Project Title: ReadNPlay for a Bright Future in Appalachian Tennessee

Project Number: H17MC28296

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Project Period: 3/1/2015-2/28/2021

Total Amount of Grant Awarded: $250,000
PURPOSE OF PROJECT AND RELATIONSHIP TO SSA TITLE V MATERNAL AND CHILD HEALTH (MCH) PROGRAMS:
The project team developed and pilot tested the ReadNPlay for a Bright Future Program, which culturally and linguistically adapts and coordinates Bright Futures, Reach Out and Read, and other existing programs for families with young children in Northeast Tennessee (TN) and Southern Appalachia for integration into the health maintenance visits of the Medical Home. ReadNPlay uses a 4 part framework- Play More: Shut Off the Screens, Play Together: Be Active as a Family, Play Safely, and Fuel to Play: Eat Healthy. These components empower providers to engage families with young children in order to review child development, health risk behaviors, parenting skills, and home environments. The program provides community resources, including support groups and events that promote optimal child nutrition, activity and intellectual, physical and emotional development. The ReadNPlay program was developed in collaboration with a wide range of community collaborators including health care providers, early childhood educators, public health officials, the Tennessee Chapter of the AAP, parents, and families. Educational tools developed include (in English and Spanish) My Baby Book & Healthy Active Living Tips booklet (for use to improve healthcare provider - parent communication about healthy behaviors during the first two years of life), a set of five posters based on our Play themes, and three children’s books (A Rainy Day Adventure, A Harvest Day Adventure, and A Rainy Day Adventure). My Baby Book was also made available as a free mobile app for Apple and Android devices. All materials are available in English and Spanish. ReadNPlay was successfully pilot-tested in the ETSU Department of Pediatrics General Pediatrics and Resident Continuity Clinics. The purpose of the AAP-MCHB Healthy Tomorrows grant-funded project was to disseminate the ReadNPlay Program to 5-6 practices and build community partnership in 4 contiguous counties in Northeast Tennessee. Through this dissemination effort the project team aimed to reach 1200-1500 families beginning in the newborn period. This effort was facilitated by establishment of a Community Advisory Board with membership by representative from our
GOALS AND OBJECTIVES:

Goals

**Goal 1:** Elevate the importance of optimal child development, healthy active living, and healthy home environments in the eyes of parents and caregivers. (Attained)

**Goal 2:** Enhance the capacity of pediatricians, childcare providers, and other community organizations in providing and promoting opportunities for improving child development, healthy behaviors, parenting skills, and home environments. (Attained)

**Goal 3:** Increase parent self-efficacy and skills in supporting optimal child development, as well as healthy behaviors and home environments for themselves and their growing families. (Attained)

SMART Objectives

**Objective 1.** Disseminate ReadNPlay to 6 new practices and 1200-1500 newborns & families using a Health Promotion Coordinator (and the leadership team) and a QI methodology to improve healthy eating, reading, active living, and safety knowledge, self-efficacy, and behaviors. (Attained)

**Objective 2.** Implement a family longitudinal case management and follow up program (ReadNPlay Resource Support Program) with at least 300 high risk families referred to the ReadNPlay Program from participating practices. (Attained)

**Objective 3.** Expand Family Support Groups (Mommy & Me Support Group) using a novel collaboration and approach by pediatric providers, early childhood educators, and lactation specialists and achieve attendance at 2 or more sessions by 100 families. (Attained)

**Objective 4.** With our community partners and use of social marketing expand participation in community events that provide families opportunities for healthy eating, joint activity and promote reading, with
attendance by 80% of families in the case management program in at least 2 event(s). (Attained)

**Objective 5.** Continue to build partnerships of this project, with an active Project Advisory Board, as evidenced by holding 2 meetings annually with an attendance rate of 80% of Board members, and seek funding support for sustainability by developing two new funding sources during the project period. (Attained)

METHODOLOGY: ReadNPlay for a Bright Future includes interventions at the child and family level through the medical home, family support groups and social marketing as well as at the community level through community events.

**Practice-Level:** Project faculty trained practices using a collaborative QI model through in-person visits, monthly emails of reminders and opportunities, and a Project ECHO series. Using the ReadNPlay for a Bright Future materials, we trained six practices (Johnson City Community Health Center, Medical Care Elizabethton, Riverside Pediatrics, Mountain States Medical Group Pediatrics, ETSU Family Medicine, and Extended Hours Clinic of Mountain City) on how to incorporate the materials into well child care, thereby expanding and enhancing support for the optimal development and well-being of disadvantaged children in middle Appalachia.

