



Early Literacy in the Transformation Zone

Final Report

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**Prepared by
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The North Carolina Early Learning Challenge Transformation Zone is a system change initiative funded through the federal Race to the Top – Early Learning Challenge Grant program. Following a competitive grant process, four Tier I counties in rural, eastern North Carolina were awarded funds to implement selected evidence-based, evidence-informed strategies that support early child development and school readiness. The full portfolio of strategies targets multiple nodes in a local system of care and support for children from birth to age five, including maternal and child health, parenting and family development, child care, and early literacy. The focus of this report is the evaluation of the Early Literacy Strategy in the four Transformation Zone counties – Beaufort, Bertie, Chowan, and Hyde – under the auspices of a lead agency in each county. The lead agencies in the Transformation Zone are Beaufort-Hyde Partnership for Children, Albemarle Smart Start Partnership, Chowan-Perquimans Smart Start Partnership, and Hyde County Schools.

The overarching goal of the combined strategies is to build a system of care for young children and their families that better supports school readiness. Additional support for the effective implementation of these strategies is intended to make that system of care more efficient and coherent. Every county has a County Leadership Team to develop the vision for

community-level change and a County Implementation Team to figure out how to make change happen in the community. The North Carolina Partnership for Children (NCPC) hired an Implementation Coach in each county to facilitate community building and provide support to the County Leadership and Implementation Teams. Specialists from the National Implementation Research Network (NIRN) have also worked with these teams and coaches to help them apply the principles of implementation science to their community building and program implementation efforts.

One of the lessons of implementation science is the importance of implementing programs with fidelity to evidence-based or evidence-informed models in order to achieve the desired outcomes. The County Implementation Teams have been largely responsible for identifying child care providers, medical practices, and other community agencies that have the capacity to implement selected programs as intended. Each county also employs a part-time Literacy Coordinator who is responsible for monitoring and supporting fidelity to each of the models that comprise the Early Literacy Strategy in the Transformation Zone. This report focuses on the implementation, outcomes, and sustainability of these programs.

The Early Literacy Strategy

The Early Literacy component of the Early Learning Challenge provided Beaufort, Bertie, Chowan, and Hyde counties with the opportunity to implement up to four early literacy programs, each representing a different avenue for literacy development. Each County Leadership Team contracted with an external consultant to conduct an assessment of literacy needs in their respective counties. Based on the findings of these assessments, the counties chose to implement all four programs. Three of the programs – Story Exploring, Motherread/Fatheread, and Birth and Beginning Years (B.A.B.Y.) – were developed by Motherread, Inc., a national training and curriculum development organization based in Raleigh. The fourth program, Reach Out and Read, was developed by a national organization of the same name and is supported in North Carolina by Reach Out and Read Carolinas. Together, these four programs target the parents and teachers who care for children ages birth to five years old to build their capacity to improve children’s literacy development.

Story Exploring

Story Exploring is a professional development program for child care teachers and directors. The goal of the program is to promote understanding of concepts in print, enhance reading comprehension, build vocabulary, and help children connect spoken and written language. Training involves a one-day workshop and subsequent observations of teachers in their child care classrooms. Participants receive a two-part curriculum for reading to young children. Book 1 includes 35 lesson plans for infants and toddlers. Book 2 details 30 lesson plans geared for preschool-age children. Teachers also receive copies of the children's books needed to implement the curriculum. There are 58 books in the full set.

Motheread/Fatheread

Motheread/Fatheread trains facilitators to conduct literacy development classes for parents of young children. These classes build parents' capacity to nurture children's development of spoken and written language through reading and other family literacy-related activities. Participating parents receive copies of the children's books that provide a focus for each adult lesson and consequently are able to begin building a personal library for their children. Motheread conducts three-day workshops for facilitators and recommends that they, in turn, provide parents with a minimum of 20 hours of programming (e.g., reading, lecture, discussion, small group activities) to encourage adoption of recommended family reading practices.

Birth and Beginning Years

Motheread's Birth and Beginning Years (B.A.B.Y.) program trains facilitators to teach new and expectant mothers how to care for themselves and their babies during and after pregnancy, including a focus on developing emergent literacy skills during the first year of a child's life. B.A.B.Y. facilitators participate in a two-day workshop and then provide programming tailored to the needs and interests of participating mothers. Again, Motheread recommends a minimum of 20 hours of programming to ensure learning and adoption of healthy behaviors. Facilitators develop lesson plans that incorporate children's books to explore themes related to self-care and positive parenting. Parents receive their own copies of these books to share with their children.

Reach Out and Read

Reach Out and Read (ROR) provides medical providers with online training about the importance of reading to children from a very young age and how to work with parents to promote reading every day. During well-child check-ups for children ages 6 months to five years, medical providers give each child an age-appropriate book, model and/or explain effective reading practices to parents, and literally prescribe a course of reading to children every day. In participating medical practices, children receive a new book, and parents receive guidance in literacy development every time they come for a well-child visit. As they are able, many practices also set aside space in their waiting areas for children's furniture, books and magazines, and literacy-related information for parents.

Program Evaluation Strategies

The Program Evaluation Group, LLC (TPEG) was engaged in the spring of 2014 to evaluate the Early Literacy Strategy in the Transformation Zone. TPEG's scope of work includes documenting outputs and evaluating outcomes specific to each of the four literacy programs, as well as reflecting on lessons learned about program implementation, including readiness to implement programs, possible synergies between programs, and challenges and opportunities of implementation in rural settings. To fulfill this scope of work, we adapted surveys available from the program purveyors (Motherhead, Reach Out and Read) to assess specific outcomes, and we conducted two rounds of site visits to gain a deeper understanding of implementation, outcomes, and sustainability across programs. In addition to these data collection activities, we attended periodic cross-county meetings of the Literacy Coordinators and Implementation Coaches and reviewed needs assessment and quarterly reports prepared for each county.

Surveys

TPEG worked closely with NCPC and Motherhead to select and adapt survey instruments that aligned best with the desired behavioral outcomes for each of the Motherhead literacy programs. We used a pre/post, or baseline/follow-up, structure for survey administration in order to compare participants' self-reports of literacy-related behaviors at different points in time. Survey procedures were piloted with the first few cohorts of participants and then revised, as needed, with input from the Literacy Coordinators.

- Story Exploring *Classroom Activity Survey* – This survey was originally given to teachers three times -- after completing the Story Exploring training workshop and then three months and six months after they started using the Story Exploring curriculum in their classrooms. Respondents created their own unique IDs, which made it possible to match their surveys over time. To encourage candor and maintain confidentiality, each respondent was given an envelope in which to seal the completed survey; sealed surveys were mailed directly to TPEG for analysis. Survey items address teachers' use of general literacy activities and specific read-aloud techniques. The original survey was revised to include questions about teacher's schooling and credentials for early childhood education. Because there was less turnover than expected, survey administration was ultimately limited to baseline and one six-month follow-up. We requested Motherhead staff to administer the survey at the *end* of the teacher training workshop in order to ensure that teachers' interpretation of the questions was as close as possible to the intent of the questions – for example, that reading “dramatically” means reading with animation, gestures, and different voices for the characters. The Literacy Coordinators gave the survey to teachers again about six months after they started using the curriculum. Given the lag between when teachers were trained and when they started using the curriculum, most teachers completed the six-month follow-up surveys seven to eight months after the workshop.
- Motherhead/Fatheread and B.A.B.Y. *Class Intake Survey* and *Class Exit Survey* – The intake survey was originally given to parents during the first class they attended. However, because facilitators sometimes allowed participants to begin a series several weeks after it had started, we set the second class (usually in a series of 8-10 sessions) as the cutoff for collecting these baseline surveys. Exit surveys were completed at the end of the final class in a series. In both programs, surveys were administered by the facilitators who taught the series. Survey items address how confident parents feel about reading to their children, how often they read to them, and their use of specific read-aloud techniques. Respondents created unique IDs so that their intake and exit surveys could be matched for comparison. To encourage candor and maintain confidentiality, respondents placed their surveys in a single large envelope, which was sealed and then mailed directly to TPEG for analysis.

In collaboration with NCPC and Reach Out and Read Carolinas (ROR-C), the parent survey used to evaluate Reach Out and Read had previously been adapted and revised by TPEG for use in the statewide evaluation of NCPC's Reach Out and Read initiative.

- Reach Out and Read *Parent Feedback Survey* – During one or two data collection periods a year (as determined by ROR-C), surveys were given to parents of children ages 6 months to 5 years by medical practice staff at the conclusion of well-child visits. Survey items address how often parents read to their children and their use of specific recommended reading strategies.

Site Visits

In March of 2015, we conducted brief (1-2 day) site visits in each of the four counties. The purpose of these visits was first and foremost to observe how the Motherread programs operated “on the ground,” but also to informally identify outcomes not captured on the pilot survey instruments. In every county, we spoke to the Literacy Coordinator and several Story Exploring teachers. We also spoke to at least one facilitator of a Motherread/Fatheread and/or B.A.B.Y. class in every county except Beaufort, which had not yet begun to implement these programs at that time. We originally intended to observe a few newly formed Motherread/Fatheread classes in Bertie and Chowan counties. However, after speaking with a small group of facilitators in Bertie, we became concerned that observation by an outsider would interfere with the facilitators' efforts to establish trust and commitment to the class so early in the process. Therefore, we chose not to observe, or even interview, parents during this trip. Table 1 summarizes the number and type of interviews we conducted in each county in 2015.

Table 1
Number of interviews conducted in Spring 2015

Initiative/Program	Beaufort	Bertie	Chowan	Hyde
Transformation Zone	1	1	1*	2**
Story Exploring	4	5	5	3
Motheread/Fatheread	---	3	1*	2
Birth and Beginning Years (B.A.B.Y.)	---	1	1*	---
Total	5	10	6	7

*The Literacy Coordinator in Chowan County is also a Motheread/Fatheread and B.A.B.Y. facilitator.

**In Hyde County, in addition to the Literacy Coordinator, we also interviewed the Implementation Coach.

Following the first round of site visits and preliminary analysis of survey data, our scope of work was revised and expanded to incorporate more qualitative work. Participation in Motheread/Fatheread and B.A.B.Y. was much lower than expected, so there was little survey data to analyze for these two programs. In the case of Story Exploring, many teachers reported at baseline that they were already using the kinds of classroom literacy activities and read-aloud techniques that we expected they would adopt *as a result* of participation in the program. However, we knew from our initial interviews that teachers were engaged in Story Exploring and doing some things differently. We also wanted to see if we could learn more about parents' experiences in Motheread/Fatheread and B.A.B.Y.

In the late spring of 2016 (end April-early June), we conducted two- to four-day site visits in each county to focus on outcomes and plans for sustaining the four literacy programs. This time we interviewed a wider variety of people about all four of the literacy programs: Transformation Zone personnel (Literacy Coordinators, Implementation Coaches, County Leadership Team chairs); child care directors and teachers implementing Story Exploring; Motheread/Fatheread and B.A.B.Y. facilitators and parents; and Reach Out and Read Program Coordinators. The protocol for each interview was purposely broad in order to gain a more authentic picture of what was most salient to people about the literacy programs. We asked each person to (1) explain their role in the Transformation Zone initiative or literacy program, (2) describe direct and/or observed experiences with the four literacy programs, and (3) share their thoughts about sustaining these programs. Everyone we spoke to hoped that the literacy programs would be

sustained. We learned more about the outcomes of these programs by asking each person *why* they thought the program(s) should be sustained.

All interviews were recorded, and most of them were transcribed. Most interviews were conducted on-site during the visit. Several were conducted by phone after the visit. Table 2 summarizes the number of and type of interviews conducted in each county in 2016.

Table 2
Number of interviews conducted in Spring 2016

Initiative/Program	Beaufort	Bertie	Chowan	Hyde
Transformation Zone	3	5	3	3
Story Exploring	3	10	11	5
Motheread/Fatheread	3	4	2	---
Birth and Beginning Years (B.A.B.Y.)	1	---	1	---
Reach Out and Read	4	2	2	2
Total	14	21	19	10

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The remaining sections of this report address implementation, outcomes, and prospects for sustaining each of the four literacy programs. The report concludes with more general lessons learned from implementation of the Early Literacy Strategy in these rural communities.



## Story Exploring

### Implementation

Outside of the Transformation Zone, Motherhead, Inc. provides teacher training and follow-up services through programs that have an established structure for accountability and support (e.g., Head Start, Title I). The presiding agency does all the recruiting, arranges space for training, pays all of the associated costs, and sets expectations for how teachers will use the curriculum in their classrooms. Motherhead also has a contract with Wake County Smart Start to provide direct services to 15 child care centers a year, recruiting centers that have no more than five child care program points, scheduling training for the whole center at one time, and observing each teacher at least six times to ensure fidelity to the Story Exploring model. When there is turnover in these centers, new teachers are offered spots in one of the open trainings Motherhead holds each year in Raleigh. One year after center staff are trained, the Motherhead evaluator interviews teachers about their experience with the curriculum and also to find out what elements of the program are still being implemented.

Within the Transformation Zone, Motherhead provides the training, but the Literacy Coordinators are responsible for recruiting participants, scheduling a time and location that accommodates as many teachers as possible, doing 4-6 observations of each teacher, and coaching them to implement the curriculum with fidelity. In the beginning, coaching teachers to improve their implementation of Story Exploring was an uncomfortable role for the Literacy Coordinators. Unlike Motherhead's training specialists, the Literacy Coordinators had varying degrees of experience in promoting literacy development and little, if any, coaching experience. Also, they received their Story Exploring training alongside the first cohort of teachers. To fill the gap in their coaching experience, NCPC arranged for staff development on coaching and mentoring at one of the quarterly cross-county meetings for the Literacy Coordinators and Implementation Coaches. These meetings are convened by NCPC's Early Care and Education Program Officer. The Executive Director of Motherhead also attends in order to address the coordinators' shared challenges about any of the Motherhead programs. Between meetings, she is available by phone or email to answer their questions.

Story Exploring was the first and largest program to get underway in the four counties.

- **Beaufort County** was very intentional about not training more people than the part-time Literacy Coordinator could support at one time. Because the county is so spread out, the County Implementation Team used third-grade reading scores to prioritize and target providers in specific pockets of the county. They also prioritized child care centers and family child care homes because these teachers typically have fewer professional development opportunities than NC PreK and Head Start teachers. In the first two years, 15 people from seven locations in three different parts of the county (Aurora, Chocowinity, and Washington) were trained to do Story Exploring. In order to refresh teachers' understanding and reinforce the Story Exploring approach, the Literacy Coordinator models a lesson for each new teacher and invites them to evaluate her using the program's Observation Checklist.
- **Bertie County** also started small with eight teachers from four child care centers trained in the first year of the grant. In the second year, they added about 20 NC PreK teachers to the program. After training all willing and available teachers in the county, they seized an opportunity to provide pre-service enrichment in literacy development by training students in the Early Childhood Education program at Bertie High School. Unfortunately, turnover in the Literacy Coordinator position (four coordinators in less than three years) has made it difficult to consistently observe the large number of teachers implementing Story Exploring in six different communities in this sprawling county (Askewville, Aulander, Colerain, Kelford, Lewiston-Woodville, and Windsor). Some have never been observed.
- **Chowan County** elected to train as many teachers as they could while the funds were available. In the first year of the grant, 25 teachers and directors in eight locations were trained. In Year 2, the numbers grew to 35 people in 11 centers. All of these centers are in or near Edenton, so it is technically possible to visit more than one center in a day, as long as teachers are implementing lesson plans at different times of the day. Scheduling observations and coaching as many as 30 teachers at a time is nevertheless a challenge for someone who works only 24 hours a week and is responsible for three other programs as well. The Literacy Coordinator saw as many teachers as she could each month.

