

Nilda Cosco, PhD
Director of Programs

Robin Moore, DiplArch,
MCP, HonASLA, Director

2013 Active Living Research Conference

Improving physical activity and food awareness in North Carolina childcare centers: Preventing Obesity by Design (POD)





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Why working with child care centers?

In North Carolina, approximately 240,000 children 2-5 (38%) are enrolled in almost 5,000 licensed childcare centers

where they receive

- + most meals
- + spend the majority of their waking hours
- + exercise



Center A Grassy area and play equipment



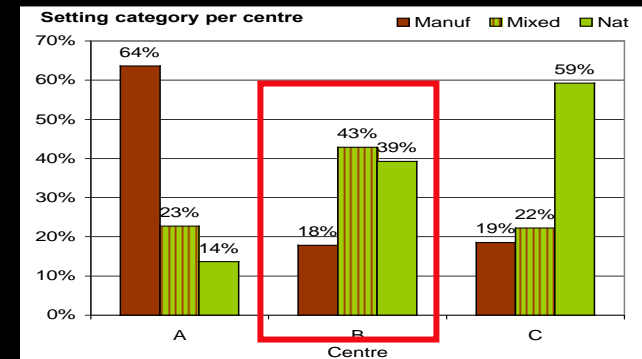
Center B Pathways, vegetation and play equipment

