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## **2014 Active Living Research Conference**

Supporting Preschool Active Living Through Built Environment  
Interventions: Outdoor Design Research Based Indicators

## Potential for change

# 11.3 Million

Number of children under 5 of working mothers in some form of childcare (US Census Bureau, 2008)

900,000 Head Start (Laughlin & Davis, 2011)

# Potential for change

# 119,550

Licensed childcare centers in US



(Child Care Resource  
and Referral agencies  
2009/2010)



# Environmental Quality

Before POD



A

After POD



B





Spanish for Fun, Chapel Hill, NC

Before renovation. Play equipment, sand play area, moveable play houses, and unutilized wooden structure.



Eight months after renovation. Board walk looped path, play equipment, shade trees, stage, play house, and vegetable gardens.





# POEMS Preschool Outdoor Environment Measurement Scale

An assessment tool  
for evaluating the quality  
of outdoor environments  
in childcare centers  
for children 3-5 years old

Karen DeBord, Linda Hestenes, Robin Moore,  
Nilda Cosco and Janet McGuinnis



North Carolina State University  
University of North Carolina-Greensboro

Item #	DOMAIN ONE: Physical Environment	Community School
1.1	Easy and Safe Drop-off/Pick-up	1
1.2	Welcoming impression	1
1.3	Place for Social Interaction	1
1.4	Learning Areas are Shielded	1
1.5	Outdoor Area is Enclosed	1
1.6	Classrooms Face Outdoors Receive Adequate Sun and External Shade	1
1.7	Windows- At the Children's Eye Level	0
1.8	Windows- Opened to Allow Fresh Air	1
1.9	Open Directly Outdoors into Usable Transition Spaces	1
1.1	Ground surface drainage- adequate	1
1.11	Overall Impression of the Outdoors is of a Natural Area	1
1.12	Outdoor Space is Easily Accessible by Children	1
1.13	Shade is Provided	1
	<b>TOTAL</b>	<b>11</b>
Item #	DOMAIN THREE; Play and Learning Settings	
3.1	Learning Settings with Constructed or Manufactured Elements	1
3.2	Natural Elements	1
3.3	Multipurpose, Open, Grassy Area	1
3.4	Horizontal, Elevated Work Surfaces	1
3.5	Circulation Areas are Ample	1
3.6	Play Materials and Equipment - Appropriate	1
3.7	Enough Outdoor Toys can be Reached	1
3.8	Play Materials and Toys can be Reached	1
3.9	Wheeled Toys - Are Available	1
3.1	Storage is Adequate	0
3.11	Manufactured Loose Parts are Available	1
3.12	Natural Loose Parts are Available	1
3.13	Decorative, Colorful, and Stimulating Elements	0
	<b>TOTAL</b>	<b>10</b>

POO change	Item present	Item not present	NA
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# NC Outdoor Learning Environment Alliance – 2007

“Playground” redefined as “Outdoor Learning Environment” (OLE)  
NC Division of Child Development and Early Learning (NC DCDEE)  
Child Care Rules

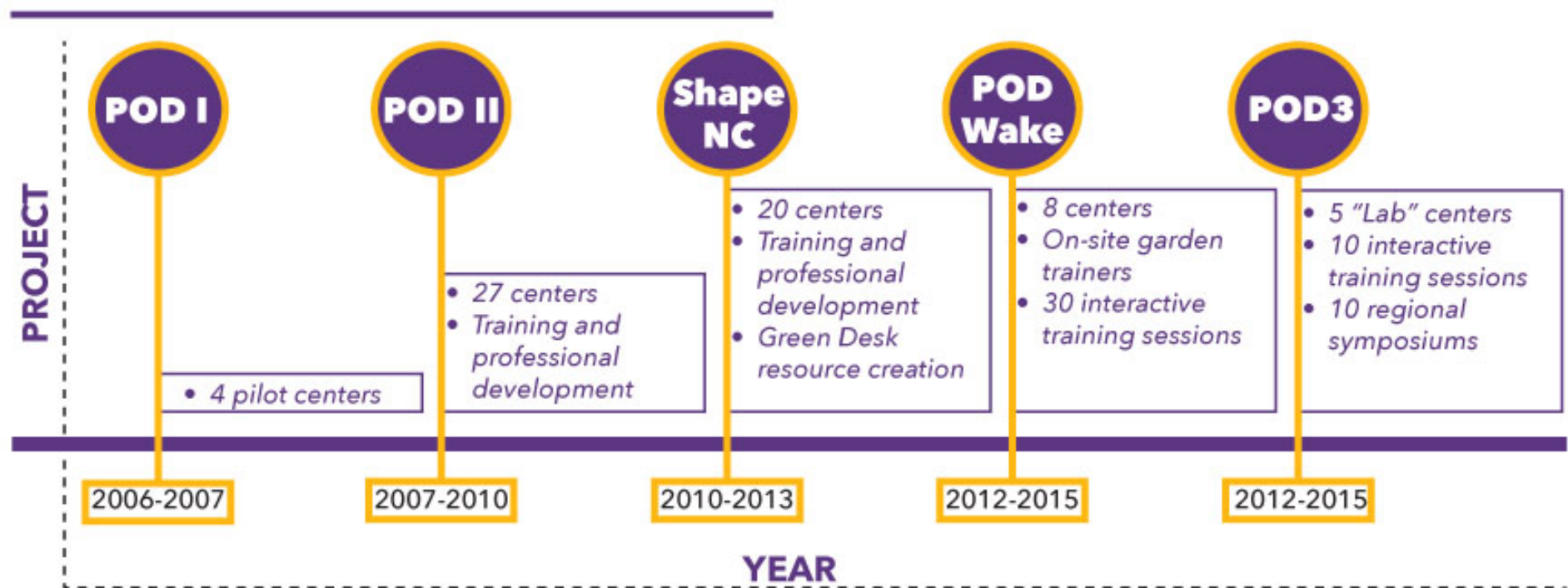
## **10A NCAC 09 .0605 CONDITION OF OUTDOOR LEARNING ENVIRONMENT**

- (a) All equipment shall be in good repair and shall be maintained in useable condition. All commercially manufactured equipment shall be assembled and installed according to procedures specified by the manufacturer.
- (b) Equipment shall be sturdy, stable, and free of hazards that are accessible to children during normal supervised play including sharp edges, lead based paint, loose nails, splinters, protrusions (excluding nuts and bolts on sides of fences), and pinch and crush points.
- (c) All broken equipment shall be removed from the premises immediately or made inaccessible to the children.
- (d) Children shall not be allowed to play on outdoor equipment that is too hot to touch.
- (e) Any openings in equipment, steps, decks, and handrails shall be smaller than 3 ½ inches or greater than 9 inches to prevent entrapment.
- (f) All upright angles shall be greater than 55 degrees to prevent entrapment and entanglement.
- (g) The outdoor play area shall be protected by a fence or other protection. The height shall be a minimum of four feet and the top of the fence shall be free of protrusions. The requirement disallowing protrusions on the tops of fences shall not apply to fences six feet high or above. The fencing shall exclude fixed bodies of water such as ditches, quarries, canals, excavations, and fish ponds. Gates to the fenced outdoor play area shall remain securely closed while children occupy the area.
- (h) All stationary outdoor equipment more than 18 inches high shall be installed over protective surfacing. Footings which anchor equipment shall not be exposed. Loose surfacing material



