77.9%)	595 (88.7%)
Active Daily	607 (91.1%)	636 (94.8%)
Choose from Five Food Groups Daily	411 (61.7%)	471 (71.0%)
Consume Grain Regularly	145 (21.8%)	217 (32.3%)
Consume Vegetables Regularly	250 (39.2%)	289 (43.1%)
Consume Fruit Regularly	292 (48.9%)	411 (61.3%)
Consume Milk Regularly	382 (57.4%)	441 (65.7%)
Positive Attitude Toward Trying New Foods	539 (80.9%)	580 (86.4%)
Positive Attitude Toward Vegetables	464 (69.7%)	496 (73.9%)
Positive Attitude Toward Physical Activity	601 (90.2%)	628 (93.6%)

## First Grade Results Summary

- 666 first graders completed the pre test, and 672 completed the post assessment.
- Recognition of fruits and vegetables increased by over 20% in nearly every category.
- Those correctly identifying MyPlate increased from 33.3% to 94.5% after the intervention.
- Students' knowledge of MyPlate concepts improved in all areas but one (dairy).
- Increases in the length of hand washing as well as daily physical activity were noted.
- Number of students choosing fruits, vegetables, grains, and milk "all the time" increased at post test.
- Attitudes related to trying new foods and physical activity improved.

## Where Are We Now?

- Increase in participation
- Implementation of 2<sup>nd</sup> grade pre/post assessments
- Improvement of tools for all grades
- Addition of social media
- More Presence in schools on a daily basis