Steps for Implementation: Parent-Implemented Intervention

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With parent-implemented intervention, parents directly use individualized intervention practices with their child to increase positive learning opportunities and acquisition of important skills (Koegel, Symon, & Koegel, 2002). Parents learn to implement such practices in their home and/or community through a structured parent training program.

The literature on parent-implemented intervention for children with autism spectrum disorders (ASD) describes numerous techniques and practices designed to improve a variety of skills associated with ASD. Targeted areas have included: (a) communication, (b) cognitive performance, (c) play, (d) social skills, and (e) reduction of interfering behaviors (e.g., repetitive, stereotypical, disruptive).

Research supports the effectiveness of parent-implemented intervention designed to (a) increase communication in children with ASD and (b) reduce interfering behavior. In the area of communication, parent-implemented intervention has been used to increase social communication skills, conversation skills, spontaneous language, use of augmentative and alternative communication, joint attention, and interactions in play. Regarding behavior, parent-implemented intervention has been used to improve compliance, increase eating, and to reduce aggression and disruptive behaviors.

Steps for Implementation of Parent-Implemented Intervention

For parent-implemented intervention to be successful, a partnership between practitioners and parents is critical. For the partnership to be effective, family-centered planning is essential for all components of the process, including needs identification, goal development, intervention plan development, parent training, and intervention delivery (Brookman-Frazee, 2004). Family-centered practices involve collaborations among parents, other primary caregivers, and professionals that facilitate the optimal development of the child and address concerns and priorities of families. When using family-centered practices, parents are fully involved in the process, leading to empowerment to make meaningful decisions.

Step 1. Determine the Needs of the Family

Each child with ASD is unique. Further, each family has its own individual circumstances and needs. To develop an effective and credible intervention plan, the practitioner must first gain thorough knowledge of the child with ASD and the family attributes, including the unique cultural context of each family.

- 1. Practitioners determine the needs of individual families through:
 - a. parental and caregiver interviews and

- b. observations of the child, caregiver-child interactions, and daily routines.
- 2. When gathering information, practitioners identify:
 - a. strengths of the child and family;
 - b. areas of concerns and needs regarding the child;
 - c. child behaviors that impact family functioning;
 - d. parent-child interactions including type, frequency, nature, and reciprocity of interactions;
 - e. family activities, routines, and physical layout of the home; and
 - f. supports and resources within the immediate and extended family and community that may be available to assist in carrying out interventions.

When gathering this information, it is important for practitioners to be responsive and sensitive to the unique cultural context of each family. This responsiveness includes consideration of ongoing practices, routines, values, and interactions that occur within the family.

To accurately determine family needs, a "Family Information Form" may be helpful to guide identification and prioritization of goals. A copy of the Family Information Form can be found in the "Forms for Parent-Implemented Intervention" handout.

Step 2. Selecting Goals

Step 2 involves helping parents implement intervention by identifying the desired goal or goals for intervention. Practitioners, parents, and other team members select the specific goals to be addressed. Goals and objectives on Individualized Education Programs (IEPs) or Individualized Family Service Plans (IFSPs) should be priorities.

- 1. Practitioners, parents, and other team members select goals that:
 - a. address areas of concern and priority for the child, parents, and/or family members;
 - b. will have a positive impact on family functioning and not cause additional stress to the parents or family;
 - c. can be implemented by parents with consistency; and
 - d. are appropriate for parents to implement in home and/or community settings (Moes & Frea, 2000).

A number of goals can be achieved through parent-implemented intervention. While most interventions will probably target child improvement, a broader orientation that includes the parents and family may be considered. Appropriate goal selection has major implications for not only the design of the intervention plan, but also its success.

It will be essential to document goals and to monitor their implementation. An example of a Goal Development Form can be found in the "Forms for Parent-Implemented Intervention" handout. In addition, practitioners must assure that intervention goals are written in observable and measurable terms and that parents had input into their selection, understand the goals, and have written copies of the goals.

- 2. Practitioners assure that goals:
 - a. are written in observable and measurable terms,
 - b. were selected in partnership with parents, and
 - c. are shared in written format with parents and all team members.

Child Goals

The aim of parent-implemented intervention is to promote child progress and may include a range of outcomes. Goals for children may encompass a broad focus or may be specific in nature. For example, one set of parents may work with their child on general compliance and following directions throughout the day, while another set of parents may focus specifically on compliance during bath time.

