

## Statewide System Change in Positive Behavior Support

David A. Rotholz and Michele E. Ford

---

### Abstract

In the past few decades, the field of positive behavior support has emerged from its origins in applied behavior analysis. However, the difference between an appropriate literature base and statewide implementation by a state MR/DD agency cannot be overstated. The development process and model for statewide system change in positive behavior support being implemented by the South Carolina Department of Disabilities and Special Needs in collaboration with the Center for Disability Resources at the University of South Carolina are described. Key areas discussed include the impetus for change, the development process, plan components, and implementation of methods for change in capacity building, training, state regulations, MR/RD Waiver changes, and case-specific technical assistance.

Applied behavior analysis has from its beginning included a focus on producing change that is socially important (Baer, Wolf, & Risley, 1968). The voluminous demonstrations of its application to socially important problems, several of which predate the Baer et al. (1968) paper (e.g., Lovaas, Freitag, Gold, & Kassorla, 1965; Wolf, Risley, & Mees 1964), have included many examples in which problem behavior exhibited by persons with mental retardation and other developmental disabilities has been described (e.g., see *Journal of Applied Behavior Analysis* 1968 to present, *Mental Retardation*, *American Journal on Mental Retardation*, *Journal of the Association for Persons with Severe Handicaps*, *Journal of Positive Behavior Interventions*, Carr et al., 1999; Risley, 1997).

Some seminal contributions to this literature have included those by Carr, Newsom, and Binkhoff (1976), Carr (1977), Iwata, Dorsey, Slifer, Bauman, and Richman (1982), and Carr and Durand (1985). Carr et al. provided empirical demonstration and illuminating discussion of the effects of demands (and their termination) and positive adult interactions on the rate of self-destructive behavior. Their concluding point has withstood the test of time particularly well: “This analysis should make clear the importance of always performing a functional analysis of such behaviors and not merely assuming that all behaviors which share a similar

topography also share a similar set of controlling variables” (p. 152). Similarly, Carr (1977) provided a thought-provoking discussion on the motivation of self-injurious behavior (SIB). Central to this paper were the concepts of multiply determined behavior, analysis of motivational factors, and key distinctions between the multiple forms of intrinsic and extrinsic reinforcement for behavior.

Iwata et al.’s work (1982) provided an experimental paradigm through which one can empirically assess functional relationships between a behavior of interest and specific environmental events. Their methodology was pioneering work that set the standard as the model for use in those cases where such a powerful approach is needed as “the only way to ensure an adequate assessment of problem behaviors” (O’Neil et al., 1997, p. 6).

Carr and Durand (1985) demonstrated how some problem behavior could be viewed as a non-verbal communication that can be addressed through functional communication training. Their work in teaching appropriate communication skills as a replacement for problem behavior that serves the same function also became the model for addressing this class of problem behaviors. Although these papers are just a small fraction of the applied behavior analysis literature, they have a direct relationship to the practice that has acquired the label of positive behavior support.

In 1990, Horner et al. provided a description of positive behavioral support. Since that time there have been several compilations of applied literature and practical applications of positive behavior support (e.g., Carr et al., 1994; Crimmins & Woolf, 1997; Koegel, Koegel, & Dunlap, 1996; Luiselli & Cameron, 1998; O'Neill et al., 1997; Reichle & Wacker, 1993). These works, along with the emergence of a journal specifically devoted to positive behavior support (i.e., *Journal of Positive Behavior Interventions*), can be argued to constitute evidence of a field that has emerged from that of applied behavior analysis. This latter point was discussed further by Carr et al. (2002), who described positive behavior support as the “evolution of an applied science” (p. 4), one that has emerged primarily from applied behavior analysis, the normalization/inclusion movement, and person-centered values.

It is a simple task to provide examples of existing literature on positive behavior support. It is considerably more difficult to point to widespread implementation of these methods at the local level or systems that promote and support them. Documented efforts in providing school-wide positive behavior support (e.g., see *Journal of Positive Behavior Interventions*, Volume 2, pp. 208–253 for brief descriptions of several efforts) are important to note as they pertain to system change (i.e., with the individual school as the system). In their work Sugai and colleagues (2000) provided guidance, noting that “without a systems approach, identification of practices is limited, adoptions are incomplete, and attention to school initiatives to address discipline is episodic and short term” (p. 136). That work builds upon previous efforts (e.g., O'Neill et al., 1997) that provide a “continuum of positive behavior support that emphasizes a systems approach, preventive perspective, and specialized interventions” (p. 136). This model is helpful for assessing which needs to address when seeking to produce meaningful and widespread change throughout a system. Additional efforts in system change within schools, such as that described by Knoster, Villa, and Thousand (2000), highlight the importance of “a comprehensive approach that attends to both the how and why of the process of change” (p. 95). Although such efforts represent important initiatives focused on meaningful change in school settings, they do not provide a model sufficient to address the needs for system change in positive behavior support in a statewide MR/DD system. In

referring to systems change across a variety of treatment settings, Carr et al. (2002) aptly noted that just as behavioral challenges for any given individual require a multidimensional remediation strategy, “meaningful change is possible only if systems are restructured in a manner that enables change to occur and be sustained” (p. 9).