Center B

Most active play area as measured by one week accelerometer monitoring

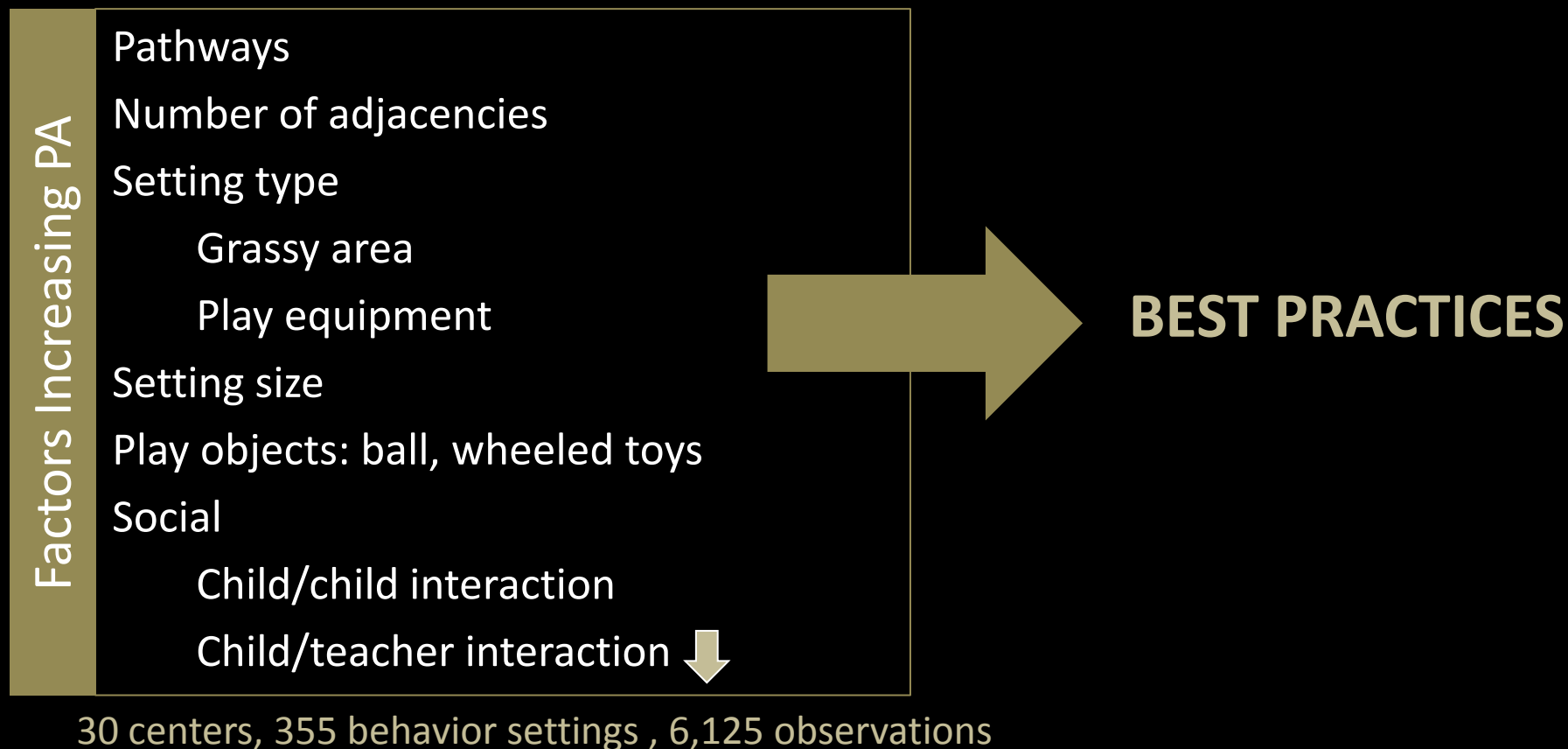


Center C Natural environment with segregated play equipment area



Proportion of manufactured, mixed and natural settings per center

Evidence based design approach



Under review

Increasing Physical Activity in Childcare Outdoor Learning Environments: The Effect of Setting Adjacency Relative to Other Built Environment and Social Factors. William R. Smith, Robin Moore, Nilda Cosco, Jennifer Wesoloski, Tom Danninger, Dianne S. Ward and Stewart G. Trost.

Research supported by the National Institute of Environmental Health Sciences (NIEHS)

Preventing Obesity by Design (POD)

Multi-year, comprehensive statewide strategy for increasing early childhood physical activity and food awareness by improving diversity in childcare outdoor learning environments

2007-2011

30 centers (3 pilot +27 centers)

- Trained 500 early childhood technical assistance providers and community members
- Approximately 1,875 children benefits from OLE renovation.