- 3. Practitioners, parents, and other team members consider the following when selecting goals for the child:
 - a. IEP or IFSP goals that are appropriate for parents to implement in home and/or community settings,
 - b. goals that will increase positive behavior and reduce interfering behaviors, and
 - c. goals that will increase communication/language skills.
- 4. Practitioners, parents, and other team members prioritize goals related to behaviors that:
 - a. are a safety concern;
 - b. cause disruption in the home;
 - c. would increase interactions (type, frequency, nature, and reciprocity of interactions);
 - d. would increase access to the community; and
 - e. require instruction in the home and/or other community settings for generalization.

Practitioners also select goals that will result in the greatest impact on not only the child's performance, but also on the parents and family. Consideration must be given to identifying goals that are realistic and that will not lead to additional stress for families.

The following examples illustrate observable and measurable child goals.

- Jake will use a spoon to feed himself pudding, yogurt, and other viscous foods for a minimum of 10 bites during snack time.
- Megan will make a choice between two items that are visually presented to her by pointing to the desired item during the two hours she is at home with her mother each weekday morning on at least three occasions.
- Polyte will independently complete the 5 steps of his bed time routine on Friday and Saturday evenings.
- Callie will state 3 things she did at school when asked by her parent.

Parent Goals

In addition to child goals, it may be helpful to identify goals for parents to achieve. With parentimplemented intervention, parents should not only assume the role of instructor, but also the role of learner. Through parent goals, skills can be acquired that will have an enduring and profound effect on child progress as well as parental mental health.

- 5. Practitioners, parents, and other team members consider the following when determining parent goals:
 - a. parent-child interactions (e.g., shared attention, turn-taking);
 - b. parents' knowledge of ASD;
 - c. parents' knowledge and skills related to instructional strategies that promote development and learning; and
 - d. parents' knowledge of behavior management strategies.

The following example of goals for a parent are both observable and measurable:

- Jake's mom will conduct motor strengthening exercises as outlined by the occupational therapist for 15 minutes at least 5 days per week.
- Megan's parents will present 2 choices a minimum of 5 times throughout her day and will honor her choice.
- Polyte's mom will write out and post the steps for cleaning up his room and will provide a special reward immediately when Polyte completes the steps.
- When asking Callie a question, her father will first gain her attention by standing in front of her, tapping on her shoulder, and pointing to his mouth.

Family Goals

There also may be areas of need for meaningful and helpful involvement of immediate and/or extended family members as well as others who provide support to families. The family can be the most powerful and enduring influence on a child with ASD. All family members and their daily functioning can be impacted by the presence of a child with ASD. Therefore, it may be helpful to outline goals targeting increased knowledge and skills for individual family members.

The definition of family members and their roles will be different for each family. For some families, members may include just parents and siblings; however, for others, extended family members, friends, or neighbors may play a critical role.

6. Practitioners, parents, and other team members identify goals for individual family members who may be involved in implementing the learner's intervention plan.

The following example goals for a family are both observable and measurable:

• Jake's sister will participate in the motor strengthening exercises three times each week by modeling the exercises and interacting with Jake.

- Megan's babysitter will present two choices for all meals and play activities and will honor her choice.
- Polyte will independently clean up his play area when visiting his grandmother.
- When asking Callie a question or giving an instruction, Callie's family members will first gain her attention by standing in front of her, tapping her on the shoulder, and pointing to his/her mouth.

Step 3. Developing the Intervention Plan

Once the goals are determined, an intervention plan is created. The plan provides specific steps that parents can easily implement. The intervention plan includes (a) the instructional strategy, broken down into step-by-step directions; (b) the frequency and duration of instruction; and (c) when and where to provide instruction.

Each intervention plan includes a customized protocol designed to address the individual child, parent, and family goals. Parent priorities, family characteristics, daily routines, and home context guide the intervention and strategies employed (Moes & Frea, 2000). The parents' ability to implement the intervention and intervention costs are further considerations (Koegel, Koegel, Harrower, & Carter, 1999). By individualizing the plan, the intervention team can target a specific goal or behavior, incorporate a combination of evidence-based strategies, tailor a plan to family characteristics, and focus on the context of intervention implementation.