In this paper we describe the development process and model implemented by the South Carolina Department of Disabilities and Special Needs (DDSN) in collaboration with the University of South Carolina's Center for Disability Resources (South Carolina's University Center for Excellence in Developmental Disabilities Education, Research, and Service) to implement high quality positive behavior support for persons served in that system. It is important to note that concurrent with this system change effort, DDSN was also designing and has since implemented a statewide system change intended to provide supports and services that are person-centered (Butkus, Rotholz, Lacy, Abery, & Elkin, 2002). For this reason, the system change in positive behavior support did not focus on person-centered planning as it would have needed to were it not being overlaid upon a system change in that area.

---

### Impetus for Change

This effort was undertaken for a variety of related reasons. In the mid- to late-1990s, a series of focus groups conducted throughout South Carolina assessed training needs within the DDSN system (Rotholz & Thompson, 1997). These groups, which included direct support staff, supervisors, middle managers, and regional office staff, all rated behavior support as the area in highest need of training and technical assistance. This information coincided with frequent requests for behavior support assistance to the DDSN state office, frequent requests for alternative residential placement (outside the DDSN network) due to behavior problems, and a growing recognition on the part of that agency that there are important needs to be addressed in the areas of appropriate training in positive behavior support, qualification requirements for professionals providing this service, and the quality of services they provide. In addition, a change in leadership of DDSN resulted in a desire to see appropriate practices implemented in the area of positive behavior support. Notably, this desire was based upon a working knowledge of appropriate practices on the part

of the agency leadership. The result was, perhaps, a unique opportunity for creating a system change effort in positive behavior support throughout a state-wide MR/DD service delivery network.

### Development Process for System Change

The development of the system change in positive behavior support process was two-tiered. It began with a task force that had a mandate to develop a comprehensive, practical answer to the question, What would it take for DDSN to provide for effective, consistent implementation of behavior support efforts, with and without the use of psychotropic medication. This task force, chaired by the first author, included members with a variety of affiliations and areas of knowledge and experiences, including that of: DDSN behavior support director, University Affiliated Program (now known as University Center for Excellence in Developmental Disabilities, Education, Research, and Service) project director, behavior analyst, family member of a person with mental retardation, clinical supervisor, residential coordinator for a community service provider, community behavioral consultant, training coordinator for a division of DDSN, pharmacy director for a residential center, psychology director for a residential center, program director, and direct support staff supervisor.

Meetings of the task force took place at least monthly, with additional activities completed between meetings. Each session had a task-oriented agenda intended to produce concrete outcomes focused on the creation of a practical set of recommendations to improve the provision of positive behavior support in the DDSN system of services and supports. Through this collaborative effort, a set of recommendations was produced (Rotholz, 1997) and provided to the leadership of DDSN. These recommendations focused on seven key areas: paradigm change, capacity building; training (for supervisors, support plan authors, and direct support staff), supervisory changes, improved communication, revision of staff qualifications, and quality review. This document also made it clear that all of the key areas needed to be addressed in a coordinated manner to make efforts in any one area successful.

### Implementation Workgroup

The task force recommendations were reviewed and approved by DDSN, in concept, for implemen-

tation a few weeks after they were submitted. At that time a group (implementation workgroup) was formed to plan the implementation of the various components (i.e., the second tier of the development process). Although the task force recommendations had been specific, there is a considerable difference between recommendations and the actual implementation of the efforts. For example, the recommendation that training be provided to community program staff differs considerably from the process of securing funding, developing a request for proposals, selecting a contractor, collaboratively developing a curriculum, and implementing competency-based training for hundreds of staff persons throughout South Carolina. Similarly, a recommendation to ensure that those who develop behavior support plans have the needed expertise is quite different than developing qualification standards and a process for implementing those standards, securing approvals from the state and federal Medicaid agencies needed for their implementation under DDSN's MR/RD Waiver, and implementing the new process.