**Family-Level:** Using grant funds, a Health Promotion Coordinator was hired through Niswonger Children’s Hospital to help disseminate ReadNPlay training and materials to participating practices, conduct a Resource Support Program, and assist in planning and conducting support groups and community events and promoting the program via social media. Providers identified and provided high-risk, interested families to resources, groups, and events, or referred them to the Health Promotion Coordinator for assistance. Grant funds were also used to support the ETSU Applied Social Research Lab to conduct the project evaluation.
Community-Level: The project team collaborated with early childhood educators and other ETSU professionals and trainees, current breastfeeding support group leaders, and the hospital system’s family literacy group. The project team engaged new partners in nutrition/food access and continued collaborations with existing partners in events. Registration for events was facilitated by the Health Promotion Coordinator outreach and media. A Community Advisory Board for the project was also established at Niswonger Children’s Hospital. Current and new partners, providers, key personnel, the Health Promotion Coordinator, as well as TNAAP and Title V representatives joined the Community Advisory Board and participated in bimonthly meetings.

EVALUATION:

Program Reach to the Targeted Population

The number of My Baby Books packets and ReadNPlay children’s books distributed through clinics was tracked by the Health Promotion Coordinator and project assistants. The participants in support groups and community events were tracked using sign-in sheets. The participants in the Resource Support program were tracked by the Health Promotion Coordinator. Facebook followers were tracked through Facebook Insights. The ETSU Applied Social Research Lab helped to design and conduct the provider and parent/caregivers surveys intended to assess program effectiveness, adoption, implementation, and maintenance.

Parent/Caregiver and Provider Surveys

Program Effectiveness, Adoption, Implementation, Maintenance

In 2015, Dr. Karen Schetzina with ReadNPlay for a Bright Future commissioned the Applied Social Research Laboratory (ASRL) to conduct a longitudinal survey of parent/caregivers and providers participating in the ReadNPlay program. Study procedures were reviewed and approved by the ETSU Institutional Review Board (IRB) and informed consent was obtained for study participation. The goal of this evaluation was to assess
parent/caregivers’ pre, mid-, and post-program perceptions, intentions, and behaviors while participating in ReadNPlay. Providers at participating health centers also participated in a pre and post survey in order to obtain their feedback on adoption, implementation, and maintenance of the program, as well as its effectiveness.

**Provider Surveys:** The target population for this study consisted of providers from the four participating ReadNPlay health centers: ETSU Pediatrics, Johnson City Community Health Center, Medical Care Pediatrics Elizabethton, and Riverside Pediatrics. The providers were invited to participate in a pre and post survey in order to monitor the adoption of the program and receive valuable feedback on its implementation. Pre-surveys were collected from December 2018 - March 2019 and post-surveys were collected between February 2020 - March 2021. Providers were asked about their impressions of the ReadNPlay program, as well as time utilization, unforeseen costs, and whether the practice developed policies or procedures to keep the program in place.

**Parent/Caregiver Surveys:** The target population for this portion of the evaluation consisted of parents/guardians of children from the four participating ReadNPlay health centers: ETSU Pediatrics, Johnson City Community Health Center, Medical Care Pediatrics Elizabethton, and Riverside Pediatrics. At the beginning of the project, the child had to be two years old or under. This was adjusted to five years due to low recruitment. Potential participants were invited to join the study via flyers at participating health centers/events and social media posts on the ReadNPlay Facebook page. Social media posts were later discontinued due to repeated bot attacks. The data for this study were collected through web-surveys administered by ETSU ASRL using the Qualtrics platform. At the beginning of the project, the respondents were asked to complete four surveys: baseline, 6-months, 12-months, and 18-months. The 18-month survey was later removed due to allow extension of the recruitment period. The web-survey remained open from
December 2018 to February 2020. Parents/guardians were asked about their shared reading, screen time, breastfeeding, sugary drinks, fruit and vegetable intake, physical activity, dental health, injuries, and perceived health status.

RESULTS/OUTCOMES: Please see additional details of the evaluation in Appendix 1, page 20.