- **Hyde County** has very few child care providers serving the mainland and Ocracoke Island, which is a three-hour ferry ride away. The Literacy Coordinator was able to arrange training for most providers in the first year. On the mainland, this included one Head Start teacher/director in Engelhard, as well as two NC PreK teachers and one teacher assistant in Swan Quarter. Out on Ocracoke Island, another NC PreK teacher and a teacher at the island's only child care center also were trained. In an effort to extend Story Exploring into the community in Year 2, several people outside of licensed full-time care settings also were trained, including the school librarian on the mainland, the owner of a bookstore on Ocracoke, and a provider in a part-time church preschool program that offers drop-in care two days a week.

### Outcomes

The expected outcome for Story Exploring was change in the classroom literacy environment. This outcome was operationalized on the surveys as increased use of general literacy-related activities and increased use of specific read-aloud techniques during story time with children. In interviews with child care teachers and directors, we also were interested to learn how often teachers used the Story Exploring curriculum and how often they used elements of the Story Exploring approach with other books. Salient elements of the Story Exploring approach include:

- Introducing concepts in print (i.e, title, author, illustrator);
- Beginning with a simple activity that relates to the theme of the story;
- Using props related to the story to draw children's attention and asking questions to help them connect their personal experience to the main topic;
- Reading the story straight through with animation, gestures, and different voices for the characters – keeping interruptions and questions to a minimum;
- Reviewing the story and asking questions that encourage children to retell it in their own words;
- Reinforcing the lesson at the heart of the story using music, art, and other group activities; and

- Devising activities that prompt children to use their own words, then writing what they say.

In interviews with teachers and directors, we asked how often teachers use Story Exploring. Responses ranged from “*daily*” to “*weekly*” to “*at least two times per month*” to “*at least once a month.*” However, with further probing it became evident that their answers represent a range of interpretations of the question, which include a) reading one of the books that comes with the Story Exploring curriculum, b) using a complete Story Exploring lesson plan, and c) using elements of the Story Exploring approach in whatever book they read. Qualitative analysis of these responses leads us to conservatively estimate that about one-third of teachers do a complete Story Exploring lesson plan once a week, while the other two-thirds do a complete lesson once or twice a month, mostly “*when it fits*” with their regular curriculum.

Based on the number of matching baseline and follow-up surveys, we estimate that at least 61 teachers and teacher assistants participated in the program for six months or more. Outcomes were estimated from survey data for 58 participants. Participants’ characteristics are described in Table 3. Three teachers were excluded from the analysis because the ages of the children they taught were not comparable at baseline and follow-up (e.g., infants at baseline, preschool at follow-up, or vice versa).

**Table 3**  
**Characteristics of Story Exploring Teachers**

| <b>Teacher Characteristics</b> | <b>Percentage (n=58)</b> |
|--------------------------------|--------------------------|
| <b>County</b>                  |                          |
| Beaufort                       | 21%                      |
| Bertie                         | 28%                      |
| Chowan                         | 41%                      |
| Hyde                           | 10%                      |
| <b>Role in the classroom</b>   |                          |
| Lead teacher                   | 63%                      |
| Teacher assistant              | 21%                      |
| Not available                  | 17%                      |
| <b>Years teaching</b>          |                          |
| 1-5 years                      | 19%                      |
| 6-10years                      | 19%                      |
| 11-15 years                    | 21%                      |
| More than 15 years             | 24%                      |

| <b>Teacher Characteristics</b>   | <b>Percentage<br/>(n=58)</b> |
|----------------------------------|------------------------------|
| Not available                    | 17%                          |
| <b>Classroom age</b>             |                              |
| Infants/toddlers (0-2 yrs)       | 22%                          |
| Preschoolers (3-5 yrs)           | 62%                          |
| All ages (0-5 yrs)               | 16%                          |
| <b>Schooling</b>                 |                              |
| High School                      | 22%                          |
| Associates                       | 24%                          |
| Bachelors                        | 35%                          |
| Masters                          | 2%                           |
| Not available                    | 17%                          |
| <b>Credentials</b>               |                              |
| NC EC credential                 | 36%                          |
| Child Development Associate      | 16%                          |
| B-K license                      | 21%                          |
| None                             | 14%                          |
| Not available                    | 17%                          |
| <b>Other literacy-related PD</b> |                              |
| Workshop                         | 31%                          |
| College course                   | 19%                          |
| None                             | 24%                          |
| Not sure                         | 17%                          |
| Not available                    | 17%                          |

In addition to running outcome analyses for all teachers in the Transformation Zone together, three of the four counties contributed enough surveys ( $n \geq 10$ ) to permit county-level analyses. Separate data reports were prepared for Beaufort, Bertie, and Chowan counties. Specific county-level differences are noted on the following pages as they relate to understanding the cross-county results.

### ***Change in Classroom Literacy Environment***

To assess changes in the classroom literacy environment, we created indexes for two sets of survey items, one set comprised of seven classroom activities that promote literacy development (e.g., structured and informal story time, music activities, etc.) and another set including 11 read-aloud techniques recommended for Story Exploring. Comparing means for paired baseline and 6-month follow-up responses, we found no difference on either index (see Table 4).

**Table 4**  
**Change in Classroom Literacy and Read-aloud Indexes**

| <b>Pre-Post Comparisons</b>                   | <b>Baseline mean</b> | <b>6-month mean</b> | <b>Difference</b> | <b>t-statistic (sig)</b> |
|-----------------------------------------------|----------------------|---------------------|-------------------|--------------------------|
| Classroom literacy activities (max=35 points) | 30.98                | 30.38               | -0.60             | .971 (.168)              |
| Read-aloud techniques (max=55 points)         | 46.83                | 47.43               | 0.60              | .552 (.292)              |

We also looked at mean differences in individual items to see if there might be differences in the use of specific classroom literacy activities (see Table 5). At baseline, teachers reported *on average* that they were already doing most of these activities in the range of “often” (4.0) to “every day” (5.0). Only one difference between baseline and follow-up, a small decline in leading structured music activities, was statistically significant. Singing songs helps with oral language development. Both Bertie and Chowan teachers reported declining use of this activity. Beaufort teachers showed no change.

The activity that was utilized least often across the board, and particularly in Bertie and Chowan, was connecting spoken words to written language. This finding is consistent with our observation that the “Write What’s Said” story extension activities for preschoolers were rarely mentioned as a follow-up to reading a Story Exploring book. Connecting speech to written words helps children develop critical decoding skills. Only Beaufort teachers showed statistically significant improvement in this area.

**Table 5**  
**Change in Use of Classroom Literacy Activities**

| <b>Classroom Literacy Activities</b>                                      | <b>Baseline mean (max=5 pts)</b> | <b>6-month mean (max=5 pts)</b> | <b>Difference</b> | <b>t-statistic (sig)</b> |
|---------------------------------------------------------------------------|----------------------------------|---------------------------------|-------------------|--------------------------|
| 8c. Talk to children during routine care and play                         | 4.79                             | 4.79                            | ---               | ---                      |
| 8d. Engage children in conversation throughout the day                    | 4.76                             | 4.69                            | -0.07             | .541 (.296)              |
| 8g. Sing or chant informally, in small groups or with individual children | 4.57                             | 4.69                            | 0.12              | .961 (.171)              |
| 8f. Lead structured music activities with the whole class                 | 4.43                             | 4.12                            | <b>-0.31*</b>     | <b>2.041 (.023)</b>      |
| 8b. Read books informally, in small groups or with individual children    | 4.41                             | 4.31                            | -0.10             | .830 (.205)              |
| 8a. Have structured story time for the whole class                        | 4.17                             | 4.26                            | 0.09              | .539 (.296)              |
| 8e. Connect spoken communication to written language                      | 3.84                             | 3.74                            | -0.10             | .477 (.318)              |

\*Significant at  $p \leq .05$ , based on one-tailed test of significance

Regarding the use of specific read-aloud techniques, *on average* teachers reported using most of these techniques in the range of “often” (4.0) to “every day” (5.0), even at baseline. Asking higher-level questions, leading activities to extend stories, and using props to help introduce stories are the techniques that still are used least often. These activities help children to think, express themselves, understand, and engage. We find only one significant difference. On the 6-month follow-up surveys, teachers reported slightly greater use of props to help introduce stories (see Table 6). The difference is equivalent to almost a half-point on a five-point scale. Using props to engage and focus children’s attention on a story is a key recommendation of the Story Exploring program. Beaufort and Chowan have both improved in this area.

**Table 6**  
**Change in Use of Read-aloud Techniques**

| <b>Read-aloud Techniques</b>                                  | <b>Baseline mean (max=5 pts)</b> | <b>6-month mean (max=5 pts)</b> | <b>Difference</b> | <b>t-statistic (sig)</b>      |
|---------------------------------------------------------------|----------------------------------|---------------------------------|-------------------|-------------------------------|
| 9a. Show children the title of the book                       | 4.67                             | 4.59                            | -0.08             | .962<br>(.170)                |
| 9d. Read dramatically                                         | 4.60                             | 4.64                            | 0.04              | .351<br>(.364)                |
| 9g. Talk to children about details or actions in the pictures | 4.50                             | 4.52                            | 0.02              | .145<br>(.443)                |
| 9e. Point or tap lightly on pictures while you read           | 4.48                             | 4.57                            | 0.09              | .659<br>(.257)                |
| 9f. Involve children in telling the story                     | 4.38                             | 4.26                            | -0.12             | .766<br>(.224)                |
| 9i. Review the story                                          | 4.36                             | 4.33                            | -0.03             | .207<br>(.419)                |
| 9b. Tell children the name(s) of the author and illustrator   | 4.31                             | 4.38                            | 0.07              | .372<br>(.356)                |
| 9h. Ask children open-ended questions about the pictures      | 4.24                             | 4.47                            | .023              | 1.477<br>(.073)               |
| 9j. Ask children higher-level questions                       | 3.91                             | 4.03                            | 0.12              | .628<br>(.267)                |
| 9k. Lead activities to extend the story                       | 3.79                             | 3.90                            | 0.11              | .629<br>(.266)                |
| 9c. Use props to help introduce or tell a story               | 3.57                             | 4.02                            | <b>0.45*</b>      | <b>2.682</b><br><b>(.005)</b> |

\*Significant at  $p \leq .05$ , based on one-tailed test of significance

Across the board, Bertie teachers showed small and mostly insignificant declines in the use of recommended classroom literacy activities and read-aloud techniques. One possible explanation for this is that Bertie teachers’ responses were inflated at baseline; most of their baseline responses are higher than those reported by Beaufort and Chowan teachers. The Bertie

sample includes many NC PreK teachers who were out of school for the summer when they completed the baseline survey. When they completed the follow-up survey, they were back in school and working with students every day, which may have led to more accurate reporting based on actual practices at the time. To the extent that these results indicate actual declines in use of recommended activities and techniques, we would expect adherence to the Story Exploring approach to improve with more consistent observation and coaching by a trained Literacy Coordinator.

Another issue to consider is the adequacy of the Classroom Activity Survey for measuring all changes in classroom practice that are relevant to Story Exploring. In retrospect, at least one key feature of the Story Exploring approach – namely, reading with minimal interruption – is not addressed in the survey. Other items that are related to asking questions about the story (e.g., ask children open-ended questions about the pictures, talk to children about details or actions in the pictures) are not specific about the timing of questioning and, therefore, do not capture the desired shift of questions and discussion to the end of the story. In light of these and other insights gleaned from pilot use of the survey, we plan to revise it for future use in the evaluation of behavior change among Story Exploring teachers.

### ***Other Outcomes***

The biggest challenge that teachers and directors mentioned about using the Story Exploring approach was reading a book straight through, without interruptions. Many of them had previously been taught to point out details in the pictures and ask questions throughout the story. They found it “*hard not to involve [children] during the story,*” especially when children’s attention was flagging. Many said they “*tried*” to read straight through, at least when reading books with a Story Exploring lesson plan, but they gave the impression that they were still working on this. Only a few admitted to giving up on this practice. Based on this kind of feedback, the Motherhead training specialists now provide more guidance during Story Exploring workshops about how to respond positively when children interrupt with questions and guide them back to the story (e.g., “*That’s a great question! Let’s see what happens next.*”). Those who have adopted the practice for reading any story, about one-third of the teachers we interviewed, were glad they did. They found that with consistent use their children eventually learned to hold their comments and questions, knowing that they would have an opportunity to



express themselves at the end of the story. One teacher observed that *“before I would go with their questions, and you’d never get through it.”* When her children learned to hold their questions, she found that they listened more closely to the story. A director acknowledged that reading straight through was *“an adjustment”* for her teachers, but they learned from experience that it helped their children stay focused on the story: *“...when you stop, it’s almost like you’re breaking the child’s train of thought.”* She believes that children get more out of a story when they listen straight through. Another teacher said, *“...kids get distracted when you stop, [but] with Story Exploring they remember, [and] they can relay what they read.”*

Other outcomes observed by teachers and center directors include:

- More engagement in the story – *“If they’re excited, they’re learning.”*
- Increased comprehension – *“That’s the whole point, building comprehension...when we go back and review, they remember.”*
- Better verbal skills – Without Story Exploring, *“maybe the children would not be speaking as well as they are now or expressing themselves.”*
- Increased confidence and interest in reading – *“It builds their confidence...like, ‘Oh I can do it. I could read a book.’ It piques their interest. They want to look at more books.”*

### Sustainability

A positive outcome for any pilot program is having participants decide that it is worthwhile to continue it. Teachers said they planned to continue using at least some of the Story Exploring books and lesson plans, especially those that work with their theme-based curricula and resonate best with their children. The most frequent reason given for continuing to do Story Exploring after the Transformation Zone grant ends is because *“it works, it works better...it helps us, helps the children.”* A few NC PreK teachers hoped Story Exploring would continue in local child care centers so children would be better prepared for reading activities when they enrolled in their classrooms. Teachers who had success using the Story Exploring approach with other books said they would continue to do so. A few directors even expressed interest in developing Story Exploring lesson plans for other books.