The implementation workgroup, chaired by the first author, was comprised of 13 members in total, with 8 of the members comprising the main workgroup and the other 5 participating in subgroups devoted to specific project activities (e.g., quality improvement, training development). Members of the workgroup had backgrounds and/or positions in the following areas: director of mental retardation division for DDSN, DDSN behavior support director, UAP project director, behavior analyst, clinical supervisor, family member of a person with mental retardation, regional service director for DDSN, training director for DDSN, training coordinator, program coordinator for community services provider, pharmacy director for residential center, associate executive director for community service provider, psychologist, and residential services director.

A key factor that facilitated the implementation process was the active participation by the director of the mental retardation division of DDSN. Her willingness to participate as well as gain new knowledge of the area meant that the committee's plans were likely to be well-received by the MR/DD agency. This participation enabled us to build into the development of each component of change the process for state agency approval. Although this did not guarantee approval or full funding of a particular component of change, it certainly enhanced the likelihood. Having this member in the imple-

mentation workgroup also served the function of ongoing communication of the group's activities to the executive level of the state agency. This communication helped ensure that expertise of the group in the area of positive behavior support was synchronized with the policy parameters of the state agency (e.g., additional discussion/justification and supporting information was provided where necessary to maintain the support for implementation of all planned components).

---

### Areas of System Change

The implementation plan began with the assumption that when properly developed, each component would be implemented on a statewide basis. The group, therefore, focused on each component, combining and revising in some places and developing components of the system change effort in different areas simultaneously. There were five primary areas of change addressed by the group, four of which have been successfully implemented and one that has not progressed past initial development at this time. These areas were training for authors of behavior support plans, training for supervisors of direct support staff, revising qualifications for behavioral consultants by changing this area under the MR/RD Waiver, a technical assistance and training team, and an instrument for evaluating the quality of behavior support plans.

#### *Training*

Training initiatives were developed to meet two different and equally critical needs. The first need was the shortage of appropriately skilled professionals to develop positive behavior support plans for persons served by DDSN. Although this is a national problem (e.g., a shortage of persons sufficiently trained in applied behavior analysis and other areas related to positive behavior support to competently develop positive behavior support plans), a solution was needed to address this problem in South Carolina. While efforts were planned to attempt recruitment of such professionals to work in South Carolina, we also recognized the necessity of enhancing the skills of behavior support plan authors already working in the state.

Dunlap et al. (2000) described essential elements of training in positive behavior support. One of their recommendations especially relevant to this project was that "the content and structure of in-service training and the methods used to deliver

training should be crafted specifically to meet the factors affecting the participating individuals and agencies" (p. 25). One aspect of how we tailored the training to meet the specific needs of the MR/DD system in South Carolina was to develop one model for training supervisors of direct support staff that addressed key skills related to positive behavior support (but was not focused on plan authorship) and a separate process for those who develop positive behavior support plans.

In order to enhance the skills of current behavior support plan authors, we initiated discussions with professors from two universities in an attempt to collaboratively develop a series of full semester graduate-level courses specifically focused on applied behavior analysis and positive behavior support in developmental disabilities. The purpose of the course sequence would be to provide local professionals with new or enhanced skills in applied behavior analysis and positive behavior support that were practical, empirically sound, and focused on persons with developmental disabilities. In one of the two universities, this course sequence has been developed in their special education program. Although the courses are now included within the regular offering of graduate courses by that department (as electives), the most salient part of this component of system change is how the courses are provided by DDSN. The three-course graduate-level sequence is provided on an on-going basis by DDSN via a contract with either a selected faculty member at the University of South Carolina or directly with his or her academic department. This arrangement allows DDSN exclusively to enroll persons who write behavior support plans for community support agencies or residential centers and those providing behavioral consultation under the MR/RD Waiver in this training. We require the successful completion of the first full semester course (Applied Behavior Analysis I: Application to Persons With Severe Disabilities) as a prerequisite to enrolling in the second (Applied Behavior Analysis II: Functional Assessment and Positive Behavior Support Plans). Likewise, a student must successfully complete the second course to be permitted to enroll in the third course (Applied Behavior Analysis III: Advanced Procedures in Functional Assessment and Positive Behavior Support Plans). In the summer of 2002, we provided the first of the three courses for the third time (e.g., the seventh course offering), with a commitment by DDSN to continue this effort on an on-going basis.