# Preventing Obesity by Design (POD)—physical design as OLE intervention

## POD Evolution



Preventing Obesity by Design

*Outdoor Learning Environment  
Toolkit*

# 1 Preventing Obesity by Design



Supported by:  
Blue Cross and Blue Shield of North Carolina Foundation

*Preventing Obesity by Design (POD) is the Built Environment Component of the Shape NC Program, North Carolina Partnership for Children, Inc. supported by the Blue Cross and Blue Shield of North Carolina Foundation.*

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**Disclaimer**—The Natural Learning Initiative (NLI), its partners and supporting entities assume no responsibility for the installation of outdoor components and/or designs and their use. In no event will NLI be liable for any loss or damage including without limitation, indirect or consequential, incurred during the construction or use of the outdoor learning environment. NLI further suggests adherence to the guidelines set forth in the U.S. Consumer Product Safety Commission's *Public Playground Safety Handbook* and to follow local, state, and national code requirements concerning but not limited to land use, zoning, safety, accessibility, permitting, and approval of plans prior to construction.

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*The children were able to plant and have a garden this past summer. We had cucumbers, basil, tomatoes, corn, squash and green peppers.*

*Director of participating childcare center*

## What is Preventing Obesity by Design (POD)?

Preventing Obesity by Design (POD) is an on-going comprehensive, health promotion design intervention focused on the outdoor environments of childcare centers. Developed by the Natural Learning Initiative, the primary goal of POD is to increase early childhood physical activity, food awareness through evidence-informed design assistance, teacher training, and dissemination of information. The POD program considers design of outdoor environments in early childhood as a health promotion intervention.

Preventing Obesity by Design (POD) is the Built Environment Component of the Shape NC Program, North Carolina Partnership for Children, supported by the Blue Cross and Blue Shield of North Carolina Foundation.

*Sharing best practice OLE images at POD workshop.*







### POD COMPONENTS

A highly participatory process is launched at the beginning of each project to engage stakeholders and ensure sustainability. Components include:

1. Participatory design assistance to facilitate OLE master plan development:
  - a. Community stakeholder and design programming workshops.
  - b. Conceptual master plan created by NLI trained landscape architects and designers based on the hands-on design program created by center stakeholder group.
  - c. Design reviews by center staff working with NLI design team.
  - d. Development of a phasing plan tailored to the center's funding and implementation capabilities.
  - e. Construction cost opinion to guide fundraising efforts.
  - f. Review of local health and safety regulations.
  - g. Provision of affordable design solutions and planting suggestions.
2. Site assessment using the *Preschool Outdoor Environments Measurement Scale—POEMS* (DeBord, et al., 2005).
3. Small "seed grants" (\$2000–\$3000) to support the cost of design implementation, construction materials, plants, and gardening tools.
4. Teacher symposia, training workshops, and webinars on use of renovated outdoor settings to promote physical activity and healthy eating.
5. On-call, on-site, and web-based technical assistance.
6. Dedicated website section for each participating center.
7. Evaluation of post-renovation using behavior mapping, POEMS assessment, center director survey, and interviews.

*Introduction of basic OLE design and management principles at POD interactive workshop.*



*POD interactive design workshop engages teams from several centers working with NLI design staff to create OLE spatial layouts.*

**\$323,000 seed grants, incentives for technical assistance providers, training support**

## BEFORE RENOVATION



**Before POD:**  
**Growing Place, Randolph Co.**  
A large, raised area of safely surface woodchips, larger than required, dominates the space. Odd-shaped patches of grass are unused. The space lacks shade and choice of play settings.

**After POD: Growing Place, Randolph Co.**  
A new curvy, looping, concrete pathway now defines the fixed equipment use zone with added shade trees, and affords active wheeled toy play. A new, shady sand play setting is tucked in the far left corner. The playhouse has been relocated along the righthand fence under existing shade trees. An inexpensive shady meeting/working setting with cable spools and log seats has been created. An earth play and natural loose parts play with shade trees and tire planters occupies the second loop (far distance).

### IMPACT

Evaluation of the 27 centers participating in POD 2009-2011 (Cosco et al., 2014) using behavior mapping (Cosco et al., 2010) shows that site layout attributes such as the form of pathways (i.e. “single loop” and “double loop”) and the overall environmental quality of the sites (as measured by POEMS) were positively associated ( $p < .05$ ) with increased preschool activity.

Almost 70% of center directors reported positive changes in children’s behavior (such as less altercation and better integration of children with different abilities) and mentioned the creation of vegetable gardens as great achievements. The gardens also supported children’s tasting of vegetable and fruits grown in the centers.

Through community engagement efforts, centers raised more than double the amount awarded by the project and received dozens of volunteer hours.

Centers participating in the Shape NC project, managed by the NC Partnership for Children, and applying POD strategies, reported similar results (i.e. increased children’s physical activity, longer stay outdoor in all seasons for all ages, and the creation of vegetable gardens to support healthy eating). These centers engaged the community and increased their funding by approximately three times the amount of the initial seed grant, including cash contributions, discounted goods and services, and volunteer support.



## AFTER RENOVATION







**Evidence based/informed  
best practice indicators**

# Identifying best practice indicators

## FACTORS INCREASING PA

Number of adjacencies

Physical attributes

- Equipment present - PA increased by .224
- Use of a ball - PA increases by .782
- Wheeled toy - increases PA by .500
- Site and setting size