Program Reach to the Targeted Population

ReadNPlay books distributed (reported in # infants/children) and group/event/support/media participation

<table>
<thead>
<tr>
<th>Year</th>
<th>Baby Books</th>
<th>Children’s Books</th>
<th>Support Groups</th>
<th>Community Events</th>
<th>Resource Support</th>
<th>Social Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>600</td>
<td>-</td>
<td>120</td>
<td>1600</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>1160</td>
<td>369</td>
<td>100</td>
<td>7225</td>
<td>0</td>
<td>1332 followers</td>
</tr>
<tr>
<td>3</td>
<td>1020</td>
<td>1500</td>
<td>100</td>
<td>7522</td>
<td>277</td>
<td>1444 followers</td>
</tr>
<tr>
<td>4</td>
<td>465</td>
<td>920</td>
<td>150</td>
<td>6539</td>
<td>1500</td>
<td>1553 followers</td>
</tr>
<tr>
<td>5/6</td>
<td>500+</td>
<td>900+</td>
<td>50</td>
<td>7123</td>
<td>Unknown*</td>
<td>1605 followers</td>
</tr>
<tr>
<td>Total</td>
<td>3745+</td>
<td>3689+</td>
<td>520</td>
<td>30,009</td>
<td>1777</td>
<td></td>
</tr>
</tbody>
</table>

*Due to loss of Health Promotion Coordinator at Niswonger Children’s Hospital

Notes: We estimate that 87% of the population served was White, 6% Black, 5% Asian, 2.4% American Indian/Alaskan Native, and 15% Hispanic, based on the demographics of our region. Year 5/6 data accuracy was impacted by both transition in coordinators and COVID-19 restrictions. Support Groups were discontinued in September 2019 due to decreasing participation and subsequent COVID-19 Pandemic. No community events were held since December 2019 due to Flu season and the subsequent COVID-19 Pandemic.

Program Effectiveness, Adoption, Implementation, Maintenance

Provider Surveys: The number of participating ReadNPlay providers were as follows: Riverside (4), Medical Care (3), JCCHC (2), and ETSU Peds (27). There were 19 complete pre-surveys (53%) and 14 complete post-surveys (39%), for a total of 33 completed provider surveys. Results suggested that distribution of ReadNPlay books to patients and referrals to the mobile app and social media sites increased during the evaluation
period, as did discussion of books during visits. In addition, parent/caregiver engagement appeared to increase, based on how often My Baby Books was brought to visits. Overall, the providers report enjoying their participation in ReadNPlay and say that it has been helpful to them in various ways. Ninety percent of providers said that My Baby Book was somewhat or extremely helpful and 89% of providers said that the ReadNPlay children’s books were somewhat or extremely helpful at baseline. This assessment was similar in the post-surveys, although perceived helpfulness of My Baby Book decreased slightly, perhaps due to the inserts added with updates while updated books were being printed. Eighty-four percent described the support groups and community events as somewhat or extremely helpful, while only 42% described the mobile app as somewhat or extremely helpful. Findings were similar in the post-survey. Barriers reported to program implementation included time, lack of interest/engagement from families, and lack of family mobile phones/internet. Comments suggested that maintenance of the program was facilitated by staff training, making ReadNPlay part of the “normal workflow,” and creating “book stations” in exam rooms. Providers also reported becoming more efficient at delivering the program during visits. Providers would also like to see a larger variety of ReadNPlay book titles, in addition to the three that they already have.

Parent/Caregiver Surveys: There were 38 complete baseline surveys, 16 complete 6-month follow-up surveys, and 8 complete 12-month followup surveys.