- 1. Practitioners, parents, and other team members develop an individualized intervention plan for the child and family that:
 - a. targets the identified child, parent, and family goals;
 - b. is consistent with the parents' ongoing practices, routines, values, and interactions;
 - c. incorporates intervention within the context where target behaviors occur;
 - d. incorporates intervention into naturally occurring daily routines to the maximum extent possible;
 - e. includes practices that have an evidence base and have been shown to be effective when implemented by parents; and
 - f. includes instructional practices that are compatible with parent knowledge, characteristics, and preferences and will not cause added stress.

The intervention plan outlines step-by-step instructions for parents so that they know how to implement the intervention.

- 2. Practitioners develop step-by-step instructions for individual practices that include the following information:
 - a. target skill or behavior;
 - b. who will implement the intervention;
 - c. where the intervention will be implemented;
 - d. when the intervention will be implemented (the minimum amount of instruction, both frequency and duration, parents are to implement per day or week);

- e. how long the intervention will be implemented (define how parents know when the intervention session or instructional trial is completed);
- f. materials required;
- g. any steps needed to prepare the intervention;
- h. strategies to be used;
- i. prompting hierarchy to be used; and
- j. reinforcement schedule.

An example of a Parent Intervention Protocol Form is provided in the "Forms for Parent-Implemented Intervention" handout. This form can be used when the goal is to increase child skills or promote positive behaviors. For parents whose priority goal is to reduce interfering behaviors (e.g., repetitive, stereotypical, disruptive) in the home or community, a functional behavior analysis (FBA) may be needed. **Please refer to** *Functional Behavioral Assessment: Steps for Implementation* (National Professional Development Center on ASD, 2008) to acquire more in-depth information about FBA strategies. After the FBA has been completed, the Parent-Implemented Behavior Intervention Plan form, included in the forms handout, may be helpful to practitioners and families. This document can be used to list and prioritize goals as well as the specific details of the intervention plan.

- 3. Practitioners and parents design a data collection system to monitor progress toward goal attainment. Because parents need to focus their time on their child, the ultimate goal is to develop a data collection system that:
 - a. takes family characteristics into account,
 - b. is simple and succinct,
 - c. is quick and easy to implement,
 - d. can be implemented in the context of natural routines, and
 - e. can be analyzed quickly.

Data collection will be based on goals and targeted skills and behaviors. Practitioners create data sheets that are individualized and capture the child's target goals. Parents should be provided with detailed instructions for data collection, including when and how often to take data. To track progress on acquisition of a skill or reduction of an interfering behavior, data may be collected using a variety of strategies. There are several basic types of data collection appropriate for parents, including:

- log book documentation,
- occurrence data, and
- frequency data.

Log Book Documentation

One primary form of data collection is ongoing documentation through a log book. Log book entries allow parents to track the implementation of intervention and document changes in behavior. Log book entries should include the following information:

- a. dates of intervention implementation,
- b. times of intervention implementation,
- c. individual who implemented intervention,
- d. noted changes in behavior, and
- e. concerns, questions, and reflections.

Log book entries are useful when:

- parents require an easy and quick format for data collection,
- parents are unable to take data on the child's behavior when it actually occurs and need a system that allows data recording at a convenient time,
- a description or narrative is useful,
- a system is needed for parents to track the actual implementation of intervention, and
- parents need an outlet to record questions, concerns, and reflections to guide dialogue with one another regarding intervention implementation.

A sample list of behaviors that can be recorded in a log book is provide below. This list is not exhaustive but can be used to help guide selection of a data collection system. It includes:

- a. parent implementation of a behavioral plan,
- b. parent stress level and triggers for increased stress,
- c. grandma's use of environmental modifications,
- d. sister's interaction during play,
- e. aggression during clean up of toys or activities,
- f. noncompliance during the bed-time routine,
- g. on-task behavior during homework,
- h. interaction with sister during play,
- i. use of an augmentative communication system during the day,
- j. attempts to communicate desires,
- k. efforts to initiate an interaction, and
- I. attending during a story read by the parent.

An example of a "Log Book Entry Data Sheet" is provided in the "Data Collection Sheets for Parent-Implemented Intervention" handout.