The second training need was to develop positive behavior support skills for those persons who directly serve and impact service delivery to DDSN's service recipients. We chose to focus on supervisors of direct support staff for this effort because they are the ones who, on a practical level, train their staff on how to perform their jobs, provide feedback and staff evaluations, and typically have greater longevity in their jobs than do direct support staff. The requirements set for this training, before it was developed, were that it needed to be skills training, competency-based, provided in relatively small groups, and conducted by professionals who were expert trainers as well as experts in positive behavior support for persons with developmental disabilities.

To accomplish the training of supervisors in positive behavior support skills, DDSN personnel issued a request for proposals (RFP) and conducted a national search for an appropriate contractor. After the contract was awarded, 3 members of the implementation workgroup (e.g., the chair, training director, and training coordinator) worked in collaboration with the contractor to develop the training curriculum and process. The format of the training was to provide information in a skill area, demonstrate its application (e.g., typically role play), have trainees demonstrate the skill, and have the trainers provide feedback to all trainees on their performance. A complete description of this training (e.g., process, content) and the Positive Behavior Support Training Curriculum (Reid, Parsons, Rotholz, Braswell, & Morris, in press) is available elsewhere (see Reid, Rotholz et al., 2003).

The curriculum consists of 26 different modules focused on skills related to positive behavior support: Dignity and Behavior Support; Defining Behavior; Positive Reinforcement and Punishment; Negative Reinforcement; Identification of Antecedents, Behavior, and Consequences; Functional Skills; Role of the Environment; Role of Choice; Interactions; Prompting; Error Correction; Chaining and Shaping; Program Implementation; Problem Solving; Functional Assessment; Staff Observation; Performance Checklists; Feedback; Modeling; Data; Recording Data; Data Analysis I; Data Analysis II; Problem Solving II; Evaluating a Written Behavior Support Plan; and Performance Analysis.

We note that the module on positive reinforcement and punishment included the latter not as a procedure to use, but as a principle of behavior to

be aware of in terms of its occurrence in every day life and concerns associated with its use as a behavior change procedure.

Training conducted with the Positive Behavior Support Training Curriculum consisted of 4 full days of skills-focused active learning in a classroom setting plus one day in which each participant was observed at their typical worksite performing skills in four areas in which they received training (i.e., appropriate interactions, offering meaningful choices, teaching a skill, and observing/providing feedback to staff). The on-the-job skills checks in four key skill areas serve as a "real world" supplement to the in-class skills checks (e.g., role plays, quizzes, activities) that are included in each of the 26 modules. Satisfactory completion of all skills checks is required for completion of the training; however, it is not required that they be passed on the first attempt. Although the locally conducted skills checks require significant logistical planning, they provide the meaningful demonstration of skill acquisition that we believe is essential to implementing changes in positive behavior support at a local level. Thus far, 715 supervisors have participated in the supervisory training with 637 (89%) successfully completing the course. The successful completion required performance of all classroom and on-the-job skills checks at mastery criteria.

It is important to note that participation by local provider agencies in all of the training activities was voluntary. Although individual participants were most likely selected by their employer to participate in the training, there was no requirement for their employer's involvement. Our rationale for this step was that at the local level, required training is often viewed as less valuable than training that is voluntary. It was the local provider agencies that decided whether or not to participate and then used their own method for selecting participants. We found that the informal communication among local provider agencies about the value and quality of the training was an important inducement for participation. Ninety-two percent of the local provider agencies participated in the training for supervisors during the first year, with 100% participation by the third year of training.

A related training component was a process to teach local trainers to implement a version of the curriculum for direct support staff. This effort helps address the issue identified by Anderson, Albin, Mesaros, Dunlap, and Morelli-Robbins (1993) that "self-perpetuating training resources are critical to

providing continued inservice training for positive behavioral support” (p. 369). Participants who successfully completed the positive behavior support training for supervisors were eligible to enroll in a trainers’ course, depending on the availability of training slots (e.g., the number of participants in the trainers course was limited to keep the class size small).

The 2-day trainers course included information on appropriate use of the Positive Behavior Support Training Curriculum—Direct Support Staff Edition, effective training techniques, and appropriate preparation steps during the first day of training. On the second day, conducted one week later, each participant presented one complete module of the curriculum (typically with a partner from the same local service provider) to the group. This comprised the competency-based evaluation of the participants’ training skills as they related to the curriculum during the first 2 years of this training.

An additional component added at the beginning of the 3rd year was an on-site skills check for participants, which was used to evaluate the participant’s performance in the actual implementation of the curriculum with direct support staff at their place of employment. This new requirement served two purposes. First, it enhanced the realism of the competency-based evaluation and, second, helped to ensure the initiation of the training at the local community provider agency level. During the first 3 years of this training effort (i.e., June 2002), 80 persons representing 38 different service providers have participated in this train-the-trainers program. Sixty of them (75%) successfully completed the course. More importantly, although several of these new trainers have not yet implemented the direct support training, over 1,000 direct support staff have been trained in this curriculum.