The main factor limiting sustainability at the teacher level is the number of books in the Story Exploring curriculum. Literally the only critique that teachers and directors shared about Story Exploring was that there are not enough books for them to implement it weekly. This is in part a function of the number of lesson plans available for each age-level (35 for infants-toddlers, 30 for preschool-age). Another limiting factor is the degree to which these books can be used to cover the particular themes in their general classroom curriculum (e.g., Creative Curriculum, High Scopes, A Beka Preschool). The themes they were most often unable to cover with the Story Exploring books were holidays and seasons, but teachers also wished the program included “*explaining books*” about “*simple things*” like tying shoes, dressing up, or cooking. Some teachers worked around the problem of using it with theme-based curricula by reading Story Exploring books during open reading time (e.g., before naptime, or at the end of the day) and doing follow-up activities during center time. But another issue for teachers was that some books “*just don’t connect with the kids.*” A few NC PreK teachers estimated that they would no longer use about eight of the books in the preschool set because their children either did not understand them, did not enjoy them, or they could not find a place for them in their theme-based curriculum. While Motherhead, Inc. does not anticipate expanding the curriculum any time soon, they have developed a new training – Beyond Story Exploring – to show teachers how to use the Story Exploring model with any books in their classrooms. They will begin providing this workshop for previously trained teachers and directors in the fall of 2016.

Another limitation to long-term sustainability of Story Exploring in the four counties is turnover among trained teachers and directors. Though turnover is not as high in these rural communities as in larger communities with lower unemployment, teachers and directors still retire, and some do leave child care or move to other centers that may not be implementing Story Exploring. In order to sustain what has been achieved in the Transformation Zone, there needs to be a plan and budget in place to monitor staff turnover at existing sites and train new teachers and directors, as needed.

When these interviews were conducted, the counties were just beginning to figure out which literacy programs to continue and how to support them. All were committed to providing some level of continued support for Story Exploring:

- Now that **Beaufort County** has worked out their process for supporting Story Exploring, they are training more teachers to expand capacity in the county before the Transformation Zone grant ends. In July 2016, all five of the original child care centers participating in Story Exploring chose to have new or additional staff trained. Teachers from two new sites also were trained at that time. In October 2016, all 10 of the NC PreK teacher assistants in the county took the Story Exploring workshop, and 22 previously trained teachers and directors received Beyond Story Exploring training for guidance on how to develop curriculum for other children's books. The Beaufort-Hyde Partnership for Children will use Smart Start funds to keep the Literacy Coordinator on staff in their Quality Enhancement Program at least through June 2017. As part of her job, she will continue to observe and coach the newest cohorts of trained teachers and teacher assistants, making sure that they are using the program and using it with fidelity to the Story Exploring model. She will also continue to transition center directors into the role of observers/coaches so that they become part of the infrastructure for sustaining Story Exploring. In addition, she will support experienced Story Exploring teachers as they practice adapting the approach to other books.
- In May 2016, the **Bertie County** Leadership Team successfully lobbied the County Board of Commissioners for funds to support Better Beginnings for Bertie's Children (BBBC), an initiative that grew out of community collaboration on the County Leadership and Implementation Teams. With additional funding from the Albemarle Alliance for Children and Families, BBBC will have a full-time coordinator and provide resources for early literacy and family support programs (e.g., Healthy Social Behaviors, Kid Find, and Triple P). One of the coordinator's responsibilities will be to coordinate the early literacy programs that have been piloted under the Transformation Zone grant, including Story Exploring. What is not yet clear is how many teachers the county can afford to train, and how many the coordinator of this new initiative will be able to observe and coach.
- In **Chowan County**, the Executive Director of Chowan-Perquimans Smart Start does not anticipate having funding to maintain a dedicated Literacy Coordinator. However, she feels that they can continue to support Story Exploring with existing staff. The Quality

Initiative Coordinator has taken over observations at the two newest centers, and the internal Program Evaluator will pick up the observations of all sites in 2017.

- The chair of the **Hyde County** Leadership Team calls Story Exploring “*one of the brightest aspects of the early literacy strategy.*” Two of the four teachers that have been using the curriculum for the past two years just retired. One of them, an NC PreK teacher on the mainland, has been replaced by the school librarian who was trained previously but has not yet used the curriculum. The other retiree was the founding director of the Head Start program on the mainland; her successor was trained this summer. The Literacy Coordinator was able to recruit six more people to attend a training workshop in July 2016, including two teachers who will expand capacity at two existing sites – one is an NC PreK substitute on the mainland, and the other is a child care center teacher on Ocracoke. Also trained this summer were the operators of a newly licensed family child care home on Ocracoke. The last two are community members who represent educational programs in the community; one hosts a children’s reading group, and the other runs the 21<sup>st</sup> Century Afterschool program on the mainland. Still to be determined is how all the new teachers will be observed and mentored when the Transformation Zone grant ends and to what extent community members will be able to incorporate Story Exploring in their work.

## Motheread/Fatheread

### Implementation

Motheread, Inc. typically trains Motheread/Fatheread facilitators who are employed in programs that are required to serve parents in some way (e.g., Head Start, Early Head Start, Title I). These facilitators incorporate the curriculum into the work they are already doing with a clearly defined population of parents. In the Transformation Zone, the four counties have tried to follow a similar model, recruiting partner sites/organizations with access to parents of young children and training members of these organizations to be facilitators. The Literacy Coordinators and other local Smart Start staff also received the training and subsequently facilitated Motheread/Fatheread classes when other facilitators and/or partner organizations were not available.

The Motheread/Fatheread experience has been quite different in every county.

- The **Beaufort County** Leadership Team chose to partner their Motheread/Fatheread program with child care centers that are implementing Story Exploring. When facilitator training was first available, the Literacy Coordinator recruited directors and teachers at three child care centers to participate. Two of those centers, both operated by Care-O-World, later held a joint Motheread/Fatheread class in the fall of 2015. Each two-hour session was taught by the director of the Chocowinity center and a teacher at the Washington center. Both centers used their Parents Night to provide information about the class and to register parents. The owner/operator of Care-O-World was present at both events. He was instrumental in encouraging parents to participate in the class as a way to both extend the work of the Story Exploring teachers and directly support their children's literacy development. Originally there were to be two separate series, one at each center, so parents could make up a missed session during the same week. However, participating parents preferred instead to combine the two classes into one and extend the series from 10 to 12 weeks to provide opportunities for make-up sessions. Dinner was provided before each session for parents and their children. While parents were in class, children participated in Story Exploring lessons with other teachers from the two centers. Based on attendance records, 16 parents started the program at the two different

locations, and 12 parents remained when the two series were consolidated into one. Ten of these 12 participants (83%) graduated with 20-24 hours of instruction.

- **Bertie County** jumped into Motheread/Fatheread in a big way. Although complete documentation is not available for all of the classes that were offered in Bertie, at least nine series were held between October 2014 and May 2016. Seven of these series were held at five NC PreK locations and one childcare center in hopes of attracting parents of preschool age children. The other two classes were held at the Bertie County Schools Central Services Complex (where the Albemarle Alliance for Children and Families maintains a local office) and The Hive House (a non-profit community resource center that provides parent education and family support services). NC PreK and childcare teachers also were invited to attend the Motheread/Fatheread classes with the intention that they, in turn, would use their experiences in the class to recruit their students' parents to participate in future classes. The Literacy Coordinator attended Family Night events at two of the NC PreK sites to talk to parents about upcoming series, and flyers were posted throughout the county (e.g., at the Bertie County Health Department, Bertie County Rural Health Association, Department of Social Services, and child care facilities). Most classes were small, ranging from 2 to 9 participants and averaging 4 participants per class. Although as many as 10 community members were trained to be facilitators, classes were taught mainly by Albemarle Alliance staff. Most classes were offered at mid-day or mid-afternoon during the work week; only the series at The Hive House was held in the evening to accommodate working parents. Based on available attendance records, at least 28 participants started a Motheread/Fatheread class at the beginning of a series, and 10 of them (36%) completed a minimum of 20 hours of instruction. However, interview and survey data suggest that an unknown percentage of these graduates may not have been parents or regular caregivers of children in the target age range (0-5 years).
- While still seeking partners to implement Motheread/Fatheread, the **Chowan County** Literacy Coordinator also advertised the program to the general public and co-facilitated classes at the public library in Edenton with colleagues from the Chowan-Perquimans Smart Start Partnership. The county's needs assessment revealed that the library was not open to the public on the weekend, when families had more time to use it. Through the

intervention of the County Leadership Team, and with the use of Transformation Zone funds, the library has been open for half a day on Saturdays since the spring of 2015. Two very small Motheread/Fatheread classes subsequently were held in the library's upstairs meeting room on Saturdays, one in the spring of 2015 and the other in the spring of 2016. Child care was provided off-site at a local child care center, as needed. Based on attendance records, seven parents joined one of the two classes at the beginning the series, and three of them graduated (43%) with 20-25 hours of instruction. Meanwhile, additional facilitators were trained, including one from the Albemarle Pregnancy Resource Center and one from Albemarle Hopeline (a private, non-profit organization that provides services to victims of family violence and sexual assault). After having an opportunity to observe the Literacy Coordinator teach a session at the library, the facilitator at Albemarle Hopeline began offering her own series of the class in the summer of 2016.

- The needs assessment conducted for **Hyde County** found that parents were most likely to attend programs that were offered close to home in the villages and settlements that are scattered around the county. With this in mind, the Literacy Coordinator sought to recruit facilitators who could offer the class in one of the local churches or community centers. In the fall of 2014, the pastor of Pleasant Grove Church of Christ in Fairfield led a series at the church with the help of a congregation member. The program was advertised to parishioners and local residents. Dinner and child care were provided to accommodate families attending in the evening. The class was small (2 couples and 2 other parents) but reportedly was well attended until most of the parents found work during bean picking season, which started about 6 weeks into the series. With these parents working until midnight and at least one other taking a second job, the series ended before 20 hours of instruction had been delivered. A second class was scheduled to begin in February 2015. This class was to be taught in a central location, on the campus of the K-12 Mattamuskeet School in Swan Quarter, by the director of the district's 21<sup>st</sup> Century Community Learning Center. Dinner, child care, and an interpreter for Spanish-speaking families was arranged. The class was advertised for several weeks – in English and Spanish – using the school's automated phone system, as well as posting flyers in the grocery store,

the post office, and area churches. When no one enrolled, the series was cancelled. Hyde has not offered another Motheread/Fatheread class since then.

**Outcomes**

As a result of their participation in Motheread/Fatheread, parents were expected to read more often to their children, experience improved confidence in their own literacy skills, and make changes in their home literacy environments. The following table displays demographic characteristics of participants in three counties who provided matching Class Intake and Class Exit surveys (see Table 7).

**Table 7  
Characteristics of Motheread/Fatheread Parents**

| <b>Participant Characteristics</b> | <b>Percent (n=18)</b> |
|------------------------------------|-----------------------|
| <b>County</b>                      |                       |
| Beaufort                           | 33%                   |
| Bertie                             | 44%                   |
| Chowan                             | 22%                   |
| <b>Gender</b>                      |                       |
| Male                               | 11%                   |
| Female                             | 89%                   |
| <b>Race/ethnicity</b>              |                       |
| Black                              | 50%                   |
| White                              | 33%                   |
| Hispanic/Latino                    | 6%                    |
| Native American                    | 6%                    |
| Not available                      | 6%                    |

A word of caution about the Motheread/Fatheread survey data: While the surveys are anonymous and confidential, attendance records indicate the participants’ names and which survey(s) they completed (Intake and/or Exit). Based on the length of each session in a series and the number of sessions attended, we can calculate the number of hours each participant completed. We also know whether they provided both an Intake and an Exit Survey. Based on an examination of these records, it appears that, of the 18 pairs of matching Intake and Exit Surveys we received, only 13 pairs were completed by parents who had actually received at least 20 hours of instruction. The other five parents who provided matching Intake and Exit Surveys completed 6-18 hours of instruction (median of 16 hours). In other words, about one-quarter of



survey respondents completed fewer than the 20 hours of instruction recommended by Motheread, Inc.

Because we received matching Intake-Exit surveys from fewer than 10 participants in each county, survey results are provided for all three counties combined.

**Change in how often participants read to children**

Reading frequency was rated on a six-point ordinal scale – never (1), several times a year (2), several times a month (3), once a week (4), several times a week (5), and every day (6). On the Class Intake Survey, reading frequency varied a great deal, including several times a year or month (28%), once a week or several times a week (50%), and every day (17%). One person did not answer this question on the intake survey. The mean rating for reading frequency at intake was 4.18 on the 6-point scale, meaning that *on average* these participants were reading to their children about once a week when they started the Motheread/Fatheread class. The mean rating for reading frequency on the Class Exit Survey was 5.29, indicating that *on average* participants were reading several times a week or more by the end of the series. The increase in reading frequency from intake to exit was both statistically and substantively significant (see Table 8). At exit, one person decreased their reading from several times a week to once a week. Everyone else reported reading several times a week (61%) or every day (33%). The number of daily readers doubled from three to six.

**Table 8**  
Change in frequency of reading to children

| Pre-Post Comparisons                            | Intake mean | Exit mean | Difference | t-statistic (sig) |
|-------------------------------------------------|-------------|-----------|------------|-------------------|
| Frequency of reading to children (max=6 points) | 4.18        | 5.28      | 1.11*      | 3.95 (.0005)**    |

\*This difference represents growth within the range from Once a week (4.0) to Every day (6.0).

\*\*Significant at  $p \leq .05$ , based on a one-tailed test of significance

**Change in confidence about reading to children:**

Confidence was rated on a five-point ordinal scale – not at all confident (1), a little confident (2), somewhat confident (3), confident (4), and very confident (5). The majority of participants were already confident (22%) or very confident (67%) about reading to children at intake. The mean rating for confidence at intake was 4.59 on the 5-point scale, or between confident and very confident. On the Class Exit Surveys, the mean confidence rating was 4.88, indicating a

small but statistically significant increase in confidence in an already confident group of parents (see Table 9).

**Table 9**  
**Change in confidence about reading to children**

| Pre-Post Comparisons                                | Intake mean | Exit mean | Difference | t-statistic (sig) |
|-----------------------------------------------------|-------------|-----------|------------|-------------------|
| Confidence about reading to children (max=5 points) | 4.59        | 4.88      | 0.29*      | 1.77 (.048)**     |

\*This difference represents growth within the range from Confident (4.0) to Very confident (5.0).

\*\*Significant at  $p \leq .05$ , based on a one-tailed test of significance

***Change in participants’ at-home reading behaviors:***

To assess overall changes in the family literacy environment, we created an index representing how often parents used 11 read-aloud techniques recommended by Motheread/Fatheread (e.g., reading the title of the book, letting the child hold the book, asking questions about the pictures, etc.). Frequency was rated on a five-point ordinal scale – Never (1), Not very often (2), Sometimes (3), Often (4), and Every time (5). Respondents also were given the option to check that their child was too young for the activity, in which case the response was coded “1” for “Never.”

Comparing means from the Class Intake and Class Exit surveys, we found a positive and statistically significant difference overall in how often parents used recommended read-aloud techniques (see Table 10).

**Table 10**  
**Change in overall use of read-aloud techniques at home**

| Pre-Post Comparisons                  | Intake mean | Exit mean | Difference | t-statistic (sig) |
|---------------------------------------|-------------|-----------|------------|-------------------|
| Read-aloud techniques (max=55 points) | 38.12       | 43.47     | 5.35*      | 2.93 (.005)**     |

\*Averaging this result across 11 techniques to put it on a 5-point scale, this difference represents growth of about half a point (.49) within the range from Sometimes (3.0) to Often (4.0).

