

American Academy of Pediatrics

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***Connected Kids* Implementation Project  
Preliminary Findings  
December 2007**

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***Funded by Centers for Disease Control and Prevention (CDC)  
Contract No. 200-2006-15969 Task 0049***

For more information about *Connected Kids: Safe, Strong, Secure*, visit  
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## I. EXECUTIVE SUMMARY

During 2007, 27 pediatricians implemented the American Academy of Pediatrics (AAP) violence prevention program *Connected Kids: Safe, Strong, Secure* in their practices, with a focus on improving parental supervision and monitoring during middle childhood. Over a period of 6 months, information was gathered on their practices' experiences in implementing *Connected Kids*, their success in incorporating *Connected Kids* topics in their counseling, and the barriers to and facilitators of *Connected Kids* implementation. Two-thirds of the project participants completed the entire project (i.e., 6 months of implementation, completion of 3 online surveys, participation in a telephone discussion group or interview.)

Findings from the project indicate that *Connected Kids* is appealing to pediatricians, implementation is feasible, and use is sustainable over a period of 6 months. Those participants who expressed the most positive feelings about their implementation of *Connected Kids* were those who recognized that full implementation of a program of this complexity and comprehensiveness will take time and must be done incrementally and those whose practices already had a strong anticipatory guidance routine. Barriers to implementation were similar to those that could be anticipated with most changes in clinical practice (e.g., time and staff limitations, motivation, changing routines). A majority of participants reported that they did not increase the time spent per well-child visit; instead they focused on shifting how they approach and prioritize anticipatory guidance rather than adding to the content of their counseling.

## II. IMPLEMENTATION PROJECT OVERVIEW

The new AAP program *Connected Kids: Safe, Strong, Secure* provides a comprehensive, logical approach for health care providers to integrate violence prevention into their practice. *Connected Kids* takes an asset-based approach to anticipatory guidance, focusing on helping parents and families raise resilient children. Each counseling topic discusses the child's development, the parent's feelings and reactions in response to the child's development and behavior, and specific practical suggestions on how to encourage healthy social, emotional, and physical growth in an environment of support and open communication. *Connected Kids* includes a clinical guide with counseling suggestions for each well-child visit and 21 patient education brochures for parents and teens.

The focus of the *Connected Kids* Implementation Project was improving parental supervision and monitoring through implementation of the middle childhood section of *Connected Kids* (ages 5 to 10 years) by pediatricians. The middle childhood section of *Connected Kids* covers 4 well-child visits (5 years, 6 years, 8 years, and 10 years). Nine topics are recommended for introduction during these visits:

- Establishing Routines and Setting Limits: importance of routines and limits in helping children feel loved and secure; suggestions for parents on how to establish routines and set limits
- Teaching Behavior: discussion of how children learn by watching and interacting with their parents and others; suggestions on how parents can coach children in their social behaviors and model approaches to resolving conflict
- Bullying: prevalence and impact of bullying; suggestions for bullies, victims of bullying, bystanders, and their parents

- Out-of-School Time: discussion of how children learn important life skills during playtime and after-school activities and while helping with household tasks
- School Connections: importance of children's attachment to school in learning socialization skills; suggestions on how parents can be involved in their children's school
- Alcohol and Drugs: suggestions on how parents can discuss alcohol and drug use with their children and model behavior
- Interpersonal Skills: suggestions on how parents can help their children develop strong interpersonal skills by teaching and modeling behavior
- Child Mental Health: importance of child mental health and resilience; assessment of child mental health; suggestions on connections to prosocial activities and referrals to mental health providers
- School Performance: suggestions on how parents can monitor their children's school performance, praising children's efforts and successes and helping with any weaknesses

In addition, 5 parent education brochures are provided for use during the middle childhood visits:

- Growing Independence: Tips for Parents of Young Children
- Bullying: It's Not OK
- Drug Abuse Prevention Starts With Parents
- Friends Are Important: Tips for Parents
- Everybody Gets Mad: Helping Your Child Cope with Conflict

In January 2007, a call for applications was distributed electronically, with a focus on AAP groups that were most likely to be interested in participating: Section on Injury, Violence, and Poison Prevention; Council on Community Pediatrics; Section on Developmental and Behavioral Pediatrics; Section on Administration and Practice Management; Section on Young Physicians; Council on School Health; Healthy Tomorrows Partnership for Children grantees; and Community Access to Child Health (CATCH) grantees. We selected 27 pediatrician participants for the project, with the goal of maximizing diversity of practice characteristics (e.g., pediatricians from different types of practices, practices with different specialty mixes, different size practices, different practice settings, and different regions) and pediatrician characteristics (e.g., age/years in practice, race/ethnicity, and gender). (See Participant Profile below.)