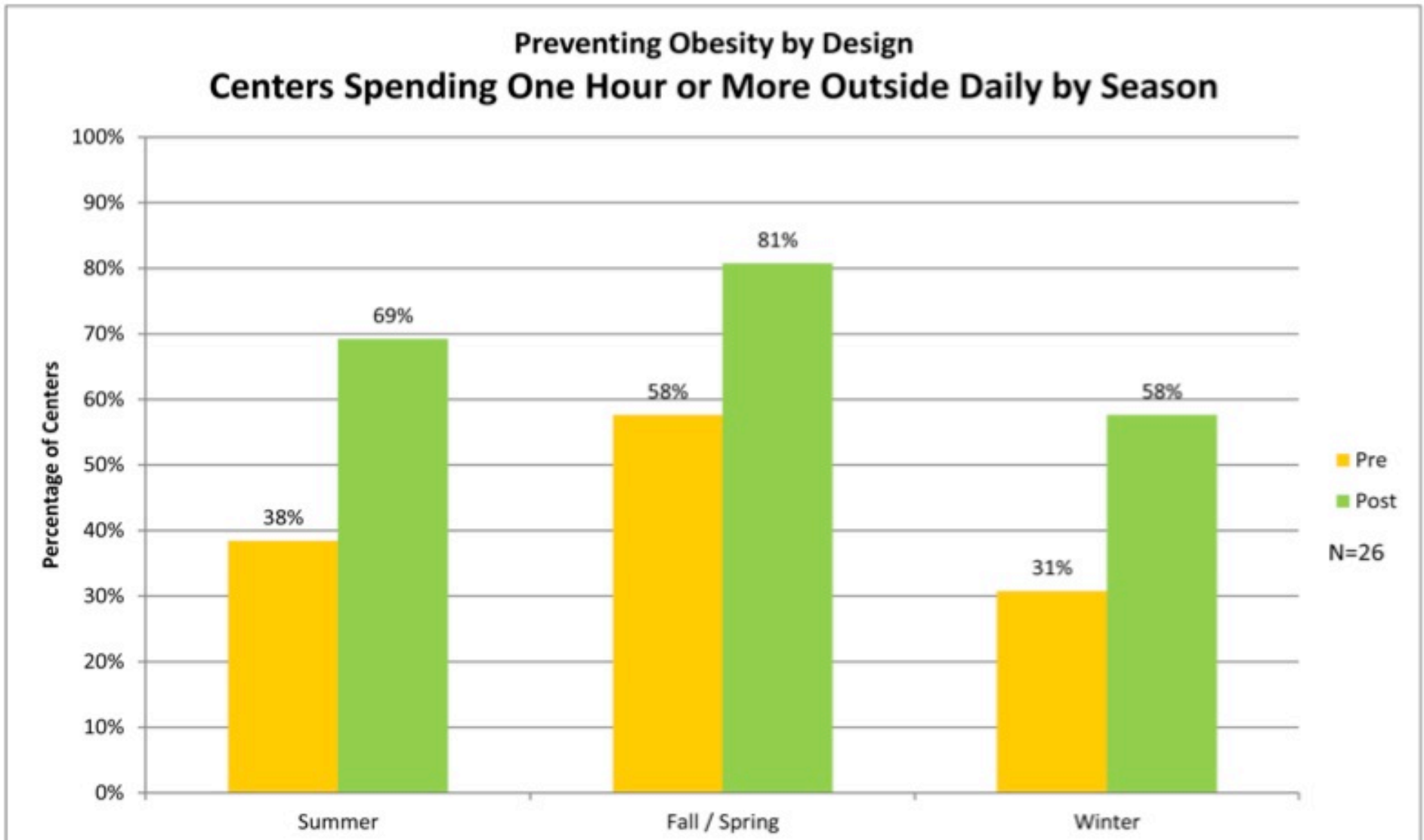
Social interactions

(30 NC child care centers. 355 behavior settings: 6125 behavior mapping observations)

Preventing Obesity by Design (POD)

# Increased time outdoors, post-renovation

Pre-post center renovation evaluation survey results. N=26





# POD Evaluation

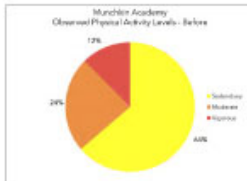
The POD project began in 2009, with a preliminary site visit for observations and behavior mapping research. After a design workshop with representatives of the center staff, the NLI developed a design to increase natural play opportunities, gardens, contact with nature, and physical activity. The design

was implemented through a grassroots community effort in 2010. The NLI team conducted follow-up behavior mapping at Munchkin Academy in 2011 finding a marked increase in moderate to vigorous physical activity and significantly more edible plants after the renovation.

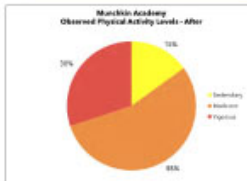
Behavior Mapping Data Collection at Munchkin Academy



Munchkin Academy Physical Activity Level Observation Data: Before (2009)



Munchkin Academy Physical Activity Level Observation Data: After (2011)



# Results

## POD II Evaluation

Higher environmental quality (measured by POEMS)

### Physical Activity Increase



Children observed after outdoor renovations were 22% more likely to be engaged in light, moderate, or vigorous physical activity.

### Higher Environmental Quality

After renovation, centers showed higher environmental quality as measured by POEMS (Preschool Outdoor Environment Measurement Scale), i.e. more settings, more natural elements, more manufactured components (arbors, benches, etc).

### Site Layout Contributes to Children's Physical Activity



27 child care centers 6596 behavior mapping observations before / after OLE renovation



# 2

## Best Practice Indicators





# 12 Best Practice Indicators

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*We have a wonderful trike track, container gardening, art, a stage, a bridge, pathways, a huge sand/water area, and multi-surface areas such as sand, rocks, grass, cement, small pebbles, and mulch.*

*Director of participating childcare center*

## Best Practice Indicators for a Model Outdoor Learning Environment

### INTRODUCTION

The Best Practice Indicators for a Model Outdoor Learning Environment are used to assess the quality of the childcare center outdoor learning environment (OLE). The 12 key indicators listed below assess best practice environmental qualities and components. They work together to demonstrate the potential for excellence in using the OLE to improve and sustain children's health and well-being through active play and gardening activities. The 12 OLE Best Practice Indicators are:

*Within one year of POD this center has already met several best practice indicators. Just in this section are sand play; a curvy, looping path (post and rope protect planting); open, grassy areas; a shade-covered deck; planting beds; a teepee; natural, loose parts; and storage.*

1. There are 10 or more play and learning settings.
2. There is a looping, curvy primary pathway for circulation and wheeled-toy use.
3. There is a grassy area for games, activities, and events for 25 or more children.
4. There are sufficient shade structures in addition to trees.
5. There is a variety of natural, loose materials present and accessible for children to play freely with them.
6. There are sufficient, different types of wheeled toys, portable play equipment, and play materials accessible for children to play freely with them.
7. There are sufficient gross motor activities supported by the OLE.
8. There are sufficient trees.
9. There is a proportion of trees that are edible fruit or nut species.
10. There are sufficient shrubs (including fruiting shrubs and vines).
11. There is a designated vegetable garden with sufficient produce for snacking and/or meals.
12. There is an outdoor classroom/program base/storage available.



# #1-Ten or more play and learning settings

Use this document with the included Scoring Sheet for Best Practice Indicators for a Model Outdoor Learning Environment to rate your outdoor learning environment and identify what incremental next steps you can take to increase its value for children's health and wellbeing.

Best Practice Indicators can be used for measuring outdoor quality and/or as guidelines for site improvement, which typically includes four stages:

1. Development of a master plan.
2. Restructuring the layout of the site by installing primary pathways, repositioning fence lines, relocating fixed equipment items, etc.
3. Conducting incremental developments such as planting trees and shrubs, adding decks, arbors, pergolas and shade structures, as resources become available.
4. Managing the OLE naturalization process (see Guide #4—*Managing Site Naturalization*).