\*\*Significant at  $p \leq .05$ , based on a one-tailed test of significance

We also looked at mean differences in individual survey items to see which techniques showed the most gain (see Table 11). At the beginning of the class, the methods used most often were changing voices for different characters, pointing at pictures, and reading the title of the book. The methods used least often included asking the child what s/he thinks will happen next, asking questions about the pictures, and allowing time for the child to ask questions or talk about

the story. Five read-aloud activities showed statistically significant gains, including all three that were used least often before the class started: reading the title of the book, letting the child hold the book or turn the pages, asking the child what s/he thinks will happen next, asking questions about the pictures, and allowing time for the child to ask questions or talk about the story.

**Table 11**  
**Changes in specific at-home read-aloud activities**

| <b>Family Literacy Activities</b>                                            | <b>Intake mean (max=5 pts)</b> | <b>Exit mean (max=5 pts)</b> | <b>Difference*</b> | <b>t-statistic (sig)</b> |
|------------------------------------------------------------------------------|--------------------------------|------------------------------|--------------------|--------------------------|
| a. I change my voice to sound like different animals or people in the story. | 4.18                           | 4.47                         | 0.29               | 1.000 (.166)             |
| b. I point at the pictures while I read.                                     | 4.00                           | 4.33                         | 0.33               | .946 (.179)              |
| c. I read the title of the book aloud.                                       | 3.94                           | 4.61                         | 0.67               | 1.944 (.035)**           |
| d. I let my child hold the book or turn the pages.                           | 3.67                           | 4.33                         | 0.66               | 2.287 (.018)**           |
| e. I point to the words as I read them.                                      | 3.65                           | 4.00                         | 0.35               | 1.191 (.126)             |
| f. I explain new words or words my child does not say very often.            | 3.47                           | 3.82                         | 0.35               | 1.031 (.159)             |
| g. I try to relate the story to something my child already knows or does.    | 3.41                           | 3.53                         | 0.12               | .308 (.381)              |
| h. I ask my child to make sounds or say words repeated in the story.         | 3.12                           | 3.65                         | 0.53               | 1.376 (.094)             |
| i. I ask my child what he/she thinks will happen next.                       | 2.82                           | 3.47                         | 0.65               | 1.833 (.043)**           |
| j. I ask my child questions about the pictures.                              | 2.71                           | 3.88                         | 1.17               | 2.910 (.005)**           |
| k. I give my child time to ask questions or talk about the story.            | 2.65                           | 3.35                         | 0.70               | 1.953 (.035)**           |

\*These differences represent changes in the range from Not very often (2.0) to Every time (5.0).

\*\*Significant at  $p \leq .05$ , based on a one-tailed test of significance

**Changes in participants’ reading and writing skills:**

On the Class Exit Survey, participants were asked to rate the extent to which their reading and writing skills had improved since they enrolled in the Motheread/Fatheread class. Participants rated their agreement with statements about improved reading and writing skills on a five-point scale – Strongly disagree (1), Disagree (2), I’m not sure (3), Agree (4), and Strongly agree (5). Regarding reading skills, most participants agreed (28%) or strongly agreed (67%) that their reading skills had improved while in the course. Only one person was unsure about any improvement. The group’s mean rating was 4.61, which confirms that *on average* they were

tending toward strong agreement that their reading skills had improved. With respect to writing skills, most participants agreed (56%) or strongly agreed (33%) that their writing skills had improved as well. One person disagreed that they had made any improvement in their writing skills, and another person was unsure. The group's mean rating was 4.17, which indicates that *on average* they agreed their writing skills had improved.

### **Other outcomes**

We heard from more than one facilitator that it usually took three or four sessions before participants really relaxed and started to participate fully. Once they did, "*they were hooked.*" Inspired by parents' hard work and desire to learn, several facilitators chose to extend classes beyond the usual 8-10 weeks (depending on the length of individual sessions) so that more participants could complete the class. One facilitator even worked with a parent one-on-one so she could finish her 20 hours.

We had the opportunity to speak with eight Motheread/Fatheread participants when we visited the Transformation Zone counties in the spring of 2016. Four of them were the parents of children in the target age range (0-5 years). We also interviewed two child care teachers who did not have young children of their own, and two retirees who occasionally tutor at their church. When asked what she learned about reading in Motheread/Fatheread that she did not already know, one of the child care teachers replied: "*It's more in-depth. You're not [just] reading the story, you're getting the inside of the story. What was that author thinking? As a teacher I'm learning a lot that I can give my kids [in child care].*" The other child care teacher and one of the parents (who is also a child care teacher) subsequently participated in a Story Exploring workshop so they could learn more about how to support the literacy development of the children they care for at work.

Based on our interviews, as well as a review of writing samples produced by Beaufort and Chowan participants during the Motheread/Fatheread class, we learned that parents not only started reading to their children more often, some also reported using the library for the first time. One mother described how she visits the library regularly with her daughter, something she never did with her now grown son. She lets her daughter pick out her own books and takes out "*three or four*" of them at a time. Parents learned that "*there's more to reading a book than just reading the words off the page,*" that "*you can take a book and break it down in so many ways to*

*relate to while you're going through it,"* and that reading to a child every day is important because *"reading is the start of every subject."* They also learned how to interact and bond with their children during story time, as well as how to ask questions to see if they understand what they read. Furthermore, they were pleased to see their children get *"excited"* about reading and learn to *"like books."*

## **Sustainability**

Many things need to come together in order to successfully implement Motheread/Fatheread. Motheread, Inc. emphasizes this point in the facilitator training – that it is crucial to first think through the structure, timing, and location of program delivery before offering a class: *"Don't just build it and [expect that] they will come. Figure out what they'll come to and build that."* All of the counties learned from experience how important the following elements of Motheread/Fatheread implementation are:

- Identifying and utilizing facilitators within the community – The first implementation challenge is recruiting community members, especially those with connections to family-serving organizations, who are willing to attend a three-day workshop and then are comfortable and available to facilitate a 20-hour class. Facilitators also must be able to quickly earn parents' trust and create a non-judgmental and caring atmosphere among participants in general. Beaufort and Hyde both had success at recruiting and using facilitators with strong connections to families in a specific area of the county. Although other community members were trained in Bertie and Chowan counties, the Literacy Coordinators and local Smart Start staff did virtually all of the facilitation in order to be able to offer the class. It was only in the summer of 2016, after first observing the Chowan County Literacy Coordinator teach a class and then identifying enough interested parents among those she serves, that the facilitator from Albemarle Hopeline began to offer a class.
- Finding the right location – In addition to being a place where parents feel comfortable attending a literacy class, the location must also be accessible. Lack of transportation and/or the costs associated with transportation (e.g., gasoline, public/private transit options, travel time) are common implementation challenges for programs in vast rural communities. Each of the county's literacy needs assessments flagged transportation as a

concern for implementing parent education programs in the Transformation Zone. With this in mind, Beaufort held a class for 12 parents at a child care center where they were already going to pick up their children. Hyde offered a class at a church in one of the county's small villages and enrolled six parents, most of whom were able to attend regularly until they found seasonal employment. When another class was offered at a more central location, on the campus of the Mattamuskeet School in Swan Quarter, no one came. One of Chowan's biggest accomplishments was getting the library in Edenton to open on Saturdays and being able to hold classes there; however, classes were quite small with only a few regular participants who had reliable transportation to get to this central location. Although Bertie scheduled classes at elementary schools in several small communities around the county, parents are still "*spread so far apart [that] they just can't get there.*"

- Scheduling class when parents are available – Even when facilitators and facilities are locked in, parents cannot attend a class that conflicts with other obligations, especially work. In Hyde County, which has one of the highest unemployment rates in the region, the opportunity for seasonal employment had to take precedence over completing the Motheread/Fatheread class at the church in Fairfield. The best time of year to offer parent education programs in Hyde is a narrow window of time from November to February, during the off-season for fishing and farming. Bertie County felt fortunate to be able to hold classes at elementary schools located in underserved parts of the county, but these facilities are only available to them during the day when parents are working.
- Getting the word out – Although advertising programs does not guarantee participation, it is nevertheless necessary in order to make parents aware of opportunities available to them. Just as coaching Story Exploring teachers was a new role for the Literacy Coordinators, developing a marketing plan to advertise family literacy programs was also a new skill for all but one of the Literacy Coordinators. The Beaufort County Literacy Coordinator has a marketing background and freely shared all the materials she developed with the other coordinators. In addition, the NCPC Program Director also shared guidance from NCPC's Communications Director about how to use social media to promote literacy programs. Even with these resources, marketing was a challenge,

especially when advertising programs to the general public, as opposed to targeting a specific group of parents (e.g., parents of Care-O-World kids in Beaufort County, clients who utilize services at The Hive House in Bertie County, parishioners at Pleasant Grove Church of Christ in Hyde County).

Faced with these kinds of challenges, there are varying degrees of commitment to sustain Motheread/Fatheread across the four counties of the Transformation Zone:

- The **Beaufort County** Literacy Coordinator observed that in order to effectively implement programs like Motheread/Fatheread, you need “*a magic combination of the right message, the right messenger, and a location that feels comfortable and safe to people.*” Beaufort found the right combination by connecting the support children were receiving in Story Exploring classrooms to parents’ interest in reinforcing what their children were learning (the right message), by partnering with a child care operator who is trusted by the community and committed to the children and families he serves (the right messenger), and by holding classes at a child care center that was comfortable and familiar to parents (the right location). They were also able to offer the class at a time when a critical mass of parents could attend. The facilitators were pleased with the turnout for the first class and have determined that fall is the best time for them to host – and for parents to attend – future classes. A new class is already underway at the Care-O-World center in Chocowinity. Now that they know how to run the program, what it can accomplish, and how much it costs, the local Smart Start partnership wants to keep it going. According to the partnership’s Executive Director, who is also the chair of the County Leadership Team, they will probably need to seek grant funding to pay for facilitation, child care, and food.
- Now that Bertie County has a new Literacy Coordinator who is committed to the position through the end of the Transformation Zone grant, plus funding from the County Commissioners to continue the literacy work for another six months, the Implementation Coach feels confident that Bertie can still make Motheread/Fatheread work. Under the umbrella of Better Beginnings for Bertie’s Children and the Albemarle Alliance for Children and Families, the county plans to continue offering Motheread/Fatheread as a family literacy program. In addition to seeking out more partners to provide facilities and

facilitation, one of the jobs for the Better Beginnings Coordinator will be to reconnect with community members who already have been trained to facilitate. One promising scenario under consideration is to hold a class at the YMCA in Windsor. The director has expressed interest in hosting at his facility and would like to have his assistant director trained for this purpose. A community member who already is trained to facilitate Motheread/Fatheread, uses Story Exploring in her NC PreK classroom, and “*spends a lot of time at the YMCA*” might be a good fit to co-facilitate the class.

- Although they were able to recruit a few small groups of parents from the general public to attend Motheread/Fatheread classes at the public library on Saturdays, **Chowan County** has observed more parent engagement in other programs that deal with broader issues like maternal and child health (Motheread B.A.B.Y.), parenting strategies (Triple P), and children’s behavioral issues (Incredible Years). The County Leadership Team sees more potential in first raising awareness about the importance of reading through these other parent education programs and then “*circling back*” to try Motheread/Fatheread again. There is some precedent for this as two of the parents who completed the class had previously attended a B.A.B.Y. class when they were pregnant with their youngest children. Although they did not complete the B.A.B.Y. class, they were inspired to attend Motheread/Fatheread in order to keep learning about how to help their children develop literacy skills.
- In **Hyde County**, when one class ended early and another one did not generate any interest, Motheread/Fatheread “*fizzled out.*” The chair of the County Leadership Team, who is also the Director of Student Services for Hyde County Schools, explained that “*the way it’s structured, the way we’ve had to implement the program, it’s really not been a good fit for our families.*” If the program could be delivered in fewer, shorter sessions (i.e., fewer than 20 hours), she believes “*it will really take off,*” and she thinks it would be a good fit with another grant she administers that has a significant parent development component. Motheread, Inc. recommends 20 hours of instruction when the goal is to change parents’ reading behaviors, as was the case in the Transformation Zone. However, the Executive Director of Motheread acknowledges that other communities which do not have regular access to parents have used the program to address other goals,



like parent engagement. Still to be determined is how Hyde would use a shorter version of the Motheread/Fatheread class to support parent development.

## Birth and Beginning Years

### Implementation

Motheread, Inc. provides a two-day workshop to train facilitators to conduct Birth and Beginning Years (B.A.B.Y.) classes for pregnant and new mothers. Typical facilitators include public health and social services staff, medical personnel, and school or school system staff (e.g., social workers and teaching staff, especially in high schools with pregnant teens). Some agencies use B.A.B.Y. as an outreach strategy – to advertise their other services or to attract new clients, but generally the class is incorporated into work that is already being done with an existing clientele. Participants learn more about what to expect before, during, and after delivery. Family literacy objectives are addressed by connecting themes in the maternal and child health content to children’s stories and also by promoting reading to children, even in utero. Stories are read aloud by the participants and then discussed in relation to their own personal experiences and how they relate to children’s social-emotional growth and development.

B.A.B.Y. has been the most challenging component of the Early Literacy Strategy to implement in the Transformation Zone. The Literacy Coordinators have had difficulty finding partner organizations in their counties that have access to the target group of new and expectant mothers and that also are willing and able to host and facilitate classes. Only two of the counties, Beaufort and Chowan, have been able to offer B.A.B.Y. classes so far.

- In **Beaufort County**, Washington Pediatrics was selected to provide the B.A.B.Y. class because of the practice’s ability to implement the class with fidelity to the program model, its prior commitment to literacy development as a Reach Out and Read medical practice, and its strong connections to other community resources for new and expectant mothers. In collaboration with the medical practice manager, the Literacy Coordinator organized a B.A.B.Y. Shower to recruit participants for the first series. In order to connect the target population with other community resources, they also invited representatives from a variety of agencies and programs to share information about available services and other parent education opportunities (e.g., Coastal Pregnancy Center, Family Connects, Women Infants and Children, and Department of Social

Services). Following the recruiting event, the Literacy Coordinator followed up with everyone who expressed interest in B.A.B.Y. to provide more information about the class (e.g., dates, logistics, and expectations) and to sign them up. Women were encouraged to attend with a partner, friend, or family member “*so they had some type of support group.*” The Literacy Coordinator called or texted participants each week to remind them about the class and arrange for transportation by taxi, if necessary. Dinner was served before each session started; nurses and other staff members from the practice provided child care, as needed. The series was co-facilitated by the practice manager and a staff nurse; they also brought in specialists from other organizations to expand on selected health-related topics (e.g., car seat safety, birth control). A primary care provider from the practice stayed late to answer questions one-on-one when participants had personal concerns about their pregnancies. After several weeks, reminders were no longer needed as participants bonded with the facilitators and with each other. An additional session was held so more participants could complete their 20 hours. A few of the mothers delivered their babies during this period and still returned to finish the class. Among the 15 people who started the series, 63% of the new or expectant mothers (5 out of 8) and 29% of their support persons (2 out of 7) completed 20-22 hours of instruction.