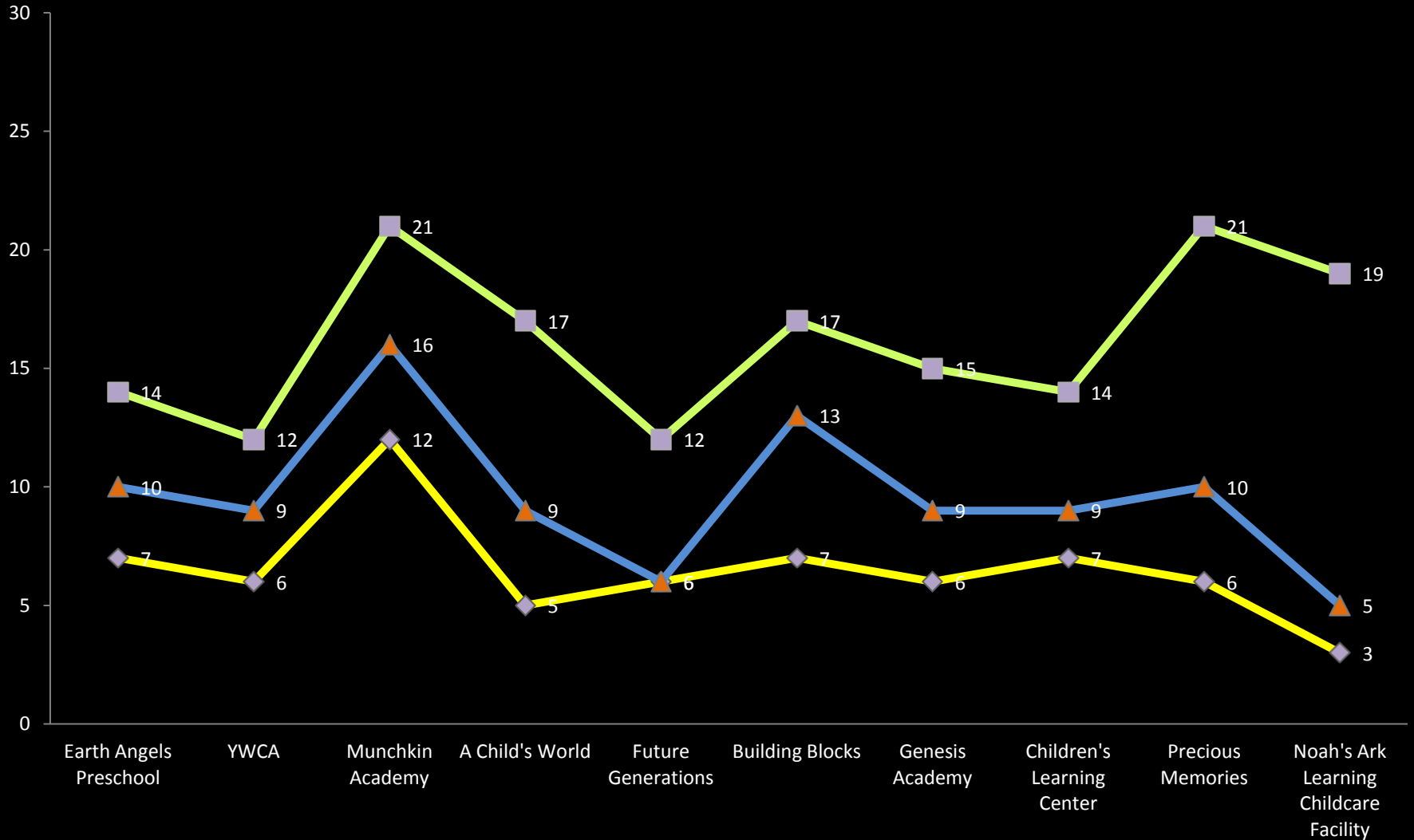
Supported by the Blue Cross and Blue Shield of North Carolina Foundation

Activities

- **Teacher training** on the use of the outdoors to promote physical activity and healthy nutrition.
- **Train-the-trainers** sessions for Smart Start technical assistance (TA) providers (500).
- **Participatory design assistance** for preschool staff, parents, volunteers, and community members (extension agents, garden clubs, Rotary Club, etc.)
- **Start-up incentives** to buy plant materials and tools, and support to lead teachers to attend training sessions.
- **Ten webinars** a year.
- **On-call, on-site, and website-based technical assistance** and resource dissemination.
- **Pre-post evaluation**: childcare provider and Smart Start TA surveys, behavior mapping, photo documentation.
- **Dissemination** of information.

Number of settings proposed / installed - Year One Centers

◆ Settings Before POD ■ Settings proposed in POD design ▲ Settings actually installed after POD phase1