### *Qualifications of Behavior Support Plan Authors*

When we examined the issue of appropriate qualifications for the professionals who develop positive behavior support plans and provide behavioral consultation, we found important problems that needed to be addressed. We ran into a problem that is national in scope, yet needed a solution to be implemented, for our purposes, in South Carolina. The problem is that there is no widely used set of standards or mechanism to ensure that a professional claiming to be a “behavioral consultant” has the appropriate training, skills, and experience to ap-

propriately provide this service to persons with mental retardation. In fact, the term *behavioral consultant* has been used by so many individuals with such widely varying levels of expertise and with no accepted definition as to make the term virtually meaningless from the perspective of objective standards or qualifications (cf. Rotholz & Jacobson, 2001). However, for our system change to be successful, it would need to ensure that the professionals providing positive behavior support are appropriately qualified in this area. In addition, in order to provide this service under the Medicaid MR/RD Waiver, DDSN would need to ensure to the then Health Care Finance Administration (HCFA, now Centers for Medicaid and Medicaid Services, CMS) that all providers are appropriately qualified.

The primary obstacle in the area of qualifications is that there is no one licensure or certification process ensuring that the person has the appropriate expertise and experience with persons who have mental retardation. Key issues at the core of this problem are that behavioral consultants are different than psychologists; many psychologists do not have training and experience in applied behavior analysis or positive behavior support; some professionals with expertise in positive behavior support are not psychologists; a license to practice psychology typically does not communicate anything about that person’s skills in applied behavior analysis or ability to provide positive behavior support; and even the credential of board certification in behavior analysis does not ensure that the professional has experience with persons who have lifelong disabilities (Rotholz & Jacobson, 2001). In addition, that latter certification is quite recent at a national level and in many areas it would be difficult to locate such a professional.

Because we could not rely on any licensing body to ensure the proper qualifications of behavior support professionals, we developed a set of objective criteria and an application process to address this need (see Appendix A). After securing the approval of the state Medicaid agency, we put into place a process in which all professionals seeking to or currently providing positive behavior support services under the Medicaid MR/RD Waiver needed to qualify under the new criteria. There was no “grandfathering” of then current providers of the service because that could have dramatically diminished the impact of imposing appropriate qualification criteria and procedures; however, providers

were given advance notice of this change 9 months prior to its implementation.

The qualification procedures, initially implemented as a clarification of the “relevant experience” requirement already in the MR/RD Waiver regulations (requiring approval at a state Medicaid agency level) required an application form and a positive behavior support plan that satisfied the objective criteria and had been implemented for a person with mental retardation. Following the receipt of those materials, a doctoral-level behavior analyst skilled in positive behavior support (first author), and a doctoral-level psychologist who directs the DDSN Office of Behavior Support (second author) jointly conducted an interview. The interview contained a series of questions to determine appropriate expertise of the applicant and a detailed review and discussion of the behavior support plan submitted as the work sample portion of the application. Both the questions and the discussion of the work sample were focused on the applicant’s knowledge and demonstrated use of methods that included all of the criteria listed in Appendix A. The appropriate application of each skill reflected in this appendix in a manner consistent with the values of positive behavior support (e.g., O’Neill et al., 1997) was one of the requirements for approval as a provider of behavior supports under DDSN’s MR/RD Medicaid Waiver. For those applicants who did not pass the interview or whose work sample did not meet the established criteria, detailed feedback was provided along with references to appropriate professional literature and/or training when needed. Applicants were informed that they could submit a new work sample that met the criteria and re-interview at a later date. For cases where the applicant(s) disagreed with the results of the interview process, they were free to engage in an appeal process directly with the state Medicaid agency. As of May 2003, two applicants have used the appeal process. In neither case was the decision of the interview process altered.

Further changes were requested to the qualification process used with the MR/RD Waiver, but these required approval by CMS rather than the state Medicaid agency. These changes, approved approximately 1 year after the first set of changes and implemented in July 2002, provide for further enhancements to ensuring appropriate levels of skills and qualifications of positive behavior support providers. These additional changes consist of a 2-year term of approval for provider status; a requirement

for continuing education related to positive behavior support; and quality review of provider work to ensure that the criteria the providers met in the application process are routinely met in their community work with persons who have mental retardation.

