
ASQ Online

Developmental Screening

Brief

In the United States

Early identification of developmental disorders is critical to the well-being of children and their families. It is an integral function of the primary care medical home and an appropriate responsibility of all pediatric health care professionals. Delayed or disordered development can be caused by specific medical conditions and may indicate an increased risk of other medical complications. Delayed or disordered development may also indicate an increased risk of behavior disorders or associated developmental disorders.

We recommend that developmental surveillance, as described later, be incorporated at every well-child visit. Any concerns raised during surveillance should be promptly addressed. In addition, standardized developmental screening tests should be administered regularly ...

Policy Statement, American Academy of Pediatrics, "Identifying Infants and Young Children with Developmental Disorders in the Medical Home,"

July 2006, reaffirmed, 2010

Approximately 15-18% of children in the U.S. have a developmental or behavioral disability and 39% of Medicaid children under age 5 are estimated to be at risk of a developmental, behavioral, or emotional problem. Yet, only 20-30% of children with or at risk for problems are identified prior to starting school.

National Academy for State Health Policy, "State Policy Options to Improve Delivery of Child Development Services," Dec. 2006

The Problem

When a developmental delay is not recognized early, children must wait to get the help they need. This can make it hard for them to learn when they start school. In the United States, 17% of children have a developmental or behavioral disability. In addition, many children have delays in language or other areas, which also impacts school readiness. But less than 50% of these children are identified as having a problem before starting school, by which time significant delays may have already occurred and opportunities for treatment have been missed.

In Alaska

The 2007 National Survey of Children's Health reports that in Alaska:

- 10.1% (5,936) of children age 4 months to 5 years are at high risk for developmental, behavioral or social delay
- 20.7% (10,172) of children age 10 months to 5 years had a health care visit during the previous 12 months that included developmental screening
- 39.3% (23,172) of parents of children age 4 months to 5 years have one or more concerns about their child's development

Based on State of Alaska Department of Health and Social Services data, the following percentage of children received at least one initial or periodic Early Periodic Screening, Diagnosis and Treatment (EPSDT) exam in 2009:

- 88% of infants
- 55% of children ages 1-5
- 57% of children ages 6-9

Alaska IDEA Part B and Part C Data

The Individuals with Disabilities Education Act (IDEA) is a law ensuring services to children with disabilities throughout the nation. Infants and toddlers with disabilities (birth-2) and their families receive early intervention services under IDEA Part C. Children and youth (ages 3-21) receive special education and related services under IDEA Part B.

In Alaska:

- 2% of infants under the age of 3 were served by Infant Learning Services (Part C), less than the national average of 2.67% (Dec. 2009)
- 1,788 families of infants and toddlers were served by Part C in 2010
- 2,104 of enrolled 3-5 year olds (18%) are currently in special education (Part B) services
- 1,361 of enrolled 8-year-olds (14%) are currently in special education (Part B) services

Research shows...

That clinical assessment without the use of standardized screening tools identifies less than 30 % of children with developmental disabilities, while reliable screening tools correctly identify such children at least 70% of the time.

"Pediatricians' Reported Practices Regarding Developmental Screening,"
Sand et al. 2005

Over one quarter (26.4%) of children under age 5 are at moderate or high risk of developmental, behavioral, or social delays based on parent report. **However, risk factors are not evenly distributed across all children. Poor children (33%), minorities (34 % of Hispanic children and 32% of black children), and children with public insurance (33%) appear more likely to be at risk for delays.**

"The Role of Developmental Screenings in Medicaid and CHIP," Urban Institute,
December 2010

The Urban Institute's 2010 report, "Improving the Lives of Young Children: The Role of Developmental Screenings in Medicaid and CHIP," offers these recommendations:

- ⇒ Increase participation in Medicaid and CHIP
- ⇒ Increase provision/receipt of well-child visits under Medicaid and CHIP
- ⇒ Increase use of standardized development screening during well-child visits
- ⇒ Use data to monitor, develop, and fine-tune policy changes

Understanding the Problem

"Developmental screening in early childhood systems involves interdisciplinary coordination, and cooperation seems to pose one of the most significant challenges to implementation ... Coordination of early childhood systems inherently requires everyone involved to think outside of the traditional silos within which early childhood health and education professionals commonly operate."

"Developmental Screening in Early Childhood Systems: Summary Report,"
Healthy Child Care America, American Academy of Pediatrics, March 2009

The Center for Disease Control and Prevention reports that:

- About 65% of pediatricians feel inadequately trained in assessing children's developmental status
- There are currently no national data tracking the state of this practice (developmental screening) and how it is integrated into primary care

How Do We Fix It?

The CDC's National Center on Birth Defects and Developmental Disabilities has established the following goals to help children reach their full potential:

- Develop and test community-based model programs in primary care settings (and potentially other settings that care for young children) to screen children early and to refer them for further assessment and intervention as appropriate
- Increase providers' knowledge of and skills in developmental screening
- Monitor use of screening in primary care settings
- Raise awareness about the need for and benefits of developmental screening

What is Alaska Doing?

- ⇒ Alaska's Infant Learning Program is increasing accessibility of the "Ages and Stages Questionnaire" screening tool through online availability to primary care providers and others
- ⇒ Alaska's TACSEI Project (Technical Assistance Center on Social Emotional Intervention) will raise awareness about the importance of early screening by providing training to early care and learning providers and families on social/emotional development
- ⇒ "Child Find" reaches out to communities to identify children potentially in need of Part B and Part C services
- ⇒ The Early Childhood Comprehensive Systems (ECCS) Program and the Developmental Screening Workgroup are creating a provider education plan to raise awareness of the importance of developmental screening and the tools available to assist providers

Impact of Ages and Stages Questionnaire Scores on Pediatrician Referral Patterns

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The American Academy of Pediatrics has recommended an algorithm for identifying children with potential developmental delays. It includes a recommendation that positive screening should result in referral for additional evaluation or intervention. Yet, it is not known whether positive screens do, in fact, influence physician referrals. The primary aim of this study was to evaluate whether positive screens from an Ages and Stages Questionnaire would prompt physicians to refer for additional evaluation or intervention as recommended by the American Academy of Pediatrics algorithm. A sample of 207 physicians read one of three hypothetical clinical vignettes describing an 18-month-old child with ambiguous language development. Vignettes differed on the presence or absence of an Ages and Stages Questionnaire score and, if a score was present, on whether the Ages and Stages Questionnaire score was positive or negative. Physicians indicated what actions they would take including whether they would refer for evaluation or intervention. Multinomial regression analyses showed physicians referred more often for further evaluation or intervention if the hypothetical Ages and Stages Questionnaire score was positive. Likewise, physicians referred less often if the Ages and Stages Questionnaire score was negative. Physicians without the Ages and Stages Questionnaire scores did not choose one action more frequently over another. In this initial investigation, the data show that physicians do refer, as recommended, when presented with positive Ages and Stages Questionnaire screens. This is important because it lends support to one critical component of the American Academy of Pediatrics developmental screening algorithm. Given the use of hypothetical vignettes in this study, it will be important to investigate whether positive Ages and Stages Questionnaire screens impact actual referrals in clinical practice.