Parent/Caregiver reported improvements during the study period

<table>
<thead>
<tr>
<th></th>
<th>Intentions</th>
<th>Ease of behaviors</th>
<th>Perceived social support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not smoking</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Reading daily</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Child passenger safety</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Limiting juice</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gun safety</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Healthy eating</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Physical activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not texting while driving</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Limiting screen time</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Parent/caregivers improvements reported during the evaluation period are summarized in the table above and include: (1) Intentions to “never smoke around my child or in the house or car”, “share/read books aloud daily”, and “feed my child fruit instead of giving fruit juice to get their vitamins”; (2) the ease of some positive health behaviors (i.e., Have my child always ride rear-facing in the backseat until at least 2 years old, Never smoke around my child or in the house or car, Keep guns out of my home or store unloaded and locked separately from ammunition, Share/read books aloud daily, Be a role model for healthy eating habits for my child, Have my family eat meals together, and Have my family be active together by taking walks or doing other activities); and (3) The extent to which important people in the respondents’ lives want them to participate in certain behaviors (i.e., Have my child always ride rear-facing in the backseat until at least 2 years old, Never smoke around my child or in the house or car, Keep guns out of my home or store unloaded and locked separately from ammunition, Never read or type a message while driving, Share/read books aloud daily, Have my child play more by setting limits on watching TV). Unfortunately, the small sample sizes limit the ability to draw inferences about the program outcomes and impact. Use of study flyer distribution by providers in clinics for participation in an online, longitudinal survey did not prove to be well-received by our patient population. The occurrence of frequent survey “bot attacks” when the flyers were shared through our social media pages prevented use of this recruitment methodology. We also note that the evaluation methods did not account for potential temporal changes and natural maturation processes.

PUBLICATIONS/PRODUCTS:

**ReadNPlay Books:**


**ReadNPlay Mobile Application:**


**Peer-Reviewed Publications:**


DISSEMINATION/UTILIZATION OF RESULTS: Describe action taken to share information/findings/products/resources with others within and outside the State.

Peer-reviewed abstracts and conference presentations:


Schetzina KE, Jaishankar G. Supporting Healthy Active Living and Literacy among Families with Young Children: ReadNPlay for a Bright Future. American Academy of Pediatrics Council on Community Pediatrics Poster
Alyssa Lovelace*; Dr. Karen Schetzina, MD, MPH, CLC, FAAP; Gayatri Jaishankar, MD, FAAP. JUICE
CONSUMPTION AMONG CHILDREN AGED 9 TO 24 MONTHS PARTICIPATING IN WOMEN, INFANTS, AND
CHILDREN (WIC) PROGRAM. ASRF, Johnson City, TN 2016.

Imaobong Chinedozi*, Alyssa Lovelace*, Dr. Karen Schetzina, Dr. Gayatri Jaishankar. ASSESSMENT OF
BREASTFEEDING RATES AMONG MOTHERS IN APPALACHIAN TENNESSEE. ASRF, Johnson City, TN 2016.

Alyssa Lovelace*, Karen Schetzina, MD, MPH, CLC, FAAP; Gayatri Jaishankar, MD, FAAP Juice Consumption
among Children aged 9 to 24 months participating in Women, Infant, Children (WIC) Program. AAP National

Imaobong Chinedozi*, Karen E. Schetzina, MD, MPH, CLC, FAAP, Gayatri Bala Jaishankar, MD, FAAP, Robin
Fisher, Jill Fair. ReadNPlay for a Bright Future Mobile Application Development and Experience.. AAP National
Conference, October 22, 2017. San Francisco, CA.

Shoemaker, Griffin, Kwak, Gloria, Jaishankar, Gayatri, Schetzina, Karen. Prenatal Drug and Related Exposures
in Infant Patients at Northeast Tennessee Pediatric Primary Care Clinic. American Academy of Pediatrics
National Conference. November 2-6, 2018, Orlando, FL.

Hakyong G. Kwak, Olushola Fapo, Gayatri B. Jaishankar MD, Matthew Tolliver PhD, Deborah Thibeault LCSW,
Karen E. Schetzina MD, MPH, Knowledge and perceptions of ACES (Adverse Childhood Experiences) among
parents and providers in Northeast Tennessee. Presented at the 2018 Appalachian Student Research Forum.
Johnson City, TN, April 5.


Other dissemination publications for professionals:

AAP National Resources Center for Patient/Family-Centered Medical Home Program Spotlight. ReadNPlay for a
General public: We participated in local press releases and local media appearances several times a year to promote support groups and community events and release of new books and resources.

Title V and TNAAP: Updates on the ReadNPlay project were shared annual at state meetings for Title V and the TNAAP by the project director.