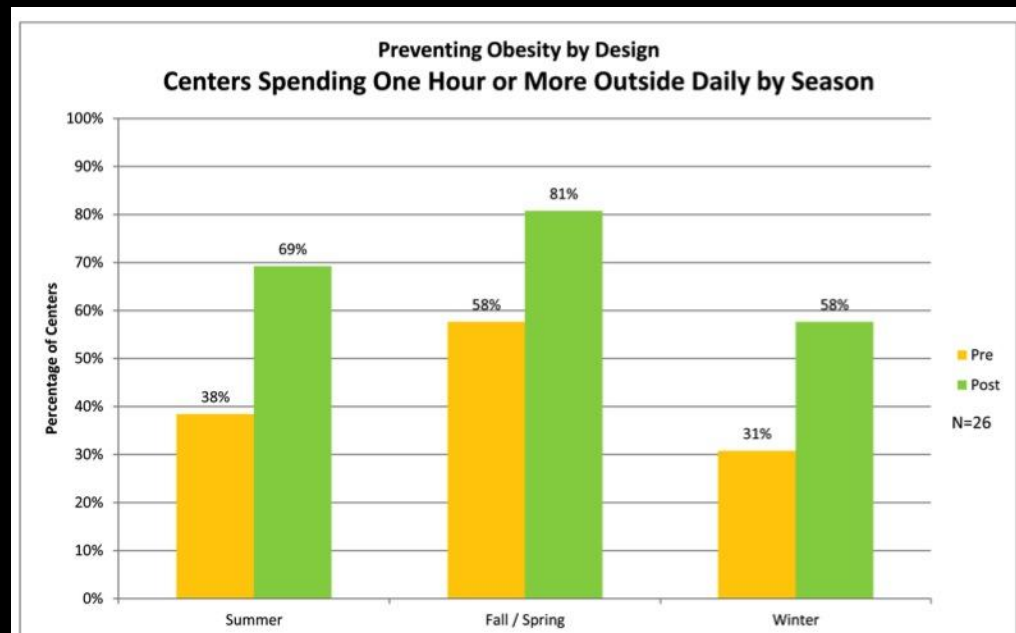
N=10

Preventing Obesity by Design (POD)