*A new curvy, concrete pathway and pergola constructed from pieces of old grape vine provide a unique OLE entry. Physical activity is stimulated by the many portable and wheeled toys.*



## ILLUSTRATED BEST PRACTICE INDICATORS

By systematically responding to the 12 Best Practice Indicators, through incremental development over time, an OLE can meet the "Level Four Best Practice" for each criterion (purple box, lower section). See Score Sheet at the end of this guide.

### BEST PRACTICE INDICATOR #1

There are 10 or more play and learning settings.

Play and learning settings are the basic increment of OLE development.

Each supports a different type of activity or mix of activities, for example sand play, water play or multipurpose lawn. The

more settings an OLE contains the greater the diversity of choice for different children to play and learn.

#### Further information

- NLI InfoSheet—Adding Value to Early Childhood Outdoor Play and Learning Environments: The Top Ten Activity Settings.
- NLI InfoSheet—Affordable Settings and Elements: Ideas for cost effective elements



*Three of many possible play and learning settings (above, acoustic play; left, Earth play; below, grass maze) that could partly satisfy "ten settings or more."*





## #2-Looping, curvy pathway

### BEST PRACTICE INDICATOR #2

There is a looping, curvy primary pathway for circulation and wheeled-toy use.



*Decomposed granite provides a soft, friendly surface of this curvy primary pathway.*

Research demonstrates that broad, curving, looping, hard-surfaced pathways that accommodate children using wheeled toys are highly attractive and afford higher levels of physical activity than most other types of settings. From a health promotion perspective, broad, curving, looping pathways are a top priority OLE setting. Primary pathways with these characteristics interconnect adjacent settings and add overall synergy and diversity to children's activity. When a best practice primary pathway is directly connected to the classroom building, there is greater likelihood that children will follow the pathway so that activity is spread out more evenly across the OLE.

#### Further information

- NLI InfoSheet—Designing Pathways: Promoting physical activity, providing access.
- NLI Green Desk posts—Pathways

*Curvy, looping primary pathway lined with small trees to provide summer shade and fall color. Note attractive, tinted concrete surface.*



## #3-Grassy area for 25 or more children

### BEST PRACTICE INDICATOR #3

There is a grassy area for games, activities, and events for 25 or more children.

A single, well-maintained, defined lawn, surfaced with high-quality turf, is a more valuable asset than large, amorphous grassy areas where other settings could be developed. Bare feet on soft grass can be a primary source of

delicious, tactile experience. An open lawn is a key setting for many types of group activity such as games with loose parts, portable equipment, large scale construction, parachute play, "sports," etc. Defined, grassy settings should be installed on well-drained soils.



*A soft, shady lawn can provide the perfect spot for story time on a blanket.*



*Lawns support group games with rules.*

*An open, grassy area can offer a perfect spot for high-energy, group play.*





What's wrong with this picture?



# #4-Shade structures in addition to trees

## BEST PRACTICE INDICATOR #4

There are sufficient shade structures in addition to trees.

One reason to improve OLE quality is to attract children and teachers outdoors for longer periods of time. However, they must be protected from the harmful ultraviolet sunlight. If not, it is easy for a young child to be sunburned at any latitude during summer. Shade structures, designed to protect children from direct sunlight are particularly important to install

before trees are large enough to contribute to sun protection—at which point, structures may be removed. A shade structure may be considered part of another setting or a setting itself, for example as a shady seating area.

### Further information

- NLI Green Desk post—Affordable Shade Options
- NLI Green Desk post—Summer Play: Beat the Heat

*Shade structures can take several forms. Below, lattice shade structure over anchored porch swing. Bottom, suspended textile for group activity with integrated planting. Built by volunteers with recycled galvanized pipe and standard shade cloth.*





# #6-Wheeled toys and portable play equipment

## BEST PRACTICE INDICATOR #6

There are sufficient, different types of wheeled toys, portable play equipment, and play materials accessible for children to play freely with them.

Wheeled toys (trikes, carts, etc.), portable play equipment (balls, parachutes, hula hoops, blocks, sand play toys, skipping ropes, bowling ball and pins, musical instruments, etc.), and play materials (pieces of cloth, cardboard boxes, dress-up clothes, etc.), serve similarly as the natural equivalent described above. Because they can be manipulated and moved around at will, they stimulate more creative, imaginative, social, and physical play—and higher levels of

cognitive play, compared to fixed features. Wheeled toys work better on hard-surfaced pathways (see Best Practice #2). Note, this criterion is a measure of diversity of types of equipment and materials, not amount.



*Classic hollow blocks are an example of portable equipment that can be used in myriad ways.*

*Portable equipment as simple as lengths of colored cloth can animate active, imaginative play.*



*Traditional play trucks, cars, and tractors add interest to snow and ice play.*





# #10-Shrubs (including fruiting and vine species)

## BEST PRACTICE INDICATOR #10

There are sufficient shrubs (including fruiting shrubs and vines).

Shrubs are the other basic vegetation element for achieving best practice OLE quality. Shrubs add ground level natural diversity and can be used to define spatial experience.

Shrubs introduce color, and provide seasonal change and natural loose parts. They can be part of the edible landscape (blueberries for example). Large shrubs add shade and appear like small trees to young children. As more shrubs than trees are required, conceptually one half of the site need shrubs with three hrubs/100 square feet. As with trees, a site of 10,000 square feet is used in the example below.

*Basic formula*, where A = Area of OLE  
 $(A \div 2 \times 3) \div 100 = \text{Number of shrubs required to meet Best Practice Indicator.}$

*Example:* If OLE area = 10,000 square feet, number of shrubs required is  
 $(10,000 \div 2 \times 3) \div 100 = 150 \text{ shrubs.}$

*Rule for allocating number of edible species:*  
 Total number (150) divided by 4 (or 25%) = 38 permanent, edible landscape shrub species (or vines such as thornless blackberry, grape or kiwi), which may be planted as a stand-alone setting or integrated with other play and learning settings.

As sites vary in the number and size of existing shrubs, potential planting conditions, amount of shade cast by buildings, orientation of the sun, etc., the overall number of shrubs should be considered an approximation that may need to be adjusted in some circumstances.



*Above, gourds come in many shapes and sizes and fascinate children, here offer summer shade supported by a timber pergola.*

*Below left, gourds come in many shapes and sizes and here offer summer shade supported by a timber pergola.*

*Below, fruiting shrubs fascinate children.*



# #11-Designated vegetable garden for snacking and/or meals

## BEST PRACTICE INDICATOR #11

There is a designated vegetable garden with sufficient produce for snacking and/or meals.

Even a few hundred square feet of vegetable garden can produce abundantly if managed appropriately; i.e., several hundred pounds of produce from a few beds filled with excellent topsoil. If teachers engage children in hands-in-the-soil activity,

including breeding earthworms and sowing seeds, they will be highly motivated to eat the resulting vegetables. Research indicates that hands-on experiences growing vegetables and herbs helps children understand that food comes from seeds planted in the earth; and further, if young children have repeated opportunities to taste vegetables, they will not develop phobias and become "picky eaters."

