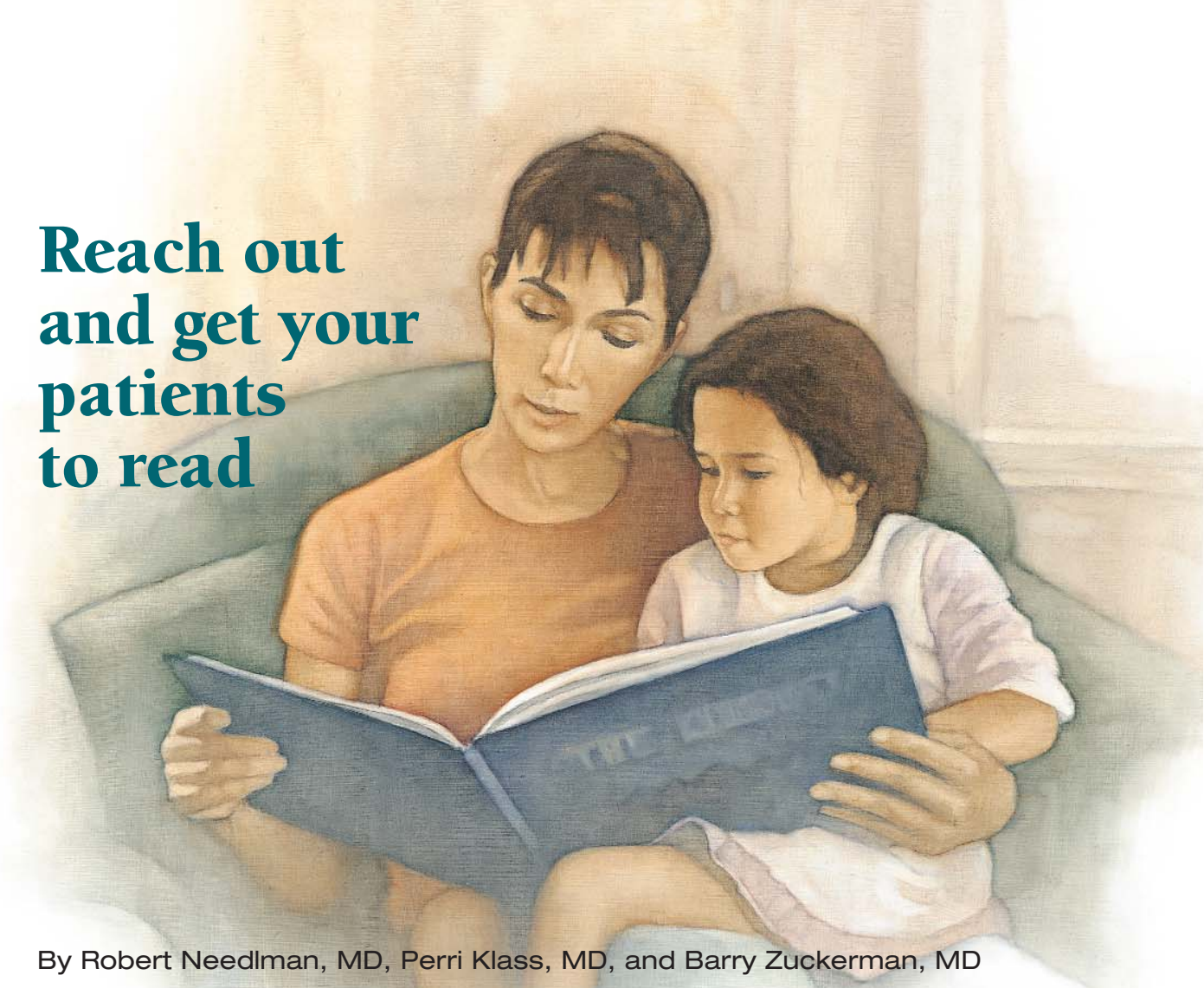
Reach out and get your patients to read



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Intervention to prevent reading problems needs to occur long before first grade. Evidence shows that incorporating a reading promotion program into your practice can improve the reading ability of children and thereby bestow lifelong benefits.