Participants were asked to implement *Connected Kids* for 6 months, from March to August 2007. Each participant received a copy of the *Connected Kids* Clinical Guide, 100 copies of each of the 5 middle childhood patient education brochures, and a copy of *TIPP and Connected Kids on CD-ROM*, which includes all 21 *Connected Kids* patient education brochures and all patient education materials from TIPP—The Injury Prevention Program. Participants also received a PowerPoint training presentation on *Connected Kids*, which was supplemented with additional information about the Implementation Project. Throughout implementation, there were various opportunities for participants to receive training and technical assistance.

Evaluation focused on how successfully participants were able to use *Connected Kids* in practice to enhance their counseling on parental supervision and monitoring. Each participant was asked to complete 3 online surveys throughout the project: a baseline survey that was incorporated in the participant application, an initial implementation survey that was completed 6 weeks after participants received their *Connected Kids* materials, and a follow-up survey that was completed 6 months after receipt of materials. The surveys were supplemented by telephone discussion

groups with participants (or interviews with participants who could not be scheduled for participation in a group), conducted after completion of the 6-month follow-up survey. Participants were required to complete all 3 surveys and participate in a discussion group or interview to receive their stipend. All 27 participants completed the baseline survey, 24 completed the initial implementation survey, and 20 completed the follow-up survey. Telephone discussion groups had 12 participants, and one-on-one interviews were conducted with 6 participants (or other designated practice staff in 2 cases).

### **III. PARTICIPANTS**

The profile of the 27 project participants is described below.

#### Participant demographic characteristics

Number of years since completion of pediatric residency:

Range: less than 1 – 39 years

Mean: 14

Median: 8

Participant age:

Range: 28 – 75 years

Mean: 45

Median: 40

Participant sex:

Male: 4 (15%)

Female: 22 (85%)

3 participants (12%) are of Hispanic/Latino origin.

20 (77%) participants are white.

4 (15%) participants are black/African American.

1 (4%) participant is Asian.

1 (4%) participant is Native Hawaiian/other Pacific Islander.

#### Practice location/type characteristics

States in which primary practice/position is located:

Alabama

Arizona

California (2)

Florida (5)

Indiana

Iowa

Kentucky

Missouri (2)

Montana

New Jersey

New York  
Ohio (4)  
Oregon  
Pennsylvania (2)  
South Carolina  
Texas  
Wisconsin

Community in which participants' primary practice/position is located:

Urban inner city: 9 (35%)  
Urban, not inner city: 4 (15%)  
Suburban: 3 (12%)  
Rural: 10 (38%)

Type of primary employment site setting:

Self-employed solo practice: 4 (15%)  
Pediatric group practice: 7 (27%)  
Multispecialty group practice with primary care only: 1 (4%)  
Medical school or parent university: 3 (12%)  
Non-government hospital/clinic: 1 (4%)  
Non-profit community health center: 4 (15%)  
City/county/state government hospital or clinic: 4 (15%)  
Hospital-affiliated ambulatory center: 1 (4%)  
Pediatric emergency department: 1 (4%)

#### Participant workload characteristics

All participants provide direct patient care during a typical work week.

Range: 2 – 60 hours per week  
Mean: 33 hours per week  
Median: 36 hours per week

26 participants provided a response to question about how many patient visits they conduct during a typical work week.

Range: 34 – 150 visits per week  
Mean: 86 visits per week  
Median: 80 visits per week

21 participants provided valid responses to question about what percent of well-child exams are for children in each age group (i.e., total = 100%).