### *Technical Assistance and Training Team*

Another component of the system change work in behavior support is a technical assistance and training team. This effort, actually the first component to be implemented, was designed as a resource to be used in situations where previous attempts at behavior support in community settings had not been successful and the person was in jeopardy of losing his or her community placement. It is also available to persons served by DDSN who are at risk of referral for placement at a regional center or returning to a community living arrangement from an “alternative placement” (e.g., private residential setting, such as therapeutic foster care, psychiatric hospital). This team, consisting of a full-time behavior analyst with training in positive behavior support and a director (behavior analyst with training in positive behavior support who contributes to the effort on a part-time basis), provides consultation that includes a functional assessment of the presenting problems, interviews, observations, and data analysis to determine the function(s) of the problems, design of positive behavior support plans, training staff and/or family members to implement the plan, and on-going follow-up observations, training, and consultation to help ensure the success of the plan. This team’s effort has resulted in the successful preservation of numerous home situations for the persons referred, improved quality of life for those persons, and a cost savings to DDSN estimated to be at least \$150,000 per year in annual recurring costs.

---

### **Obstacles and Challenges**

System change includes obstacles and challenges that must be overcome in order to achieve the change desired. Although considerable effort was involved in each of the areas of change, there were two that presented, and continue to present, the greatest challenge: maintaining sufficient numbers of skilled positive behavior support professionals (i.e., the consultants) in the system and monitoring the quality of work they produce. These areas continue to present challenges in terms of the effort

required to achieve and maintain sufficient quantity and quality of positive behavioral supports. South Carolina, like many other states, has difficulty in attracting sufficient numbers of professionals with appropriate training and experience in providing positive behavior support to persons with mental retardation and related disabilities. Although our system change effort has provided many local practitioners and those seeking to become local practitioners with the opportunity for a three-course graduate-level training sequence in applied behavior analysis and positive behavior support, this has not yet been sufficient to ensure adequate numbers of qualified professionals. Not all who enroll in this training complete it, and as with any type of graduate-level training, there is a considerable variation in the skill level of those who participate.

The second area of continuing challenge is monitoring the quality of work implemented by the providers of positive behavior support. As with any work done by a group of professionals, the quality of work (based on a limited sample at this point) varies considerably. The process developed to address this issue, implemented in July 2002, essentially holds the provider accountable to the criteria under which they qualified to provide this service under DDSN's MR/RD Medicaid Waiver (see Appendix A). The quality assessment process involves the on-site review of positive behavior support plans by each provider and requires that each of the criteria be met. If problems are identified with the quality of the work, notice is sent to the provider informing them of the problems and requiring that they be corrected within 60 days. A follow-up review is then conducted either on that positive behavior support plan or any other developed by that provider. If continued problems are found, the provider will lose approval to provide the service.

---

## Discussion

A system change in the provision of positive behavior support has been implemented in the South Carolina MR/DD system. This effort, collaboratively implemented by South Carolina DDSN and the University of South Carolina's Center for Disability Resources, is improving the way in which positive behavior supports are provided in the DDSN system.

It is important to note that system change is a slow and laborious process. It requires deliberative planning, on-going monitoring and reassessment,

and solid support from those who run the system being affected. This support must include political, philosophical, and financial areas in order for the long-term effort to succeed. Successful system change requires expertise in the content area being changed, but equally as important is the on-going involvement by and effective communication with key leaders of the system. This collaboration with system leaders ensures from the beginning that essential issues are addressed in a manner likely to succeed within that system.

Although this system change effort can best be described as a "work in progress," much has been accomplished. In the area of training, over 635 local supervisors of direct support staff have been trained to demonstrated competency in key positive behavior support skills. More than 1,000 direct support staff have been trained by a second-generation trainer in a companion version of the Positive Behavior Support Training Curriculum designed specifically for direct support staff.

In the area of increasing capacity to provide positive behavior support, there have been 46 local authors of behavior support plans who have participated in at least one of the classes that comprise the three-course graduate-level training sequence (total enrollment in the classes was 102, with continuation into the second and third classes limited to participants from the first class). Approximately 14 have successfully completed the full sequence of courses. Professionals providing behavior support services under DDSN's MR/RD Waiver have either demonstrated that they can meet established criteria for providing appropriate behavior support or are no longer allowed to provide this service. In addition, some highly skilled positive behavior support professionals have been recruited to South Carolina to work as consultants under the Waiver and now serve a few hundred persons with behavior support services.