- A significant challenge for **Bertie County** is the fact that most children of county residents are not born in the county. This makes it difficult to find mothers who are eligible for programs like B.A.B.Y. Even so, the Literacy Coordinators and Implementation Coach identified a wide range of possible partners, including an infant nutrition class offered through Cooperative Extension, a child custody mediation program, the Bertie County Health Department (in conjunction with WIC visits), and a few local churches. Between turnover in the Literacy Coordinator position, lack of fit with the requirements of the B.A.B.Y. model, and concerns about transportation and participant recruitment, none of these options had come to fruition by the time of our last site visit in May 2016.
- **Chowan County** initially recruited staff from the Albemarle Pregnancy Resource Center to train and facilitate B.A.B.Y. classes. However, staff turnover has so far prevented them from offering a class there. In the meantime, the Literacy Coordinator and several

colleagues from Chowan-Perquimans Smart Start (including the Director of Child Care Resource & Referral) have offered three series of the class. Two of them were held at the public library in Edenton. After a promising start to both classes, participation quickly dwindled to one or two participants. Several people were allowed to join the class late (after the second session) in order to have enough participants for small group activities and discussions. While lack of transportation hindered regular participation, just as in the case of Motherread/Fatheread, the Literacy Coordinator also acknowledged that sometimes “*reality in life hits [and] you wish you hadn’t signed up for a Saturday class.*” A third series was offered in one-hour sessions as a pilot to a small group of pregnant teens at the Alternative School. Three students started the class, but only one participated regularly until the end of the semester when she finished the credits she needed for graduation. Of the 16 participants who started a B.A.B.Y. class at the beginning of a series, including an unknown number of support persons, only one (6%) completed the minimum 20 hours of instruction. Although the pilot class at the Alternative School ended after fewer than 10 hours with only one regular participant, Chowan is still optimistic about the potential for success there – where the school provides space for the class during the regular school day, students do not need other transportation to get there, and child care is provided for their children.

- **Hyde County** has a small population with a low birth rate, averaging 50 live births in the county each year – about 10 on Ocracoke and 40 on the mainland. With such a limited population in the target group of new and expectant mothers, B.A.B.Y. “*never really got off the ground.*” The Literacy Coordinator approached the Hyde County Health Department about offering a class, but they declined, citing poor participation in other programs they have offered in the past. In lieu of offering a B.A.B.Y. class, the Literacy Coordinator contributes to infant literacy development by supplying board books for the baby baskets that are delivered to new mothers through Family Connects.

### Outcomes

Given limited implementation of B.A.B.Y. in the Transformation Zone, literacy-related outcomes could not be assessed reliably using Class Intake and Exit Surveys. We received matched Intake-Exit surveys from four of the five graduates in Beaufort and for the one graduate

in Chowan. We also received matched Intake-Exit surveys for four other Chowan mothers who did not complete the program. In total, we received fewer than 10 matched Intake-Exit Surveys from mothers who completed the program. This number is insufficient for reporting because of the need to protect the privacy of those who responded to the surveys.

The Class Intake and Exit Surveys were modeled on those used to evaluate the Motherread/Fatheread program. Most of the mothers who completed matched surveys (6 out of 9) were pregnant with their first children at the time they took the class and, therefore, by design did not answer questions about changes in at-home reading activities with their children. Only three mothers were able to report specific literacy activities that they used with their children. Besides being unable to protect the privacy of these respondents, this number is also insufficient for producing reliable estimates of outcomes associated with B.A.B.Y.

The primary focus of the B.A.B.Y. curriculum is on maternal health, child development, and parenting from conception through the first year of a child's life. The specific topics covered in the course of a 20-hour class are tailored to the interests and goals of the participants in each class. In the Transformation Zone, all classes cover the topic of literacy development, using a special instructional supplement to teach parents how to nurture emergent literacy skills. Participating mothers practice their own literacy skills throughout the class by reading aloud, discussing what they read, writing reflections about what they are learning, and writing a journal of their pregnancy (aka, the "Mama Book") to share later with their babies. Based on the Final Reflections that participants wrote at the end of the class, we found that new and expectant mothers learned "*a lot of new things for being a new mom,*" including how to feed and comfort an infant and how to encourage good sleep habits. They also wrote about learning "*how much it helps to read to children early,*" hearing "*a lot of good information on ways to read to the baby,*" and reading to the baby in utero "*to sharpen her skills before birth [and] to talk to her without feeling ashamed.*"

In interviews with B.A.B.Y. facilitators, they described how the mothers and their support persons initially were shy about reading aloud in front of the group; a few even declined to read at first. However, hearing others read, make mistakes, and not be judged eventually persuaded all to participate in the read-aloud portions of the class. The facilitators reported that everyone's

confidence in reading and expressing their own thoughts increased over the course of the class. They felt this would, in turn, increase their confidence to read and talk to their children.

### Sustainability

- In **Beaufort County**, Washington Pediatrics was recruiting participants for a second B.A.B.Y. class at the time of our last site visit in June 2016. Recognizing that the fall had been a particularly hectic time to run their first class, the practice decided that future classes will be offered in the summer, when they typically see fewer patients. The facilitators felt that the mothers in the first series had *“made a connection through this class with each other and with us, too, because now when they come, we feel like they’re our babies, too.”* As a result, the practice is *“fully committed”* to continuing B.A.B.Y. as an outreach program at its own expense when the Transformation Zone grant expires.
- As part of Better Beginnings for Bertie’s Children (BBBC), the County Board of Commissioners allocated initial start-up funds for the Kid Find Project. One of the responsibilities of the new BBBC coordinator will be to develop a comprehensive system for locating children and families that currently are not accessing any services within the county and then recruiting them into B.A.B.Y. and other family support programs. The Kid Find system and resulting database will be developed in collaboration with multiple agencies – including the Albemarle Alliance for Children and Families, CADA Head Start, Bertie County School System, Bertie County Rural Health Association, Bertie County Sheriff’s Department, NC Cooperative Extension Services, and Vidant Bertie Hospital. In addition, the Albemarle Alliance has been awarded a grant by the NC Department of Health and Human Services to implement the PREPare for Success (PREP) program, an outreach program for pregnant teens, in Bertie County. The Implementation Coach hopes to arrange B.A.B.Y. training for facilitators of the PREP program at Bertie Middle School, Bertie High School, and Bertie Early College before the Transformation Zone grant ends. PREP is a good fit for B.A.B.Y. because teens are in the program long enough during the school day to incorporate the B.A.B.Y. curriculum, and because they do not require additional transportation to attend. In the meantime, the PREP facilitator has participated in a Motherread/Fatheread workshop with

the expectation that she will incorporate some of that literacy development content into PREP.

- Following pilot implementation of an abbreviated B.A.B.Y. class at the Alternative School, **Chowan County** believes that the school is a viable partner through which Chowan-Perquimans Smart Start can offer future classes to pregnant teens at no additional cost and also connect them with other health-related resources in the community. In hindsight, the County Leadership Team feels that B.A.B.Y. works better as a health education program rather than a literacy development program. Based on the recommendation of the county's Implementation Coach, B.A.B.Y. has been adopted by Albemarle Regional Health Services (ARHS), using state planning money, to improve maternal and child health outcomes in its seven-county region. Nineteen additional B.A.B.Y. facilitators already have been trained in the northeast region of the state, including staff from ARHS and three county school systems, as well as members of the faith community and other service agencies. Plans are underway for Smart Start and ARHS to offer a series of B.A.B.Y. classes at Vidant Chowan Hospital in Spring 2017. If a sufficient number of B.A.B.Y. participants become interested in learning more about literacy development, the Smart Start local partnership will consider offering Motherread/Fatheread classes again. There is some precedent for this – two mothers, who attended some B.A.B.Y. classes when they were pregnant, subsequently completed a Motherread/Fathered class offered at the public library.
- The Interim Director of the **Hyde County** Health Department confirms that they have no plans to implement B.A.B.Y., since other parent education programs they have offered have not been well attended. And the county's Implementation Coach acknowledges that – given the limited population from which to recruit participants – B.A.B.Y. is not a priority at this time.

# Reach Out and Read

## Implementation

To participate in Reach Out and Read (ROR), medical practices complete an online application. In North Carolina and South Carolina, Reach Out and Read Carolinas (ROR-C) monitors progress on applications to bring clinics on board in the region. Each site selects a pediatric primary care giver to be the Medical Consultant for the practice and a staff person to be the administrative Program Coordinator. In small practices, the Medical Consultant may also serve as the Program Coordinator. The Medical Consultant makes sure that at least 75% of providers in the practice complete online training for the program and generally serves as the “medical champion” for ROR in their practice. The Program Coordinator orders and organizes books, establishes a system for selecting and delivering age-appropriate books during well-child check-ups, and completes semi-annual progress reports for ROR-C. When space and resources permit, medical practices are also encouraged to create a literacy-rich waiting room with children’s furniture, books and magazines, and other literacy-related information for parents. ROR-C provides on-site orientation for every new medical practice, conducts site visits to all existing sites at least once a year, communicates general information monthly via email, and does quarterly check-ins with every practice either by phone or email.

In the Transformation Zone, the Literacy Coordinators are responsible for recruiting medical practices to participate in ROR. Once a practice is up and running, they continue to provide on-site support for all of the tasks that practices would normally do on their own or in consultation with ROR-C Program Specialists. Typical support includes ordering books and organizing them on-site, picking up Parent Feedback Surveys (collected twice a year) and sending them for analysis, providing data to ROR-C twice a year, setting up a literacy-rich waiting area, and connecting practices to other literacy-related resources in the community.

Each county has a unique medical provider landscape and varying opportunities to implement ROR:

- **Beaufort County** was able to start its ROR program fairly quickly. Washington Pediatrics, the largest pediatric practice in town, had been doing the program since 2002 but had very little money for books. When the director of the practice became president



of the North Carolina Pediatric Society, she wanted to go “*all in on children’s literacy*” and saw an opportunity to revitalize their ROR program with help from the Transformation Zone grant. The practice manager’s job now involves one day a week for literacy-related activities, including fundraising and proposal writing, maintaining the waiting area, and recruiting guest readers for the waiting area. It took longer to bring other practices on board in Beaufort County because several of them had been purchased recently by Vidant Health system, a large non-profit healthcare group based in Greenville. After untangling a few legal issues with the help of the Programs Director at Reach Out and Read Carolinas, the Literacy Coordinator recruited three Vidant practices that serve the largest number of pediatric patients in the communities of Belhaven and Chocowinity. The two Belhaven practices have since been combined into one larger practice. Altogether, participating medical practices in Beaufort County do about 3000 well-child check-ups each year. At all three of these practices, the Literacy Coordinator maintains a bulletin board in the waiting area with up-to-date information about literacy resources in the community. To promote literacy in smaller medical practices that do not see many children, she puts “Read and Return” boxes in the waiting areas and keeps them stocked with gently used children’s books.

- Implementing ROR in **Bertie County** is a challenge because there are no pediatric practices there. Most children get well-child check-ups in neighboring counties (Beaufort, Hertford, or Pitt). The only provider currently doing well-child checks in Bertie is the Bertie County Health Department, which began implementing ROR in 2015. Two providers have been trained to do ROR consultations, but they find many parents only bring children in when they are sick. The nurse practitioner who runs the pediatric primary care clinic once a month mostly sees older children who come in for sports physicals or college physicals. The child health nurse does about 100 well-child check-ups each year. When she meets with families to talk about ROR, she writes them an Rx for Reading prescription to read to their children every day and gives them a bookmark as an additional reminder. She also encourages parents to read for their own enjoyment. Another way the Health Department promotes literacy is by providing gently used books to children that come in for WIC food and nutrition benefits.

- In **Chowan County**, the Smart Start partnership had already been supporting implementation of ROR in Chowan and Perquimans counties through their respective health departments and Coastal Carolina Family Practice for several years with money from local Ruritan Clubs and the Chowan-Edenton Optimist Club. The Chowan Health Department became part of the Transformation Zone initiative in January 2014, but they conduct very few well-child check-ups (about 48 annually). Early in the initiative, the local Smart Start partnership also tried to recruit a few private medical practices in Edenton. One family practice was approved for ROR but has had to postpone participation while they resolve problems with Electronic Medical Records and staff turnover. Another pediatric practice, part of the Vidant Health system, faced the same legal issues as in Beaufort County. Eventually, having the Vidant Director of Operations on the County Leadership Team helped to smooth the way for Vidant Pediatrics and Vidant Family and Sports Medicine to become ROR sites. According to the county's Implementation Coach, "*the red tape just kind of dissipated.*" These two Vidant practices now conduct most of the 1300 well-child check-ups attributed to ROR practices in Chowan County. The Implementation Coach is in the process of setting up their literacy-rich waiting rooms before the Transformation Zone grant ends in December 2016. In addition, she has set up other literacy-rich waiting areas at the Department of Social Services and Albemarle Urgent Care, "*anywhere a family waits.*"
- The **Hyde County** Health Department only opened a regular clinic for well-child visits in 2015. Shortly afterwards, the Physician's Assistant who runs the clinic started implementing ROR. Like the health departments in Bertie and Chowan counties, the one in Hyde County only does about 100 well-child check-ups annually. Most families take their children to pediatricians in Washington or Belhaven in Beaufort County or Nags Head in Dare County. On the upside, all of those clinics have ROR programs, so Hyde County children still benefit from it. The only other full-time family practices in the county are two federally-qualified health centers, one in the community of Engelhard in eastern Hyde County and the other on Ocracoke Island. Though reluctant to begin ROR for the past few years, the Ocracoke Medical Center came on board as an ROR medical practice in September 2016. They will begin giving out books this fall when they complete their orientation with Reach Out and Read Carolinas.

## Outcomes

Table 12 summarizes the number of well-child visits (WCVs) that participating medical practices expect to perform each year, as well as the number of books that have been distributed by these practices since they began implementing ROR as part of the Transformation Zone grant. Estimated WCVs for Chowan County mostly include numbers for two clinics that started ROR in 2016, which explains why the number of books distributed is much lower than the number of WCVs. In Bertie and Hyde counties, where the county health departments are currently the sole participating ROR providers, the mismatch between WCVs and books distributed may be due to the inclusion of WCVs for children older than 5 years.

**Table 12**  
**ROR Well-child Visits and Books Distributed**

| <b>Initiative/Program</b>                  | <b>TZone</b> | <b>Beaufort</b> | <b>Bertie</b> | <b>Chowan</b> | <b>Hyde</b> |
|--------------------------------------------|--------------|-----------------|---------------|---------------|-------------|
| Start date of first participating practice | 1/1/14       | 1/1/14          | 3/1/15        | 1/1/14        | 4/1/15      |
| Annual well-child visits                   | 7,350        | 6,704*          | 37            | 447           | 162         |
| Books distributed since start date         | 7,208        | 6,700*          | 37            | 447           | 24          |

\*Includes estimates of 1300 well-child visits and 1300 books for one reporting period (Jul-Dec 2014).