Range: 8 – 40% of well-child exams in a typical work week are for 5- to 10-year-olds  
Mean: 25% of well-child exams are for 5- to 10-year-olds  
Median: 25% of well-child exams are for 5- to 10-year-olds

## Patient characteristics

All participants estimated the percent of Hispanic/Latino patients at their practice.

Range: 0 – 95% of patients in practice are Hispanic/Latino

Mean: 25% of patients

Median: 10% of patients

The mean estimates of racial composition of participants' practices are:

White: 53% (median 50%, range 1 – 99%)

Black/African American: 37% (median 33%, range 0 – 99%)

Asian: 6% (median 3%, range 0 – 40%)

Native Hawaiian/other Pacific Islander: 3% (median 0%, range 0 – 40%)

American Indian/Alaskan Native: 4% (median 0%, range 0 – 60%)

The mean estimates of patient insurance coverage are:

Private insurance: 28% (median 25%, range 0 – 75%)

Public insurance (e.g., Medicaid, SCHIP): 59% (median 64%, range 15 – 90%)

TRICARE: 5% (median 5%, range 0 – 30%)

Uninsured: 10% (median 7%, range 0 – 25%)

The proportion of the participant's well-child visits for 5- to 10-year-olds was the only characteristic on which there was a statistically significant difference between the 18 participants who completed all evaluation activities (mean of 26% of well-child visits) and the 9 participants who did not complete all evaluation activities (mean of 16%). An intuitive reason for this is that because the project focused on middle childhood, it would have more resonance among and be more likely to lead to full participation by pediatricians who see more 5- to 10-year-old patients.

## **IV. VIOLENCE PREVENTION COUNSELING**

Each of the 3 surveys included several questions about the frequency and content of counseling related to violence prevention. Responses to those questions are summarized below. (See Tables 1-4.)

After 6 months, the proportion of participants who incorporated 7 specific violence prevention interventions in at least half of their middle childhood health supervision visits had increased, although none of the changes reached the level of statistical significance. (See Table 1.) No increase was seen for only one of the interventions—discussion of limit setting—but this was the intervention used by the highest number of participants at baseline.

**Table 1. Proportion of respondents who report incorporating specific violence prevention interventions in at least half of health supervision (well-child) visits for children 5- to 10-years-old**

	Baseline Survey	Initial Implementation Survey (6 weeks)	Follow-Up Survey (6 months)
Discuss limit setting	63%	59%	63%
Discuss establishing routines	52	59	74
Discuss parent modeling of behavior such as conflict resolution	35	50	68
Discuss bullying prevention	27	36	53
Talk to parents about their children's friends	54	59	79
Suggest approaches for monitoring and reinforcing behavior	54	73	79
Suggest approaches for building children's skills and competency	44	68	58
Provide information on community-based positive youth development programs	27	36	37

*Proportion of valid survey respondents only; none of the changes from baseline reach the level of statistical significance.*

At baseline, almost all participants felt that they spent too little time addressing violence prevention in their practices. After 6 months, there was modest, but not statistically significant, improvement, with one-quarter of participants reporting that they spent the right amount of time on violence prevention. (See Table 2.)

**Table 2. Proportion of respondents reporting they spend too much, too little, or just about the right amount of time addressing violence prevention issues in their practices**

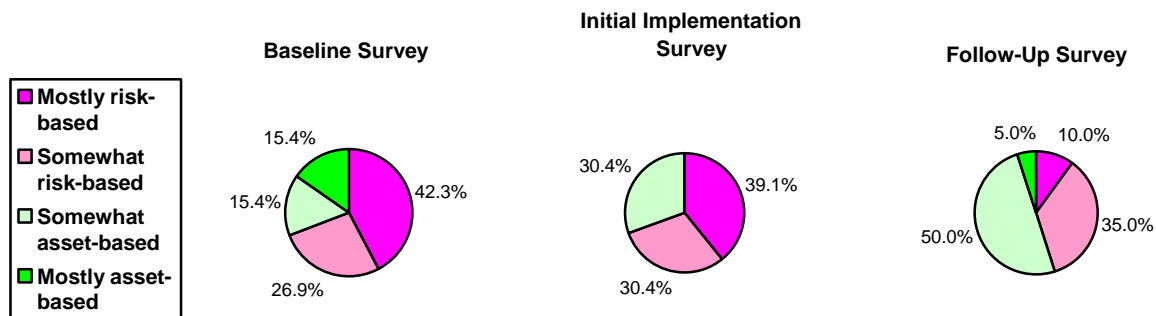
	Baseline Survey	Initial Implementation Survey	Follow-Up Survey
Too much	0	0	0
Just about the right amount	7.7%	13.0%	25.0%
Too little	92.3%	87.0%	75.0%