Pre-post renovation survey results

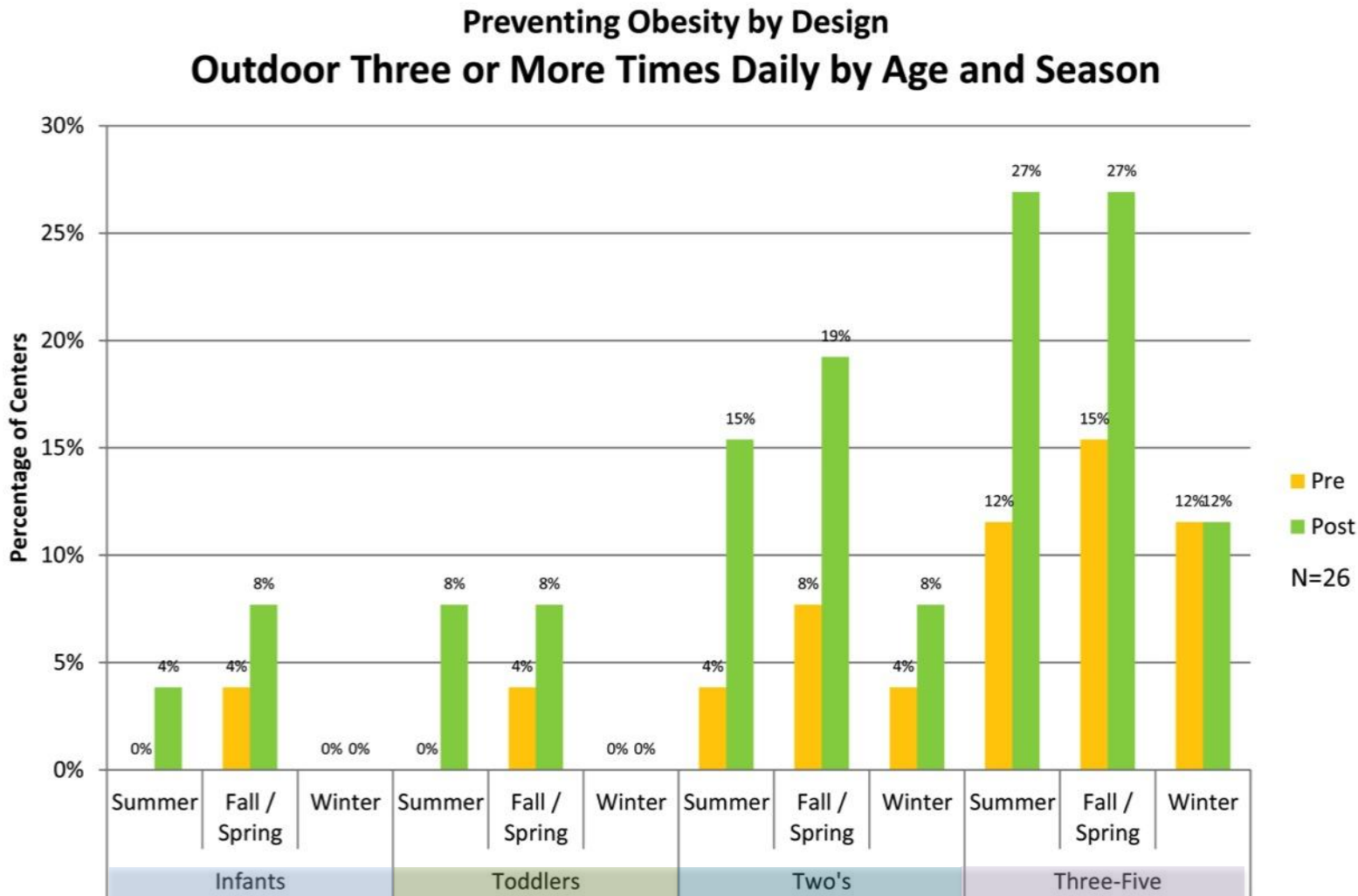
One hour or more outside by season

N=26



Pre-post renovation survey results

N=26





2011 Before

Does this outdoor environment meet regulations?



2012 - 8 months later

Spanish For Fun, Chapel Hill, NC

Preventing Obesity by Design POD | Munchkin Academy, Buxton, NC



2009 Before renovation



2010 After renovation

Munchkin Academy, Buxton, NC



2009 Before renovation



2010 After renovation

Preventing Obesity by Design

Evaluation

- 68% POD centers reported positive change in children's behavior
- 40% reported new gardens and edible plant installations as greatest successes
