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# Peaceful Playgrounds: Using Evidence-Based Strategies and QI to Address Childhood Obesity in Florida



### Introduction

Under the support of the Multi-State Learning Collaborative,<sup>1</sup> Florida's Martin County Health Department (MCHD) embarked on a three-year effort to use quality improvement (QI) processes to address contributing risk factors that impact childhood overweight and obesity. Martin County, located on the southeast coast of Florida, has a population of nearly 140,000, 18.5 percent under the age of 18. MCHD used the plan-do-check-act (PDCA) model during an intervention called "Peaceful Playgrounds" to target the childhood obesity issues in the community.

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#### MARTIN COUNTY, FL

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#### PLAN

MCHD convened a team that included local health department staff and volunteers to focus on one local elementary school to undertake the QI effort. The team began by examining data regarding childhood obesity. According to 2007-2008 body mass index data from the school district, 35 percent of first- and thirdgraders were overweight or obese. MCHD also found a high rate of sedentary adults in their county's behavioral risk factor surveillance system data, and based on social learning theory,<sup>2</sup> children tend to replicate parent behaviors through observation and modeling. The team conducted a root cause analysis of sedentary behavior in their target school and developed a fishbone diagram that revealed limited physical activity equipment on the school playground contributed to children being physically inactive during recess. The team also surveyed parents as part of the root cause analysis, which helped them determine that a structured activity component during recess would be a beneficial intervention.

Team members researched interventions related to childhood obesity and decided to implement the Peaceful Playgrounds program at a local elementary school. Peaceful Playgrounds is an evidenced-based program<sup>3</sup> that promotes both structured and unstructured play at recess by encouraging physical activity. The program involves designing play areas and using activity guides to describe games and other activities to encourage physical activity among students. The team's improvement theory were that, if Peaceful Playgrounds was implemented, then more children would be physically active at recess.

The team began by observing the activity patterns of first-graders at recess to determine baseline data before implementing the intervention, which included painted stencils on the ground for games and providing equipment for play. Observation showed that 21 percent of the students engaged in no physical activity during recess. In addition to implementing the Peaceful Playgrounds program, the team also planned to introduce complementary physical activities. Group activities such as Thread the Needle, Horse and Buggy, and Car Game were taught using the hula hoop. Activities where students learn developmental skills with others such as Jump Bridge and Snake Jumping and individual jump rope fitness activities were introduced in phases. A supply of equipment was provided to the students, including balls for use with stencils, relay races, and free play recess activities.



#### DO

The team purchased the program blueprints, playground balls, bean bags, and a chest to store the equipment. They worked with school staff and volunteers to install the stencils. plan events, and introduce students to the activities. The team used bright colors to attract students to the Peaceful Playground games. The staff was trained prior to implementation; students were taught game rules and provided instructions on how to solve conflicts with playground disputes.

To collect data, the team observed recess for comparison against the baseline in three phases: when balls were provided, when hula hoops and jump ropes were provided, and when a summer activity pack was provided. These phases are shown in the graph below. When observing students, team members tracked them as "active" and "not active." This meant comparing students who did not move around at all to students who did some sort of activity.

#### CHECK

During the check phase, the team analyzed the data after implementation of stencils and provision of equipment for students, and the number of inactive students decreased by 12 percent (from 21% to 9%).

## ACT

Although the team noted a 12-percent decrease in the number of inactive students, they wanted to further impact the activity rates. They adapted their successful intervention to include additional play items, like hula hoops and jump ropes, for students after feedback from children about wanting more toys (Chart 1). They entered the PDCA cycle again and during their second check phase, saw an additional five-percent decrease in the number of students who were inactive—resulting in 96 percent of students being active during recess (Chart 1). Coordinators determined approximately 10 percent of the previously inactive (before the first cycle) students were now participating in physical activity, and 44 percent of students were using the physical activity equipment provided by the team during recess.

Because of these successes, MCHD provided the school with materials and training to train students in other grades and sustain children's physically active during recess. They also encouraged the school administration to provide parent or teacher volunteers to engage students in physical activity and teach students games using the stencils. These coordinators, who are school representatives supported by MCHD, will also be responsible for training other teachers on how to use the stencils, coordinate yearly activities, and provide information to students and parents about physical activity and health.

#### Next Steps

In order to sustain the efforts, MCHS is seeking additional funding to replenish and update playground equipment each year. The team will continue to stay active in the school's physical activity programs. If observations continue, the team wants to measure physical activity using a continuum from "not active" to "very active."

MCHD was able to improve physical activity options for students at local elementary schools. Their team found the PDCA cycle useful in identifying activities that had the greatest impact on their projects and helping them change behaviors among their target populations.

#### References

- 1. For information about the MLC, visit <u>www.nnphi.org/mlc</u>.
- 2. Rotter, J. B. (1945). *Social Learning and Clinical Psychology*. Prentice-Hall.
- 3. For a complete list of studies supporting Peaceful Playgrounds, visit <u>www.peacefulplaygrounds.com/research.htm</u>.

#### FOR MORE INFORMATION

Contact a member of NACCHO's Accreditation Preparation & Quality Improvement Team at accreditprep@naccho.org.







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