*Proportion of valid survey respondents only; none of the changes from baseline reach the level of statistical significance.*

One of the goals of the project was to assess whether *Connected Kids* implementation resulted in a shift from a risk-based to an asset-based approach to anticipatory guidance. From baseline to 6 weeks after implementation, participants reported a slight, but not statistically significant, shift *away from* an asset-based approach; this is most likely due to a better understanding of what an “asset-based approach” entails gained during their initial implementation of *Connected Kids*. In other words, participants’ self-reported anticipatory guidance style at baseline was affected by social desirability bias toward asset-based because they likely did not fully understand the phrase

but knew that we considered it to be important. There was some shift toward an asset-based approach from baseline to 6-months follow-up, but this change was not statistically significant. However, from the initial implementation survey to the follow-up survey, there was a statistically significant shift from a risk-based approach to an asset-based approach. (See Figure 1.) The same shift in counseling style was found in our previous work during the field test of *Connected Kids*. We are encouraged by the apparent sustainability and replicability of changing the style of anticipatory guidance administration by *Connected Kids* users, as this is one of the primary goals of the program.

**Figure 1. Proportion of respondents reporting their style of administering anticipatory guidance is mostly risk based, somewhat risk based, somewhat asset based, or mostly asset based**



*Proportion of valid survey respondents only. The Wilcoxon Signed-Rank Test shows statistically significant changes in individuals' responses on the initial implementation and follow-up surveys ( $p < .01$ ). The differences between the baseline and initial implementation surveys and between the baseline and follow-up surveys are not statistically significant.*

## V. USE OF CONNECTED KIDS MATERIALS

The initial implementation and follow-up surveys included several questions about use of *Connected Kids* materials. After 6 weeks, 23 of 24 survey respondents reported that they were using *Connected Kids*; after 6 months, 21 of 23 respondents reported that they were using *Connected Kids*. (Two participants reported using *Connected Kids* materials at baseline.) The sustainability of *Connected Kids* use will be noted in future promotion and dissemination of the program. Responses to additional questions about use of *Connected Kids* materials are summarized below. (See Tables 3-5.)

After 6 months, all respondents were using *Connected Kids* with 5- to 10-year-olds, the target population for the project, and fewer than half were using *Connected Kids* with older or younger children. (See Table 3.)

**Table 3. Proportion of respondents using *Connected Kids* with each age group**

	Initial Implementation Survey	Follow-Up Survey
Birth to 4 years	30.4%	27.3%
5 to 10 years	95.7	100.0
11 years and older	43.5	40.9

More participants reported using the brochures than the Clinical Guide; after 6 months, 2 of the brochures (“Growing Independence: Tips for Parents of Young Children” and “Bullying: It’s Not OK”) were being used all respondents. Participants reported much greater use of print materials than of the *Connected Kids* CD-ROM. (See Table 4.) The discussion groups revealed that many participants did not realize that the CD-ROM included printable versions of the brochures and that those who did understand this often forgot to use the electronic materials. There were, however, some participants who either used the CD-ROM versions for brochures outside the project age range, for which they were not provided print brochures, or noted that they intended to use the electronic brochures on their practices’ computer terminals as soon as they were able to dedicate more time to implementing the program. Though current utilization of the brochures on the CD-ROM is reportedly low, participants noted interest in having the materials available in this format. More investigation is needed of the sustainability of *Connected Kids* use when participants are not provided with free print materials and of pediatricians’ willingness to purchase and use materials in an electronic-only format.

