COMMONWEALTH OF MASSACHUSETTS
TRIAL COURT
PROBATE AND FAMILY COURT DEPARTMENT

BRISTOL, ss No. 86E-0018-EI

JUDGE ROTENBERG EDUCATIONAL CENTER, INC., et al.

v.

COMMISSIONERS of the DEPARTMENT OF DEVELOPMENTAL SERVICES and the DEPARTMENT OF EARLY EDUCATION AND CARE

BRIEF AMICUS CURIAE OF THE MENTAL HEALTH LEGAL ADVISORS COMMITTEE

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INTRODUCTION

The use of electric skin shock to control behavior of individuals with disabilities at the Judge Rotenberg Center (JRC) is a matter of considerable national and international interest. JRC is the only program in the United States that employs an electrical stimulation device, ostensibly to deter self-injurious or aggressive behaviors with painful punishment. Since this Court issued its Order in 1987 allowing electric shock use with Court permission in individual cases, many federal and state agencies, professional associations, family organizations, international governmental officials (including the United Nation's Special Rapporteur on Torture) and consumer groups have studied the use of aversives, including contingent electric shock, at JRC. A clear consensus has now emerged that these techniques are not consistent with professional standards, not effective, and are unnecessary. For reasons set forth below, based on generally available information and not facts in evidence in this case, MHLAC concurs with Defendants that it is no longer "equitable" to enforce the 1987 Consent Decree (also "Order," or "Judgment.") and supports the position of the Defendants, the Massachusetts Department of Developmental Disabilities (DDS) and the Massachusetts Department of Early Education and Care (DEEC), as presented in their motion under Rule 60 (b)(5) to vacate the Decree.

INTEREST OF THE AMICUS

MHLAC was established by the General Court in 1973 under the jurisdiction of the Massachusetts Supreme Judicial Court for the purpose of advocating for the rights of persons with mental disabilities. An independent state agency, MHLAC provides advice on a wide range

of legal issues, including involuntary civil commitment, access to services, treatment rights, guardianship, and the rights of individuals with disabilities in institutional and community settings. MHLAC also provides direct legal assistance to indigent individuals with psychiatric and behavioral disorders.

MHLAC served as *amicus* in many cases implicating the rights of persons with mental health and related disabilities.[1] A central tenet of MHLAC's work is to ensure that individuals with disabilities have access to appropriate treatment, are as autonomous as reasonably possible, and, if not capable of making treatment decisions on their own, are afforded "substituted judgment" procedures that honor the decisions they would make if they were competent. MHLAC has a long history of weighing in on questions regarding the interpretation of the state mental health law statute and of other statutes authorizing extraordinary treatment. Its views on constitutional issues, state laws, and disability-specific programs has been afforded considerable weight by the Supreme Judicial Court. *See, e.g., Commonwealth v. Nassar,* in which the SJC

[1] These include: *In re of G.P.*, 473 Mass. 112 (2015) (procedural and substantive due process rights in proceedings for civil commitment for alcohol or substance abuse); *Walden Behavioral Care v. K.I.*, 471 Mass. 150 (2015) (rights against self-incrimination in civil commitment proceedings); *Guardianship of Erma*, 459 Mass. 801 (2011) (due process in cases involving forced treatment with antipsychotic medications); *Kenniston v. DYS*, 453 Mass. 179 (2009) (holding provisions of G.L. c. 120 allowing extension of commitments to DYS to be unconstitutional); *Boston Housing Authority v. Bridgewaters*, 452 Mass. 833 (2009) (reasonable accommodations in public housing appeals process); *Newton-Wellesley Hospital v. Magrini*, 451 Mass. 777 (2008) (emergency hearings access for involuntarily committed mental health patients); *In re. Andrews,* 449 Mass. 587 (2007) (standard of proof for an applicant in a substituted judgment treatment proceeding under G. L. c. 123, § 9 (b)); *Adoption of Gregory*, 434 Mass. 117 (2001) (reasonable accommodations for parents with disabilities in care and protection cases); and *Loffredo v. Center for Addictive Behaviors, Inc*., 426 Mass. 541 (1998) (whether there is a private right of action in a case challenging a drug treatment clinic's denial of patient admission).

adopted amici's argument that trial courts must consider whether there is a less restrictive alternative to hospitalization in a civil commitment case.[2]

STATEMENT OF THE CASE

The Commonwealth filed a Motion under Probate and Family Court Rule 60 and Mass. R. Civ. P. 60(b)(5) to vacate the consent decree in the above-captioned matter.[3] *Amicus* adopts the statements of the case contained in the Defendants' Motion and Memorandum.