Key words: *ASQ, development, referral patterns, screening*

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DEVELOPMENTAL disabilities affect an estimated 17% of the children in the United States and have a significant impact on their health and educational functioning (Boyle, Decouflé, & Yeargin-Allsopp, 1994) as well as their quality of life (Sheppard-Jones, Thompson Prout, & Kleinert, 2005). Fortunately, early detection and intervention can lead to improved outcomes for children with developmental delays or at risk for poor

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developmental outcomes (King & Glascoe, 2003). Indeed, early detection has long been considered an important part of good primary care (Rosenbaum, Mauery, Shin, & Hidalgo, 2005), and the American Academy of Pediatrics (AAP) published an official statement confirming the importance of early identification of children with disabilities (Council on Children With Disabilities, 2006).

Consequently, significant effort has centered on improving the early detection of developmental disabilities. The AAP recommends that physicians incorporate both general surveillance methods and more structured developmental screening instruments to improve detection (Council on Children With Disabilities, 2006). General surveillance methods traditionally involve a flexible format with reliance on skilled observation. Developmental screening involves a structured standardized instrument that compares patients with normative developmental standards and then provides objective scores that indicate when referral for additional services should be considered (Squires, Twombly, Bricker, & Potter, 2009). This coupling of surveillance and screening increases the likelihood that children are detected early.

Numerous standardized screening instruments have improved detection rates (Dworkin, 1992; Smith, 1978); however, one specific screening instrument, the Ages and Stages Questionnaire (ASQ); (Squires, Potter, & Bricker, 1999), has excellent psychometric properties and, more importantly, has good sensitivity and specificity. Indeed, the ASQ can effectively detect children who have developmental delays, whereas excluding those who do not (Squires et al., 2009).

One outcome of the development of effective screening tools like the ASQ is a strong push to disseminate these instruments into primary care settings. Fortunately, this effort has been guided, in part, by research. For example, studies looked at developing and evaluating practical protocols of ASQ administration in community primary care clinics (Rydz et al., 2006). Others evaluated the effective-

ness and costs of implementing the ASQ under "real world" conditions (Hix-Small, Marks, Squires, & Nickel, 2007). Still other studies looked at the barriers to implementation and made proposals for how best to overcome these obstacles (Sand et al., 2005).

Although the ASQ is efficacious at detection, investigators have increasingly acknowledged that the process of transferring clinical tools into real world settings is impacted by a variety of factors, only one of which is the efficacy of the tool (Glasgow, Vogt, & Boles, 1999). Equally important is the extent to which the tool prompts practitioners to make referrals for evaluation or intervention. However, previous studies of the ASQ have not evaluated its impact on physician referral rates (Hix-Small et al., 2007; Rydz et al., 2006). Thus, there are no studies to date that have looked specifically at the effect positive ASQ scores have on physician referrals.

Interestingly, the AAP has called for exactly this type of research to build evidence for the current algorithm recommended to identify children with a potential developmental delay (Council on Children With Disabilities, 2006). In that algorithm, it is expected that positive screening will result in referrals for additional evaluation or intervention. The purpose of this investigation was to conduct a preliminary analysis, using hypothetical vignettes, of whether positive ASQ scores impact physicians' referral as expected within the AAP algorithm. We hypothesized that the presence of positive ASQ scores would result in a referral for evaluation or intervention and that negative scores would be less likely to result in a referral, thus, supporting AAP's proposed algorithm.

METHODS

Participants

We randomly selected 15 states across the United States (e.g., New Hampshire, Georgia, California, Minnesota) and contacted the AAP state chapters to request contact information for its members. Four

states (i.e., Nebraska, Colorado, North Dakota, and Mississippi) returned phone, e-mail, or both inquiries and provided this information without requiring payment for access to the contact information. Because of monetary limitations, states requiring payment for their lists were not included. A total of 1329 physicians were identified as potential study participants, but this number reduced to 1293 due to eight incomplete addresses and 28 surveys marked "returned to sender."

These 1293 potential participants were randomly assigned to one of three survey conditions (Version 1, 2, or 3; described below under Questionnaire). The overall response rate was 19.4% (251 received/1293 mailed surveys); 207 of the returned surveys meet inclusion criteria (i.e., providing services to children 3 years and younger). For further details of participant enrollment and return rates by state see Table 1.

Returned surveys reflected a fairly even distribution across versions—approximately 30% for Versions 1 and 3 and 40% for Version 2 questionnaires. Physicians were more likely to be females (56.2%) and pediatricians (98.1%). Roughly 16% of the physicians saw only 0–19 pediatric patients aged 0–3 weekly, whereas 36% saw 20–39 patients and 48% saw more than 40 weekly. See Table 2 for additional practice and patient characteristics.

Table 1. Participant Enrollment

No. of AAP physician members in four states	1329
No. of surveys distributed	1321
No. of surveys returned	251
Colorado (798 total)	145
Mississippi (241 total)	37
Nebraska (194 total)	71
North Dakota (96 total)	25
No. of surveys meeting inclusion criteria	207
No. of surveys with complete data	201

Note. AAP = American Academy of Pediatrics.

QUESTIONNAIRE

A 14-item questionnaire accompanied the vignette sent to physicians. Tables 2–4 provide a summary of the information requested on the questionnaire. The questionnaire asked about their education (e.g., type of residency), practice (e.g., medical specialty), and patients' characteristics (e.g., number of 0- to 3-year-old patients per week). Physicians were asked about their use of screening tools (i.e., If you use a standardized developmental screening tool, which tool[s] do you use?). A list of example screening tools was provided to choose from with an opportunity to write in additional tools not covered in the list (Table 3). Respondents were also asked to describe their familiarity with and use of the ASQ (i.e., familiarity with the ASQ [please check all that apply]; see Table 4).