### Further information:

- NLI Green Desk post—edibles (all posts)
- NLI Green Desk post—Children's Vegetable Gardens: Introduction
- NLI Green Desk post—Growing Edibles in Containers



*Timber and sheet steel raised planters support a mix of vegetables and flowers. "U" shape provides a compact growing area. Elevated soil is easy for children to work. Horizontal edge provides a resting place for tools and sitting space for teachers.*

*Top, a "walk-in" raised bed garden can be reconfigured each year to fit desires of children and teachers. This year they build a vine teepee, grew sunflowers against the garden shed, planted herbs and flowers, and enjoyed the water melon!*



## #9-Proportion of trees are edible fruit or nut species





## #11-Designated vegetable garden



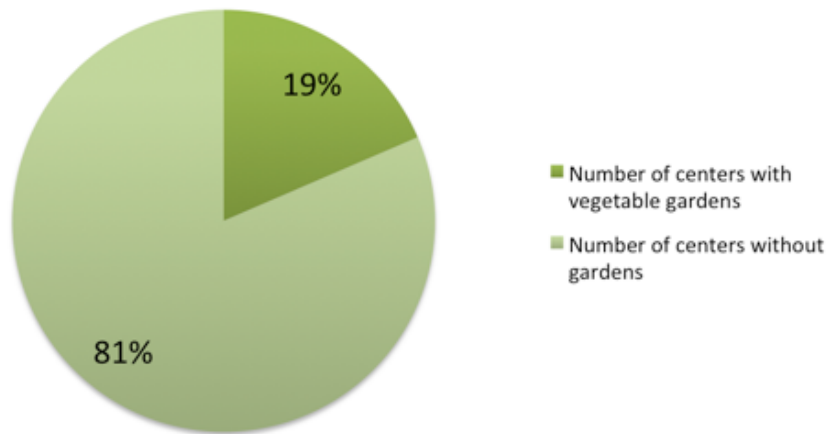


## Preventing Obesity by Design (POD)

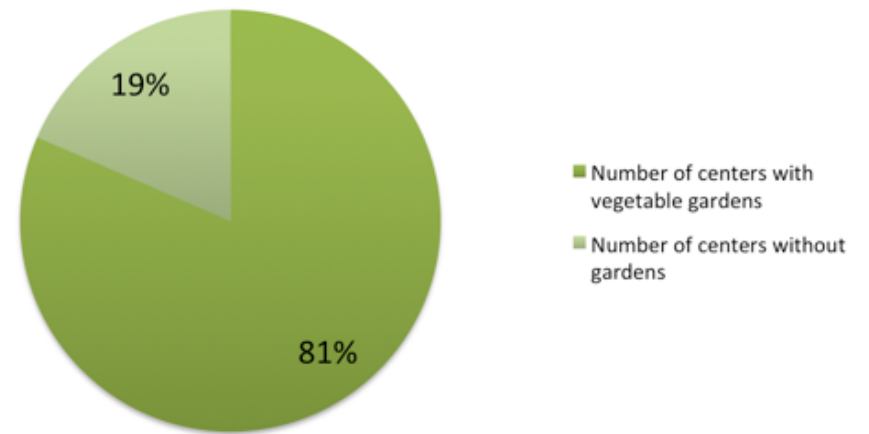
# Increased vegetable gardens, post-renovation (62%)

Pre-post center renovation evaluation survey results, N=26

Before POD



After POD



**Best Practice Indicators for a Model Outdoor Learning Environment  
SCORING SHEET**

Best Practice Indicators	Incremental improvement path			BEST PRACTICE Level 4
	Level 1	Level 2	Level 3	
1. Are there 10 or more play and learning settings? <sup>1</sup>	<input type="checkbox"/> 0-5	<input type="checkbox"/> 6-7	<input type="checkbox"/> 8-9	<input type="checkbox"/> 10 settings or more are provided.
2. Is there a looping, curvy primary pathway for circulation and wheeled-toy use?	<input type="checkbox"/> No path	<input type="checkbox"/> A straight linear path, but it is less than 5 feet in width and is not connected to the building	<input type="checkbox"/> A circular path less than five feet wide	<input type="checkbox"/> A curved, looped or double looped pathway at least five feet wide is provided and is connected to the buildings and OLE settings.
3. Is there a grassy area for games, activities, and events for 25 or more children?	<input type="checkbox"/> No grassy area	<input type="checkbox"/> There is a small grassy area, large enough for approx. 6-8 children	<input type="checkbox"/> There is a medium-sized grassy area, large enough for approx. 9-15 children	<input type="checkbox"/> A grassy area is provided, large enough for 25 or more children.
4. Are there sufficient shade structures in addition to trees? <sup>2</sup>	<input type="checkbox"/> None	<input type="checkbox"/> 1-2	<input type="checkbox"/> 3-4	<input type="checkbox"/> 4 or more shade structures are provided.
5. Is there a variety of natural, loose materials present and accessible for children to play freely with them? <sup>3</sup>	<input type="checkbox"/> Few to none of these natural materials, or children are not allowed to play with them	<input type="checkbox"/> 2-3 items, and children are allowed to play with them freely	<input type="checkbox"/> 4-5 items are present and children are allowed to play with them freely	<input type="checkbox"/> 6 or more natural loose materials are provided and children are allowed to play with them freely.
6. Are there sufficient, different types of wheeled toys, portable play equipment, and play materials accessible for children to play freely with them? <sup>4</sup>	<input type="checkbox"/> No outdoor toys are accessible for children	<input type="checkbox"/> 2-3 items are present and children are allowed to play with them freely	<input type="checkbox"/> 4-5 items are present and children are allowed to play with them freely	<input type="checkbox"/> At least 6 items are present and children are allowed to play with them freely.
7. Are there sufficient gross motor activities supported by the OLE?	<input type="checkbox"/> No gross physical activities are supported.	<input type="checkbox"/> At least 4 physical activities are supported.	<input type="checkbox"/> At least 6 physical activities are supported.	<input type="checkbox"/> At least 8 physical activities are supported.

<sup>1</sup> In addition to the "Top Ten" listed in the NLI InfoSheet (Indoor-Outdoor Transitions, Pathways, Gathering Settings, Decks, Multiuse Lawns, Sand Play Settings, Water Play Settings, Edible Landscapes, Program Bases/Outdoor Classrooms, and Shady Places), possible additional settings include arts/crafts area, balance beam, play house, music play area, seating, play equipment, tables, woodwork benches, porch swing, swings, mounds/slopes, and areas for pets such as chickens and rabbits.

<sup>2</sup> Possible shade structures include pergolas, porches, awnings, canopies, and other type of shade structure.

