Augmentation of Special-needs Services and Information to Students and Teachers "ASSIST" — A Telehealth Innovation Providing School-based Medical Interventions

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Abstract

An innovative school-based telehealth technology was introduced in Hawaii with the purposes of: (1) evaluating students for medical/developmental conditions with educational implications, (2) providing a professionally-monitored Internet-based system of learning/development, and (3) delivering medically-based physical and occupational therapy at the student's school. Electronically recorded satisfaction surveys from parents, teachers, and providers revealed significant improvement in all three areas.

Introduction

Many school-aged children have medical/developmental conditions that affect their ability to learn and to succeed in school. Included are: Attention-Deficit/Hyperactivity Disorder, autism/pervasive developmental disorders, and specific learning disorders. These conditions impact both the medical and educational domains, as the evaluation for the conditions generally rests with the medical/psychological professionals, while intervention affects, and is the primary responsibility of, the educational system. Physician evaluation of these children is often inefficient, inadequate, and/or unavailable for a number of reasons, including: (1) Physicians vary in their level of training, experience, and comfort in dealing with these conditions; (2) Even for an experienced and motivated physician, the time constraints imposed by a busy office practice may limit the ability to provide a thorough evaluation; (3) Office-based evaluations and follow-up visits require repeated absences from school, further impeding the child's educational progress; and (4) There is a lack of consistency and quality control in the evaluation process.

This is particularly relevant to military dependent children in Hawaii. The Department of Defense (DoD) considers Hawaii to be an Outside the Continental United States (OCONUS) location, and therefore tours of duty in Hawaii are considered overseas tours. But Hawaii is unique among OCONUS duty areas because of the relatively high level of available medical resources. Furthermore, the military's Exceptional Family Member Program (EFMP) requires that the availability of services for dependents with special needs must be considered in determining a service member's duty assignment. Therefore, a service member who has a child with special medical or educational needs may be more likely to be assigned to Hawaii for an overseas tour than to other overseas locations with fewer medical resources. Additionally, there are no Federally-run schools for military dependents in Hawaii; all military dependent children who attend public school in Hawaii are enrolled in the State Department of Education (DOE) schools. The educational system in Hawaii has been criticized[1] in the past for a lack of responsiveness to parents' concerns regarding the availability and quality of intervention services for children with disabilities. In addition, because the military represents a significant portion of the population in Hawaii, and particularly on Oahu, factors that affect military dependent children can have an appreciable effect on the school system statewide.

In March of 1999, a request was made of the Commander, Tripler Army Medical Center (TAMC) to help in the provision of services to special needs students who were dependents of active duty personnel in the State of Hawaii. Congressional funding provided the basis of a research / demonstration project entitled "Augmentation of Special-needs Services and Information to Students and Teachers (ASSIST)". Prior to any intervention, a thorough Needs Assessment, was carried out with careful collaboration between the Departments of Education, Health, and Defense, and the University of Hawaii. This collaborative effort identified three areas of greatest need for military dependent special-needs students in Hawaii. The Needs Assessment also provided a baseline for the project's outcome measures.

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The three identified areas of need became the three major components of ASSIST:

1. Evaluation of children suspected of having one of the four most common medical diagnoses that affect a student's ability to learn in school and require specific educational planning. These diagnoses are: Attention-Deficit/Hyperactivity Disorder (ADHD), Auditory Processing Disorder (APD), Autistic Spectrum Disorder (ASD), and dyslexia. The survey also found a need to decrease the amount of time that these children spend out of school for evaluation, treatment, and monitoring of their medical condition.
2. The development of an educational web site with professionally-monitored website linkages to various educational/developmental sources of information for providers, parents and teachers of children with special needs.
3. The delivery of school-based, medically-indicated physical and occupational therapy intervention at the school, so as to limit educational/classroom interruptions.

Each of the three components of the project had specific objectives and anticipated benefits. **Component 1**, the evaluation of medical conditions with educational implications, had three objectives:

1. To demonstrate that children with these conditions could be evaluated using telemedicine, thus minimizing time away from school,
2. To improve parental satisfaction with the child's educational experience, and with the diagnosis and management of the medical condition,
3. To decrease the number of classroom problems and interruptions attributable to the medical condition affecting the child's education by providing early detection and intervention.

The anticipated major benefits of this aspect of the project included:

- Less time spent by the families visiting physicians or other professionals in order to make the diagnosis,
- An expedited evaluation process compared with standard methods,
- Creation of a remotely-accessible store-and-forward video of the child in the classroom setting as a valuable diagnostic tool,
- Development of educational presentations for students and teachers (initially focusing on learning disabilities), with an emphasis on understanding and acceptance of children with special needs.