Clinical Vignette

Physicians then read one of three clinical vignettes describing a non-gender-specific 18-month-old child with a potential communication delay (Figure 1). The vignettes used in this study were adapted from vignettes previously used in published research on developmental screening (Sices, Feudtner, McLaughlin, Drotar, & Williams, 2004). The primary aim of the study was to evaluate whether the ASQ scores impacted referral; therefore, the vignettes were adapted to reduce the physician's ability to rely on clinical judgment and to create a situation in which the presence of the ASQ scores would facilitate decision making.

All three vignettes described the child as healthy and growing well along with some communication/language development the child had been exhibiting. The child's language skills made it unclear as to whether the child was delayed in that area. Versions 1 and 2 included a statement that the parents had completed an ASQ in the waiting room. An ASQ score profile and score interpretation excerpt were just below the clinical vignette on Versions 1 and 2. The score profile showed the same fictitious scores for each

Table 2. Physician Demographics and Characteristics of Their Practices and Patients ($N = 207$)

Physician Demographics	%	Practice Characteristics	%
Gender		Medical speciality ^a	
Female	56.2	Pediatrics	98.1
Male	43.8	Family practice	1
Birth year		Other	2.9
M_{year} (SD)	1963 (10.94)	Practice affiliation ^a	
Range	1933-1984	None	16.9
Year completed medical school		Community hospital	41.3
M_{year} (SD)	1990 (10.95)	HMO	9.5
Range	1959-2009	Academic medical center	19.4
Type of residency		Other	27.5
Pediatric	99	Region of United States ^a	
Family practice	1	Midwest	39.4
Years in practice ($N = 60$)		South	15.3
M_{years} (SD)	16.22 (10.73)	West	43.8
Range	1-40	Other	1.5
Patient Characteristics	%	Community type ^a	
No. of patients, ages 0-3, seen weekly		Urban	31.9
0-19	15.7	Suburban	41.8
20-39	36.5	Rural	26.9
>40	47.7	Military base	0.01

Note. HMO = Health Maintenance Organization.

^aParticipants were able to mark more than one option, so percentages may be higher than 100%.

developmental area except the total communication score. Version 1 included a scoring profile with an ASQ score of 10 in the communication domain, which falls below the cutoff (i.e., clinically significant score) and, therefore, is highlighted in black on the profile. The profile showed all other scores on the ASQ above the cutoff range. Version 2's ASQ score profile reflected all scores in the typical range. Version 3 did not include ASQ scores following the scenario. At the conclusion of the clinical vignette, physicians were asked to indicate all possible actions they would take from a list of actions (e.g., no additional action, bring patient back early, refer to early intervention services). Physicians also had the option to further specify actions not listed.

Procedure

A one-page questionnaire with the clinical vignette on the second page was devel-

oped, pretested with pediatric residents at the University of Nebraska Medical Center, and revised for content and clarity. Specifically, answer categories were consolidated or expanded on the basis of responses and feedback from the residents. The questions were grouped into sections: physician demographics (e.g., gender, birth year), patient characteristics (e.g., no. of patients ages 0-3 seen weekly), practice characteristics (e.g., medical specialty, practice affiliation), use of development assessments (see Table 3 for answer options), and ASQ familiarity (see Table 4 for answer options). Participants were instructed to continue onto the next page that contained the clinical vignette.

Questionnaires were mailed in envelopes with a cover letter and prepaid return envelope. The cover letter explained the purpose of the study and informed participants the study was evaluating "developmental screening." Surveys were mailed in April 2010

Table 3. Developmental Assessment Used ($N = 207$)

Developmental Assessment Used	%
Do not typically use a standardized screening tool	15.5
ASQ	51.2
CDI	3.4
CDR-PQ	2.4
CSBS DP: infant/toddler checklist	4.3
Denver-II Screening Test	27.5
PEDS	3.9
Other, please specify	8.7
Bright futures	1.4
Physician created	1.4
Mayo Developed Screener	0.5
M-CHAT	3.4
PDQ	0.5
State-specified profile	0.5
Gesell Developmental Observation	0.5
American Academy of Pediatrics Form	0.5
Bayley Scales of Infant and Toddler Development	0.5

Note. ASQ = Ages and Stages Questionnaire; CDI = Child Development Inventory; CDR-PQ = Child Development Review-Parent Questionnaire; CSBS DP = Communication and Symbolic Behavior Scales Developmental Profile; M-CHAT = Modified Checklist for Autism in Toddlers; PEDS = Parents Evaluation of Developmental Status; PDQ = Prescreening Developmental Questionnaire.

to all participants without a second mailing due to monetary constraints. A prescreening question at the top of the survey identified those eligible to participate (i.e., physicians who provide primary care services to children aged 3 and younger). Pediatricians who did not meet the criteria were asked to return the survey after answering the prescreening question.

Variables of Interest

The independent variable for this study was the clinical vignette version. The dependent variable for this study was actions taken by the physician regarding the child. The list of possible responses was condensed into three primary categories for ease of interpreting pediatrician response (Table 5). The “no

Table 4. Familiarity With the Ages and Stages Questionnaire ($N = 207$)

Level of Familiarity	%
Not familiar	20.3
Heard of the ASQ	74.9
Seen the ASQ protocol or summary sheet	61.8
Exposed to the ASQ in medical training	5.8
Used the ASQ in practice when assessing infants and children	53.1
Attended a workshop on how to use and interpret the ASQ	14.5

Note. ASQ = Ages and Stages Questionnaire.

action” category indicated that no further action would be taken on the part of the physicians and included the options “no additional action required at this time” and “wait and see at the next visit.” The “physician guidance” category indicated that physicians would engage in additional action themselves and included “bring patient back early” and “do more screening now.” The “referral” category indicated that physicians would refer the patient to another practitioner or service agency and included “refer to audiology,” “refer to early intervention services,” “refer to medical specialist,” and “refer to psychologist.” Responses included in the “other” category were filtered into one of the three primary categories on the basis of the action listed (e.g., “refer to speech therapy” was placed in the “referral” category).