<sup>3</sup> Natural, loose materials include smooth sticks, mulch, shells, pinecones, driftwood, dirt, leaves, acorns, large seeds, etc.

<sup>4</sup> Toys and materials include wheeled toys, blocks, balls, pieces of cloth, ribbons, skipping ropes, hoses, sand toys, water toys, rings, hula-hoops, chalk, etc.

**Best Practice Indicators for a Model Outdoor Learning Environment  
SCORING SHEET**

Best Practice Indicators	Incremental improvement path			BEST PRACTICE Level 4
	Level 1	Level 2	Level 3	
8. Are there sufficient trees?	<input type="checkbox"/> No trees are present in the OLE	<input type="checkbox"/> As calculated by formula, approximately 30% of the trees are present.	<input type="checkbox"/> As calculated by formula, approximately 65% of the trees are present.	<input type="checkbox"/> As calculated by formula, approximately 100% of the trees calculated are present.
9. Is there a proportion of trees that are edible fruit or nut species?	<input type="checkbox"/> No edible fruit or nut trees are present.	<input type="checkbox"/> As calculated by formula, approximately 10% of the trees present are edible fruit or nut species.	<input type="checkbox"/> As calculated by formula, approximately 20% of the trees present are edible fruit or nut species.	<input type="checkbox"/> As calculated by formula, approximately 25% of the trees present are edible fruit or nut species.
10. Are there sufficient shrubs (including fruiting shrubs and vines)?	<input type="checkbox"/> No shrubs are present in the OLE	<input type="checkbox"/> As calculated by formula, approximately 30% of the shrubs are present.	<input type="checkbox"/> As calculated by formula, approximately 65% of the shrubs are present.	<input type="checkbox"/> As calculated by formula, approximately 100% of the shrubs are present.
11. Is there a designated vegetable garden with sufficient produce for snacking and/or meals?	<input type="checkbox"/> No vegetable garden is present.	<input type="checkbox"/> A vegetable garden is present but produce is minimal, not enough for all children to taste.	<input type="checkbox"/> A vegetable garden is present and the produce is used for taste tests or snacks during at least one season of the year	<input type="checkbox"/> A vegetable garden is present and the produce is used for snacks and/or meals in two seasons of the year.
12. Is there an outdoor classroom/program base/storage available?	<input type="checkbox"/> No outdoor storage is provided.	<input type="checkbox"/> At least one enclosed, lockable storage space is provided.	<input type="checkbox"/> At least one, full height enclosed, lockable storage space is provided with small covered area.	<input type="checkbox"/> At least one, full height enclosed, lockable storage space is provided with covered area large enough for 25 of children to gather and engage in classroom activity.

**NOTES**

# 3 Implementing the Vision





*Outdoor Learning Environment  
Toolkit*

## 4 Managing Site Naturalization



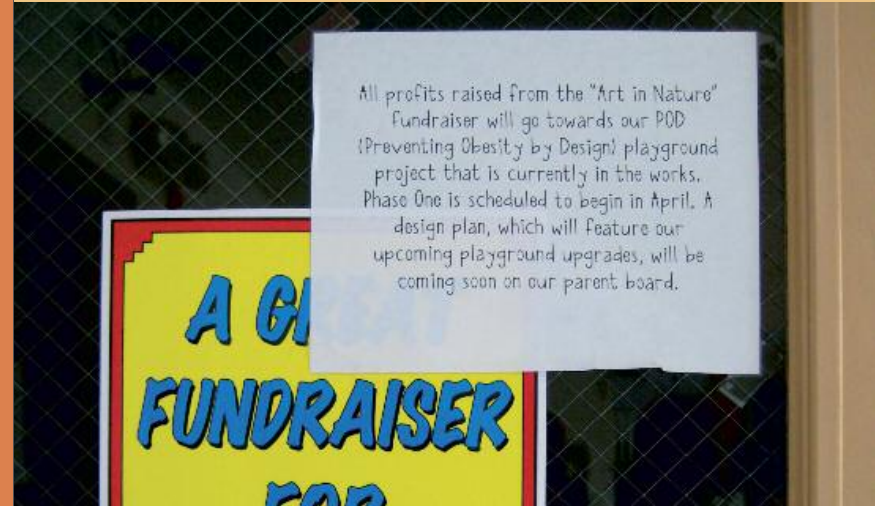
NLI  
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INSTITUTE

NC STATE UNIVERSITY  
College of Design

# 5 Community Engagement



# 6 Community Fundraising





# Policy Implications

# Myth Busters Group

NC Rated License Assessment Project

NC Division of Child Development

Children Environmental Health Branch

## NC OLE Alliance Position Statement on “Growing Tomatoes” in preschool gardens:

There is tremendous value in gardening with children. Tomatoes can bring much learning, day by day wonder as fruit grows, flare and yes . . . delicious fruit to eat! There has been some controversy over growing tomatoes in licensed child care centers because the leaves and stems of tomato plants have mild toxicity. Our state leaders have engaged in research and case studies and have determined that the toxicity levels of the leaves and stem are very low. Ingesting them would be problematic only in large quantities, and there is no evidence or cases to indicate that tomatoes should be prohibited from the outdoor learning environment for children 3 years of age or older. Tomato plants are not recommended for infant and toddler areas because children of this developmental stage enjoy exploring their environment with their mouths.

**Why should we grow tomatoes?** There are many reasons to grow tomatoes. One is that they grow in abundance in North Carolina and provide nutritious and delicious fruit for meals and snacks. From a seed or young plant, children learn firsthand that tomatoes come from our garden, not just the food shelf. Children learn the concepts of smaller and larger as the fruit grows. They learn colors and shapes as the fruit ripens. Different kinds of tomatoes offer the opportunity to compare and contrast their size, color, firmness, and taste. Some varieties ripen in late spring and some extend into the autumn. Children can count how many tomatoes are on the vine, how many are ready to pick today and how much today’s harvest weighs. How many tomatoes will one plant produce? How can we prepare tomatoes? What does it look like inside? Which kind is my favorite? Imagine all the graphing, documentation, art, celebration and learning that can occur.

**NCRLAP** - Yes, growing tomatoes in your garden is fine. Gardening is viewed as an intentional planned activity when there are enough tools and supplies for children (such as gardening spades, gloves, watering cans, wheel barrows). Handwashing is required when children return indoors after gardening. Growing tomatoes in infant and toddler play areas is not recommended.

**DCD** - Yes, growing tomatoes inside your licensed child care outdoor learning environment is fine for children age 3 years of age or older. Gardens are acceptable but would need to be maintained. Growing tomato plants in infant and toddler play areas (children 2 years of age or younger) is not allowed.

**CEHB** - Handwashing is required after outdoor activity including gardening. It is important to harvest the ripened fruit to prevent it from falling to the ground and attracting vermin. The use of pesticides is not recommended for gardens in licensed child care programs.