Occurrence

Occurrence data allow the parent to document whether the behavior occurred or did not occur during a specified interval of time. When taking occurrence data, the following must be included:

- a. the specific behavior to be recorded.
- b. the specific observation interval. (The observation interval may be any given unit of time. For example, an entire day may be the interval for a parent who is working on documenting whether the child requested to use the bathroom, while the dinner hour may be the interval for a parent who is tracking spontaneous comments.)

c. the format for documenting the occurrence of a behavior. (In some cases, a check mark may be used to indicate the behavior occurred. In others, parents may document the specific behavior. For example, for a parent who is documenting child requests to use the bathroom, a tally mark may be used; while the parent who is tracking spontaneous comments may record exactly what the child said.)

Occurrence data collection is useful when:

- the intervention strategy is targeting the acquisition of a behavior that is currently rare and results in a need to record any occurrence of the target behavior;
- the intervention strategy is newly introduced and results in the need to track whether the strategy increased the occurrence of the target behavior;
- the intervention strategy is targeting the reduction of a behavior that is currently rare and results in a need to record any occurrence of the target behavior;
- the frequency of the target behavior is too high to record each occurrence;
- the parents are unable to take data on the child's behavior every time it occurs, resulting in data for at least some specific time intervals; and
- a system is needed to document the target behavior only during a specific activity (e.g., dinner, playtime with peer).

A sample list of behaviors that can be recorded when using an occurrence data collection system is provided below. Again, this list is not exhaustive but can be used to help guide selection of a data collection system. Potential behaviors include:

- a. occurrence of self-stimulatory behavior during homework,
- b. occurrence of aggression in the home setting,
- c. occurrence of disruption when getting ready for bed,
- d. pointing at a preferred object,
- e. showing the parent a picture he/she colored,
- f. requesting to use the bathroom,
- g. responding to a peer's attempt to play,
- h. exchanging a picture to request a snack,
- i. commenting on a play activity,
- j. stating an activity he/she did at school, and
- k. initiating a conversation about a specific topic.

Examples of an "Occurrence Data Sheet" are provided in the "Data Collection Sheets for Parent-Implemented Intervention" handout.

Frequency

Frequency data allow parents to document how many times the behavior occurred during a specified interval of time. When taking frequency data, the following must be included:

- a. the specific behavior to be recorded,
- b. the specific observation interval, and

c. the format for documenting the occurrence of a behavior. (There are two ways to take frequency data. One way is for the parent to make a tally mark each time the behavior occurs. The second is for the parent to document the specific behavior. For example, when taking data on the number of times the child demonstrated noncompliance, the parent may make a tally mark to record its occurrence. Conversely, when taking data on spontaneous labels, the parent may write down each item the child labels.)

Frequency data collection is useful when:

- the intervention strategy focuses on the acquisition of a behavior, and it is important to ensure the occurrence of the target behavior is increasing;
- the intervention strategy focuses on the reduction of a behavior, and it is important to ensure the occurrence of the target behavior is decreasing;
- the intervention strategy targets behavior in multiple situations, and data are needed to compare the occurrence of the behavior across environments and activities; and
- the intervention strategy is targeting the generalization of the target behavior across a variety of situations, and data are needed to compare the occurrence of the behavior across environments and activities.

A sample list of behaviors that can be recorded using frequency data collection procedures is provided below. It includes:

- a. occurrence of aggression during clean-up activities,
- b. occurrence of throwing objects in the home environment,
- c. occurrence of saying "no" during home work,
- d. occurrence of self-injurious behavior,
- e. pointing to a desired object,
- f. taking a turn when playing a game with peers,
- g. exchanging a picture to request a snack,
- h. verbally requesting using three or more words in a sentence,
- i. labeling an item in a book,
- j. commenting on a play activity, and
- k. asking a question.

Examples of a Frequency Data Sheet are provided in the "Data Collection Sheets for Parent-Implemented Intervention" handout.

Step 4. Training Parents

Once an intervention plan is developed, parents are taught how to implement the intervention through a structured parent training program (Johnson et al., 2007). Practitioners and parents develop an individualized training program that will result in parent learning and implementation of the intervention. When creating the training program, teachers/practitioners consider the (a) training format, (b) training location, (c) training components, and (d) amount and duration of training.