SUMMARY OF ARGUMENT

The DDS seeks to vacate a an Order, dated January 7, 1987, that incorporates a settlement agreement which creates a procedure for authorizing the administration of painful electric shocks to persons with disabilities in order to coerce modifications in behavior. DDS' Motion asserts, under Rule 60(b), that it is no longer "equitable" to enforce the Order. It is a threshold requirement under this rule that a "significant change of circumstances" postdates the Judgment.[4] This criterion is satisfied.

In the nearly 30 years since the Court issued its Order in this matter, a professional consensus has emerged that the use of painful aversives is inappropriate, ineffective, and unnecessary.[5] The majority of states have banned the use of aversives on adults with intellectual or developmental disabilities.[6] The federal Food and Drug Administration (FDA) recently issued

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[2] 380 Mass. 908, 917-918 (1980).
[3] The Defendants' Memorandum Of Law In Support Of Motion Under Probate And Family Court Rule 60 And Mass. R. Civ. P. 60(B)(5) To Vacate Consent Decree ("Defendants' Memorandum") at 2.
[4] *Rufo v. Inmates of the Suffolk County Jail,* 502 U.S. 367 (1992).
[5] *See* Argument, Part I.
[6] Pages 6 - 7.

proposed regulations that would ban use of electrical stimulation devices (ESDs) to modify behavior in individuals with disabilities across the nation.[7] Professional opinion, derived from a now considerable body of research, is solidly against the use of painful aversive techniques and favors Positive Behavioral Supports (PBS) and other alternatives.[8] Professional and advocacy organizations unanimously call for the abolition of these practices, specifically targeting the use of the electrical stimulation device at the JRC.[9] And JRC's electric shock techniques are now officially recognized as "torture" under international law.[10] The DDS recognized these developments when it issued a regulation that severely limits the use of "Level III" aversives in DDS run or licensed facilities.[11] The accumulation of clinical information in opposition to painful aversives constitutes changed circumstances reflected in DDS's prohibition of these techniques. With the exception of JRC's practices, painful aversives have joined other now-

[7] Pages 7 - 13.
[8] Pages 13 - 18.
[9] Pages 18 - 22.
[10] Pages 22 - 25.
[11] Pages 25 – 27. In addition to the short-hand, "aversives," we will refer in this brief to "contingent electric shock," perhaps the most abusive, certainly the most well-known and controversial, JRC practice. In fact, however, the ban, at 115 C.M.R. 5.14(4)(b)(4), applies to:
1. Any Intervention which involves the contingent application of physical contact aversive stimuli such as spanking, slapping, hitting or contingent skin shock.
2. Time Out wherein an individual is placed in a room alone for a period of time exceeding 15 minutes.
3. Any Intervention not listed in 115 CMR 5.14 as a Level I or Level II Intervention which is highly intrusive and/or highly restrictive of freedom of movement.
4. Any Intervention which alone, in combination with other Interventions, or as a result of multiple applications of the same Intervention poses a significant risk of physical or psychological harm to the individual.
115 C.M.R. 5.14 (3)(d). There is a grandfather clause: aversives may be used, on an individual-specific basis, when approved by the court prior to September 1, 2011. 115 C.M.R 5.14(4)(b)(4). The population for whom this clause is applicable is very small and, obviously, will become smaller over time.

discredited curative measures to which people with disabilities have been subjected for decades.[12]