Parent Feedback Surveys are collected at participating medical practices twice a year for a six-week period, in fall (October-November) and spring (March-April). Data are available for the Transformation Zone sites for four reporting periods: Fall 2014, Spring 2015, Fall 2015, and Spring 2016. For all reporting periods combined, outcomes were estimated for parents with the following characteristics (see Table 13).

**Table 13**  
**Sample characteristics of ROR participants in the Transformation Zone**

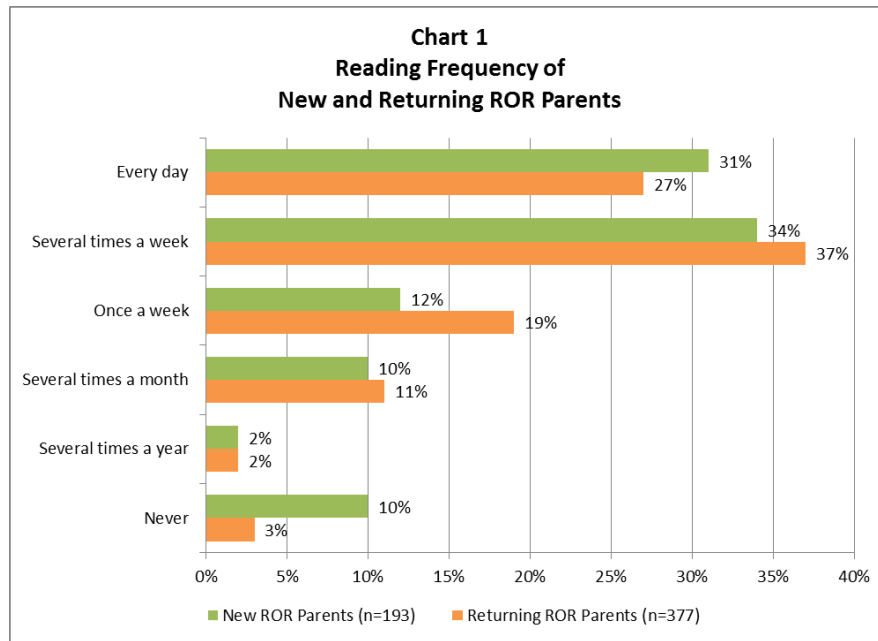
| <b>Sample Characteristics</b> | <b>Total TZone (n=570)</b> | <b>Beaufort (n=474)</b> |
|-------------------------------|----------------------------|-------------------------|
| Participation Status          |                            |                         |
| New parent                    | 34%                        | 22%                     |
| Returning parent              | 66%                        | 78%                     |
| Child's age                   |                            |                         |
| 6-12 mos                      | 26%                        | 26%                     |
| 1-2 yrs                       | 42%                        | 41%                     |
| 3-5 yrs                       | 32%                        | 33%                     |

| Sample Characteristics | Total TZone (n=570) | Beaufort (n=474) |
|------------------------|---------------------|------------------|
| <b>Insurance</b>       |                     |                  |
| None                   | 2%                  | 2%               |
| Medicaid               | 73%                 | 73%              |
| Military               | 1%                  | 1%               |
| Private                | 24%                 | 24%              |
| No answer              | <1%                 | <1%              |
| <b>Schooling</b>       |                     |                  |
| Less than high school  | 9%                  | 10%              |
| High School/GED        | 39%                 | 40%              |
| Some postsecondary     | 36%                 | 36%              |
| 4-year or more         | 16%                 | 14%              |
| No answer              | 1%                  | 1%               |
| <b>Language</b>        |                     |                  |
| English                | 89%                 | 87%              |
| Spanish                | 11%                 | 13%              |

Note that only Beaufort County contributed a sufficient number of cases for separate outcome analysis. The Bertie County Health Department did not submit any parent surveys during the grant period. Three sites in Chowan County contributed 93 surveys overall, but the number of returning ROR parents (n=7) is insufficient for valid comparison with new parents (n=86). While the Chowan County Health Department has been participating since 2014, the provider on staff does not do many well-child check-ups. The two newest medical practices see more children in the target age range, but they only began doing ROR well-child checks and distributing books in the spring of 2016. Therefore, most of the parents surveyed in Chowan are new to the ROR program. The Hyde County Health Department submitted only three (3) surveys.

### ***Change in reading frequency***

Because returning ROR parents have received guidance about reading from their medical provider on at least one prior occasion, we expect that they will be more likely than new participants to read to their children every day. However, the results in Chart 1 show that a slightly higher percentage of new parents report reading to their children every day, although the difference is small. If we consider the percentage that read to their children *at least* several times a week, then the two groups are nearly equivalent (65% new parents, 64% returning parents).



To investigate further the preliminary observation that ROR participation in the Transformation Zone is *not* associated with increased reading frequency, we used binomial logistic regression to calculate the relative odds of daily reading among returning ROR parents, compared to new participants. In order to control for other possible explanations of differences in reading frequency, we also incorporated the following variables into the model: the age of the child (preschooler vs. infant-toddler), parent's native language (English vs. Spanish), the child's eligibility for Medicaid (not eligible vs. eligible), and parent's educational attainment (some college/vocational training vs. no more than high school). The results of this analysis are displayed in Table 14.

**Table 14**  
**Odds of Reading to Children Daily**  
**Returning vs. New ROR Parents**

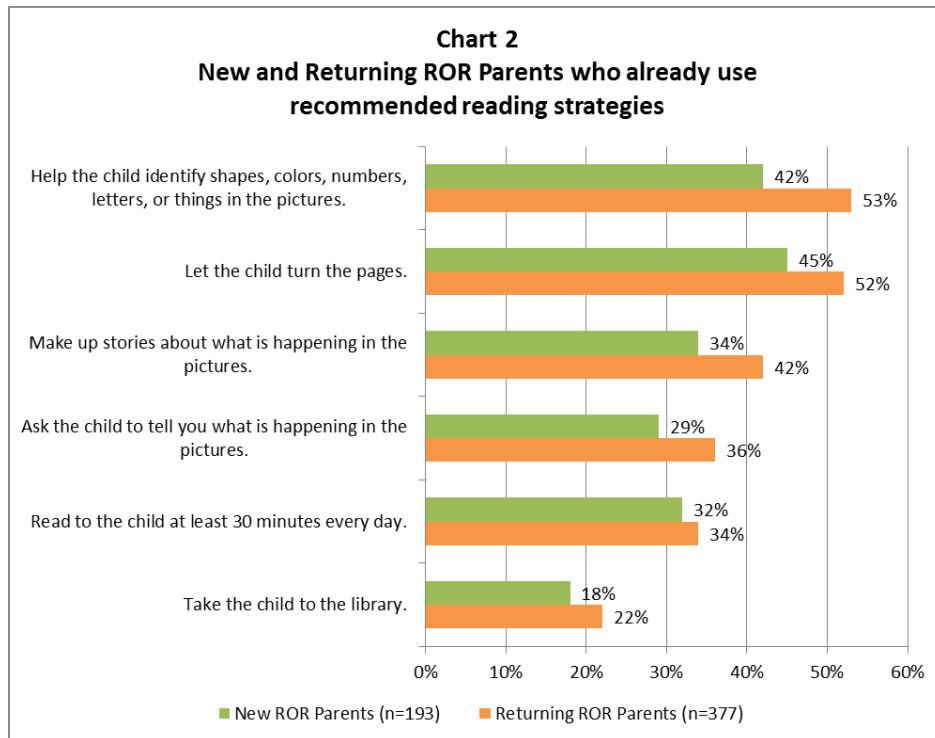
| Predictor & Covariates              | Total TZone (n=562) |         | Beaufort (n=468) |         |
|-------------------------------------|---------------------|---------|------------------|---------|
|                                     | Odds ratio          | p-value | Odds ratio       | p-value |
| Returning ROR parent                | .818                | .163    | .775             | .159    |
| Preschool-age child                 | 1.627*              | .010    | 1.404            | .069    |
| Native English speaker              | 3.627*              | .004    | 3.307*           | .008    |
| Not eligible for Medicaid           | 1.311               | .110    | 1.323            | .126    |
| Some college or vocational training | 2.293*              | .000    | 2.491*           | .000    |

\*Statistically significant at  $p \leq .05$ , based on a one-tailed test of significance

Results displayed in Table 14 do *not* support the hypothesis that participation in ROR has a positive influence on how often parents read to their children. After controlling for other possible explanations, the odds of reading to a child every day are virtually no different for returning ROR parents and parents who are new to ROR. More salient factors for predicting daily reading in the Transformation Zone overall include having preschool-age children, speaking English as a first language, not being eligible for Medicaid, and having completed some college. In Beaufort County, the factors that appear to have the greatest impact on whether a parent reads to their child daily is being a native English speaker and having completed at least some college.

### ***Change in reading strategies***

To gauge the impact of ROR participation on the use of recommended reading strategies, we compared reported use by returning ROR parents and new participants. This time the results are as expected. Higher proportions of returning ROR parents reported that they were already using each strategy (see Chart 2).



Once again, to confirm our preliminary observation, we ran a binomial logistic regression model, controlling for other factors that might explain parents’ use of recommended reading strategies. In this model, the dependent variable is the use of at least one recommended strategy. Results are displayed in Table 15.

**Table 15**  
**Odds of Using at Least One Recommended Reading Strategy**  
**Returning vs. New ROR Parents**

| Predictor & Covariates              | Total TZone (n=526) |          | Beaufort (n=437) |          |
|-------------------------------------|---------------------|----------|------------------|----------|
|                                     | Exp(B)              | p (Sig.) | Exp(B)           | p (Sig.) |
| Returning ROR parents               | 1.487*              | .026     | 1.573*           | .038     |
| Preschool-age child                 | 2.061*              | .001     | 2.120*           | .001     |
| Reads to child every day            | 2.937*              | .000     | 2.633*           | .000     |
| Native English speaker              | 2.010*              | .014     | 2.274*           | .008     |
| Not eligible for Medicaid           | 1.309               | .132     | 1.534            | .054     |
| Some college or vocational training | 1.920*              | .001     | 1.704*           | .011     |

\*Statistically significant at  $p \leq .05$ , based in a one-tailed test of significance

Results displayed in Table 15 support the hypothesis that participation in ROR has a positive influence on parents’ use of recommended reading strategies. In the Transformation Zone as a

whole, even after controlling for other possible explanations, the odds of using at least one recommended reading strategy were 49% higher for returning ROR parents, compared to new participants. In the Beaufort County sub-sample, the odds of using at least one recommended reading strategy is 57% higher for returning versus new ROR parents.

## Sustainability

Though most participating medical practices in the Transformation Zone have been implementing ROR for two years or less, all are committed to sustaining the program long-term. Several of them have already begun to think about how they will pay for more books in the future. When asked why they want to continue the program, Medical Consultants and Program Coordinators across the four counties gave very similar reasons:

- Medical providers use the books as part of a child’s developmental screening to assess a variety of cognitive milestones (e.g., holding a book or picking it up, turning the pages one at a time, showing curiosity, naming objects in the pictures, etc.). They also show parents how they themselves can use the book to look for significant new behaviors, and they like that it gives them “*more time to be able to interact*” with children and parents.
- Medical providers also find that giving books to their youngest patients helps them talk to parents about the importance of reading to their children every day, which some parents “*don’t think about.*” They find it easier to discuss children’s literacy in a concrete way when there is a book at hand and the child will be taking it home to keep. Recognizing that it is important to be sensitive to parents and not judge them, one provider reviews the book with them and asks their advice about how suitable it is for their child.
- Program Coordinators, usually the practice manager, are pleased to be able to give children “*something extra that they need,*” especially to the youngest children who may never have handled a book before and to all who do not have books of their own at home. The books selected by ROR are “*so colorful and so bright.*” Children look forward to getting them on a return visit, which the coordinators hope contributes to patient satisfaction – of parents and children – in the long-run.

Several medical practices have already figured out how to pay for more books when their current stocks run out:



- In **Beaufort County**, Washington Pediatrics has written several grant proposals and already has received enough money to buy books for at least two more years. The practice manager is also thinking about how to get books at the best possible price, perhaps contracting with the school system or the public library to order books in greater bulk.
- In **Chowan County**, the practice manager at Vidant Family and Sports Medicine feels she will be able to buy more books in the future using either supply money or marketing money, since individual Vidant practices “*get to market their own practice.*” She already puts a sticker on every book with the practice name on it. She is confident they can “*make it work*” because “*once something’s there, and it’s going well, and it’s serving the community,*” it is hard to stop doing it.
- In **Hyde County**, the interim health director has written an addendum to the county’s child health agreement with the state to use state grant funding to buy books in the future. However, she acknowledges that this is a year-to-year agreement, and “*you never know when your funding is going to be cut.*”

All of the other practices are counting on their local Smart Start partnerships (or school system, in the case of Hyde County) to help them buy books or write grants. Medical practices with 35% or more of patients on Medicaid are also eligible for book funding and fundraising support from ROR-C. Representatives from all four counties, including members of the County Leadership Teams, will meet before the Transformation Zone grant ends to discuss how they might collaborate on fundraising for ROR and the other literacy programs. Because Vidant Health has a presence in three of the counties (Beaufort, Bertie, and Chowan), one idea is for ROR-C and County Leadership Team members to approach that organization as a group to request support for ROR at least in its participating clinics.

## **Summary of Program Outcomes**

When implemented with fidelity, even with the challenges of implementing these programs in rural communities, all four of them showed evidence of positive outcomes, especially those that touched the most children – Story Exploring and Reach Out and Read.

### **Story Exploring**

Based on site visit interviews with child care teachers and center directors, we conservatively estimate that about one-third of Story Exploring teachers in the Transformation Zone do a complete lesson once a week. The remaining two-thirds of teachers use the curriculum as intended once or twice a month, depending on whether one of the books “fits” with what they are covering in their regular classroom curriculum.

For the region as a whole, the most significant finding in the survey data from 58 teachers was an increase in the use of props to introduce or tell a story. At the county level, both Beaufort and Chowan teachers showed gains in this area. Beaufort teachers also made gains in connecting speech with written words, leading activities to extend stories, and asking children open-ended questions about the pictures in a book. Chowan teachers also showed evidence of increased attention to an important concept of print – telling children the name(s) of a book’s author and illustrator. Across the board, Bertie teachers showed small and mostly insignificant declines in the use of recommended classroom literacy activities and read-aloud techniques; however, we suspect this was due to inflation of baseline responses and a more accurate self-assessment at follow-up, rather than an actual decline in use. The small sample of teachers in Hyde County ( $n \leq 10$ ) did not permit county-level analysis.

Child care teachers and center directors also reported positive outcomes that they associated with use of the Story Exploring books and curriculum. The benefits they observed included more engagement during story time, increased comprehension, better verbal skills, and increased confidence and interest in reading.

All four counties intend to continue supporting their Story Exploring teachers and training more, if possible. Beaufort County currently has the most concrete plan for doing this. The other three counties still need to work out the logistics of who will observe and coach teachers once the Transformation Zone grants ends.

## **Motheread/Fatheread**

Each county's experience with Motheread/Fatheread was very different. Beaufort County held one class at a Story Exploring child care center and graduated 10 out of 12 parents who participated (83%). Bertie County offered at least nine classes, most of them at elementary schools with NC PreK programs; 10 out of 28 participants graduated. Chowan County held two classes at the public library; out of seven people who started these classes, three graduated (43%). Hyde County was able to start a class in one of their small village churches, but all six parents dropped out when they found employment during bean picking season.