The major objective of **Component 2**, development of a web site, was to provide parents, teachers, and health care professionals with a reliable, thorough, single source of information on educationally-relevant medical and developmental conditions. The primary goal for the website was to create a professionally-monitored Internet-based system of learning/development, including a central source of links to websites that would be rated and monitored by the professional staff of the project (psychologists, social workers, developmental pediatricians, occupational and physical therapists). The links needed to be accessible via the same portal that the parents and professionals use to access the ASSIST evaluation and feedback system. The development of this learning center resulted in over 100 links to internet websites, in the following categories: Advocacy, Autism, Behavior Problems/ADHD, CAPD, Disaster-Related Anxiety, Federal/Military, General Information, Genetics, Learning Disabilities / Early Intervention, Motor Development, Physical Disabilities, and Unique Military-Related Information.

Component 3, the delivery of medically-based physical and occupational therapy, had two major objectives:

1. To improve the children's quality of life, and
2. To increase patient, family and provider satisfaction.

The benefits included the ability to:

- Provide medically-indicated occupational and physical therapy services in the classroom setting,
- Allow occupational and physical therapy assistants to provide services in the schools, using electronic, web-based supervision by fully-trained pediatric occupational and physical therapists,
- Reduce absenteeism, and augment the student's educationally-based occupational and/or physical therapy services.

Methods

The research was approved by the TAMC Institutional Review Board and Human Use Committee, and consents were obtained from parents and assents from the students participating in the study. Schools on federal property were chosen due to their high percentage of military students (most over 90%). All students were referred for evaluation through the Student Services Coordinator (SSC) at their respective school, and were entered onto the secure Project ASSIST website. Students at all 9 of the Hawaii Department of Education schools located on federal property were eligible for services from Project ASSIST; however, certain conditions needed to be met in order for children to participate in the research study. For **Component 1**, only children never previously evaluated / diagnosed with one of the four medical conditions were enrolled in the research, secondary to difficulties discontinuing medication or other services. In **Component 3**, only children who had educationally mandated OT and/or PT on their Individualized Educational Plan (IEP) were enrolled in order to determine if the addition of medically indicated OT and/or PT services would improve their quality of life and parent/provider satisfaction.

Component 1: Medical Conditions with Educational Implications. The four educationally relevant diagnoses were approached in the following manner.

For children suspected of having ADHD, we identified a set of questionnaires that were already being used in our institution's ADHD evaluation clinic, and adapted them for use in an interactive electronic format. The questionnaires included the Comprehensive Behavior Rating Scale for Children (CBRSC)[2], School Situations questionnaire, ADHD Rating Scale, ADHD Comprehensive Teachers/Parents Rating Scales (ACTeRS)[3], Home Situations Questionnaire, and marital and depression scales for the parents. Some of these questionnaires had been developed in our facility, some were "freeware", while the CBRSC and ACTeRS were commercially available. These questionnaires are included as appendices. For copyrighted questionnaires, we obtained permission from the pub-

lishers to allow us to develop an electronic version.

We then set up a secure website with password-protected access. When a teacher or parent identified a student as having difficulties at home and/or in the classroom that could be an indication of ADHD, ASSIST or school personnel informed the parent about the project and assigned them an identification code and password to enable access to the site. The parent and teacher then completed the questionnaires on-line. Once each questionnaire was submitted, it could not be recalled or modified. At no time were the responses of parents or teachers available to each other. Response data was electronically tabulated, with standard scores and/or T-scores recorded on a data summary sheet. The specific questionnaire answers and data summaries were then accessible to ASSIST personnel, including psychologists and developmental pediatricians.

An additional benefit of the online questionnaires for our military dependent population was that parents who were deployed from Hawaii, or otherwise inaccessible, could still provide information on their child by using the website.

In order to provide a form of direct observation of the child, we used a small video camera in the child's classroom to compare the child's in-classroom behavior to that of an adjacent control student (student assent and parental consent were obtained from the control student and parent respectively without identifying the identity of the subject student). The camera was connected to the school's Local Area Network (LAN), and was controlled from a remote location via the LAN. A 15-minute store-and-forward video-clip of the child's (and control's) behavior during individual deskwork was recorded to allow for observation of distractibility and impulsiveness in the classroom setting. This was used in lieu of the method used by our existing ADHD evaluation clinic, in which a child is asked to perform a standardized "pseudoacademic" task for 15 minutes, while being monitored by a trained observer.

Control satisfaction surveys were obtained from the parents of students being evaluated through the ADHD clinic at TAMC. Most, but not all, parents were willing to serve as controls.

If the teacher felt the student had difficulties primarily in the areas of speech / language and socialization, an assessment for an Autistic Spectrum Disorder was initiated, using the DoD Clinical Pathway; an assessment tool adapted from the recommendations of a multidisciplinary task force[4].

Students were screened for Auditory Processing Disorders using specific on-line questionnaires. If results were suggestive of the diagnosis, screening intellectual/academic testing was done. If those results were also compatible with APD, the child was referred to an audiological specialist for further assessment.