Educators and developmental psychologists have long considered reading aloud to children to be the "single most important activity to promote success in reading."[1] But a recent national survey found that 16% of parents of children age 3 years and younger don't read at all with their children, and 23% do so only once or twice a week.[2] Among low-income children, who face the highest risk of reading problems, the percentage of parents who read aloud regularly is much lower.

Pediatricians have a special opportunity to encourage parents to read aloud because they enjoy regular and repeated contacts with infants and their parents, and because parents are eager for, and trusting of, guidance that addresses their infants' overall well-being, not just physical health.[2] Ten years ago, a group of physicians and educators in Boston, including two of the authors of this article, realized the role that pediatricians could play and developed a program called Reach Out and Read (ROR). It consists of three linked interventions:

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- anticipatory guidance about reading aloud provided as an integral part of health supervision visits, along with modeling and observation of parent-child book use
- developmentally and culturally appropriate picture books given by the doctor at each health supervision visit so that parents are both encouraged to read aloud and have the tools to do so
- community volunteers who read to the children in the waiting room, modeling developmentally appropriate techniques for the parents.

An early description of ROR appeared in the February 1992 issue of *Contemporary Pediatrics* ("Fight illiteracy: Prescribe a book").[3] At that time, our knowledge about the program was limited to clinical experience from a handful of sites and the results of a single study.[4] In the years since, ROR has spread to more than 1,100 sites in 50 states, and the number of published studies has increased as well.[4–10] This article reviews lessons learned over the past decade and describes how this simple but effective approach can enrich primary pediatric care.

What the research has shown

The ultimate goal of pediatric literacy intervention for infants and toddlers is to foster a love of books and help lay the foundation for reading success in elementary school. Primary prevention of reading problems needs to occur long before first grade. Once a child has been identified as needing "remedial reading" the chance of that child actually rejoining the mainstream of good readers is low.[11,12] The challenge for researchers has been to show that an intervention that begins in infancy can have an impact years later in school. In bridging these two points in time, the research has looked first at parental attitudes and behaviors and then at child language outcomes.

Parental attitudes and activities. Several studies have looked at parents' attitudes toward reading aloud and their self-reported behaviors. Our initial report showed that, after controlling for parental education and other demographic factors, parents in an urban primary care clinic who had been given a picture book by their child's physician at a previous visit were approximately four times more likely to report reading aloud as a favorite activity than were parents who had not been given a picture book; among parents on welfare, the intervention was associated with an eight-fold increase in support for reading aloud. Subsequent studies have confirmed and extended this finding. High and colleagues showed that parents who had participated in a program based on ROR were 4.7 times more likely to show "child-centered literacy orientation" than a comparison group from the same clinic before initiation of ROR.[5] In this case, literacy orientation was defined as a parent including reading aloud among the parent's or child's favorite activities, or reading aloud at bedtime at least six nights per week. In a randomized, prospective trial of a ROR–like intervention (minus the volunteers) in a primarily Spanish-speaking population in Rhode Island, Golova and colleagues documented significant increases in the percentage of parents who read aloud three or more days per week (from 24% to 66%), owned five or more children's books (19% to 52%), and considered reading aloud a favorite activity (13% to 43%).[6] On the opposite coast, Sanders and colleagues have documented similar results among primarily Spanish-speaking immigrant families in California.[8]

Child language outcomes. In the last two years, studies have appeared showing a link between ROR and improved child language skills. This finding is important for three reasons. First, while social desirability might induce some parents to over-report their pro-literacy attitudes and behaviors, child language measures are much less vulnerable to this bias. Second, a large body of research shows that one of the most important effects of early reading aloud is on verbal language development.[13–16] Therefore, if ROR actually increases reading aloud, one would expect to find that it has effects on language. Last, preschool language ability is one of the most important predictors of later reading success.[17] So, positive effects on preschool language skills should translate into increased success in reading later on.