Related to quality assessment, a process has been established for monitoring the quality of work performed by local behavioral consultants working under DDSN's MR/RD Waiver. This monitoring will help ensure that these services meet the recently established criteria as a requirement for continuation of provider status with DDSN and its Waiver. Finally, 50 persons have received direct evaluation, technical assistance, consultation, and/or training from DDSN's behavior support technical assistance and training team. Approximately 40% of these people received a full-scale and long-term

positive behavior support intervention that resulted in improving their quality of life and preserving their community placements, while at the same time saving hundreds of thousands of dollars that would have been spent on more restrictive alternative residential placements. Those not included in the 40% who received the full-scale successful consultation either received less intensive assistance, moved prior to intervention, received secondary consultation (e.g., the team assisted but did not take the primary consultation role), or moved following intervention.

Our effort has involved a focus on components of system change necessary to create a qualitative improvement in a comprehensive area of service. Given the breadth of the challenge and the difficulty of assessing, planning, developing, and implementing this type of system change, it was not surprising to find no example in the literature upon which we could directly model our efforts.

It is our hope that the description of the system change process used in South Carolina in the area of positive behavior support to assess needs, develop recommendations, tailor those recommendations for practical implementation, and the statewide implementation of system change in positive behavior support will be of benefit to other states and provider systems desiring to improve their provision of positive behavior supports to persons with mental retardation and related disabilities.

## References

- Anderson, J. L., Albino, R. W., Maestros, R. A., Dunlap, G., & Morella-Robbins, M. (1993). Issues in providing training to achieve comprehensive behavioral support. In J. Reichle & D. Wacker (Eds.), *Communicative alternatives to challenging behavior: Integrating functional assessment and intervention strategies* (pp. 363–406). Baltimore: Brookes.
- Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*, 91–97.
- Butkus, S. J., Rotholz, D. A., Lacy, K. K., Abery, B. H., & Elkin, S. (2002). Implementing person-centered planning on a statewide basis: Leadership, training, and satisfaction issues. In S. Holburn and P. M. Vietze (Eds.), *Person-centered planning: Research, practice, and future directions* (pp. 335–359). Baltimore: Brookes.
- Carr, E. G. (1977). The motivation of self-injurious behavior: A review of some hypotheses. *Psychological Bulletin, 84*, 800–816.
- Carr, E. G., Dunlap, G., Horner, R. H., Koegel, R. L., Turnbull, A. P., Sailor, W., Anderson, J. L., Albino, R. W., Koegel, L. K., & Fox, L. (2002). Positive behavior support: Evolution of an applied science. *Journal of Positive Behavior Interventions, 4*, 4–16.
- Carr, E. G., & Durand, V. M. (1985). Reducing problem behavior through functional communication training. *Journal of Applied Behavior Analysis, 18*, 111–126.
- Carr, E. G., Horner, R. H., Turnbull, A. P., Marquis, J. G., McLaughlin, D. M., McAtee, M. L., Smith, C. E., Ryan, K. A., Ruef, M. B., Doolabh, A., & Braddock, D. (1999). *Positive behavior support for people with developmental disabilities: A research synthesis*. Washington, DC: American Association on Mental Retardation.
- Carr, E. G., Levin, L., McConnachie, G., Carlson, J., Kemp, D. C., & Smith, C. E. (1994). *Communication-based intervention for problem behavior: A user's guide for producing positive change*. Baltimore: Brookes.
- Carr, E. G., Newsom, C. D., & Binkhoff, J. A. (1976). Stimulus control of self-destructive behavior in a psychotic child. *Journal of Abnormal Child Psychology, 4*, 139–153.
- Crimmins, D. B., & Wolf, S. B. (1997). *Positive strategies: Training teams in positive behavior support*. Valhalla, NY: Westchester Institute for Human Development.
- Dunlap, G., Hieneman, M., Knoster, T., Fox, L., Anderson, J., & Albin, R. W. (2000). Essential elements of inservice training in positive behavior support. *Journal of Positive Behavior Interventions, 2*, 22–32.
- Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1982). Toward a functional analysis of self-injury. *Analysis and Intervention in Developmental Disabilities, 2*(1), 3–20.
- Knoster, T. P., Villa, R. A., & Thousand, J. S. (2000). A framework for thinking about systems change. In R. Villa & J. S. Thousand (Eds.), *Restructuring for caring and effective education: Putting the puzzle together* (pp. 93–28). Baltimore: Brookes.
- Koegel, L. K., Koegel, R. L., & Dunlap, G. (1996). *Positive behavioral support: Including people with*