If a student was experiencing reading difficulty but was not identified as having a Specific Learning Disability (SLD) on standardized testing by the DOE, or if the student was still having difficulties and suspected of having dyslexia despite special education intervention, specific online questionnaires were completed by parents and teachers, and a child psychologist carried out a full evaluation for dyslexia.

Research for Aspect 1 centered on two distinct areas: (1) Parents' satisfaction with the evaluation process, including accessibility, ease, and timeliness, and (2) comparison of behavior problems in the classroom before and after the evaluation. To accomplish this, 5-point Likert scale parent satisfaction questionnaires (Appendix 1) were contrasted using T-tests comparing the means between students being evaluated for any of these diagnoses at the target schools versus the currently functioning Developmental Pediatrics ADHD clinic at TAMC.

To assess whether the evaluation process made a difference in the student's functioning in the classroom, parents and teachers were asked to complete two commonly used surveillance questionnaires for treatment efficacy: the ADHD Comprehensive Teacher Rating Scale (ACTeRS) and the ADHD IV Rating scale (a 4-point scale of severity composed of the 9 inattentive and 9 hyperactive/impulsive criteria listed in the Diagnostic and Statistical Manual of Mental Disorders - DSM-IV) (Appendices 2 and 3). Each child served as his/her own control (pre- vs. post-evaluation classroom behaviors).

Component 2: Website Development for a CSPD. Visitors to the site were queried as to whether they were a parent, teacher, or provider of services, to then asked to complete a simple four question pop-up survey as they exited the site. The four questions were:

- Did this website provide you with more credible/useful information than other sites you have visited?
- Was the information on this site up-to-date in comparison to other sites you have visited?
- Was this website easier to use than other sites?
- Would you recommend this site to others?

Component 3: Provision of medically-based occupational and/or physical therapy. Objectives and outcomes were established prior to the provision of services. Parent and teacher questionnaires were developed (Appendix 4) using a 5-point Likert scale, and were administered before and three months after the initiation of services. Each child served as his/her own control. Parents were given the entire questionnaire, while teachers were asked only the first eight questions. Results of pre-and post-intervention questionnaires were analyzed using the Student T test.

Results

Component 1: Evaluation of Medical Conditions with Educational Implications:

As of the end of April 2004, 599 students have been referred and 508 evaluations have been completed for students suspected of having medical conditions with educational implications. Of these, 172 were referred for an evaluation of an ADHD and met the criteria for participation in the research. Of these 84 completed satisfaction questionnaires. Table 1 compares the parent satisfaction survey results between students evaluated through ASSIST and students evaluated through the Tripler ADHD Clinic. The survey results were overwhelmingly positive. On 10 of the 20 questions, the increase in parent satisfaction was highly significant ($p<0.01$). The most significant findings included satisfaction with timeliness, referral process, forms, location of the evaluation, and the evaluation itself. The parents also felt they were better able to enjoy and advocate for their child. There was only one question in which ASSIST parents reported lesser satisfaction than the parents who had gone through the standard ADHD clinic evaluation; that being the understanding and use of medication for an ADHD.

We also compared the teacher's perception of the child's behavior in the classroom before and 3 months after the evaluation, using the ACTeRS and ADHD-IV questionnaires. These results are summarized in Tables 2 and 3. Note that the ACTeRS is designed in such a way that post-treatment minus pre-treatment improvement in a child's behavior is reflected by positive scores in Attention and Social Skills, but negative scores in Hyperactivity and Oppositional Behavior. Also, treatment of a child who is diagnosed as having ADHD is individualized, and determined by the child's physician and the family, so these results do not reflect whether or how the child was treated for the condition.

Component 2: Website Development for a CSPD. As of the first of June 2004, there have been 566 pop-up surveys completed. The four questions asked and the percentages of respondents answering "yes" to the questions are included in Table 4. Overall, greater than 84% of the respondents answered "yes" to each of the four questions.

Component 3: Provision of Medically-Based Occupational and/or Physical Therapy. The results of the pre- and post-intervention questionnaires completed by teachers and parents are summarized in Tables 5 and 6. For the parent questionnaires, every question showed a significant positive change ($p<0.05$), and for 5 of the 8 questions the change was highly significant ($p<0.01$). For the teacher questionnaires, all of the changes were positive, but only three were statistically significant.

Discussion

It is important to realize that significant stressors for military personnel have been present since September 11, 2001, with a significant number of military personnel deployed in the Global War on Terrorism to Iraq and Afghanistan. Because of this, it was anticipated there would be an overall decrement in satisfaction questionnaires, particularly those dealing with quality of life issues. Surprisingly, this was not the case.