Statistical Analysis

Simple frequency and mean values of physician, practice, and patient demographics were calculated as well as for use of developmental screening tools and ASQ familiarity. Covariate analyses were run for the action outcomes (i.e., “no action,” “physician guidance,” and “referral”) comparing action outcomes to gender and familiarity with the ASQ. Significant findings indicated that the variable(s) should be included in the multinomial regressions performed evaluating

<p>VIGNETTE FOR VERSIONS 1 AND 2 OF THE QUESTIONNAIRE: ASQ SUMMARY SHEET EXCERPT INCLUDED</p> <p>You are seeing an 18-month-old child for a well-child visit. The child is an established patient in your practice, in good health and growing well. The child is walking well, drinking from a cup, saying "mama" and "dada" plus several other words, and can sometimes retrieve a familiar toy or object at the parents' request. While sitting in the waiting room, the parents filled out an Ages and Stages Questionnaire (see ASQ results below). Based on this information, what action(s), if any, would you take at this visit? (please check all that apply)</p>
<p>VIGNETTE FOR VERSION 3 OF THE QUESTIONNAIRE: NO ASQ SUMMARY SHEET EXCERPT INCLUDED</p> <p>You are seeing an 18-month-old child for a well-child visit. The child is an established patient in your practice, in a good health and growing well. The child is walking well, drinking from a cup, saying "mama" and "dada" plus several other words, and can sometimes retrieve a familiar toy or object at the parents' request. Based on this information, what action(s), if any, would you take at this visit? (please check all that apply)</p>

Figure 1. Vignettes included on questionnaires.

vignette version (i.e., ASQ summary sheet below cutoff, ASQ summary sheet in typical range, and no ASQ summary sheet provided) and selected action outcomes (i.e., no action, physician guidance, and referral). Missing data were excluded from analyses, which resulted in a drop in participants included in the final analysis of differences in physician action between vignettes from 207 to 201.

RESULTS

How Familiar Are Physicians With Developmental Screening Tools?

Physicians were provided with a list of some of the more common assessment tools

used in primary care but were also allowed to write in other tools used. Of the 207 physicians, 84.5% reported using a developmental screening assessment as part of their well-child visits. The two most common were the ASQ (51.2%) and the Denver-II Screening Test (27.5%). Thus, the majority of physicians reported using a screening tool in their clinic. Table 2 outlines the percentages associated with various developmental screening tools. Regarding familiarity with the ASQ specifically, 79.7% of the physicians reported some familiarity with the ASQ and 53.1% indicated that they have used the ASQ at some point in clinical practice (Table 4).

Table 5. Impact of ASQ on Physician Actions ($N = 201$)

Outcome Variable	%	Version	Comparison Version	OR (95% CI)	<i>p</i>	
No action	51.2	Version 2	Version 1	9.13 [4.4, 18.93]	.000	
			Version 3	3.32 [2.06, 5.35]	.000	
			Version 3	Version 1	2.75 [1.22, 6.18]	.014
Physician guidance	19.9	Version 1	Version 2	0.286 [0.48, 3.45]	.618	
			Version 3	Version 1	2.67 [1.24, 5.74]	.012
			Version 2	3.43 [1.48, 7.96]	.004	
Referral	28.9	Version 1	Version 2	8 [3.16, 20.27]	.000	
			Version 3	3.08 [1.65, 5.75]	.000	
			Version 2	Version 3	0.39 [0.14, 1.08]	.069

Note. ASQ = Ages and Stages Questionnaire; CI = confidence interval; OR = odds ratio.

Does Gender or Familiarity With ASQ Impact Action Outcome?

To evaluate the impact gender and ASQ familiarity had on the action outcome selected by physicians, three different covariate analyses were conducted. First, the relationship between the vignette version and ASQ familiarity was evaluated, which yielded a nonsignificant finding ($\chi^2_{2,205} = 1.12, p = .572$). A second analysis was run to evaluate the association between the physicians' familiarity with the ASQ and their selected action outcomes. To determine the impact of familiarity, physicians who marked any of the options indicating that they had contact via seeing, hearing, being exposed to, using, or attending a workshop on the ASQ were considered to be familiar with the ASQ. Results from this analysis indicated no significant relationship between ASQ familiarity and action outcomes ($\chi^2_{2,199} = 3.85, p = .146$). The third covariate analysis explored the relationship between the physicians' gender and their selected action outcomes. Results indicated again no significant relationship between the two variables ($\chi^2_{2,197} = 0.82, p = .663$). As a result of these findings, gender and ASQ familiarity were not classified as covariates in the subsequent analyses.

Does the Presence of an ASQ Summary Sheet and Score Impact Outcome?

Vignette versions were compared to evaluate the impact the presence of the ASQ had on physician referral behavior using two multinomial regression analyses (Table 5). Statistically significant findings indicated that physicians who received Version 2 (i.e., ASQ scores in the typical range) were 9.13 and 3.32 times more likely to take no action than physicians who received Versions 1 and 3, respectively ($p < .001$). Physicians who received Version 3 (i.e., no ASQ scores) were also 2.75 times more likely to take no action compared with physicians who received Version 1 (i.e., ASQ below the cutoff; $p = .014$). Physicians who received Version 3 were 2.67 ($p = .012$) and 3.43 ($p = .004$) times more likely to select

physician guidance than physicians who received Versions 1 and 2, respectively. No difference was found between Versions 1 and 2 on likelihood to select physician guidance. Physicians who received Version 1 were 8 and 3.08 times more likely to refer than physicians who received Versions 2 and 3, respectively ($p < .001$). However, no difference in likelihood to refer was found between physicians who received Versions 2 and 3.

DISCUSSION

The results of this investigation suggest that, for this sample of primary care physicians, the hypothetical ASQ scores impacted referral for additional evaluation/services as recommended by AAP's algorithm. More specifically, physicians were significantly more likely to refer a child with positive ASQ scores than if there were no ASQ scores to guide them or if the ASQ scores were negative. Likewise, physicians were also significantly less likely to refer a child who had negative ASQ scores than if they had no scores to guide them or if a single ASQ score was positive. These findings provide initial support for the use of the ASQ as a developmental screener in accordance with the AAP algorithm (Council on Children With Disabilities, 2006).

The presence of the ASQ score may have served as a means to reduce ambiguity. Physicians who did not receive an ASQ score were more diverse in their action outcomes compared with their counterparts who received ASQ scores (Table 6). Specifically, if the ASQ score indicated that the child was at risk, 70.2% of the physicians referred, and if the ASQ score indicated that the child was within the typical range, 85.9% of the physicians selected no action necessary. However, if the ASQ score was not provided, 37.3% indicated no action, 40.7% engaged in physician-guided actions, and 22% made referrals. Physicians were not more likely to choose one action over the other, which indicates that the presence of the ASQ score may have helped physicians

Table 6. Physician Action Outcome by Vignette Version Percentages ($N = 201$)

Version	Outcome Variable		
	No Action	Physician Guidance	Referral
Version 1	14	15.8	70.2
Version 2	85.9	8.2	5.9
Version 3	37.3	40.7	22

distinguish between children who needed to be referred and those for whom no action was necessary.