High and colleagues studied 153 low-income children attending four pediatric clinics.[7] Using alternate-day assignment, half the children received free books and guidance

about reading aloud at each of their health supervision visits; the other half received "business as usual" primary care. After an average of three visits, when the children were 14 to 25 months old, parents reported on their attitudes and reading behaviors and completed a modified version of a standardized instrument to measure child vocabulary, the MacArthur Communicative Development Index (CDI).

The study, like those reviewed previously, documented large, significant differences between the treatment and control groups in parental attitudes and reading behaviors. Moreover, there were significant increases in both receptive and expressive language scores among the older children in the study. These effects were apparent using a list of words drawn from the books that had been given to the children—evidence that the parents had in fact been using them. But significant differences were also found using a list of words that were not in the books, suggesting that the intervention extends beyond the specific books used.

Further evidence of language effects appeared in a recent article by Mendelsohn and colleagues.[10] They compared parent-reported behaviors and child language scores in two clinics in New York, one of which had had ROR in place for three years, the other of which had just started ROR. In all other respects, the clinic populations were similar. Using the well-validated One-Word Expressive and Receptive Picture Vocabulary Tests, the researchers found significantly higher receptive and expressive language scores among children exposed to ROR. Following a multivariate analysis, the adjusted mean differences were 8.6 points for receptive, and 4.3 points for expressive, representing large, statistically and clinically meaningful differences. What's more, the researchers documented a dose-response effect, wherein the more ROR contacts a child had, the higher his expressive and receptive language scores. In a subsequent study, presented as an abstract, researchers returned two years later to the clinic that had served as the comparison site. Now, with ROR well established, language scores were significantly above baseline, and on par with those of the original intervention site.[18]

Reach Out and Read increases reading aloud and book ownership and results in improved verbal language development.

We know of two studies of ROR–like interventions that report negative findings for language skills and (in one case) for parental attitudes as well.[19,20] Although neither of these has been published except as abstracts, we mention them here for the sake of completeness.

In summary, the preponderance of evidence demonstrates that ROR works. By convincing parents that reading aloud is enjoyable and beneficial, ROR increases reading aloud and book ownership and results in improved verbal language development. Given the close connection between preschool language delays and later reading disability, an intervention such as ROR that stimulates language development is very likely to prevent reading problems. Of course, verbal language ability does not guarantee reading success. After age 4 or 5, other skills, such as letter naming and phonologic awareness, come into play.[21] But without adequate verbal language skill, the chances of success are slim.

Strategies for improving literacy

Why is such a simple and inexpensive intervention so effective? The answer may have to do with the special meaning of books in our culture as symbols of success in school, and all that that success means for one's life chances. The delight of parents when their infants respond with interest to a picture book reflects the value parents place on their children being intellectually oriented. Consistent with this, a recent national poll found that one of the areas parents most wanted information from pediatricians about was children's learning.[2] In addition, parents' ratings of physician helpfulness are significantly higher when ROR is part of the visit.[9]

Books are durable, particularly the board books that we give to infants. Unlike pamphlets that often last only long enough to be thrown away, a picture book gets used day after day, each time reinforcing the pediatrician's message that reading aloud is important. The intervention is less dependent on parents remembering, because children often

TABLE 1

SAFER strategies for literacy guidance

S	**S**how the child the book early in the visit (don't wait until the end)
	Share (look at or read) the book with the child yourself, modeling for the parent
A	**A**sk the parent about reading aloud ("Have you started looking at books with Jane yet?")
	Assess the child's development and the child-parent relationship
F	Give **F**eedback about what you've observed the child do
	Give **F**eedback about parents' attitudes and interaction with the child
E	**E**ncourage the parent to read aloud daily to the child
	Explain about literacy development
R	**R**efer (to the library or family and adult literacy programs)
	Record in the chart what you did

initiate (that is, demand) reading aloud. Reading aloud can become addictive; as soon as parents and children discover how enjoyable it is, they're "hooked." Picture books are the necessary tools for reading aloud, although story telling and other literacy-related activities can proceed without them. Among lower-income families, between 10% and 40% report having no children's books at all until they get their first ROR book. Ten years ago, there were very few ethnically appropriate picture books. Now, the selection is much wider, including many titles in Spanish, in both Spanish and English, and in other languages.