Component 1: Medical Conditions with Educational Implications. The parent and teacher satisfaction questionnaires indicate a significant improvement in the satisfaction of the evaluation process at Target Schools compared to a long-standing ADHD clinic at Tripler AMC, despite a similar evaluation process in place at both locations. The major improvements were in timeliness, accessibility, availability of school-based evaluations, and ease in accessing the evaluation process.

Since one goal of the project was to make the diagnosis of ADHD more efficient and streamlined for families by doing the evaluations in the school and on line, we would have predicated that the ASSIST parents would report increased satisfaction on questions dealing with timeliness and location of the evaluation. This was in fact the case. In addition, an unexpected benefit was that the parents also showed significantly improved satisfaction (compared with those going through the standard ADHD clinic) on questions concerning the benefit of the recommendations, their ability to advocate for their child, and their enjoyment of the child after the completion of the process. This could be due to a "halo effect" from the increased parental satisfaction with the process, or it could represent a benefit of the improved efficiency of the evaluation. Since the treatment of ADHD was left to the family and physician of each individual child, the questionnaire results did not reflect whether or not the child had received medical treatment for ADHD. The only area in which improvement was not noted was in a thorough understanding of medication. The TAMC ADHD program has a very detail-oriented, educational system in place to ensure understanding of the types of medication, effects, side effects, timing and duration of action of medications used for ADHD, which was not necessarily present when children were referred to their primary care physician/care manager for medical intervention.

The classroom behaviors as rated on the ACTeRS and ADHD-IV Rating Scale indicate that there was improvement in all behaviors rated on the ACTeRS. The improvement in attention on the ACTeRS scale was significant at a p value of <0.05. This is especially encouraging because impairment of attention is the most important obstacle to learning in the classroom. Social skills and oppositional behaviors also improved, though not at a statistically significant level. Improvement in these traits may take longer than in attention or hyperactivity. It might be interesting to repeat the ACTeRS questionnaires at six months to one year following the evaluation; however, the mobility and transience of military families make this impractical in this population.

The least amount of improvement on the ACTeRS was in the area of hyperactivity. This is somewhat surprising, since reduction of hyperactivity is often one of the most rapid and reliable effects when children with ADHD are treated with stimulant medication. One possible explanation is that some of the children may not have started medication at the time of the follow-up study, either because they had not yet had an appointment with their physician, or because their families had decided not to initiate medical treatment. A lack of medical intervention would not explain the improvement in attention, however that measure could have been due to other factors, for example classroom placement, and a better understanding by the teacher of the student's medical condition.

The ADHD-IV rating scale revealed an improvement in all aspects, both attention and impulsivity/hyperactivity. None of the improvements achieved a p value of <0.05. Like the ACTeRS, there was less significant change in the hyperactive/impulsive criteria, although improvement was documented in all criteria.

Component 2: Website Development for a CSPD. With so much information available on the Internet, and so few ways to determine its bias, accuracy, or scientific validity, we felt it would be helpful to provide a website that filters and professionally monitors other websites that deal with children's disabilities and educationally-related disorders. Teachers, parents, and therapists all reported that they found our site beneficial. Each of the three groups made positive comments regarding the utility and benefit of the site. Occupational and physical therapists had a somewhat lower rate of positive responses concerning their personal use of the site, perhaps because they have already determined their own list of discipline-specific "favorite" sites. Still, 85% of therapists said they would recommend the site to others. The question identifying the respondent as a parent, teacher or provider was not asked when the site was first developed,. As it was impossible to correctly identify those 210 early respondents, they were placed in the category "other". Although it is still possible to respond as "other", there have been only 19 who have chosen that category, suggesting the majority of visitors to the site are parents and teachers, the population identified as benefiting from such a website filter/monitor.

Component 3: Provision of medically-based occupational and/or physical therapy. The responses of parents and teachers to the questions regarding their satisfaction with the services provided by ASSIST were uniformly positive. The pre- vs. post-intervention parent questions relating to services were all (100%) statistically significant at a *p-value* = <0.05. Teachers responded positively to three out of eight of the questions at a statistically significant level. Both of the questions dealing with delivery of services to students (amount of service and availability of therapist) were statistically significant. The questions dealing with the teachers' knowledge of how to access services for their students were not statistically significant; suggesting that teachers know how to access services, but are unable to obtain the degree of service they felt their student needed.

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Appendix 1.— Parent Questionnaire of Satisfaction with the Evaluation

A collaborative effort of the Department of Defense, Department of Education, Department of Health, Pacific Telehealth & Technology Hui, and the University of Hawaii.

Project ASSIST / Pacific Telehealth & Technology Hui wants your honest opinions on the ease or difficulties you have experienced in getting your child/student evaluated. There are no right or wrong answers.

Parent(s) to Complete

For each question, check the box that best describes the situation.