Training Format

- 1. Prior to parent training, practitioners and parents choose one of the following formats for instruction (Brookman-Frazee, Stahmer, Baker-Ericzen, & Tsai, 2006):
 - a. *individual* (i.e., training is provided to parents or caregivers of a single child and may occur in the home, school, or clinic setting);
 - b. *group* (i.e., training is provided to parents of at least two unrelated children at the same time); or
 - c. *combination* (i.e., training is provided to parents using both the individual and group format).

Training Location

- 2. Practitioners and families choose one or more of the following locations for training parents to implement the intervention:
 - a. home (child's primary residence);
 - b. community (any setting outside of the home);
 - c. clinic (any laboratory, university, or treatment center); or
 - d. school (any educational setting).

Training Components

- 3. Practitioners provide individualized training programs that incorporate an assortment of components designed to educate and instruct. Most parent-implemented intervention programs include didactic instruction provided in a lecture style or discussion format. This didactic instruction typically is used to describe the strategies and intervention protocol in detail and to allow parents to ask questions and discuss concerns. In addition, parent-implemented intervention that has been effective also includes one or more of the following components:
 - a. *feedback and coaching*. Feedback is given directly to the parents as they implement the intervention with their child. Emphasis is placed on skills implemented correctly. For skills that need improvement, direct and immediate input and corrective strategies are provided. This allows parents to alter and improve implementation in real time.
 - b. modeling. Specific procedures are demonstrated to the parents during training sessions. Modeling preferably occurs with the target child, but may also be done with another child or adult. The goal is for parents to observe the target behavior or skill being implemented correctly and successfully. Some parents may find it helpful to have both good and bad examples of the behavior and/or skill component.
 - c. *role playing and behavioral rehearsal.* Parents practice the intervention strategy or skill with someone other than their child. This strategy should be combined with feedback and coaching. This allows parents to practice and perfect the intervention prior to implementing with their child.

- d. *documentation through a log book or data collection.* Parents track the behaviors targeted, hours of implementation, and/or the specific performance of the child and note successes as well as any problems or concerns. Entries should be reviewed with the trainer as needed.
- e. *video analogies*. Parents review examples of the strategy and may follow-up by discussing the video and steps of the intervention. This strategy provides an alternative to live modeling.
- f. *video analysis*. Parent and trainer review a video clip of the parent/child and followup with feedback. Input is provided regarding skills implemented correctly as well as those in need of improvement. Parents can ask questions, discuss concerns, and review progress made.

Amount and Duration of Training

The goal of parent training is for the parents to learn to implement intervention strategies consistently over time, across family settings, and with a variety of behaviors when direct support from service providers is no longer available. Therefore, the amount and duration of parent training are highly unique.

- 4. Practitioners and families determine an appropriate amount and duration of training based on:
 - a. child characteristics,
 - b. parent characteristics,
 - c. family characteristics, and
 - d. peer-reviewed articles that have demonstrated the minimum amount of intervention needed to achieve goals.

When creating a parent-implemented intervention program, the following factors guide the decision-making process:

- *intervention plan.* The intervention plan and considerations used to create it ultimately guide the parent training component of parent-implemented intervention. Some skills may be successfully taught to groups in a school, program, or clinical setting, while other components require more individualized attention. Certain concerns or behaviors unique to a specific child may warrant one-to-one parent training as it provides the ability for individualized problem-solving as well as more intensive instruction.
- *parents' preferences*. Parents may have a preference regarding the training program used due to family commitments, convenience, travel considerations, as well as other personal factors.
- *parents' learning characteristics*. Parental learning style, ability to retain knowledge, application, and generalization of skills may dictate the optimal training program. The intensity and detail of instruction, as well as the ability to practice strategies in ways specifically relevant to the parents must be considered (Koegel, Koegel, Harrower, & Carter, 1999).

- *need for parent collaboration.* Some parents may benefit from interacting with other parents. Opportunities for parents to collaborate and learn from each other may be a valuable component that complements direct support and training from practitioners (Sofronoff, Leslie, & Brown, 2004).
- geographical location of the family. Families live various distances from service providers who offer intervention to children with ASD. Geographical constraints are important considerations when designing training for parents.
- *cost of training.* Creating an efficient and cost effective way to provide training is important for many parents and for practitioners trying to provide services to a greater number of children with autism (Koegel, et al., 2002).