Given these changed circumstances, this Court must determine whether the DDS regulation at issue in this case, which prospectively bans ESDs, is a valid exercise of the Agency's authority. The DDS, by statute and its own regulations, must ensure that all of its services, programs, and activities undertaken on behalf of individuals with developmental disabilities are consistent with accepted professional standards, effective, and minimally intrusive.[13] Its regulation of ESDs thus falls squarely within the broad authority granted to the agency by the legislature and affirmed by the SJC in *Judge Rotenberg Educational Center, Inc. v. Department of Mental Retardation.*[14] Consistent with recent binding precedent, DDS must demonstrate nothing more than a rational basis in support of its regulation, a standard that is clearly met here.[15] Further, as *parens patriae*, DDS has a compelling interest in protecting children and persons who are incapacitated due to a disability from harm, even when the individual right affected may be classed as "fundamental."[16]

[12] Once widely accepted treatments for mental illness are now considered at best obsolete and at worst barbaric. For instance, for years, commonly used treatments included extreme physical restraint and hydrotherapies. Walter E. Barton, THE HISTORY AND INFLUENCE OF THE AMERICAN PSYCHIATRIC ASSOCIATION 159-160 (1987).
[13] Pages 28 – 30.
[14] 424 Mass. 430 (1997). *Id*.
[15] Pages 30-32.
[16] Pages 32 - 37.

ARGUMENT

I. The Overwhelming Weight Of Professional Research, Positions Of Professional And Advocacy Organizations, Developments In International And National Law, the FDA's Proposed Ban On The Use Of Electrical Stimulation Devices, And The Information Considered By The DDS In Its Rulemaking Process Constitute, Changed Circumstances That Justify Vacating This Court's 1987 Judgment.

A. The Majority of States Have Limited or Prohibited the Use of Electric Shock and Other Aversives.

Disability professionals and service providers not working for the JRC overwhelmingly recognize that painful aversive interventions are an outmoded and unnecessary approach to behavior modification. Rather, painful aversives have been supplanted by PBS and other treatments and therapies designed to eliminate targeted behaviors without the infliction of pain or punishment. Recognizing advances in the field, state legislatures and administrative agencies have banned or severely limited the antiquated techniques still in use at the JRC. For example, in 2012, Rhode Island's legislature banned its agencies from using "prohibited aversive intervention techniques on a person with a developmental disability." The statute explicitly prohibited a range of interventions including electric shock.[17]

Rhode Island is not unique. *Amicus* identified at least twenty-seven jurisdictions that have enacted prohibitions on the use of contingent electric shock and other painful aversive procedures that are as restrictive as, if not much more restrictive than, the current DDS regulations.[18] Almost all of these bans were enacted since this Court's 1987 Order.

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[17] RI Gen L § 40.1-26-4.1 (2012).

[18] The twenty-seven jurisdictions that have enacted at least one type of ban on skin shock or other painful aversive techniques for adults with ID/DD are Arizona, Arkansas, Colorado, Delaware, District of Columbia, Florida, Illinois, Indiana, Louisiana, Maine, Maryland, Michigan, Missouri, Montana, Nevada, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Vermont, Washington, and West Virginia. Citations are provided in DDS Exhibit 220.

Many states have promulgated regulations that similarly ban or dramatically restrict the use of electric shock devices. New York, which for many years has placed students at JRC, promulgated a regulation in 2006, "prohibiting schools, including 'approved out-of-state day or residential schools' [such as JRC], from using aversive interventions."[19] The regulation, which was unsuccessfully challenged in federal court,[20] was motivated by practices at JRC. Citing a review of the facility resulting in "significant concerns for the potential impact on the health and safety of New York's students," the New York State Board of Regents declared: "Regulations are needed to limit the aversive behavioral interventions that inflict pain and discomfort to children and have the potential to result in physical injury and/or emotional harm."[21]

B. The Food and Drug Administration Has Issued a Proposed Rule that Would Ban the Use of Electrical Stimulation Devices to Modify Behavior in Persons with Disabilities Because they Pose an Unreasonable Risk of Illness or Injury.