### NC OLE Alliance Position Statement "Digging in the Dirt":

There is tremendous value in having youngsters experience, work and play with dirt. In stating this, we are not suggesting activities using the dirt that you find at the edge of your parking lot that may contain car oil run-off or animal feces. Rather we are alluding to the rich soil that exists in your school or home garden or in your woods. The friable feeling of dirt, the fragrance of it and the different types of soil youngsters can discover and learn about all contribute to a rich sensory experience for children.



Our state has such a broad variety of soils. We have the clays of the Piedmont, the stony soils of the Mountains, the sandy and peaty soils of the Coastal Plain. Each type of soil allows children to experience an array of textures and encourages them to explore and to make discoveries. Here are some suggested activities to get you started:

- Investigate what kind of soil you have in your play yard – under the trees, by the garden – in the different places that make up your outdoor learning environment.
- Have children bring in a baggie of soil from their own backyard and encourage them to compare them.
- Bring in different types of soil for children to explore; rich mulches, topsoils, silts, sands and clay.
- Make your own soil using leaves, sand and soil from the ground and explore a range of soil recipes.
- Investigate the creatures who live in the soil; earthworms, insects and roly pollies. Look for pebbles and other natural matter in the soil.
- When it rains allow children to discover how the soil turns into mud and malleable clay.
- Provide opportunities for children to turn that rain soaked soil into mud pies and pots and to sculpt soil when it's wet.
- Use your existing flower beds and raised beds for digging and discovery.
- Shake soil from the school yard in a jar and discover what floats, what remains suspended and what settles to the bottom of the jar.

The possibilities that explorations with soil/dirt provide for learning and sensory experiences for children are endless! So, start digging!

**1. Is it really ok to have a dirt pile for the children to dig in on your playground? If so is a cover needed? (One suggestion is to have a large round "swimming pool tub" to put the dirt in, or a type of sand table that can be covered. However, can a dirt area be created that has borders with a cover similar to a sand pit play area?)**

**NCRLAP** - Yes, dirt is fine as an alternative to sand play. To earn credit, there must be evidence that providing dirt play is intentional; meaning that there is enough to dig in, scoop, pour, experiment with and additionally there should be materials or tools provided for children to use such as shovels, etc. Higher levels of quality require more variety in materials and also increased frequency of sensory play experiences. When infants and toddlers are enrolled a cover is

**DCD** - Dirt pile would be acceptable but would need to be maintained.

**CEHB** - Handwashing is required after outdoor activity. Sandboxes are required to allow for proper drainage, covered when not in use and kept clean. Similar recommendations would be made for a "dirt area". In addition, the history and source of the soil would be important information. Where was the dirt obtained? The concern is potential contaminants such as lead or pesticides.

# Creating a Supportive Network, 2011

NC Division of Child Development and Early Education (DCDEE)  
Licensing Consultants and Environmental Assessors



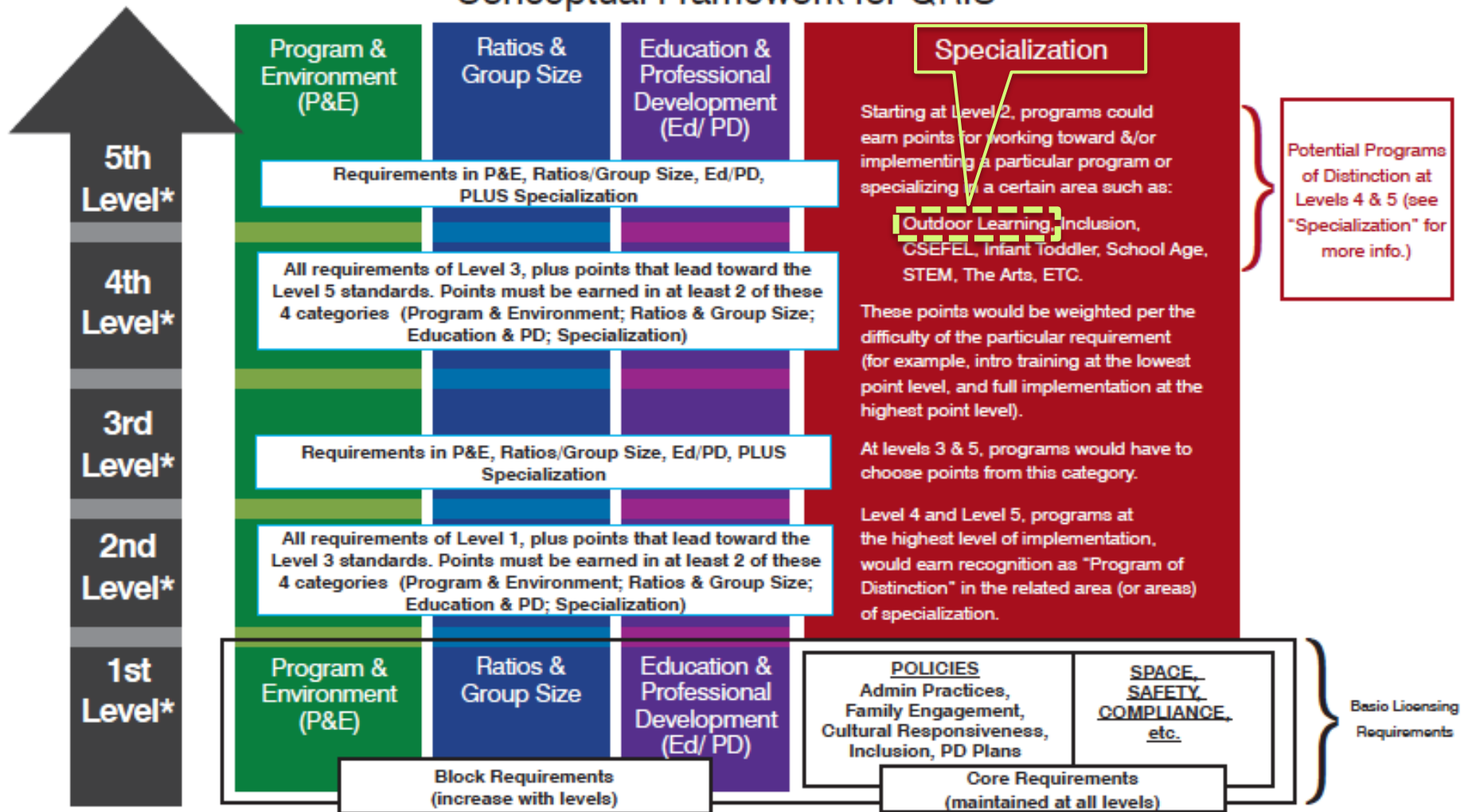
205 participants





# Policy implications

## Conceptual Framework for QRIS



\* ERS or other quality measure required at this level. Also, it is expected that program accreditation will be added to the model during the pilot phase, most likely at levels 3-5.