Q1) How long did it take from the initial referral to starting an evaluation for a medical condition with educational implications?
❑ 1 Less than one week
❑ 2 One to two weeks
❑ 3 Two weeks to one month
❑ 4 One to two months
❑ 5 Greater than 2 months

Q2) How long did it take from the initial referral to completing the evaluation for such a medical condition?
❑ 1 Less than one month
❑ 2 One to two months
❑ 3 Two to three months
❑ 4 Three to four months
❑ 5 Greater than 4 months

Q3) Overall, how satisfied are you with the timeliness of your child's evaluation?
❑ 1 I am very dissatisfied with the timeliness.
❑ 2 I am dissatisfied with the timeliness.
❑ 3 I am neither satisfied nor dissatisfied.
❑ 4 I am satisfied with the timeliness.
❑ 5 I am very satisfied with the timeliness.

Q4) How satisfied are you with the referral process?
❑ 1 I am very dissatisfied.
❑ 2
❑ 3 I am neither satisfied nor dissatisfied.
❑ 4
❑ 5 I am very satisfied.

Q5) How satisfied are you with the forms you were asked to complete for the evaluation?
❑ 1 I am very dissatisfied.
❑ 2
❑ 3 I am neither satisfied nor dissatisfied.
❑ 4
❑ 5 I am very satisfied.

Q6) How satisfied are you with the location of the evaluation?
❑ 1 I am very dissatisfied with the location (distance too great or location not convenient).
❑ 2
❑ 3 I am neither satisfied nor dissatisfied.
❑ 4
❑ 5 I am very satisfied.

Q7) How satisfied are you with the evaluation done for your child's condition?
❑ 1 I am very dissatisfied with the length, ease, and type of questions asked.
❑ 2
❑ 3 I am neither satisfied nor dissatisfied.
❑ 4
❑ 5 I am very satisfied.

Q8) How beneficial were the recommendations for your home?
❑ 1 The recommendations are irrelevant, impractical and not able to be implemented.
❑ 2
❑ 3 The recommendations are somewhat helpful, and some should be incorporated.
❑ 4
❑ 5 The recommendations are both practical and are able to be implemented.

Q9) If your child is currently on medication for attention or hyperactivity, do you understand the medication(s)?
❑ 1 I don't understand the medication(s).
❑ 2
❑ 3 I partially understand the medication(s).
❑ 4
❑ 5 I have an excellent understanding.

Q10) Did your child start receiving services as soon as he/she needed to?
❑ 1 The diagnosis was made too late and he/she missed needed services.
❑ 2
❑ 3 It took longer than I wanted, but my child / student didn't miss any important services.
❑ 4
❑ 5 From start to services was very short.

(Questions 11-21)
For each question, check the box that best describes how you feel. Use boxes 2 or 4 if your answer falls between 1, 3 or 5. There are no correct answers and everyone experiences the care giving challenges differently.

Q11) Are you able to be an advocate?
❑ 1 I haven't figured out how to be an effective advocate for my own child or for other children.
❑ 2
❑ 3 I can advocate for my child, but I haven't yet found ways to make a difference for others.
❑ 4
❑ 5 I have found ways to make life better for my child and others.

Q12) Do you need help coordinating your child's care?
❑ 1 I have to do all the care coordination myself and the hassle and complexity is overwhelming.
❑ 2
❑ 3 Most of the time I can handle the coordination and paperwork, but I would like

some help.
❑ 4
❑ 5 I don't need any help with care coordination.

Q13) How much of a problem is worry for you?
❑ 1 I constantly worry about my child. There is never a time I do not think about it.
❑ 2
❑ 3 I worry a fair amount but not all the time.
❑ 4
❑ 5 I don't worry.

Q14) Is grief and sadness a problem for you?
❑ 1 I feel constant grief and sadness over my child's condition.
❑ 2
❑ 3 I usually feel grief and sadness.
❑ 4
❑ 5 I usually do not feel grief and sadness.

Q15) Do you have any physical symptoms of stress?
❑ 1 Because of my child, I have many physical symptoms of stress: headaches, bowel problems, insomnia, and/or fatigue.
❑ 2
❑ 3 I have a few mild physical symptoms of stress.
❑ 4
❑ 5 I have no effects on my own physical health.

Q16) Do you have any time to do something just for yourself?
❑ 1 I devote all my time to my child due to his needs with no spare time for myself.
❑ 2
❑ 3 I can get some housework and shopping done, and some time to do little things I like.
❑ 4
❑ 5 I spend some time taking care of my child, but I have time to do things just for myself.

Q17) Are you able to be hopeful?
❑ 1 I find no purpose or hope in this unfortunate situation for my child.
❑ 2
❑ 3 Sometimes I can make sense out of what has happened and see some hope.
❑ 4
❑ 5 I have been able to find inner peace about my child's condition.