So the books themselves are important. But when pediatricians get into the habit of just giving out books as though they were lollipops, they miss an opportunity to do much more. The SAFER mnemonic outlines 10 pediatric strategies for literacy guidance (Table 1):

S is showing the book to the parent and child early in the visit, rather than waiting until the family is walking out the door. It also stands for sharing the book with the child during the visit. Modeling how one can share a book with a particular child is often more effective than trying to tell a parent what to do, and taking a minute to share a book is a great way to build rapport with the child. For anxious children, an irresistible book can be the ice-breaker you need to complete your examination.

A is asking parents, "Have you started looking at books with Johnny yet?" By asking, rather than telling, you avoid boring or offending parents who have already discovered reading aloud. By adding the "yet," you allow parents to answer No without feeling guilty—they are not too late to start. ***A*** is also assessment. When an infant shows excitement about a new book, watch the parent's response. A proud, beaming parent lets you know that there is a strong parent-child connection. If you hand the book to the parent and invite her to look at it with her child (while you write in the chart, perhaps) you can observe a great deal about the child's development and the parent-child interaction. (Table 2 presents several book-related developmental milestones.)

F is feedback—about the child's *and* the parents' response to the book. When a child responds positively to the book, a simple comment showing your approval can make a lasting impression: "Brianna really seems interested in that book, Mrs. Smith! Did you know she'd be so into it?" For a child who is not interested in the book, it's important to help the parent feel okay about that, too: "Dan's not interested right now, but he might change his mind later, so it's important to offer books regularly." Parents also value feedback about their own reading aloud behavior: "You've really got the hang of asking open-ended questions!"

E is encouragement, and explaining about emergent literacy (see Needlman R[3]). For example, a parent who understands that "invented" spelling is an important step in literacy development might feel pleased rather than concerned when her bright 5-year-old spells out GNYS for "genius."

R is recording your literacy intervention in the chart and referring parents to libraries and literacy programs as needed. Libraries are increasingly oriented to serving the needs of parents, with story hours, play groups, and parenting resources.[22]

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TABLE 2

Book-related developmental milestones

Motor	Cognitive	What parents can do
6–12 mo		
Reaches for book	Looks at pictures	Hold child comfortably; face-to-face gaze
Book to mouth	Vocalizes, pats pictures	Follow baby's cues for "more" and "stop"
Sits in lap, head steady	Prefers pictures of faces	Point and name pictures
Turns pages with adult help		
12–18 mo		
Sits without support	No longer mouths right away	Respond to child's prompting to read
May carry book	Points at pictures with one finger	Let child control the book
Holds book with help	May make same sound for particular pictures (labels)	Be comfortable with toddler's short attention span
Turns board pages, several at a time	Points when asked, "Where's …?"	Ask "Where's the …?" and let child point
	Turns book right side up	
	Gives book to adult to read	
18–24 mo		
Turns board book pages easily, one at a time	Names familiar pictures	Relate books to child's experiences
Carries book around the house	Fills in words in familiar stories	Use books in routines, at bedtimes
May use book as a transitional object	"Reads" to dolls or stuffed animals	Ask "What's that?" and give child time to answer
	Recites parts of well-known stories	Pause and let child complete the sentence
	Attention span highly variable	
24-36 mo		
Learns to handle paper pages	Recites whole phrases, sometimes whole stories	Keep using books in routines
Goes back and forth in books to find favorite pictures	Coordinates text with picture	Read at bedtimes
	Protests when adult gets a word wrong in a familiar story	Be willing to read the same story over and over
		Ask "What's that?"
	Reads familiar books to self	Relate books to child's experiences
		Provide crayons and paper
3 yr and older		
Competent book handling	Listens to longer stories	Ask "What's happening here?" and "What's going to happen?"
Turns pages one at a time	Can retell familiar story	Encourage drawing and writing
	Understands that text "tells" the story	Let child tell the story
	Moves finger along text	
	"Writes" own name (linear scribble)	
	Begins to recognize some letters	