The FDA is mandated by Congress to review and approve all medical devices and drugs, in order to ensure that such treatments are safe, effective, and properly labeled. 21 U.S.C. Chapter 9. The federal agency has unique expertise in rendering these judgments, drawing on a wide range and number of professionals. It has established and regularly applies detailed scientific standards to determine whether specific devices and drugs should be approved. Given its statutory mandate, expertise, and careful review process, its judgments are routinely afforded

[19] *See* http://www.p12.nysed.gov/specialed/behavioral/interventions-606.pdf. The regulation was later promulgated as N.Y. Comp. Codes R. & Regs. tit. 8, § 19.5(b)(1) (2012).
[20] *Bryant v. N.Y. State Educ. Dep't.*, 692 F.3d 202, 209 (2d Cir. 2012), petition for cert. filed, (U.S. Jan. 2, 2013) (No. 12-932).
[21] State Education Department of the University of the State of New York, Memo from Rebecca H. Cort (June 6, 2006), available at http://nospank.net/jrc-rgnt.pdf.

considerable deference by the courts.[22] In the present case, the FDA has issued only a proposed rule. While a court would likely not confer to such a proposal the same level of deference as it would to a final rule, the FDA's action nonetheless merits the Court's consideration as it reveals changed circumstances regarding the opinion and use of ESDs.

In April 2016, the FDA proposed a ban on ESDs intended to reduce aggressive behaviors (ABs) or self-injurious behaviors (SIBs), finding that ESDs present an unreasonable and substantial risk of illness or injury.[23] Before reaching its conclusion, the FDA: reviewed the scientific literature;[24] sought opinions from experts (including an Advisory Panel); and gathered information from state agencies, the affected manufacturer (JRC), patients and their family members, and other stakeholders. Relying on this considerable body of knowledge, scientific opinion, and public input, it then evaluated both the risks[25] and alleged benefits[26] associated with

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[22] See Weinberger v. Hynson, Westcott & Dunning, Inc., 412 U.S. 609 (1973); United States v. Rutherford, 442 U.S. 544 (1979); Heckler v. Chaney, 470 U.S. 821, 832 (1985); Young v. Cmty. Nutrition Inst., 476 U.S. 974, 981 (1986); Medtronic, Inc. v. Lohr, 518 U.S. 470, 495-96 (1996) (deference with respect to FDA judgment regarding a medical device).

[23] FDA, Proposed Rule, Banned Devices; Proposal To Ban Electrical Stimulation Devices Used To Treat Self-Injurious or Aggressive Behavior (April 25, 2016) (81 FR 24386), https://www.regulations.gov/document?D=FDA-2016-N-1111-0001 (hereinafter, "FDA, Proposed Rule").

[24] The literature addressed individuals with intellectual and developmental disabilities, such as autism spectrum disorder, Down syndrome, Tourette syndrome, as well as other cognitive or psychiatric disorders and severe intellectual impairment.

[25] The FDA identified adverse events that may result from ESD use. These include physical harms such as pain, skin burns, loss of sensitivity to fatigue or pain, and injuries from falling; as well as psychological harms, including depression, PTSD, anxiety, fearfulness, suicidality, chronic stress, acute stress disorder, neuropathy, withdrawal, nightmares, flashbacks of panic and rage, and hypervigilance. FDA, Proposed Rule at 24389. Perhaps most troubling, the FDA found that the conditions of persons exposed to ESDs may worsen, with the exacerbation of underlying symptoms, replacing negative behaviors with others, and the loss of agency ("learned helplessness"). *Id.*

[26] To determine the effectiveness of ESDs on SIB or AB, the FDA identified 45 studies and twelve reviews of studies. *Id.* at 24399. Due to serious design deficiencies, the FDA determined that much of this research did not effectively support ESD efficacy, noting that the majority of research articles were published in the 1960s and 1970s and did not "adhere to current, more

ESDs, as well as those associated with alternative treatments, and concluded that a complete ban was appropriate and necessary. The FDA's judgment is entitled to considerable deference by this Court and clearly constitutes a changed circumstance since the 1987 Order was entered.[27]

1. The FDA found that a regimen of positive behavioral intervention is the state of the art in treating the relevant population and that ESDs are ineffective.

In its review, the FDA found that, except for JRC, clinicians have abandoned the use of ESDs for the treatment of SIB and AB and moved toward reliance upon various positive behavioral treatments, sometimes in conjunction with medication.[28] Its review and subsequent proposed rule renders it clear that treatment for SIB and AB should not include ESDs.