Q18) Are you able to enjoy your child?
❑ 1 I can't find anything that my child and I enjoy doing together and I don't know where to start.
❑ 2
❑ 3 I sometimes find enjoyable things to do with my child.
❑ 4
❑ 5 I am usually able to find or create fun experiences for me and my child.

Q19) Do you get a break from care giving (respite care)?
❑ 1 We never get away from the constant demands of care giving.
❑ 2
❑ 3 We sometimes get away, but not enough.
❑ 4
❑ 5 We have frequent enough breaks from care giving.

Q20) Overall, how satisfied are you with your quality of life?
❑ 1 Most of the time, I am very dissatisfied with the quality of my life.
❑ 2
❑ 3 Sometimes I'm satisfied with the quality of my life and sometimes I am dissatisfied with the quality of my life.
❑ 4
❑ 5 Most of the time, I am very satisfied with the quality of my life.

FINAL COMMENTS
If you could make one change to the special needs services here in Hawaii, what would you change? Please be specific.

Appendix 2.— ADHD Comprehensive Teacher Rating Scale (ACTeRS)

ATTENTION	Almost Never 1	2	3	4	Almost Always 5
1) Works well independently					
2) Persists with task for reasonable amount of time					
3) Completes assigned task satisfactorily with little additional assistance					
4) Follows simple directions accurately					
5) Follows a sequence of instructions					
6) Functions well in the classroom					
HYPERACTIVITY	Almost Never 1	2	3	4	Almost Always 5
7) Extremely overactive (out of seat, 'on the go')					
8) Overreacts					
9) Fidgety (hands always busy)					
10) Impulsive (acts or talks without thinking)					
11) Restless (squirms in seat)					
SOCIAL SKILLS	Almost Never 1	2	3	4	Almost Always 5
12) Behaves positively with peers / classmates					
13) Verbal communication clear and 'connected'					
14) Nonverbal communication accurate					
15) Follows group norms and social rules					
16) Cites general rule when criticizing ('We aren't supposed to do that')					
17) Skillful at making new friends					
18) Approaches situations confidently					
OPPOSITIONAL	Almost Never 1	2	3	4	Almost Always 5
19) Tries to get others into trouble					
20) Starts fights over nothing					
21) Makes malicious fun of people					
22) Defies authority					
23) Picks on others					
24) Mean and cruel to other children					

Appendix 3.— ADHD IV Rating Scale

Attention	Not at All 1	Just a Little 2	Pretty Much 3	Very Much 4
1) Often fails to give close attention to details or makes careless mistakes in schoolwork, or other activites				
2) Often has difficulty sustaining attention in tasks or play activities				
3) Often does not seem to listen when spoken to directly				
4) Often does not follow through on instructions and fails to finish schoolwork or chores				
5) Often has difficulty organizing tasks and activities				
6) Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)				
7) Often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, or books)				
8) Is often easily distracted by extraneous stimuli				
9) Is often forgetful in daily activities				

Hyperactivity/Impulsivity	Not at All 1	Just a Little 2	Pretty Much 3	Very Much 4
10) Often fidgets with hands or feet or squirms in seat				
11) Often leaves seat in classroom or other situations in which remaining seated is expected				
12) Often runs about or climbs excessively in situations in which it is inappropriate				
13) Often has difficulty playing or engaging in leisure activities quietly				
14) Is often 'on the go' or often acts as if 'driven by a motor'				
15) Often talks excessively				
16) Often blurts out answers before questions have been completed				
17) Often has difficulty awaiting turn				
18) Often interrupts or intrudes on others (e.g., butts into conversations or games)				

Appendix 4.— Parent Satisfaction with Provision of Occupational / Physical Therapy at the School

A collaborative effort of the Department of Defense, Department of Education, Department of Health, Pacific Telehealth & Technology Hui, and the University of Hawaii.

Project ASSIST / Pacific Telehealth & Technology Hui invites you to participate in this important survey. There are no right or wrong answers. The survey must be completed by the primary care giving parent.. A repeat survey will be required one to three months from now.

Parent To Complete

For each question, check the box that best describes how you feel. Use boxes 2 or 4 if your answer falls between 1, 3 or 5. There are no correct answers, and everyone experiences the care giving challenges differently.

Q1) Does your child have all the therapy he/she needs?
❑ 1 I can not get the appropriate amount of therapy for my child.
❑ 2
❑ 3 My child receives some therapy that he needs, but definitely needs more.
❑ 4
❑ 5 My child receives all the therapies necessary to enhance his/her medical care and education.

Q2) Do you understand how to get the services your child needs?
❑ 1 I don't know how to get services for my child and I usually give up or get upset.
❑ 2
❑ 3 I know how to get services but it involves lying, getting hysterical, or nasty.
❑ 4
❑ 5 I know how to get services and I usually do it in a positive way.