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Overall, some 40% of adults in the United States have literacy problems.[23] Illiteracy, although fraught with shame, may be easier to discuss in the context of a pediatric visit, because one of the greatest concerns for parents with low literacy is the possibility that their child will suffer the same fate. Referral to an adult literacy program may be the most meaningful intervention you make during the visit. Most cities and towns have agencies that match adult learners with literacy programs; you can find these agencies in the telephone book.

It probably isn't desirable or possible to do each of the SAFER interventions at every visit. But by keeping the mnemonic in mind, you can take full advantage of the potential power of pediatric literacy guidance.

Reading to older children and newborns

ROR concentrates its efforts on infants, toddlers, and preschoolers. But the benefits of reading aloud do not stop once school starts, and reading aloud may be particularly helpful for children who find learning to read difficult at first. Also, older children often accompany their younger siblings; they want books, too, and they often end up doing a good deal of the reading aloud. Fortunately, local scout groups and schools are often happy to run book drives and to present pediatricians with large numbers of lightly used books for older children.

On the other end of the age continuum, a number of communities have initiated programs giving books to newborns when they leave the nursery. We appreciate the symbolism of this gesture, and realize that many parents not only read to their newborns but also to their fetuses! However, child development teaches that timing is important. In the first six months of life, the child's primary focus is people, not inanimate objects. By the age of 6 months, increased visual acuity, truncal stability, and focused attention allow babies to reach out to objects, and this is when they are most likely to begin smiling and waving their arms and legs in response to the pictures in books. A mother who introduces picture books much earlier than that and who gets little feedback from her baby may conclude, incorrectly, that there is something wrong with her child.

Beyond literacy

There is more to reading aloud than cognitive and language stimulation. The quality of the parent-child interaction during book reading, for example, reflects the security of the pair's emotional attachment.[24] It also appears that training parents in effective reading aloud methods may reduce parenting stress.[25]

We've learned from our clinical work that using books as part of primary care can have wide-reaching effects. Books set the stage for talking with parents about various aspects of their children's behavior. For example, we advise parents that their toddlers may want to pick out the books and control the tempo of page turning and almost every other aspect of the activity as a normal expression of their growing autonomy. When parents learn to avoid unnecessary power struggles during reading aloud, they realize that compromise and negotiation can make many parts of the day more enjoyable for both themselves and their young children.

Books are also a great source of distraction during painful and frightening procedures, such as suture removal and blood drawing. Sharing a book for a minute or two can often reassure a child who is anxious or fearful of the physical exam. Many pediatricians have commented that giving books changes the environment in the office (and lowers the decibels in the waiting room!). Pediatricians receive particularly warm smiles and thanks when they give books. We think that this response by children and their parents has contributed to the rapid acceptance of ROR.

Although our focus has been on primary care, many subspecialists—oncologists, cardiologists, and developmental pediatricians caring for children with disabilities—believe that giving books to children with chronic illnesses conveys hope for the future in a particularly meaningful way.

Last, ROR has served as a community catalyst, adding pediatricians, nurses, and other child-health professionals to the ranks of community activists, while creating a

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place within the pediatric setting for community members who are committed to child learning and literacy. ROR provides a simple, concrete activity around which communities of like-minded people can coalesce.

Keys to making ROR work

What have we learned from a decade of experience starting new ROR programs and nurturing older ones? First, that there has to be buy-in from a physician. It is possible for the initial impetus to come from someone outside the medical setting—from a librarian or retired teacher, for example—but there has to be a physician-leader within the practice who makes a commitment to the program.