# Promoting Healthy Weight for Young Children:

A Blueprint for  
Preventing Early  
Childhood Obesity  
in North Carolina

September 2013

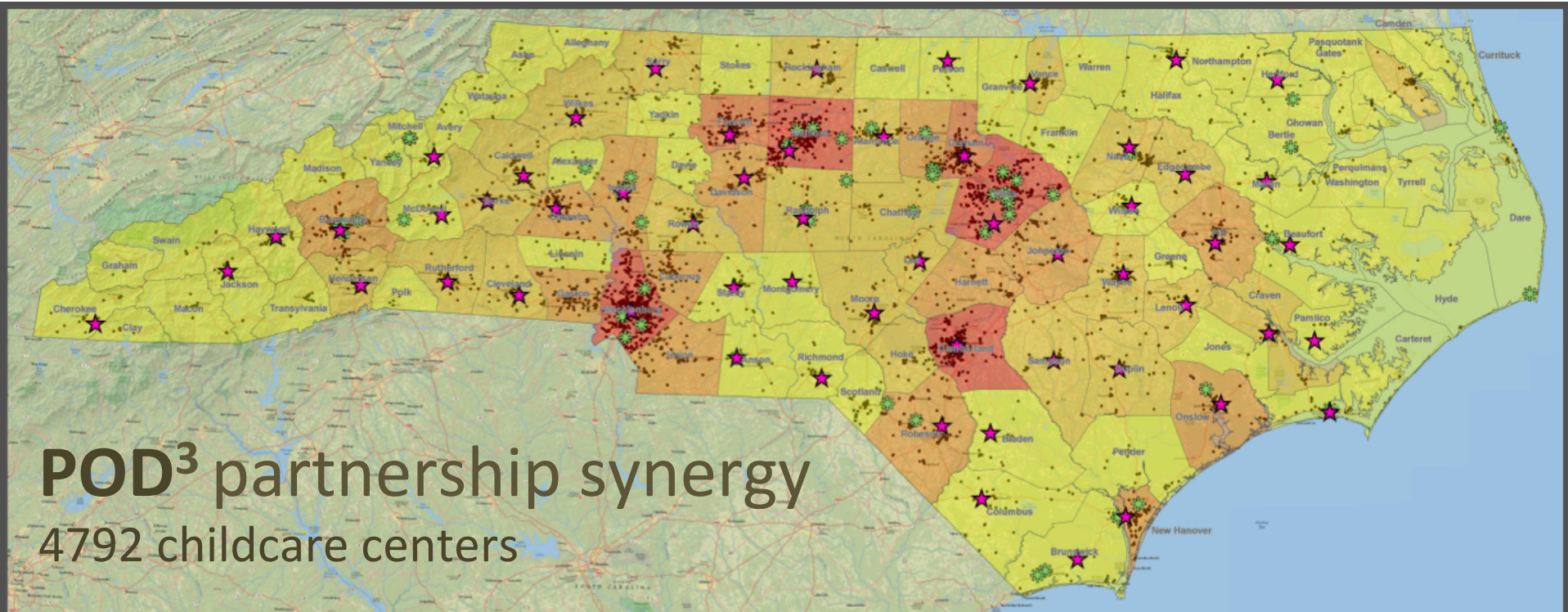
**North Carolina  
Institute of Medicine**  
In collaboration with the Blue  
Cross Blue Shield of North Carolina  
Foundation and the North Carolina  
Partnership for Children

Funded by  
Blue Cross Blue Shield of North  
Carolina Foundation



## Next steps

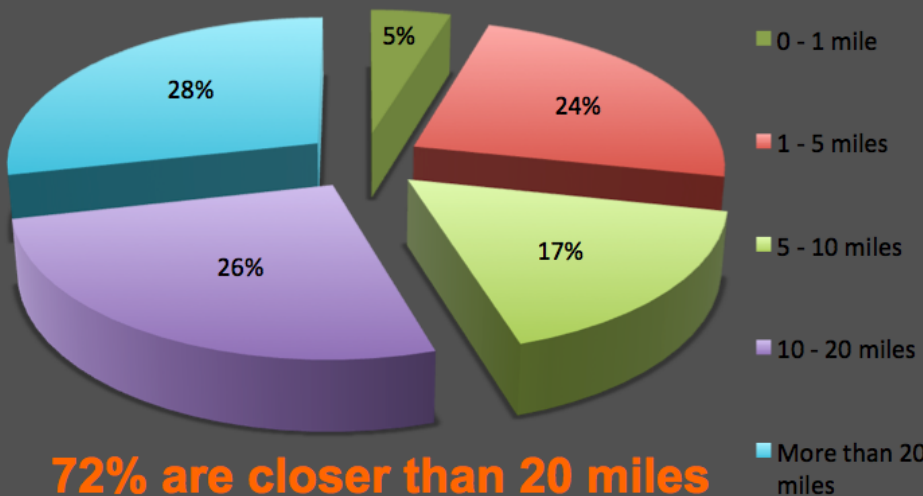
- Refine best practice indicators.
- Continue working with regulators, health specialists, environmental assessors.
- Disseminate among practitioners: EC educators, landscape designers, constructions managers, food specialists.
- Transfer knowledge through community colleges, institutions of higher education.



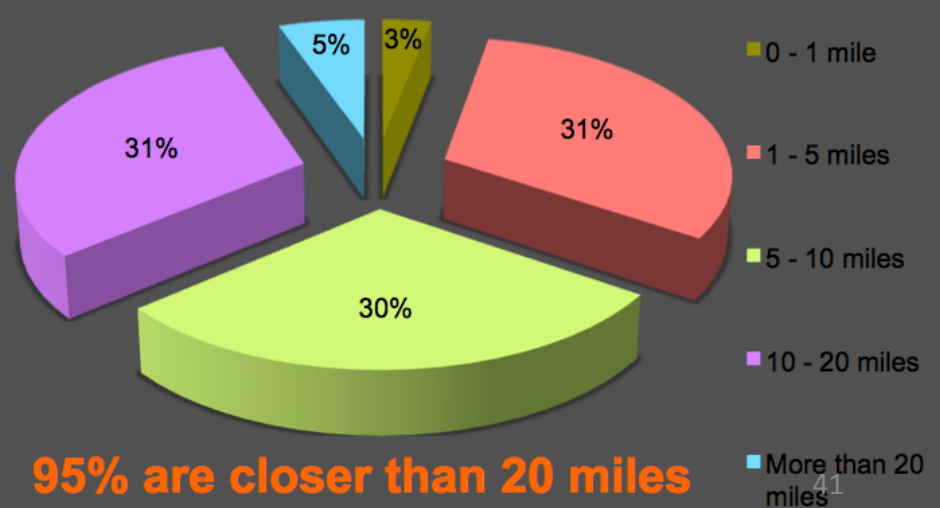
# POD<sup>3</sup> partnership synergy

4792 childcare centers

Distance from **POD Sites** to Licensed Childcare Centers  
N=4,792



Distance from **Community Colleges** to Licensed Childcare Centers  
N=4,792







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