The shift in treatment methodologies away from ESDs is rooted in "scientific advances that have yielded new insights into the organic causes and external (environmental or social) triggers of SIB and AB, allowing the field to move beyond intrusive punishment techniques such

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exacting peer-review standards for study conduct and reporting." *Id.* at 24401. In addition to significant methodological limitations, the conclusions set forth in some papers supporting ESDs were deemed not credible due to serious conflicts of interest or apparent bias. *Id.* The literature that found some immediate interruption of target behavior by virtue of ESD use did not evidence durable gains. *Id.* The Advisory Panel supported the FDA's appraisal of the research. *Id.* at 24401-02.

[27] *See Ms. S. v. Reg'l Sch. Unit 72*, 829 F.3d 95 (1st Cir. 2016) (district court would take judicial notice of proposed agency rules and the public record materials relating to Maine Administrative Procedures Act's rulemaking process); *Redfern v. Napolitano*, 727 F.3d 77 (1st Cir. 2013) (court below could take judicial notice of the manifested intent of the Transportation Security Administration to remove all non-automatic target recognition-equipped scanners from security checkpoints by particular date).

[28] The comments to the FDA submitted on behalf of parents of JRC residents criticize the FDA for suggesting that SIB and AB could be treated with Risperdal and Abilify. Comments from JRC Parents to Division of Dockets Management, FDA (July 25 2016), https://www.regulations.gov/document?D=FDA-2016-N-1111-1570 at 20. But the FDA found that pharmacotherapy should be used only as an "adjunct or supplemental method of treatment" that is secondary to positive behavioral supports. FDA, Proposed Rule at 24387.

as aversive conditioning with ESDs."[29] Positive behavioral treatments overcome a key limitation of punishment techniques, which are highly dependent on the context and setting in which they have been used. Positive treatments allow clinicians to promote skill acquisition and individual choice that carry over to other settings, and which will tend to endure over time. The shift is also responsive to "ethical concerns tied to the risks posed by devices such as ESDs, especially regarding the application of pain to a vulnerable patient population."[30]

The rise of positive treatments is facilitated by the emergence of an evaluation tool that did not exist thirty years ago -- the functional behavioral assessment (FBA). This tool is now considered essential for analyzing and determining triggering conditions that precede the expression of challenging behavior. The FBA process allows clinicians to formulate and implement effective treatment plans using positive techniques rather than painful punishment like electric shock. These treatment plans feature interventions such as positive behavior support and dialectical behavioral therapy, which "have become state-of-the-art treatments for SIB and AB."[31] Rather than simply suppressing behaviors through punishment-based techniques, these treatments "achieve durable, long-term benefits."[32] And, positive techniques are effective for even the most difficult conditions: "providers and researchers have found that PBS is successful in the treatment of even the most challenging behaviors."[33]

The FDA noted that this shift is not entirely new. The change in treatment methodology is now well-established in the field: "surveys show the [Applied Behavior Analysis] field as a

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[29] *Id.* at 24387.
[30] *Id.* at 24387**.**
[31] *Id.* at 24387.
[32] *Id.* at 24410.
[33] The FDA was careful to add that even if positive interventions cannot reduce or eliminate SIB or AB in all patients, that does not mean that ESDs should be used. *Id.* at 24406, 24411. The FDA cites two experts who argue that positive interventions can effectively address even the most serious problem behaviors. *Id.* at 24406-07.

whole moved away from intrusive physical aversive conditioning techniques such as ESDs 2 decades ago."[34] As one Advisory Panel expert described, the shift is virtually complete: "the statements of professional programs and the fact of wholesale abandonment of aversive electrical shock therapy professional programs by the peers in this field show that it is unreasonable to conclude that these devices are part of the standard of care for this class of patients . . . ."[35]

Finally, the FDA noted that as clinicians uniformly move to positive behavioral methods, the body of research regarding their efficacy has grown, with a corresponding decline in studies of ESDs, due to the view that it is an outmoded approach.[36] Given the change in thinking, instructive materials on the use of PBS are readily available, while few, if any, resources and virtually no scientific research promote the use of contingent electric shock or other aversive interventions safely.[37]

2. In addition to its review of the research and consideration of expert opinions, the FDA has made a well-reasoned administrative determination that the risks posed by ESDs as treatment for SIB or AB are unacceptable in light of available alternatives, which is entitled to considerable deference.