Second, ROR works best as a collaborative effort. A host of jobs are involved in making ROR succeed, including choosing, ordering, and stocking the books and making them readily available to the physicians; recruiting, training, and maintaining a corps of volunteers; training doctors; fundraising; and arranging for publicity in the local media (important for obtaining volunteers and donations). Many institutions contribute a portion of an employee's time to work on ROR, but, inevitably, much must be done by others—either clinic staff making in-kind donations of their time or members of the community at large. In our experience, there is no shortage of people and organizations willing to contribute time and expertise. Among those who support ROR in various communities are libraries, service organizations such as Kiwanis and the Junior League, literacy groups, businesses, and many individuals, not to mention American Academy of Pediatrics (AAP) state chapters and local pediatric organizations.

At the national level, ROR is now well-organized. Supported by foundation grants and, for the last two years, by the federal government, the national office in Boston provides training and technical assistance and start-up grants to new programs and partial continuing funding to others. Among its products are training videos, informative bookmarks and stickers, and posters. The national center collaborates with Scholastic, Inc. to produce a catalog of picture books that can be ordered easily and at a substantial discount by local ROR programs. Other activities include state and national advocacy and a national meeting that has drawn participants from as far away as Japan. The easiest way to contact ROR is by phone at 617-629-8042, or through the Web site at www.reachoutandread.org.

Looking ahead

In the past decade, the concept of incorporating reading aloud into pediatric primary care has made its way into the AAP's *Guidelines for Health Supervision* and several pediatric textbooks. Across the country, a majority of pediatric residents are exposed to ROR as part of their continuity clinic experience.

In the future, we hope to see specific guidance about reading aloud become a standard part of what we pediatricians do, much as safety guidance is now. (See "Why make reading aloud part of health maintenance," above.) Special support

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Why make reading aloud part of health maintenance?

Pediatricians confront a long list of topics to be addressed during a 15-minute health supervision visit. One way we choose among these competing demands is to consider both the seriousness of the problem and the effectiveness of the intervention that can be brought to bear in the brief time available. The following facts make the case for incorporating interventions to promote reading into your practice:

- Early reading problems affect a large number of children, including approximately 35% of students attending predominantly minority public elementary schools.[1]
- The consequences of early reading problems—school failure and drop-out, delinquency, and lifelong economic disadvantage—are dire. Health illiteracy is another consequence, one that is attracting increasing attention because of its adverse effects on adult health.
- As this article demonstrates, there is now strong evidence to suggest that what we do in the office has a significant impact on reading success. Other than immunizations, few primary care preventive interventions can make that claim.

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for low-income families should include giving a picture book at each pediatric health-supervision visit. At approximately $2.50 per book (after discounts), the cost for a "course" of 10 books is very modest, especially compared with many tests and prescriptions and in light of proven efficacy. Before books can be provided for all who need them, durable funding must be found. Today, ROR is supported by public and private funds from the federal government, one state (Massachusetts), and many foundations, corporations, and individuals; we hope that more states step up to the plate, as well as health insurers and businesses.

Although ROR was developed to serve an urban, low-income population, children from more well-to-do backgrounds could also benefit. According to a 1996 survey by the National Center for Education Statistics, 77% of college-educated parents of preschoolers read to their children nightly. That means that even within this privileged group, 23% do not. It remains to be seen how ROR principles will be adapted to serve the needs of these children.

Almost a quarter of college-educated parents of preschoolers do not read nightly to their children.

There are many ways that we pediatricians make a difference in the lives of the young children we care for. But there aren't many as enjoyable, as rewarding, and—we now know—as effective as Reach Out and Read. If evidence is important in determining best practice, payers will pay for books and pediatricians will give them—along with advice—to their young patients. As ROR moves into its second decade, we can look forward to a time when every child has the chance to grow up loving books. □

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