In addition, without the ASQ scores present, physicians were less likely to follow the AAP guidelines. The most recent recommendations by the AAP indicate that if concerns are raised at a visit, then screening should be done. Notably 36% of the physicians endorsed actions in line with this guideline, which left 64% either referring without further evidence of necessity, bringing the child back early, or not engaging in action. Given the unique role physicians have in the process of identifying children with developmental delays and connecting them with services, the use of the ASQ could lead to an increase in utilization of early intervention services through referrals made by physicians. Using the ASQ could also help reduce burden on the system by not referring children who do not meet objective assessment for referral.

The lack of impact of gender on action outcomes was unexpected given previous research that has indicated that female physicians are more likely to refer (Sices et al., 2004). The presence or absence of the ASQ score profile could have reduced the impact of gender on referral patterns. To determine whether this might be the case, an additional follow-up analysis was run evaluating only physicians who received Version 3 to determine whether a gender effect was present in just this group. Findings indicated no difference between genders on action outcomes ($\chi^2_{2, 58} = 0.6, p = .742$). Thus, the presence of the ASQ summary sheet was not impacting

the potential gender effects. Another possible explanation could be that physician specialty is a more significant predictor of referral patterns than gender, which was the other factor that increased the likelihood of referral in the study by Sices et al. (2004). Unfortunately, the current sample consisted predominately of pediatricians (98.1%); therefore, this could not be further evaluated.

An unexpected finding was that the presence of the ASQ score reduces the amount of follow-up the physician engages in for hypothetical vignettes. Particularly, physicians who received Version 3 of the vignette without the ASQ scores were more likely compared with their counterparts who received Versions 1 and 2 to select physician guidance options (e.g., asking additional questions, seeking clarification). In addition, physicians who received Versions 1 and 2 showed no significant difference between their selections of physician-guided actions. Given the increased demands placed on physicians during an office visit, the use of the ASQ may ease the burden of collecting additional information. One study found on average the monetary cost per patient of implementing the ASQ was \$1.61–\$2.43 and the average time required to explain, score, and provide referrals was 4–5 min (Hix-Small et al., 2007). Another found that the cost per child of implementing the ASQ in each well-child visit from birth to age 3 was \$11.11–\$15.56 dependent on the screen reflecting scores above or below the cutoff range (Dobrez et al., 2001). Thus, whereas one argument against standardized assessment of developmental delays is the burden of time, this study's findings argue that the overall investment of the physician may be less when the ASQ is used.

Another unintended finding from this study was that more physicians reported using developmental screeners in their everyday practice than in the past. Previous data suggested that approximately 70% of the physicians did not routinely use screening tools (Sand et al., 2005; Sices et al., 2004). However, nearly 85% of the respondents to this survey reported using a developmental screener in their practice. This high percentage could be

the result of a biased sample—pediatricians using developmental screeners were more likely to respond. In addition, our survey did not differentiate if the physicians routinely used these screeners in every well-child visit.

Several limitations exist with this study. The study relied on physicians from four states who were a member of their state chapter of the AAP and the state chapter did not charge for access to their list of physicians, which reduces the generalizability of these results. In addition, the response rate of 19% is lower than hoped for. As with any survey study, the confinement to predetermined responses may have also impacted the findings (e.g., researcher bias). An attempt was made to counter this by allowing physicians to

write in responses on some questions. Finally, the physicians in this study were responding to hypothetical vignettes and not real-life patients. Of course, the responses of physicians “in theory” may not reflect what actually happens in practice. However, the vignettes used in this study were adapted from previously used vignettes in published research (Sices et al., 2004).

Despite these limitations, these findings provide initial support that in hypothetical vignettes the ASQ influences physicians’ referral of children with potential developmental delays as intended by the AAP’s recommended algorithm. Studies are currently underway to move the evaluation from hypothetical situations into the real world (i.e., actual referrals made on the basis of ASQ scores).

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Memorandum of Understanding
Infant Learning Program Grantee
&
Community partner

Universal Screening-ASQ Online

Identifying infants and toddlers who may have developmental delays is a shared responsibility of many individuals within our community. Universal screening of infants and toddlers is one way to maximize resources so that early intervention services are available for those who need them. The State of Alaska, Infant Learning Program, has agreed to provide and support a statewide system of universal screening for children from 2 months to 60 months through Brookes Publishing and the ASQ Online Implementation Project.

The implementation of the project requires a clear understanding by both parties regarding sharing of information and understanding how information will be used.

ILP and the **Community Partner** agree to treat all family information regarding the universal screening program as protected health information (PHI) and therefore it is confidential. In addition to HIPAA requirements, PIC is required to abide by the Family Educational Rights and Privacy Act (FERPA) regulations that further outline release of confidential information. FERPA requires PIC have parental release of any information to any source.

Community Partner will:

- Incorporate developmental screening into well baby care for children birth to five years of age.
- Utilize the Online ASQ system provided by the State of Alaska, Infant Learning Program for documentation of periodic screenings.
- Refer infants and toddlers to Programs for Infants and Children when:
 - Child's skills indicate delays in typical development, and/or
 - Child's medical home determines biological/environmental risks exist that may result in developmental delay.
- Determine an onsite administrator for Online ASQ.
- Participate in ongoing communication with PIC to implement universal screening program effectively.

ILP Grantee will:

- Provide access to the ASQ Online system to community partner via the State of Alaska Infant Learning Program.
- Provide support for effective and efficient implementation and ongoing administration of universal screening program in Anchorage.
- Provide training upon request, in conjunction with Brookes Publishing technical assistance.
- Respond to referrals by offering a multidisciplinary developmental evaluation. PIC services are voluntary and parents have the right to refuse services.
- Provide feedback to ACP in accordance with HIPAA and FERPA regulations.

Considerations for Adding Programs to ASQ Online Enterprise Accounts

Summary of thoughts from Jillian Lush, Kristen Spencer for topical teleconference May 30, 2013
Facilitated by Carol Prentice, Prentice Consulting
Recorded by Jeanette Gardiner, Gardiner Business Support Services

Considerations for Adding Programs to Enterprise Accounts

1) When is an Enterprise ready to add programs?

- At a minimum, Enterprise Account needs to have their own ILP program set up as a program and have entered profiles and screenings.
- It's helpful to have set up their own Family Access webpage so they can assist new programs in setting up theirs.
- It's best to have a staff person assigned as a "point person" for ASQ who can be available to new programs to answer questions and provide some technical assistance.

2) When is a program ready to join an Enterprise?