Q3) Do you need help coordinating your child's care?
❑ 1 All the care coordination is mine, the hassle/complexity is overwhelming.
❑ 2
❑ 3 in general I can handle the coordination, but I would like some help.
❑ 4
❑ 5 I don't need care coordination help.

Q4) Can you reach the provider of your child's occupational and/or physical therapy when you need to?
❑ 1 I can never get the provider on the phone in a reasonable period of time.
❑ 2
❑ 3 Sometimes I can reach him in reasonable time.
❑ 4
❑ 5 I can always talk to him in a reasonable time.

Q5) Does your child's therapist listen to you?
❑ 1 The therapists don't care about my feelings.
❑ 2
❑ 3 Sometimes they listen but they are too busy.
❑ 4
❑ 5 They always listen and believe me.

Q6) Does your child's therapist respond to the developmental and emotional needs of your child?
❑ 1 My child's therapist is insensitive to his developmental/emotional needs.
❑ 2
❑ 3 His therapist sometimes responds.
❑ 4
❑ 5 His therapist always responds.

Q7) Is your child's therapist sensitive to ethnic and cultural diversity?
❑ 1 I don't think my child's therapist ever heard of cultural diversity or sensitivity training.
❑ 2
❑ 3 My child's therapist tries to understand different cultural practices.
❑ 4
❑ 5 My child's therapist understands my culture and beliefs and works with me.

Q8) Do you trust your child's therapist?
❑ 1 I don't trust them.
❑ 2
❑ 3 I have a fair amount of confidence.

❑ 4
❑ 5 I trust him completely.

Q9) How are your immediate family members coping?
❑ 1 We are having a very difficult time coping with my child's condition.
❑ 2
❑ 3 My family members usually cope.
❑ 4
❑ 5 My family members cope very well.

Q10) What kind of support do you have?
❑ 1 I feel isolated and alone. I have no support. I don't know who to ask for help.
❑ 2
❑ 3 I worry a fair amount of time.
❑ 4
❑ 5 I don't worry.

Q11) Have you begun to plan for your child's future?
❑ 1 The issues of my child's future are so difficult for me I can't begin to think about them.
❑ 2
❑ 3 I have a good idea for future plans.
❑ 4
❑ 5 I've made all the plans that need to be made.

Q12) How much of a problem is worry for you?
❑ 1 I constantly worry about my child.
❑ 2
❑ 3 I worry a fair amount but not all the time.
❑ 4
❑ 5 I don't worry.

Q13) Is grief and sadness a problem for you?
❑ 1 These are constant over my child's condition.
❑ 2
❑ 3 I usually feel grief and sadness.
❑ 4
❑ 5 I usually do not feel grief and sadness.

Q14) Do you have any physical symptoms of stress?
❑ 1 I have many physical symptoms of stress like headaches, bowel problems, and insomnia.
❑ 2
❑ 3 I have a few mild physical symptoms.
❑ 4
❑ 5 I have no effects on my own physical health.

Q15) Are you getting the sleep you need?
❑ 1 Because of my child, I never get enough sleep and am perpetually fatigued.
❑ 2
❑ 3 Sleep is only an occasional problem.
❑ 4
❑ 5 Sleep is never a problem.

Q16) How do you spend your time?
❑ 1 The needs of my child are so great I don't get any thing else done.
❑ 2
❑ 3 Most of the time, I can get some housework and shopping done.
❑ 4
❑ 5 I spend time taking care of my child but I also get many other things done.

Q17) Do you have any time to do something just for yourself?
❑ 1 I devote all my time to my child and have no spare time for myself.
❑ 2
❑ 3 I have some time for myself to do little things I like.
❑ 4
❑ 5 I have plenty of time to do things just for myself.

Q18) Are you able to be hopeful?
❑ 1 I find no purpose or hope in this unfortunate situation for my child.
❑ 2
❑ 3 Sometimes I can make sense out of what has happened and see some hope.
❑ 4
❑ 5 I have been able to find inner peace about my child's condition.

Q19) Are you able to enjoy your child?
❑ 1 I can't find anything that my child and I enjoy doing together and I don't know where to start.
❑ 2
❑ 3 I can sometimes find enjoyable things to do with my child.
❑ 4
❑ 5 I am usually able to find or create fun experiences for me and my child.

Q20) Overall, how satisfied are you with your quality of life?
❑ 1 Most of the time, I am very dissatisfied with the quality of my life.
❑ 2
❑ 3 Sometimes I'm satisfied with the quality of my life and sometimes I am dissatisfied with the quality of my life.
❑ 4
❑ 5 Most of the time, I am very satisfied with the quality of my life.

FINAL COMMENTS
If you could make one change to the special needs services here in Hawaii, what would you change?