- 22% children more likely to be observed in moderate activity (behavior mapping).
- Teacher custodial behavior reduced
- POD centers raised additional \$70,000 in cash (beyond seed grants) and received countless donations and volunteer hours

Project spin off (as of December 2011)

- 20 additional independent POD-like projects were developed in four counties serving 600 children.
- Local initiatives continue to grow....

Follow-up → **POD Wake County** 2012-2015
From outdoor play areas to productive lands

Evaluation

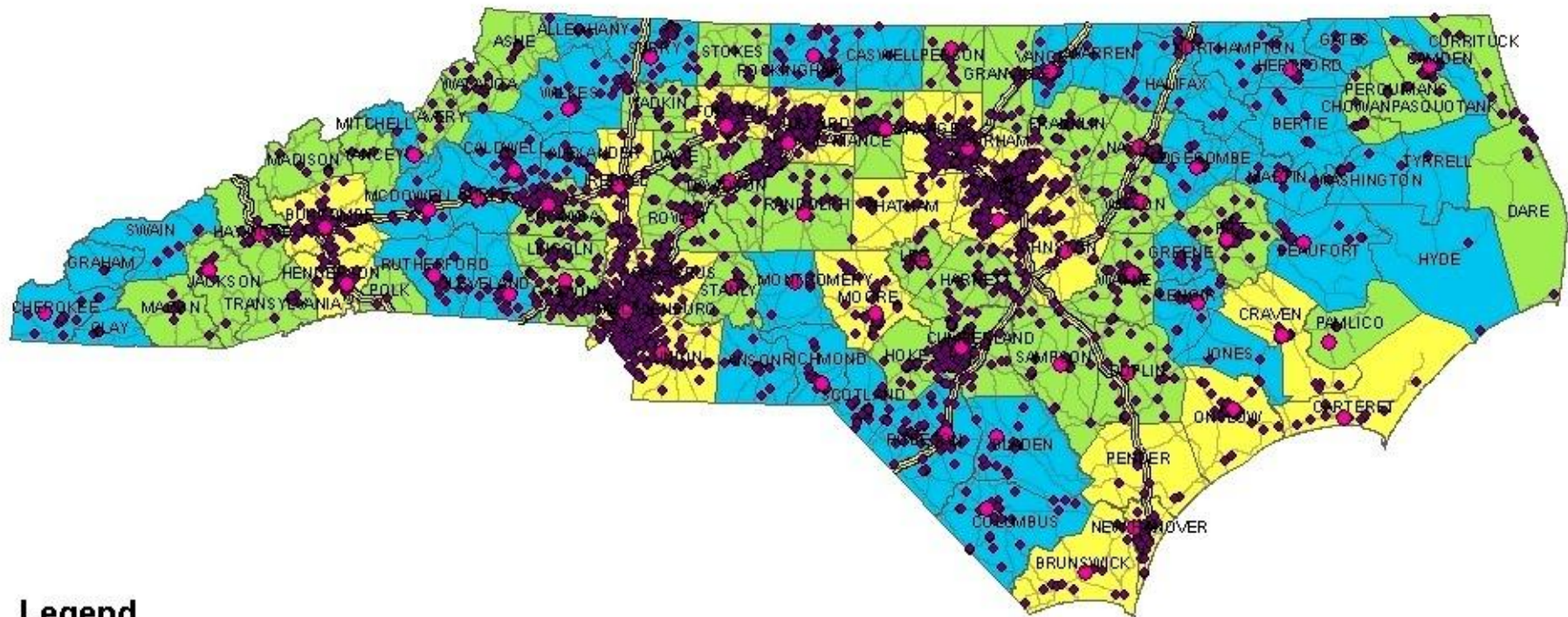
Physical activity, social interactions. Behavior mapping