**Table 4. Proportion of respondents using individual *Connected Kids* components**

	Initial Implementation Survey	Follow-Up Survey
<i>Connected Kids</i> format		
Print only	66.7%	52.4%
CD-ROM only	0	4.8
Print and CD-ROM	29.2	38.1
None	4.2	4.8
Clinical Guide format		
Print only	55.0	36.8
CD-ROM only	0	10.5
Print and CD-ROM	15.0	21.1
None	30.0	31.6
Clinical Guide components		
Counseling Schedule	58.8	53.9
Ideas for Optimal Use	47.1	84.6
Counseling Guidelines	82.4	69.2
Social Connections Worksheet	0	7.7
Developing Community Linkages Worksheet	5.9	0
Counseling Schedule Checklist	35.3	23.1
Brochure format		
Print only	82.4	84.6
CD-ROM only	0	7.7
Print and CD-ROM	11.8	7.7
None	5.9	0
Individual brochures		
Growing Independence: Tips for Parents of Young Children	76.5	100.0
Bullying: It’s Not OK	82.4	100.0
Drug Abuse Prevention Starts With Parents	64.7	76.9
Friends Are Important: Tips for Parents	82.4	92.3
Everybody Gets Mad: Helping Your Child Cope With Conflict	76.5	84.6

Over half of respondents to the initial implementation survey reported using *Connected Kids* at health maintenance visits only and with all families, consistent with how the program is intended to be used.

On the initial implementation survey, 91% of respondents reported that the *Connected Kids* tools were helpful in broaching sensitive topics with families and that patients and families seemed to welcome the *Connected Kids* materials. Discussion group participants noted that the *Connected Kids* materials provided answers to every question they were asked by parents on the included topics. One interview participant emphasized that these answers were both culturally- and age-appropriate.

A frequent concern when pediatricians consider implementing a new program is whether it will add to the length of a visit. The majority of participants reported that there was no change in the amount of time they spent per well-child visit after implementing *Connected Kids*, but a substantial proportion reported spending somewhat more time per visit. (See Table 5.) Discussion group participants further elaborated that they did not find it necessary to substitute *Connected Kids* topics for other topics in their anticipatory guidance routine, but rather were able to add the *Connected Kids* topics without adding significant time to health supervision visits. To accomplish this, participants were selective in their incorporation of *Connected Kids* in anticipatory guidance, instead of trying to incorporate all recommended topics. Many participants stated that they already offered counseling on many of the *Connected Kids* topics and that the brochures enriched their counseling.

**Table 5. Proportion of respondents reporting implementation of *Connected Kids* changed the average amount of time spent on a well-child visit for 5- to 10-year-olds**

	Initial Implementation Survey	Follow-Up Survey
I now spend much more time per well-child visit than before.	0	0
I now spend somewhat more time per well-child visit than before.	40.9%	36.8%
There has been no change in how much time I spend per well-child visit.	59.1%	63.2%
I now spend somewhat less time per well-child visit than before.	0	0
I now spend much less time per well-child visit than before.	0	0

All initial implementation survey respondents and 90% of follow-up survey respondents agreed or strongly agreed with the statement “I am likely to continue using the *Connected Kids* program in the future.” Most discussion group participants reported that they had not yet been able to implement as much as they would like but that they would continue to enhance incorporation of *Connected Kids* in their practices.

## **VI. CONNECTED KIDS IMPLEMENTATION PROCESS**

Several questions on the initial implementation and follow-up surveys addressed the process by which participants implemented *Connected Kids* in their practices; this topic was the focus of the telephone discussion groups. Survey and discussion group responses are summarized below.

On both the initial implementation survey and in the discussion groups, participants reported that they initiated implementation through some combination of meeting with their colleagues and

office staff to discuss the program and its implementation and reviewing the materials. Almost all participants had reviewed the brochures within 6 weeks of receiving the materials; three-quarters had reviewed the Clinical Guide and Counseling Schedule, and half had reviewed the PowerPoint training presentation.

Discussion group participants agreed that the existing *Connected Kids* materials were complete and accurate, but suggested additional tools to enhance implementation, including:

- A training tool or speaker's kit to use to train colleagues, schools, social workers, and community agencies.
- A weekly or periodic discussion group for *Connected Kids* users.
- Periodic e-mail reminders with "goals and due dates."
- Posters for exam rooms and waiting areas that will both spark parents' questions and trigger the pediatrician's memory regarding topics to discuss.
- Continuing Medical Education courses on specific topics.
- Community based resources or tools to help physicians take the project to the next level.