Table 1.— Parental Satisfaction with the Evaluation Process at Target Schools Compared to the TAMC ADHD Clinic (control)) Using 5-point Likert Scale

Question	Target (n=84) Mean	Control (n=67) Mean	—	*p* value
Time - referral to starting evaluation	2.47	4.75	2.27	<0.01
Time - referral to completion of evaluation	2.21	4.49	2.28	<0.01
Satisfaction with timeliness	4.30	2.40	-1. 90	<0.01
Satisfaction with referral process	4.50	3.12	-1.38	<0.01
Satisfaction with forms	4.29	3.78	-0.51	<0.01
Satisfaction with location of evaluation	4.69	3.84	-0.85	<0.01
Satisfaction with evaluation	4.69	4.04	-0.65	<0.01
Benefit of recommendations	4.58	3.84	-0.74	<0.01
Medication understanding	1.29	1.48	0.19	0.05
Timeliness of services	2.99	2.40	-0.59	0.04
Ability to advocate	3.82	3.15	-0.67	<0.01
Worry	3.44	3.01	-0.43	0.01
Hopeful	4.39	4.12	-0.27	0.05
Enjoy child	4.80	4.31	-0.49	<0.01

Table 2.— *ADHD Comprehensive Teacher Rating Scale (ACTeRS) n=61*				
Scale	Pre-Evaluation Score	Post-Evaluation Score	–	*p-value*
Attention	15.28	18.02	2.74	0.01
Hyperactivity	12.69	12.43	-0.26	0.83
Social Skills	22.98	24.90	1.92	0.08
Oppositional	10.51	9.87	-0.64	0.54

Table 3.— *ADHD-IV Rating Scale n=64*				
Scale	Pre-Evaluation Score	Post-Evaluation Score	–	*p-value*
Attention (total)	5.55	4.53	-1.02	0.07
• 1	3.06	2.76	-0.30	0.06
• 2	2.97	2.72	-0.25	0.14
• 3	2.52	2.16	-0.36	0.05
• 4	2.91	2.61	-0.30	0.07
• 5	2.81	2.58	-0.23	-0.23
• 6	2.94	2.62	-0.32	0.08
• 7	2.56	2.19	-0.37	0.06
• 8	3.17	2.94	-0.23	0.17
• 9	2.64	2.33	-0.31	0.07
Hyperactivity (total)	2.89	2.39	-0.50	0.34
• 10	2.55	2.42	-0.13	0.55
• 11	2.13	1.89	-0.24	0.19
• 12	1.61	1.48	-0.13	0.41
• 13	1.97	1.78	-0.19	0.29
• 14	1.88	1.75	-0.13	0.48
• 15	2.20	2.09	-0.11	0.56
• 16	1.97	1.78	-0.19	0.25
• 17	2.05	1.86	-0.19	0.28
• 18	2.06	1.95	-0.11	0.55

Table 4.— Website Satisfaction	Respondents answering "YES"				
Question	Parent (n=192)	Teacher (n=132)	Provider (n=13)	Other (n=229)	Average (n=566)
1. Did this website provide you with more credible/useful information than other sites you visited?	86.5%	77.3%	76.9%	83.4%	87.6%
2. Was the information on this site up-to-date in comparison to other sites you visited?	94.8%	84.1%	76.9%	90.4%	90.1%
3. Was this website easier to use than other sites?	85.9%	81.8%	69.2%	85.6%	84.5%
4. Would you recommend this site to others?	94.3%	84.1%	84.6%	91.3%	90.5%

Table 5.— *Parent Questionnaire (5-point Likert Scale) n=34*	–	*P*
1. Does your child have all the therapy he/she needs?	-1.07	<.01
2. Do you understand how to get the services your child needs?	-0.47	0.02
3. Do you need help coordinating your child's care?	-0.43	0.03
4. Can you reach the provider of your child's occupational and/or physical therapy when you need to?	-0.83	<0.01
5. Do your child's providers of OT and/or PT listen to you?	-0.53	<0.01
6. Does your child's therapist respond to the developmental and emotional needs of your child?	-0.80	<.01
7. Is your child's therapist sensitive to ethnic and cultural diversity?	-0.37	0.02
8. Do you trust your child's therapist?	-0.77	<.01

Table 6.— *Teacher Questionnaire (5-point Likert Scale) n=35*	–	*P*
1. Does your student have all the therapy he/she needs?	-1.03	<.01
2. Do you understand how to get the services your student needs?	-0.10	0.45
3. Do you need help coordinating your student's care?	-0.27	0.10
4. Can you reach the provider of your student's occupational and/or physical therapy when you need to?	-0.40	0.03
5. Do your student's providers of occupational and/or physical therapy listen to you?	-0.10	0.45
6. Does your student's therapist respond to the developmental and emotional needs of your student?	-0.63	<0.01
7. Is your student's therapist sensitive to ethnic and cultural diversity?	-0.27	0.13
8. Do you trust your student's therapist?	-0.17	0.23