FUTURE PLANS/SUSTAINABILITY: The table below lists funding applications and awards, as well as regional resources to support sustainability and expansion of the ReadNPlay for a Bright Future program by year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Grants submitted</th>
<th>Grants awarded</th>
<th>Regional Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RWJF CATCH Resident</td>
<td>CATCH Resident</td>
<td>Partnership with ETSU Early Childhood Education Program for Support Groups</td>
</tr>
<tr>
<td></td>
<td>Speedway Children’s Charities First Tennessee Development District TN Department of Health Project Diabetes Lowes Foundation</td>
<td>None!</td>
<td>ETSU COPH Partnership for Community Libraries</td>
</tr>
<tr>
<td>3</td>
<td>AAP Healthy Active Living AAP CATCH Planning Grant TN Department of Children’s Services Building Strong Brains</td>
<td>AAP Healthy Active Living AAP CATCH Planning Grant TN Department of Children’s Services Building Strong Brains</td>
<td>Niswonger Children’s Resource Center</td>
</tr>
<tr>
<td>4</td>
<td>First Tennessee Foundation</td>
<td>First Tennessee Foundation</td>
<td></td>
</tr>
</tbody>
</table>

Bright Future (aap.org)


We set and met a goal of submitting two funding proposal during each year of our project. Funded applications have resulted in an expansion of our programming for families with drug use disorder/prenatal drug exposure (Baby Steps), trauma-informed care (Baby Steps and the ETSU Strong BRAIN Institute), early childhood literacy promotion (expansion of Reach out and Read), maternal mortality prevention (Caring for Motherhood planner and toolkit), integrated care, and adolescent health and transitions. In addition, these funded application have helped support continued distribution of our ReadNPlay books and continuation of our support groups (in a format for drug-exposed infants and their families) and community events. Partnerships with other units at ETSU also facilitated improvements in the ReadNPlay program. Despite a region-wide hospital system merger during the middle of our project, and a global pandemic during our last year, ReadNPlay for a Bright Future (as well as Squirrel, Owl, and Raccoon) will continue because it has become part of the fabric of our identity as child health providers and educators at ETSU and in our region. An endowment from one of our retired faculty, a developmental-behavioral pediatrician, Dr. Mary Michal, will help to ensure sustainability of our program. In addition, the development of the Niswonger Children’s Resource Center (Dr. Schetzina serves as Medical Director Children’s Resource Center | Ballad Health) and regional Safe Kids Coalition, STRONG Accountable Care Community (Dr. Schetzina serves as Chair and multiple project faculty are founding members representing their organizational units, www.strongacc.org), and ETSU Child and Family Health Institute (Dr. Schetzina serves as Director and multiple project faculty are founding members, Child and Family Health
Institute (etsu.edu) are now all providing new opportunities for expanding work consistent with the goals of the ReadNPlay for a Bright Future program through Collective Impact. The greatest success of the ReadNPlay for a Bright Future program has been its function to enable us to engage our colleagues, trainees, patients/families, and community stakeholders in on-going efforts to improve health and resilience of children and families in our region. We’ve learned many lessons of perseverance, through exploring the multiple modes of communication needed to achieve engagement with and among professionals and families, through our many failed funding applications (and several successful), through IRB and recruitment challenges in conducting our program evaluation, and through learning to adapt to distance-learning (i.e. Project ECHO) and COVID-necessary telehealth approaches (we even hosted our annual Once Upon a Time Celebration through Facebook Live! In April). We are extremely thankful for the many opportunities provided by this Healthy Tomorrows Grant and benefits to our patients, their families, and our region.
The purpose of ReadNPlay for a Bright Future in Appalachian Tennessee was to build primary care and community partnerships for collective action around family and community support for raising healthy, active, safe, and resilient children. A collection of interactive tools, including the ReadNPlay My Baby Book, a Healthy Active Tips Booklet, and a mobile application for Apple and Android devices were developed and distributed to parents and caregivers at the primary care newborn visit. During subsequent visits, providers shared with families a series of ReadNPlay children’s books centered around promoting active and creative play (A Rainy Day Adventure), healthy eating and nutrition literacy (A Harvest Day Adventure), and injury prevention (A Safety Hero Adventure.) Partnerships with regional community organizations facilitated a series of free healthy active living community events for providers to promote to their young patients and their families to as opportunities for being physical active as a family, accessing health information and resources, and experiencing peer support for raising healthy children.

Prepare a three to five sentence description of your project, which identifies the project’s purpose, needs and problems, which were addressed, the goals of the project, the program activities used to attain the goals, the major results and materials developed.

Pediatric Primary Care, Infants, Toddlers, Early Childhood, Literacy, Resilience, Health Eating, Active
Living, Injury Prevention, Family Engagement, Community Engagement