Participants reported various methods of making *Connected Kids* information available to parents. A majority of respondents to the initial implementation and follow-up surveys indicated that they handed materials to patients/parents and/or discussed a few *Connected Kids* topics during visits. Additional dissemination methods mentioned in the discussion groups included:

- Making the brochures available in the exam rooms and discussing the topic if the parents saw the brochure and brought it up.
- Having nurses or support staff attach the designated brochure for a visit to the chart prior to the visit.
- Incorporating the brochure in a folder of brochures for parents to take home.
- Giving parents the appropriate brochure as indicated by risk assessment.

On the initial implementation survey, 65% of respondents indicated that it was easy or very easy to implement *Connected Kids*; 55% of respondents on the follow-up survey responded similarly. However, the discussion groups revealed several themes in barriers to implementation:

- Time and staff limitations.
- Motivating other physicians and staff. Those who proved successful were those in practices where *Connected Kids* implementation coincided with a large practice change (e.g., Electronic Medical Record adoption) or where physicians or staff were new to the job and *Connected Kids* became their immediate norm.
- Remembering to use the materials.
- Difficulty changing routines.
- Reluctance to broach a complex subject without adequate time to respond.
- Lack of resonance of prevention messages. Addressing a topic before it is an issue for a parent is very difficult because parents are less likely to be interested.
- Difficulty determining whether a particular patient needs discussion of a topic.
- Lack of Spanish language brochures written at a very low reading level for middle childhood visits.
- Concurrent implementation of other grant programs in some practices made it more difficult to implement *Connected Kids* and led practices and pediatricians to feel overwhelmed.

- Difficulty setting appropriate realistic goals and understanding that it is preferable to implement the program incrementally.

These barriers are not unique to implementation of *Connected Kids*, and were to be expected given the program’s comprehensiveness and complexity. Although time was a frequently mentioned barrier, a majority of participants reported that there had been no change in how much time they spent per well-child visit. Participants noted that *Connected Kids* did not recommend discussing “new” topics as much as it provided new approaches to discussing topics they already covered and to prioritizing anticipatory guidance on violence-related topics. In one discussion group, it was noted that the true value of the materials was that they remind parents that pediatricians care about psychosocial topics. Most participants expressed optimism that their practices would be able to more fully and fluidly implement *Connected Kids* after a period of time.

The approach to *Connected Kids* implementation was largely dependent on the practice’s starting point. For practices that already had a well-established anticipatory guidance routine, *Connected Kids* provided well-designed, culturally appropriate brochures that could be shared with the parent and child during the visit, allowing them to ask questions about how these concepts can apply directly to their family. For practices that do not regularly engage in open dialogue with families about these topics, *Connected Kids* message delivery was more passive, with brochures “made available” to families (e.g., in brochure racks in the waiting room) or handed out but not discussed.

## VII. CONCLUSIONS

Our preliminary findings from the *Connected Kids* Implementation Project indicate that *Connected Kids* is appealing to pediatricians, implementation is feasible, and use is sustainable over a period of 6 months. Those participants who expressed the most positive feelings about their implementation of *Connected Kids* were those who recognized that full implementation of a program of this complexity and comprehensiveness will take time and must be done incrementally and those whose practices already had a strong anticipatory guidance routine. Barriers to implementation were similar to those found with implementation of most changes in clinical practice (e.g., time and staff limitations, motivation, changing routines). Most participants did not allow time barriers to prevent implementation—they focused on shifting how they approach and prioritize anticipatory guidance rather than adding to the content of their counseling and the length of well-child visits.

Findings from the *Connected Kids* Implementation Project have been shared with the AAP Violence Prevention Subcommittee to make recommendations regarding how *Connected Kids* can be improved or ancillary materials can be developed to facilitate implementation in practice, as well as additional efforts the AAP can undertake to support dissemination and implementation of *Connected Kids* and other approaches to pediatrician adoption of strategies to improve parental supervision and monitoring.