- When potential partners are competent in using/leading an ASQ screening without the online portion. If not, they need to start with an orientation/training on ASQ prior to the use of ASQ Online.
- Are they comfortable using databases? Some basic experience is important to the success of ASQ Online.
- When there is time to commit to incorporating something new into their system. There is a minimal learning curve to get comfortable with ASQ Online but some time is required to learn this new skill.
- Access to a computer and Internet is required.

3) Identifying potential program partners

- In most cases, the ILP grantee needs to reach out to potential partners.
- Think about where referrals are currently coming from and approach those partners with ASQ Online.
- Think about where referral could be coming from, even if they aren't now, and approach those partners.
- Also, think about the communities in the ILP service area and which of those might be program partners. Where are children seen? Clinic, Head Start/Early Head Start? Parents as Teachers?
- The Part C Office has identified potential program partners including:
 - Private pediatric and family practice medical providers
 - Tribal health organizations
 - Public health clinics
 - Head Start/Early Head Start
 - Child care programs
 - Home visiting programs including Parents as Teachers
 - Public pre-k programs (school district)
 - Military child care programs

4) How to approach programs

- One-on-one outreach by setting up a meeting and presenting ASQ Online information.
- Orientation to ASQ screening as well as online. Try to get them familiar with ASQ before presenting the technological piece.
- One incentive for programs is they get access to ASQ Online for free.
- Look for opportunities at Child Find events, health fairs, and other events/opportunities.
- Also consider inviting a few potential partners in the room at the same time.

5) What responsibilities does the Enterprise have for programs? (training, problem solving, etc.)

- General technical assistance and problem solving. Help them enter child profiles into the database, and if the partner has a question, they call us.
- If the ILP Enterprise notices that a program hasn't entered any screenings, they should follow up to see what support is needed.
- General TA for programs.
- Setting up Family Access, helping with initial data entry, training.
- Consider including the ASQ Online information in the standard MOA's with programs. Have it in the general MOA and not a separate ASQ specific agreement. This implies an ongoing commitment.
- Alert programs to training opportunities (webinars, recorded webinars, etc.). Provide resource information as it becomes available.
- The grantees could be extending the invitation to programs to participate on the future live or recorded webinars.

6) What are the time/resource expectations for all parties?

- As with anything, it will take more time at first, but once learned it goes pretty quickly.
- It's difficult to quantify time since there are so many variables such as familiarity with similar database programs, number of screenings to enter, general interest and motivation.
- Need to be honest in letting potential programs know that there is a time commitment involved.

ASQ Online Functionality Q&A for Alaska ILPs

Several questions about ASQ Online functionality and features were raised during the visit from Brookes Publishing representatives Lauren Smith and Amy Perkins in early February 2012. This document summarizes the functionality questions and provides answers (reviewed and updated October 2013).

Duplications concerns

- **There are concerns about duplication of screening the same child by different entities (e.g., a pediatrician and Early Head Start Program). Does the system detect whether the same child is entered in two Programs?**
- **Can the ASQ Online system alert the user if he or she attempts to enter a child record for a child that already exists in the Program (e.g., same first & last name and birth date)?**

There is no automatic alert if a child with the same first name, last name, and birth date is entered into the ASQ Online system. It is not possible to determine whether identical children exist across ASQ Enterprise Accounts (e.g., PIC and Focus) without viewing a list of child records in each Account and manually comparing the data.

However, inside one Program (e.g., ABC Pediatrics), an alert is received if a user attempts to enter a new child record with an alternate ID that has already been assigned. Program Administrators can also view a list of all child records entered for their Program (e.g., ABC Pediatrics) in alphabetical order. If they see children with the same name, they can click on the Child Profile and merge the two records.

Inside one Enterprise Account (e.g., PIC), the Account Administrator can view a list of all child records ranked alphabetically. The Administrator can scan the list and note any identical names and birth dates. The Account Administrator can also run a report to identify duplicate children. If identical child records exist in two Programs (e.g., ABC Pediatrics and ABC Early Head Start), the duplicate record could be transferred from ABC Pediatrics to ABC Early Head Start and then merged into one record. However, once transferred, ABC Pediatrics would no longer have access to the child record.

Transfers of Child Records

- **If child record needs to move between 2 Enterprise Accounts, is that possible? For example, if a child moved from Anchorage to Fairbanks.**

Yes, child records can be transferred between Enterprise Accounts (e.g., PIC to ACCA). The Enterprise Account Administrator can request a child transfer from the list of child records from the page showing a list of child records in the account. The child's entire record (demographic information, caregiver demographic information, and screening results) transfer. There is a fee associated with a child transfer between Enterprise Accounts.

A child record can also be transferred between Programs in the same Enterprise Account. For example, a record could be transferred from ABC Pediatrics to Alaska Pediatrics.

Programs Referring to Multiple ILPs

- **The 16 ILPs will each have an Enterprise Account with Programs under them. The Programs will be pediatricians, Early Head Starts, etc. Sometimes a pediatrician refers to more than 1 of the 16 Enterprise Accounts. Would that pediatrician need to have a Program under each of the Enterprise Accounts?**

It is possible for an organization to have Programs under multiple Enterprise Accounts. In the Alaska framework, this would allow for information to flow up to the appropriate ILPs in reports. However, these separate Programs would not be linked and users would need a separate username/password for each Program.

Another possibility is to set the pediatrician's office up as a Program under the ILP Enterprise Account where most referrals occur (e.g., PIC). Staff at other ILPs (e.g., Focus) could be provided access to see the children from their area. For reporting, though, all data would flow up to the Enterprise Account where the Program resides (i.e., PIC in this example).

Entering Screenings

- **When entering screenings via short form, can all fields populate to Y and then the user only has to change the questions that are not Yes? In many cases, most questions are answered as Yes.**
- **When entering results via the short form, it would be good to be able to enter comments for every question.**

This feedback has been shared with our development team for consideration in future updates to the system.

Family Access

- **In Family Access when you accept a screening, you can assign it to an existing child profile by using a drop-down menu of child records. What if your Program has 500 kids in it? Do you have to scroll down 500 names? Is there a way to filter?**

When assigning Family Access screenings to children, a user can start typing a child's first or last name and matching child profiles in that Program will appear. The user selects the appropriate child profile from the drop-down list and the screening is assigned.

- **When using Family Access, parents need to be able to write comments for every question.**

This feedback has been shared with our development team for consideration in future updates to the system.