Comparing Class Intake and Exit Surveys for 18 participants, most of whom were the parents of children aged 0-5 years, we found that by the end of their Motheread/Fatheread class, they were reading more often to their children, and they were slightly more confident about reading to children. They also reported greater use of recommended read-aloud techniques, including reading the title of the book, letting their child hold or turn the pages, asking their child what s/he thinks will happen next, asking questions about the pictures, and allowing time for their child to ask questions or talk about the story. The number of surveys collected in Beaufort, Bertie, and Chowan counties was not sufficient to permit analysis at the county-level.

In interviews with a small number of participants, and also on a sample of final written reflections, parents remarked about taking a child to the library for the first time and letting her pick out her own books, learning how to interact and bond with a child during story time, and being pleased about how excited their children were about reading. And they were interested to learn how much more there is to reading a book than just speaking the words that are written on a page.

All four of the counties faced challenges related to recruitment (of host sites, facilitators, and parents), transportation, scheduling, and marketing. Beaufort had the most success in overcoming these challenges by recruiting parents at two (jointly-owned) child care centers that also implement Story Exploring, holding class at one of the centers in the evening, and providing dinner and after-hours child care. The same two centers plan to hold another joint class next year. Neither Chowan nor Hyde currently has plans to continue the program, but Bertie is still hopeful of finding the right partner and offering another Motheread/Fatheread class in the future.

### **Birth and Beginning Years (B.A.B.Y.)**

B.A.B.Y. has been the most challenging program to implement in the Transformation Zone. Only Beaufort and Chowan counties have been able to offer the class so far. Beaufort found an ideal host site in Washington Pediatrics, one of their Reach Out and Read medical practices. The practice manager and a staff nurse offered the class for 15 people (8 expectant mothers, plus 7 supporting family members). Five of the mothers (63%) and two of their support persons (29%) graduated from the class. In Chowan County, the Literacy Coordinator co-facilitated (with some Smart Start colleagues) two classes at the public library and an abbreviated pilot class for pregnant teens at the Alternative School. Of the 16 people who started the class, one (6%) graduated. So far Bertie has not been able to find a viable partner or host site for the class. In Hyde County, the low birth rate makes it impractical to offer a B.A.B.Y. class.

We received too few surveys for reliable analysis ( $n \leq 10$ ), but we were able to review a sample of final reflections by mothers in the Beaufort and Chowan classes. While they mostly learned about how to care for themselves and their babies, they also wrote about learning how to read to them and why it's important to start reading to children early – even in utero. The facilitators of these classes also observed that the mothers' confidence when reading in front of others and expressing their thoughts had improved, which they felt would increase their confidence to read and talk to their children.

Washington Pediatrics in Beaufort County has already held a second class this past summer, and the practice is committed to sustaining the program at its own expense. Chowan County hopes to offer the B.A.B.Y. class again at the Alternative School. Bertie is hopeful about holding a B.A.B.Y. class at Bertie High School as part of the PREPare for Success outreach program for pregnant teens. Hyde County has no plans to offer B.A.B.Y. classes in the future.

### **Reach Out and Read (ROR)**

Healthcare is relatively plentiful in Beaufort and Chowan counties but much less available in Bertie and Hyde counties. Beaufort County is supporting the implementation of ROR in one large private practice in Washington and two smaller private practices in Belhaven and Chocowinity. Chowan is working with two new private practices in Edenton, as well as the Chowan County Health Department. Bertie's only option is the County Health Department, as it is the only medical provider in the county that does well-child check-ups. Hyde is also working

with its County Health Department, which just opened a regular clinic for well-child visits last year. The health departments typically see about 100 children a year for well-child checks.

To date, more than 7,000 books have been given to children ages 6 months to five years old in the Transformation Zone through participating ROR medical practices; however, most of these books have been distributed in Beaufort County. Comparing parents who are new to an ROR medical practice to returning parents who have talked previously to the medical provider about reading, we found virtually no difference in how often new and returning parents read to their children. However, we did find that returning parents are more likely than new parents to be using the kinds of reading strategies that are typically recommended by ROR medical providers.

All of the sites participating in ROR in the Transformation Zone counties are committed to sustaining the program. Medical providers find that they are able to use the book as part of a child's developmental screening. Having a book to give also makes it easier to introduce the topic of reading to parents and reinforces the prescription to read to children every day. On top of this, medical staff simply feel good about helping to build a child's library. While several medical practices have already identified potential sources of book funding, most are counting on their local Smart Start partnerships or school district to help them buy more books when the Transformation Zone grant ends. Representatives from all four counties are beginning to explore ways to collaborate on fundraising for future book purchases.

## **Lessons Learned**

In addition to examining how the four programs of the Early Literacy Strategy are being implemented in each of the Transformation Zone counties, we also were asked to reflect on what we learned about the following:

- Readiness to implement the four programs,
- Simultaneous implementation of four literacy programs,
- Possible synergies between the four programs, and
- Challenges and opportunities in rural settings.

### **Readiness for program implementation**

According to implementation science, as practiced by the National Implementation Research Network, readiness to effectively implement new programs evolves in multiple stages. These stages include Exploration of the landscape for reform and identification of potential partners, Installation of viable partners and provision of necessary resources, and Initial Implementation to pilot new programs and make adjustments needed for Full Implementation based on the evaluation of initial performance. Success during Initial Implementation of a new program depends on three types of support, or Active Implementation Drivers, including development of the competence to implement a program as intended, development of the organizational environment to support implementation, and cultivation of the leadership needed to champion and sustain new programs.

The intent of the Transformation Zone initiative was for the lead agencies, collaborating with other community leaders on the County Leadership and Implementation Teams, to identify partner organizations in the community to implement these programs. The Literacy Coordinators at the lead agencies would coordinate training and logistical support to incentivize involvement and make the pilot process more manageable, but otherwise the objective was to start other organizations on the path to Full Implementation of these programs. One indicator of readiness, therefore, is the identification and installation of viable partners in the community. Until this can be accomplished with at least one organization that is external to the lead agency, then a county cannot be said to be “ready” to implement a particular program as defined by the

mission of the Transformation Zone. Using this criterion, readiness to implement Story Exploring and Reach Out and Read (ROR) was achieved at the Installation stage in all four counties.

Moving Motherread/Fatheread and B.A.B.Y. past the Installation stage was much more difficult. Beaufort was the only county to find partner organizations to implement both of these programs. Until very recently, Hyde was the only other county to mount a Motherread/Fatheread class with facilitation and space provided by a viable community partner. In Chowan, Albemarle Hopeline started a Motherread/Fatheread class this summer with support from the Literacy Coordinator. Prior to this, two classes had been held at the public library in Edenton, but both of them were facilitated by the Literacy Coordinator and her Smart Start colleagues. Similarly, in Bertie, Albemarle Smart Start staff have facilitated most Motherread/Fatheread classes in space provided by other organizations, which otherwise have not been invested in the classes or made any move to begin implementing them with their own staff and resources.

Most of our work involved examination of implementation, outcomes, and the prospects for sustaining each of the literacy programs in the four counties. While we did not use the Active Implementation Drivers as a framework for data collection at the time, it is possible to reframe some of our observations about implementation using them now.

### ***Competency Drivers***

Competency support is the strongest of the drivers in the Transformation Zone counties in part because it is built in to all four literacy programs.

- Motherread provides training and reference materials for Story Exploring, B.A.B.Y., and Motherread/Fatheread. Each of these models requires a period of observation and coaching to ensure that teachers and facilitators implement the related curricula as intended. The coaching role was fulfilled by the Literacy Coordinators, who received some professional development to enhance their own competency in this area.
- ROR requires at least three-quarters of medical providers at a participating practice to complete an online training program before they can start giving out books. The Programs Director at ROR Carolinas conducts orientation site visits with all new practices. Regional Program Specialists maintain contact by email and phone, as well as

visiting each site in their respective regions at least once a year to assess the quality of program implementation and provide additional support as needed. Both purveyors, Motherhead and ROR Carolinas, attend quarterly cross-county meetings with the Literacy Coordinators and also are available to them by phone to answer questions and brainstorm solutions to implementation challenges.

### ***Organization Drivers***

The organizational accommodations needed to create a supportive environment vary depending on the program. Story Exploring and ROR generally fit well with the regular workflow of teachers and medical providers. Even so, organizations may need to make changes to support these programs:

- Story Exploring teachers find it easier to consistently use the curriculum and steadily improve if they are able to remain with the same age group and not be moved around to cover understaffed classrooms. Teachers also must be given time to plan Story Exploring lessons. And in order to assume full responsibility for Story Exploring, center directors must make time to periodically observe teachers and ensure continued fidelity to the curriculum.
- Most of the accommodations needed to implement ROR are made up front – finding space to store books, working out a system for selecting books and having them on hand for well-child visits. Medical providers (and schedulers) also need to allow more time for these check-ups to ensure they have adequate time to talk to parents about the importance of reading and also model age-appropriate reading strategies.

One of the reasons it is more challenging to find partners who are willing and able to implement Motherhead/Fatheread and B.A.B.Y. is that these programs usually require more extraordinary accommodations on the part of the host organization, including re-allocation of staff time to attend training and later facilitate classes, time and resources to market the class and recruit participants, and finding physical space for classes, possibly staying open after hours in order to hold evening and weekend classes for working parents. In order to assume full responsibility for these programs, the partner organization also may need to provide other logistical support, such as child care, meals, and transportation to ensure that parents can attend



class regularly. So far only Beaufort County has enlisted partners who have committed to making the necessary organizational accommodations for Motherread/Fathered and B.A.B.Y..

### ***Leadership Drivers***

Among Leadership drivers, funding for Full Implementation appears to be the most challenging one to put in place in the Transformation Zone.

- The child care centers that have been recruited to participate in Story Exploring are unlikely to have the financial means to pay for more staff or new staff to attend training. All of the directors we have spoken to would like to continue the program, but they are looking to the lead agency in their county to pay for it in the future. Beaufort has already determined that they can use Smart Start dollars because the program is child care-related. The other counties are considering their options for obtaining grant money to pay for future training. In the case of NC PreK and Head Start, we do not know what prospects there are for these organizations to adopt Story Exploring and allocate some of their professional development budget to train teachers.
- There are no training costs for ROR, but medical practices need funding for books in order to maintain the program. At least one practice manager in Chowan County is confident that she can use her marketing budget to buy more books. Another practice manager in Beaufort County has taken it upon herself to write multiple grant applications and has been awarded enough funds to pay for books for a few more years. Otherwise, members of the four County Leadership Teams are in talks to collaborate on fundraising for books. One option is to persuade Vidant Health System, the owner of a number of practices in Beaufort and Chowan counties, to provide ongoing funding for ROR.
- In Beaufort County, the medical practice that holds the B.A.B.Y. class is committed to sustaining the program at their own expense, but the child care centers that offer Motherread/Fathered are not likely to be able to afford to pay the costs of facilitation, books, child care, and food in their own. Smart Start believes they will need to seek grant funding to support future Motherread/Fathered classes at this site.

## Simultaneous implementation of multiple programs

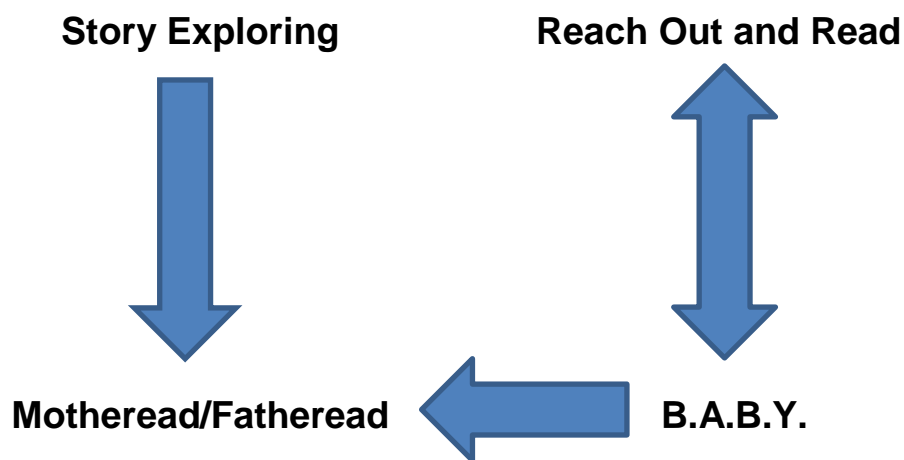
Each county's unique experience taught us something about how to manage implementation of four literacy programs at the same time.

- Beaufort demonstrated the value of the implementation science axiom of “start small, get better.” They treated each program like a pilot and considered how to allocate their time so that each would receive adequate attention at the right time. They vetted potential program sites on multiple dimensions of capacity and selected only those that met their criteria. To incentivize and support new partners as they tried something new, they allocated resources to cover the necessary costs of implementation (e.g., child care, meals, facilitation, transportation), and they regularly stepped back to examine their experience and adjust their approach to a program before recruiting more partners.
- Bertie's experience with repeated turnover in the Literacy Coordinator position underlined the importance of consistent coordination in order to get all four programs started and provide the support needed for them to develop to the point of being sustainable. Each former Literacy Coordinator left behind unfinished business in the recruitment of participants and potential program partners. And each new Literacy Coordinator needed training in one or more of the Motherhead programs before they could engage meaningfully in their work.
- Chowan showed the need for lead agencies to pace themselves, to delegate responsibilities to partner organizations (e.g., center directors), and to hold out for viable partners rather than trying to do it all by themselves. Said the chair of the County Leadership Team, *“I think trying to roll everything out at one time was a little overwhelming...pace yourself, don't try to do too much at once.”* Especially in the case of Motherhead/Fatheread and B.A.B.Y., she advises starting only one of these programs at a time: *“Give yourself time [in between] to regroup and reevaluate...before you jump into too much.”*
- From Hyde we learned that every program does not fit every community, some populations are simply too small and some places too spread out to implement extended

parent education classes like B.A.B.Y. and Motherread/Fatheread. In some communities, there may simply not be the “*magic combination*” of message, messenger, location, and timing needed to effectively implement a program as intended. Focus instead on the strategies that do fit the needs and circumstances of the community.

### Synergies between programs

Story Exploring, Motherread/Fatheread, B.A.B.Y., and Reach Out and Read were selected for implementation in the Transformation Zone because of their potential to promote school readiness at different points in the system of care. We found several examples of how a few of the counties were using one program to build on another. The following diagram illustrates the connections we encountered.



- Beaufort County recruited parents from two of its Story Exploring sites to participate in a Motherread/Fatheread class. Parents were encouraged to join the class in order to learn how to build on what their children’s teachers were doing with Story Exploring.
- The Chowan County Literacy Coordinator encouraged new mothers in her B.A.B.Y. classes to check out Motherread/Fatheread if they wanted to learn more about how to read to their baby and help them develop literacy skills before going to school. In future, B.A.B.Y. will be delivered by the Health Department and emphasize health topics, but mothers will also be directed to contact Chowan-Perquimans Smart Start if they are

interested in learning more about literacy. If there is sufficient interest, they will consider offering Motherread/Fatheread classes again in the future.