- difficult behavior in the community*. Baltimore: Brookes.
- Lovaas, O. I., Freitag, G., Gold, V. J., & Kassorla, I. C. (1965). Experimental studies in childhood schizophrenia: Analysis of self-destructive behavior. *Journal of Experimental Child Psychology*, 2, 67–84.
- Luiselli, J. K., & Cameron, M. J. (1998). *Antecedent control: Innovative approaches to behavioral support*. Baltimore: Brookes.
- O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J. R., Storey, J. R., & Newton, J. S. (1997). *Functional assessment and program development for problem behavior: A practical handbook* (2nd ed.). Pacific Grove, CA: Brookes/Cole.
- Reichle, J., & Wacker, D. P. (1993). *Communicative alternatives to challenging behavior: Integrating functional assessment and intervention strategies*. Baltimore: Brookes.
- Reid, D., Parsons, M., Rotholz, D. A., Braswell, B., & Morris, L. A. (2003). *Positive Behavior Support Training Curriculum*. Washington, DC: American Association on Mental Retardation.
- Reid, D. H., Rotholz, D. A., Parsons, M., Morris, L. A., Braswell, B., Green, C., & Schell, D. (2003). Training human service supervisors in aspects of positive behavior support: Evaluation of a statewide, performance-based program. *Journal of Positive Behavior Interventions*, 5, 35–46.
- Risley, T. R. (1997). Montrose Wolf: The origin of the dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 30, 377–381.
- Rotholz, D. A. (1997). *Recommendations of the Psychotropic Medication and Behavior Support Task Force*. Columbia: South Carolina Department of Disabilities and Special Needs.
- Rotholz, D. A., & Jacobson, J. (2001). *Behavioral consultants: Who are they and how do I find the right one?* Washington, DC.: American Association on Mental Retardation.
- Rotholz, D. A., & Thompson, S. (1997). *Report of focus group feedback on training and consultation needs*. Columbia, SC: University of South Carolina, Center for Disability Resources.
- Sugai, G., Horner, R. H., Dunlap, G., Hieneman, M., Lewis, T. J., Nelson, C. M., Scott, T., Liaison, C., Sailor, W., Turnbull, A. P., Turnbull, H. R., Wilcox, B., & Reuf, M. (2000). Applying positive behavior support and functional behavioral assessment in schools. *Journal of Positive Behavior Interventions*, 2, 131–143.
- Wolf, M. M., Risley, T. R., & Mees H. (1964). Application of operant conditioning procedures to the behavior problems of an autistic child. *Behaviour Research and Therapy*, 1, 305–312.

Received 1/22/02, first decision 5/28/02, accepted 8/12/02.

Editor-in-charge: Marty Wyngaarden Krauss

We thank Kathi Lacy for her support and creative suggestions that contributed in many ways to the success of the effort and Stanley Butkus, Brent Koyle, and Ron Abbott for their endorsement of the effort, without which this project could not have proceeded. We also thank Dennis Reid and Marsha Parsons for their authorship of the Positive Behavior Support Training Curriculum and LouAnn Morris and Bruce Braswell for their contributions to the Curriculum and the ensuing training of supervisors.

#### Authors:

**David A. Rotholz, PhD** (E-mail: drotholz@sc.edu), Project Director and Clinical Associate Professor, Center for Disability Resources, Department of Pediatrics, School of Medicine, University of South Carolina, Columbia, SC 29208. **Michelle E. Ford, PhD**, Director of Behavior Support, South Carolina Department of Disabilities and Special Needs, 3440 Harden St. Ext., PO Box 4706, Columbia, SC 29240.

## Appendix A

### Criteria for Relevant Experience for Positive Behavior Support Provision

Persons applying to become a provider of psychological services under the DDSN MR/RD Waiver must demonstrate through interview and provision of work sample(s) that they understand and can appropriately apply in treatment settings for persons with mental retardation and related disabilities the following concepts:

Conducting staff interviews for preliminary information

Defining behavior in objective and measurable terms

Design of data-collection systems

Application of data collection to determine where, when, and why problems occur

Training staff to collect behavioral data

Direct observation of behavior

Data analysis to determine function of behavior

Design of interventions, based on the preceding criteria, that have a large majority of their focus on prevention of the problem behavior(s)

Design of interventions that are focused on the function of the problem behavior(s) as opposed to their form

Design of interventions that are derived from the results of a functional assessment of behavior

Training direct support staff to effectively implement the behavioral intervention

The use of analysis techniques that allow for valid demonstration of intervention effect (e.g., graphs or other methods) that have been demonstrated to be effective in the professional literature.

A work sample must provide example(s) of the applicant applying these concepts in the treatment of persons with mental retardation and/or related disabilities.

---