Uploading forms

- **When users upload their own forms, can they upload a fillable pdf (like a referral form) and have the system automatically populate the fields (using merge fields)?**

No, a pdf file cannot be uploaded. But, you can create new documents in the Screening Management Section. You could copy and paste the data from the pdf document into the text

box in the Screening Management section. You can add select fields to be automatically populated using the Dynamic Content button (button with an image of a child to the right of the Font Size field)—date, child and caregiver demographic info, Provider name and contact information, Program name and contact information, Physician name and contact information, and program logo. Screening results cannot be automatically populated.

Referral Process

- **When a child scores below the cut-off, the Program (e.g., ABC Pediatrics, ABC Early Head Start) may want to provide access that that child's record to the ILP (e.g., the Enterprise Account). Is that possible? Would the ILP staff member need to be set up as a user in each of the Programs?**

Yes, access to the child's record can be provided to the ILP office through ASQ Online. There are two options to provide this access.

- 1) An ILP staff member can be set up as one of the Program Administrators for every Program in the Enterprise Account. The ILP staff member would have access to see every child record in the Program.
- 2) An ILP staff member could be set up as a Provider in each Program. When a Program wants to refer a child, the Provider responsible for the child assigns access to the ILP staff member. The ILP staff member can view the child records of any child for which access has been assigned.

ASQ Online does not provide automatic notification to the Enterprise Account (e.g., ILP) that a child has scored below the cut-off score. The Program (e.g., ABC Pediatrics) would need to alert the ILP staff member that a child has scored below the cut-off score and then the staff member would review the child record.

Hub Reports

- **When the Alaska Part C office runs reports through the Hub, what type of filters are there? Is there a state filter so they could only pull kids in Alaska? Some of the Alaska Enterprise Accounts may have some kids in there that reside in other states.**
- **What if the same child (DOB & name) is in 2 Enterprise Accounts (or 2 Programs), can Hub report dedupe that?**

The Hub reports are very similar to the aggregate reports available to Enterprise Accounts, except that they aggregate the data from multiple Enterprise Accounts. The Hub can filter the reports by Enterprise Account and Programs within the Enterprise Accounts, but there is no state filter available when running Hub reports. Hub reports can be exported into a CSV file and opened in Excel, and then children from states other than Alaska could be excluded.

The Hub reports also do not dedupe identical children across or within Enterprise Accounts.

App for questionnaire completion

- **We'd like an app for filling out questionnaires without internet access. The completed screenings could sync with ASQ Online when reconnected to the internet. This is important because rural areas do not have internet access or cell service.**

We do not have immediate plans to create an app, but we understand the need. We are investigating the possibility of an app.

REALIZING SUCCESS

Valuable indeed. One success story is Sprout Family Services, a small nonprofit and one of the 16 Infant Learning Programs in Alaska that has an ASQ Enterprise account. Sprout serves children prenatal through kindergarten in a large region that is based in Homer, Alaska. Explains Executive Director Jillian Lush, there's been a welcome paradigm shift that transfers screening responsibilities to partner programs and parents.

"Thanks to ASQ Online, we

can better serve children who need extra developmental support, rather than spending our time screening out ineligible children," she says. "And due to the extensive training and having a point person in the agency who serves as the 'ASQ master', we are seen as a valuable resource to our partners."

Not to mention the cost benefits. In the past, Sprout would visit 10 communities once a year to conduct screenings, at a cost of \$5,214 plus temporary loss of staff resources. This may have only resulted in 52 screenings and 12 referrals for intervention services. ASQ Online has proven to be much more efficient and just as reliable.



ASQ has made a big difference in Alaska—and it's only just begun!

MAKING A DIFFERENCE

Participants in the statewide adoption of ASQ are experiencing a variety of benefits, from the cost savings due to families conducting first-level screenings themselves, to the unintended benefit of strengthening relationships between Infant Learning Programs and their partners.

"As for concrete numbers, it's tough to get a clear before-and-after picture due to how decentralized the data was prior to the launch, but it's obvious from the data we do have that things are going well," explains Prentice. "We're seeing a lot of interesting numbers in our online database that hint at big improvements."

One hint is how data is being entered. In 2012, 13% of all ASQ screenings in Alaska's ASQ Online accounts were entered via ASQ Family Access. Just one year later, that number more than doubled to 28%—a strong indicator that online access has proven valuable to a lot of people.

The state expects that these numbers will be reflected in a rise in total screenings over time.

"Most importantly, Alaska now has a clear, comprehensive system that can be evaluated for efficacy," says Wennerstrom. She's now an assistant professor of early childhood special education at the University of Alaska, Anchorage, but remains a dedicated supporter who enjoys watching her branchchild succeed.

It's clear that the State of Alaska and all participants in the universal adoption of ASQ-3 are part of a collective success story that has only just begun.

Want to learn more about Alaska's statewide implementation of ASQ-3?

View a presentation from the 2013 Zero to Three National Training Institute.
<http://bit.ly/ASQAlaska>



Explore ASQ at www.agesandstages.com

Read user testimonials, watch a video introduction to ASQ Online, get free learning activities and sample questionnaires, and much more!

Alaska and ASQ Online

A CASE STUDY

Streamlining Screening across the Country's Biggest State

On average, 13 percent of children under age 3 experience developmental delays or disabilities.¹ Part C of the Individuals with Disabilities Education Act (IDEA) was created to give these children access to programs and services that can help them successfully transition to preschool and kindergarten. All states are required to have a Child Find program that identifies, screens, and provides early intervention services for eligible infants and toddlers.



Accessibility is a major challenge in any state with a widespread rural population. Alaska's size and terrain make outreach particularly challenging.

FACING THE PROBLEM

In 2011, Alaska's Part C Office took a critical look at its own Child Find efforts and determined that the state could—and wanted to—do better. At that point it was identifying delays or disabilities in only 6 percent of Alaska's children ages 0-3, less than half of the average identification rate. And only a third of those identified (2% of all infants and toddlers) were receiving early intervention services.

What was keeping Alaska's numbers below the national average?

"Geography, expense, and a lack of standardized screening tools," explains Erin Kinavey Wennerstrom, M.Ed. She is Alaska's former Part C state coordinator, who led the initiative to enhance Alaska's Child Find efforts.

Accessibility is a major challenge in any state with a widespread rural population, but Alaska's size and terrain make thorough outreach both time- and cost-prohibitive. With a square mileage equivalent to that of the entire eastern

¹ Rosenberg, S., Zhang, D., Robinson, C., 2008



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seaboard, and both islands and mountains in the mix, many areas can be reached only by plane. If screening must be done in person, this presents a problem for both families and professionals.