+

Food preference and eating habits questionnaires

Follow-up → POD³ 2012-2015

Transferring Knowledge • Building Capacity • Extending reach



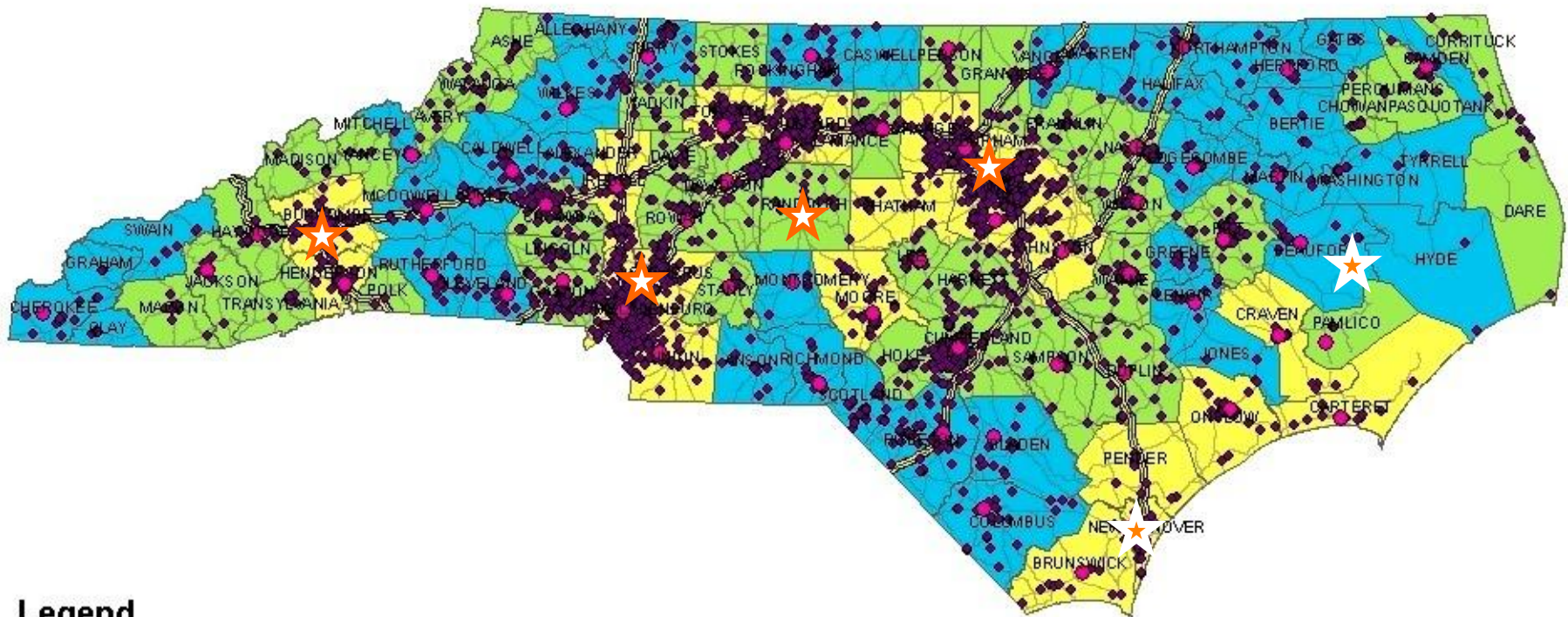
Legend

- Community Colleges
 - ◆ Licensed Center
 - === interstate_highway
- | County | NC Commerce Tier |
|--------|------------------|
| Blue | Tier 1 |
| Green | Tier 2 |
| Yellow | Tier 3 |

Follow-up → POD³ 2011-2014

Transferring Knowledge • Building Capacity • Extending reach

NC Licensed child care centers and community college locations



Legend

- | | |
|-----------------------|-------------------------|
| ● Community Colleges | County |
| ◆ Licensed Center | NC Commerce Tier |
| ══ interstate_highway | ■ Tier 1 |
| ★ Lab | ■ Tier 2 |
| | ■ Tier 3 |

NC Outdoor Learning Environment Alliance Success – 2007

“Playground” redefined as “Outdoor Learning Environment” 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

Policy implications

Steps (2011)

- Twelve month project to engage and train 200 state regulators, licensing consultants and environmental assessors on outdoor learning environment design and management.
- Produced recommendations to the NC DCDEE developed with Advisory Board to propose built environment changes to licensing rules.
 - Internal NC DCDEE OLE committee was created

North Carolina child care licensing regulations are under review

- Will support outdoor learning
- Outdoor learning environment (OLE) is critical component
- **New!** “Areas of Excellence” will include OLE

Scope of the issue



opportunity

11.3 Million

No of children under 5 of working mothers in some form of childcare (US Census Bureau, 2008)

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

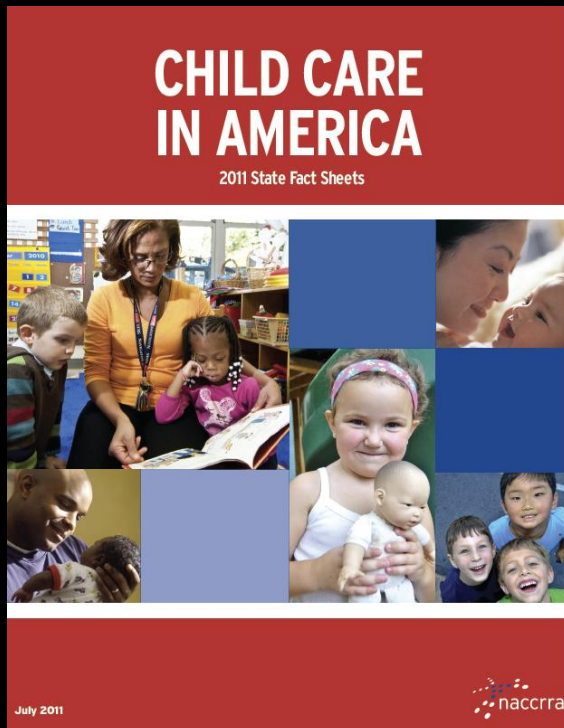
Scope of the issue



opportunity

119,550 Licensed childcare centers in US

231,705 Home care providers in US



(Child Care Resource and Referral agencies 2009/2010)



Bright Horizons Family Solutions Child Development Center, RTP



www.naturalearning.org