It is critical to monitor parent progress as training is conducted. As noted, duration of training varies depending on the unique situation. Over time, parents are expected to become more independent and master targeted skills and strategies. It is therefore necessary to collect data that will help determine whether parents are implementing interventions with fidelity. This will allow the practitioner to determine specific areas to target and make an accurate and objective assessment of parent implementation. An example of a "Parent Intervention Fidelity Form" is provided at the end of this document in the "Forms and Data Sheets" section.

Step 5. Implementing the Intervention

Parents implement the intervention plan as designed. When and where to implement instruction should be outlined in the intervention plan; however, revisions may be required after implementation begins. In some cases, parents will learn skills in clinical or professional development settings that they then implement within naturally occurring routines.

- 1. Parents implement the intervention with their children daily, or as designated in the plan.
- 2. To the maximum extent possible, parents implement the intervention within naturally occurring routines and interactions.
- 3. To the extent possible for those intervention components that cannot be completed in a natural context in the home or community, parents implement instruction at the same time each day in a relatively quiet area that is free from distractions.

Having a consistent time and place for these activities will help parents implement the intervention with greater frequency and will help children know what is expected of them.

Step 6. Progress Monitoring

To assure that this evidence-based practice is implemented with fidelity, practitioners will confer with parents to monitor implementation of the intervention, as well as to monitor child progress. Practitioners present this component of parent-implemented intervention to families in a positive manner that allays any concerns or misunderstandings about its purpose. Progress monitoring is used to refine implementation to make the achievement of goals more efficient, not to monitor the performance of parents.

Please see the handouts, "Forms for Parent-Implemented Intervention" and "Data Collection Sheets for Parent-Implemented Intervention." The resources provided in these handouts will assist in collecting data needed to monitor both parent implementation and child progress.

Forms provided include: Family Information Form, Goal Development Form, Parent Intervention Protocol Form, and the Parent Intervention Fidelity Form. The Parent Intervention Fidelity Form will be of particular value in assessing whether or not parents are implementing the strategies according to the intervention plan.

Data sheets provided include: Log Book Entry Data Sheet, Occurrence Data Sheet, and Frequency Data Sheet. Blank data sheets as well as accompanying examples of completed data sheets are provided. All of these resources should be helpful in gathering baseline (pre-intervention) and ongoing data to monitor child progress.

The following practices help to assure that data are accurately collected and used to make informed adjustments to parent-implemented intervention?

- 1. Practitioners and parents use progress monitoring data to evaluate whether the intervention is impacting target skills.
- 2. Practitioners and parents use progress monitoring data to adjust intervention, if needed.
- 3. Practitioners and parents monitor parents' implementation of the intervention using fidelity checklists and adapt training/support as needed.
- 4. As parents demonstrate mastery over training content, practitioners systematically reduce the frequency of parent training sessions based on:
 - a. child progress and
 - b. parent performance.

Practitioners slowly increase the amount of time between sessions until a mutually agreed upon interval is reached.

In the final phase of implementation, every effort should be made to maintain or enhance positive gains and help parents to generalize to other behaviors.

5. Practitioners provide parents with additional opportunities to learn how to implement intervention, improve intervention, ask questions, and solve problems.

Ongoing supervision and collaborative problem-solving help parents provide effective intervention and feel confident about their abilities to facilitate their children's skill development.

6. Practitioners promote ongoing supervision and collaboration by providing at least one of the following:

- a. *continued contact with the practitioner*. Practitioners maintain an intermittent training or meeting schedule.
- b. *parent training booster sessions*. Practitioners conduct training sessions that target specific content or strategies to ensure that child progress continues. The frequency and duration of such trainings may fluctuate over time. The need for training should be continuously evaluated and determinations made based on child, parent, and family needs and priorities.
- c. *documentation*. Through the use of a log book or data sheet, parents can document the behaviors targeted, hours of implementation, and/or the specific performance of the child and note any problems or concerns. The log book or data sheet can then be shared with the practitioner and used as a forum for discussion and problem-solving.
- d. *video analysis*. Parents can videotape intervention sessions with their child to share with the practitioner and use as a forum for discussion and problem-solving.
- e. *observation*. The practitioner can schedule a time to observe parent-implemented intervention and provide training and recommendations in real time.
- f. *email and phone correspondence*. Information can be shared with the practitioner, and problem-solving can occur via email or phone.

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