Consider, too, that the various entities that perform screening—including pediatricians, child care centers and public health agencies—may be using different screening tools. This makes it difficult for the state to measure success, provide ongoing training and support, and decide whether and how to ramp up outreach.

"We knew right away that a universal screening tool could very well address all of these issues," says Wennerstrom, "But the next challenge was deciding which one."

FINDING A SOLUTION

To determine which screening tool would best meet the state's needs, Alaska's Part C Office conducted a comprehensive review of national literature, state workgroup recommendations, and learnings from the Alaska ABCD Screening Academy Project, which had implemented ASQ at several sites to assess the benefits of structured screening.

The result? *Agree & Stages Questionnaires®*, *Third Edition*, (ASQ-3™) was the clear choice.

"We made the decision to use ASQ-3 right around the same time ASQ Online went live," says Wennerstrom. "It was a no-brainer to also incorporate the online system."

One of the state's goals was to reach rural families. With ASQ Online, any parent with an Internet connection would also be able to complete ASQ questionnaires through ASQ Family Access. Completed questionnaires are submitted securely, and parents and caregivers receive follow-up from their child care center, physician's office, or early intervention program.

"This was a really big motivator for our switch to ASQ Online," says Carol Prentice. Her firm consults for the Alaska Department of Health & Human Services and was hired to implement ASQ Online statewide.

"The expense associated with reaching many Alaskan families is prohibitive," she adds. "Now that we have a tool that allows families,

physicians, rural and public health agencies to go online and enter results, we can provide access in a way that hasn't been done before in Alaska."

GETTING STARTED

So how does an organization even begin to implement such widespread change?

The Part C Office worked closely with Prentice to devise an implementation plan that would bring the state's many screening and referral agencies on board with as little disruption as possible. The goal was to raise the identification rate of children 0-3 with developmental delays or disabilities and increase the number of kids receiving early intervention, from 2% to 2.6%.

It sounds small, but that's about a 33% increase, an ambitious goal given how many moving parts exist in such a process.

Though adopting ASQ Online is not mandatory, Alaska's thoughtful rollout approach—along with the screening tool's proven ease and reliability—made it an attractive and rewarding option for many organizations.

The state decided to take advantage of an existing organizational structure to streamline the implementation process. Alaska has 16 regional Infant Learning Programs (ILPs) that provide early intervention services to children with developmental delays and disabilities. Together these ILPs cover the entire state and have access to, or relationships with, the primary referral sources in their region—including pediatricians, child care centers, Head Start programs, pre-K programs, and public health organizations.

The goal was that the Part C Office would act as the program hub. ILPs would agree to open ASQ Online Enterprise accounts and then provide access to ASQ-3 to the primary referral sources in their respective regions. Whether or not to actually use ASQ-3 was up to each screening organization, but just the fact that they were included in the rollout makes Alaska's program unique.

Implementation was divided into three phases. Each phase would bring ASQ Online to a new set, or cohort, of ILPs while gradually introducing additional tools or features. The pilot cohort included seven ILPs, which had adopted the paper version of ASQ-3 but didn't yet use the online system.

In January 2012, after concluding the limited pilot and securing funding to expand statewide, Alaska officially launched its universal implementation. Two representatives from Brookes Publishing traveled to Alaska to help promote the statewide rollout.

The second and third cohorts ramped up their use of the online system for ASQ and incorporated access for partner programs. ASQ's Family Access option, and even started using ASQ-SE, the social-emotional screener.

"What has helped make this such a smooth process overall, is that we opted for a slow timeline to give people a chance to integrate ASQ Online into their programs," says Prentice.

OVERCOMING CHALLENGES

No program of this size progresses without hitting a few bumps. Beyond the initial challenge of just picking a tool that stakeholders could agree on, there were technical issues to consider, and reluctance that came in many forms.

One of the biggest concerns was how to integrate ASQ with electronic health records in physician's offices. Initially, there wasn't a way for the two systems to talk to each other, which meant duplicate data entry. Since most doctors operate within an efficiency model, this was seen as too time-consuming. Based on feedback from the ASQ users in Alaska and other locations, Brookes Publishing has now released an Application Programming Interface (API), which allows users to connect ASQ Online to another data management system, such as an electronic health record system.

Others worried about confidentiality and whether the system is HIPAA compliant. (It is.)

Staff of already-busy offices have expressed a reluctance to invest in the time it takes to learn a new system, as well as a concern that staff turnover will require continual retraining. (These issues are addressed in the training program that was customized for the Alaska implementation, where participants learn that the time commitment is actually minimal given ASQ's user-friendliness.)

As for parents using ASQ Family Access, it's always possible that they won't feel comfortable using the technology or entering data online. Usually this can be handled by the ILPs, who are trained to support families with their technology needs. (Plus, the benefits of reaching more people because of the online tool far outweigh the few exceptions. And those who aren't comfortable with technology, even after receiving support, can still receive screenings in-person in medical or child care settings.)

GROWING AND STRENGTHENING

As ASQ became available to the ILPs, Alaska saw that it took some groups longer than others to achieve organizational readiness. Some jumped right in, and others, for various reasons, were either hesitant or unable to start using ASQ right away. Younger generations in particular were quick to

embrace ASQ's technological aspects.

"Even though the system has been voluntary, we're finding that the response has been overwhelmingly positive," says Prentice. "As organizations come on board and achieve success, we can demonstrate that the system is working—that it really is reaching those hard-to-reach populations."

Prentice reports that the robust training program used in Alaska has been one of the forces driving interest and compliance.

The Part C Office worked closely with Brookes Publishing to make use of the company's many ASQ training offerings. They included:

- One-on-one orientations for administrators for all new ASQ Enterprise accounts
- Tutorials and help manuals in the ASQ Online system
- Topical webinar trainings on ASQ Online, including training for Program Administrators, ASQ Family Access, and report writing
- Live Q&A sessions and unlimited access to webinar archives afterward

To deliver on its promise of ongoing support, the state also developed its own valuable training efforts. Early adopters from the ILPs are sharing their knowledge with newcomers by participating in open-forum teleconferences and a peer-to-peer network. Having the ability to ask specific questions and receive timely advice strengthens abilities, builds confidence, and prepares ILPs to impart their wisdom to the program accounts within their regions.

"With 16 agencies, we have a spectrum that includes people who were using it two years ago and some who are just getting started," says Prentice. "It made sense to make use of this continuum of expertise, and we've found that people are really willing to do it."



A new API allows physician's offices to integrate ASQ with their electronic health record system.



Any parent with an Internet connection can complete questionnaires through ASQ Family Access.