- Back in Beaufort County, their largest Reach Out and Read medical provider, Washington Pediatrics, agreed to host and facilitate the B.A.B.Y. program. They are using it as an outreach program to connect new and expectant mothers to a variety of community health resources, as well as providing them with valuable information about how to care for themselves and their babies. They are also building relationships with these mothers and encouraging them to make this medical practice their healthcare home, which connects them back to Reach Out and Read – and more books – as their babies grow.

In addition to these connections between programs, there are also synergies within programs. In the case of Reach Out and Read, medical providers use the books they give out in conjunction with a child’s developmental assessment. And Story Exploring shows teachers how to link reading to other literacy development activities (e.g., writing, speaking, singing) and also how to use the books in the curriculum to aid in social-emotional development of young children.

### **Rural challenges and opportunities**

The Transformation Zone was created precisely because rural areas face challenges that limit social, economic, and educational opportunities. Transportation – the lack of it, the cost of it – was the challenge cited most often in the four counties as a barrier to participation in parent education programs like Motherread/Fatheread and B.A.B.Y. Even in Chowan County, where more than half of the population lives in and around the town of Edenton, lack of transportation affected parents’ ability to attend classes regularly. In small, rural communities, there are fewer service providers from which to recruit community partners, and there are smaller pools of parents from which to recruit program participants. There are no pediatricians in Bertie County, and nearly all babies are born out of the county. This poses problems both for the implementation of a program like Reach Out and Read, but also for any other program that is intended for very young children and their families. If you cannot find them, you cannot serve them. Hyde also has only a few medical providers and only six child care providers, including NC PreK and Head Start, on the mainland and Ocracoke Island combined. So there are not very many classrooms in which to implement programs like Story Exploring.

In spite of these challenges, or perhaps because of them, rural communities can also be incubators of innovation – figuring out new ways to achieve the same objectives or repurposing resources to achieve other worthy goals. We end this report with the following innovations in the four Transformation Zone counties – some already realized and some still on the drawing board – but all demonstrating the creativity and resourcefulness of rural communities.

- With a bird’s eye view of the County Leadership and Implementation Teams, Beaufort County was able to identify all of the county’s resources for maternal and child health. In order to connect these community organizations with people who need their services – and also recruit new and expectant mothers for B.A.B.Y. classes at Washington Pediatrics – the Literacy Coordinator and practice manager organized a B.A.B.Y. Shower for potential participants. Each of the resource agencies advertised the shower to their clients and also attended the shower to provide information about their services. Mothers who expressed interest in attending a B.A.B.Y. class were contacted after the event by the Literacy Coordinator with more information about the class.
- The Beaufort County Literacy Coordinator found that new and expectant mothers were more likely to attend regularly if they could bring a family member, usually their partner or mother. Family members were easily integrated into the class, with the exception of one activity – mothers writing their Mama Book journals to their babies. In order to include the family members in the activity in a meaningful way, the Literacy Coordinator collaborated with Motherhead, Inc. to develop an alternative journaling activity for family members – A Journal from Me to You.
- Bertie County used some of its Transformation Zone money to send students in the Early Child Education class at Bertie High School to a Story Exploring workshop, providing them with valuable exposure to the importance of literacy development and strategies to help prepare young children to succeed in school.
- Bertie County successfully lobbied the Board of Commissioners for funds to develop the Kid Find Project. The purpose of the project will be to develop a system for identifying Bertie children from birth in order to improve recruitment of parents into B.A.B.Y. and other family support programs, including those that have been piloted in the county as part of the Transformation Zone.

- When Chowan County’s literacy needs assessment found that the library was not open to the public on the weekend, the County Leadership Team elected to use Transformation Zone grant funds to keep the library open for half a day on Saturdays. Since the spring of 2015, library staff have been keeping track of Saturday usage to support a request to the County Commissioners for more library hours.
- When Albemarle Regional Health Services (ARHS) was looking for a way to improve maternal and child health outcomes, Chowan County’s Implementation Coach persuaded them to adopt B.A.B.Y. – a health education program with a literacy “twist” – in its seven-county region, including Chowan.
- Although Hyde County was unable to find a partner to offer B.A.B.Y. classes to new and expectant mothers, the Literacy Coordinator collaborated with the coordinator of another Transformation Zone strategy, Family Connects, to put together “baby baskets” containing infant board books and other community literacy information for distribution to new mothers.
- Given that they have so few child care providers, Hyde County has provided Story Exploring training to the staff of local community centers and other community-based organizations in hopes of enhancing the informal reading programs they offer.

## **Attachment A**

### **Detailed Program Outputs**

- *Story Exploring*
- *Motheread/Fatheread*
- *Birth and Beginning Years (B.A.B.Y.)*
- *Reach Out and Read*

## Story Exploring

Staff trained, all counties combined, showing some turnover of centers and teachers in 2016:

| Outputs, all 4 counties  | 2014 | 2015 | 2016 Q1 | 2016 Q2 |
|--------------------------|------|------|---------|---------|
| Facilities participating | 18   | 31   | 30      | 28      |
| Staff trained            | 44   | 77   | 84      | 74      |
| Children benefitting     | 247  | 698  | 677     | 608     |

Matched surveys, by county, indicating approximate number who participated for at least 6 months:

| Teaching Staff trained (n=61) | Beaufort | Bertie | Chowan | Hyde |
|-------------------------------|----------|--------|--------|------|
| Lead teachers                 | 9        | 12     | 13     | 4    |
| Teacher assistants            | 1        | 4      | 6      | 1    |
| Role unknown                  | 3        | 2      | 5      | 1    |
| <b>TOTAL</b>                  | 13       | 18     | 24     | 6    |

NOTE: Although we received 61 pairs of matched surveys in all, only 58 pairs were used in the analysis of outcomes. Three (3) pairs were excluded because the ages of the children they taught were not comparable at baseline and follow-up (e.g., infants at baseline, preschool at follow-up).



**Motheread/Fatheread**

Based on annual and quarterly reporting by counties:

| Outputs, all 4 counties | 2014 | 2015 | 2016 Q1* | 2016 Q2* |
|-------------------------|------|------|----------|----------|
| Participants registered | 33   | 39   | 17       | 19       |
| Graduates               | 4    | 28   | 0        | 6        |
| Children benefitting    | 4    | 14   | 11       | 12       |

\*Classes may run across reporting periods, so the 6 graduates in Q2 may be among the 17 who were registered in Q1.

Based on attendance sheets received:

| MRFR Class Outputs                               | Beaufort        | Bertie                   | Chowan      | Hyde <sup>3</sup> |
|--------------------------------------------------|-----------------|--------------------------|-------------|-------------------|
| Classes held                                     | 1               | 7                        | 2           | 1                 |
| Range of hours offered                           | 24 hrs          | 10.5-22 hrs <sup>2</sup> | 25-27.5 hrs | ---               |
| Participants who attended at least one class     | 12 <sup>1</sup> | 30                       | 10          | 6                 |
| Number that started by Class 2 <sup>4</sup>      | 12              | 28                       | 7           | 6                 |
| Number completing 20+ hours                      | 10              | 10                       | 3           | 0                 |
| Percent completing min. 20 hours <sup>5</sup>    | 83%             | 36%                      | 43%         | 0%                |
| Number completing at least 15 hours <sup>6</sup> | 11              | 16                       | 5           | 0                 |

NOTES:

1. Beaufort originally offered the class at two locations of Care-O-World. Four people attended the first class at the Chocowinity site; 12 parents attended the first class at the Washington site (16 total). When the decision was made to consolidate the two classes into one, parents were asked to consider whether they would truly be able to commit to the full 20 hours. Four parents at the Washington site chose not to continue; therefore, we used 12 parents as the denominator for calculating the completion rate.
2. One class in Bertie was cancelled after 10.5 hours due to insufficient participation.
3. No attendance information was received for the class in Hyde County. Information in this table was provided by the facilitator in a 2015 interview.
4. Facilitators waited until the second class to administer the Class Intake Survey and officially begin the class. They occasionally allowed people to begin even later than the second class, and a few of these people may have completed intake surveys.
5. Percent completing is the number who completed a 20+ hours, divided by the number of participants who started by the second class.
6. One output of interest was the number of parents who completed 75% of Motheread/Fatheread sessions. However, sessions were offered in different increments of time (usually 2 or 2.5 hours). Therefore, we report here the number of parents who completed at least 75% of the minimum required hours.

Based on Intake and Exit surveys received:

|                                                        | Beaufort | Bertie | Chowan | Hyde |
|--------------------------------------------------------|----------|--------|--------|------|
| Class Intake Surveys received                          | 10       | 28     | 5      | 6    |
| Matched Intake-Exit survey pairs <sup>1</sup>          | 8        | 9      | 4      | 0    |
| Intake-Exit survey pairs used in analyses <sup>2</sup> | 6        | 8      | 4      | 0    |
| Number of children benefitting                         | 11       | 9      | 4      | 0    |

NOTES:

1. Intake and Exit surveys were matched using a unique ID created by each participant according to a fixed formula. If this process had worked perfectly, then the number completing 20+ hours in the previous table would be equal to the number of matched pairs of surveys in this table. Three possible observations were for Beaufort (2) and Bertie (1) because matches could not be made from the IDs provided. However, one observation was gained in Chowan because someone who did not complete 20+ hours nevertheless completed both the intake and exit survey. This survey could not be identified for exclusion and therefore is included in the analysis.
2. Three more surveys were excluded from subsequent analyses (two from Beaufort, one from Bertie) because the age of the “youngest child” referenced in some survey questions was not comparable at intake and exit (e.g., infant at intake, preschooler at exit).

## Birth and Beginning Years (B.A.B.Y.)

Based on annual and quarterly reporting by counties:

| Outputs, all 4 counties | 2014 | 2015 | 2016 Q1 | 2016 Q2* |
|-------------------------|------|------|---------|----------|
| Participants registered | 7    | 33   | 0       | 11       |
| Graduates               | 2    | 8    | 0       | 0        |
| Children benefitting    | 5    | 27   | 0       | 10       |

\*Classes may run across reporting periods, so the participants registered in Q2 will not appear as graduates until Q3.

Based on attendance sheets received:

| B.A.B.Y. Class Outputs                       | Beaufort         | Chowan                    |
|----------------------------------------------|------------------|---------------------------|
| Classes held                                 | 1                | 3                         |
| Range of hours offered                       | 22 hrs           | 8.5-22.5 hrs <sup>1</sup> |
| Participants who attended at least one class | 20               | 25                        |
| Number that started by Class 2 <sup>2</sup>  | 15 <sup>3</sup>  | 16 <sup>5</sup>           |
| Number completing 20+ hours                  | 7 <sup>4</sup>   | 1                         |
| Number completing 15-19 hours                | 1                | 2                         |
| Percent completed min. 20 hours <sup>6</sup> | 47% <sup>7</sup> | 6%                        |

NOTES:

1. One class in Chowan was offered at the Alternative School for 8.5 hours. The other two classes were offered for 20 and 22.5 hours each.
2. Facilitators waited until the second class to administer the Class Intake Survey and officially begin the class. They occasionally allowed people to begin even later than the second class, and a few of these people completed the intake survey.
3. Includes 8 mothers in the target group and 7 other family members who planned to help raise the child.
4. Includes 5 mothers in the target group and 2 other family members.
5. The number of mothers vs. others is unknown.
6. Percent completed is the number who completed 20+ hours, divided by the number of participants who started by the second class.
7. The overall completion rate in Beaufort breaks down to 63% for mothers in the target group (5 out of 8) and 29% for other family members (2 out of 7).

Based on Intake and Exit surveys received:

|                                  | <b>Beaufort</b> | <b>Chowan</b> |
|----------------------------------|-----------------|---------------|
| Class Intake Surveys received    | 7               | 12            |
| Matched Intake-Exit survey pairs | 4               | 5             |
| Number of children benefitting   | 4               | 5             |

NOTE: Comparing the number that started by Class 2 in the previous table with the number of intake surveys received on this table, it appears that facilitators did not collect intake surveys from all participants who started the class on time. This is likely because surveys were only given to mothers, and mostly given to mothers in the target group – that is, women expecting their first child and mothers of children less than one year old. One pair of intake-exit surveys was completed by the mother of a preschool-age child.

## Reach Out and Read

Based on records provided by Reach Out and Read Carolinas (ROR-C):

| Outputs, all 4 counties  | 2014              | 2015 | 2016 Q1-Q2 | TOTAL             |
|--------------------------|-------------------|------|------------|-------------------|
| Implementing sites       | 2                 | 7    | 9          | 9                 |
| Annual well-child visits | 2754 <sup>1</sup> | 2750 | 1846       | 7350 <sup>2</sup> |
| Books distributed        | 2754 <sup>1</sup> | 2726 | 1713       | 7208 <sup>2</sup> |

Notes:

1. Information for Washington Pediatrics in Beaufort County, the largest participant in ROR, is not available for July-December 2014. These figures include estimates of 1300 well-child visits and 1300 books.
2. ROR-C does not require *new* medical practices to report actual numbers of well-child visits and books distributed for the first six months of their participation in the program. Therefore, the total number of visits and books may be under-reported by about 500 in each category.

Number of books distributed by medical practice (per ROR-C):

| Medical Practice                                       | County   | TZ Start Date | Jan-Jun 2014 | Jul-Dec 2014      | Jan-Jun 2015 | Jul-Dec 2015 | Jan-Jun 2016 | Total |
|--------------------------------------------------------|----------|---------------|--------------|-------------------|--------------|--------------|--------------|-------|
| Washington Pediatrics                                  | Beaufort | 1/1/2014      | 1430         | 1300 <sup>1</sup> | 1286         | 1330         | 1219         | 6565  |
| Vidant Family Medicine Belhaven Water St. <sup>2</sup> | Beaufort | 7/1/2015      | 0            | 0                 | 0            | 13           | 5            | 18    |
| Vidant Family Medicine Belhaven Allen St. <sup>2</sup> | Beaufort | 5/1/2015      | 0            | 0                 | 0            | 15           | 16           | 31    |
| Vidant Chocowinity                                     | Beaufort | 11/1/2015     | 0            | 0                 | 0            | 0            | 86           | 86    |
| Bertie County HD                                       | Bertie   | 3/1/2015      | 0            | 0                 | 0            | 25           | 12           | 37    |
| Chowan Co. Health Department                           | Chowan   | 1/1/2014      | 4            | 20                | 24           | 12           | 4            | 64    |
| Vidant Peds Edenton                                    | Chowan   | 1/1/2016      | 0            | 0                 | 0            | 0            | 347          | 347   |
| Vidant Family and Sports Medicine                      | Chowan   | 1/1/2016      | 0            | 0                 | 0            | 0            | 36           | 36    |
| Hyde County HD                                         | Hyde     | 4/1/2015      | 0            | 0                 | 0            | 21           | 3            | 24    |

Notes:

1. The report for this period was lost. This figure is an estimate.
2. These two medical practices have since been combined into one practice.