In addition to compiling and analyzing existing studies and literature, the FDA, after consultation with a wide range of interested parties and agencies, reached its own, well-reasoned determination that the risks posed by ESDs for SIB and AB are unacceptable. While recognizing that ESDs can reduce self-injurious or aggressive behavior on a short-term basis, the FDA concluded that these immediate effects are outweighed by the numerous short and long-term risks. These risks are particularly troubling, the FDA concluded, for a population

[34] *Id.* at 24405.
[35] *Id.* at 24406.
[36] *Id.* at 24407.
[37] *Id.*

lacking the ability to protest: "For many individuals who exhibit SIB or AB, these risks are magnified by their inability to adequately communicate the harms they experience to their health care providers."[38] Also factoring into the FDA's assessment of risk was the concerns around the need for ongoing and stronger shocks when ESDs are used:

> . . . without durable conditioning the target behavior will recur over time and necessitate ongoing shocks to cause immediate cessation, magnifying the risks. If adaptation occurs, it would render the shocks wholly ineffective and could lead to stronger shocks with no effect.[39]

Put simply, the FDA concluded that the risks of ESDs are not worth taking, in light of the availability of safer, current methodologies:

> Decades ago, health care providers had a poor understanding of the causes of SIB and AB and very limited options to treat SIB or AB. Contingent skin shock was used even though the result was fleeting and continual shock administration was needed. Since then, state-of-the-art treatment for SIB and AB has evolved considerably. Today we know that careful functional assessment, which identifies specific unwanted or undesired behaviors, the frequency and severity of these behaviors, and their specific triggers, allows for the development of positive-based behavioral therapy that provides greater benefit and poses less risk than using ESDs. …These interventions pose little risk and, on their own or alongside pharmacological treatments, have been shown to be successful in treating even the most severe behaviors … and to achieve durable long-term results.[40]

The FDA has rendered the essential findings that this Court should make to vacate its 1987 Decree and uphold the DDS regulations. Those findings, issued after years of review, with extensive scientific input, can – in fact, must – be relied upon by this Court in evaluating the change in facts and legal rules applicable to electric shock devices used by JRC pursuant to the Court's Order. The FDA had ample justification for its conclusion that there has been a change in circumstances. The agency concluded that ESDs are no longer a justified approach to dealing

[38] *Id.* at 24411.
[39] *Id.*
[40] *Id.*

with self-injurious and aggressive behavior and should no longer be used to modify behavior of individuals with disabilities.[41]

C. The Professional Literature Supports a Prohibition on Contingent Electric Shock in Favor of the Use of Positive Behavioral Supports and Other Approaches.

Over the course of the last thirty years, PBS has become the prevailing treatment technique and best practice for addressing challenging behaviors in persons with significant disabilities. PBS is both less intrusive and more effective than aversives.

PBS is an "applied science" that approaches the individual and others who interact with him or her to improve the quality of their lives in the pertinent environment. A secondary, and consequent, goal is to decrease the incidence of problematic behavior.[42]

PBS is a common sense and functional approach that probes for the reasons why persons exhibit challenging or dangerous behaviors and the role environment plays in prompting the targeted conduct. Rather than trying to extinguish such behaviors with harsh negative punishments or the purposeful infliction of pain, PBS practitioners seek to expand an individual's repertoire of appropriate behaviors. These practitioners support positive behavior by altering the environment in which the individual operates to "increase opportunities for positive behavior" and change the individual's "life style."[43] PBS therapy teaches persons functional skills, especially in communication, ascertaining and honoring a person's motives and supporting their fulfillment in an environment in which they are included and where their human dignity is

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[41] *Id.*
[42] *See* Edward G. Carr et al., *Positive Behavior Support: Evolution of an Applied Science,* 4 J. OF POSITIVE BEHAVIORAL INTERVENTIONS 4 (2002), http://www.cehd.umn.edu/ceed/events/summerinstitute/2008institute/2008pbsresources/articles/positivebehaviorsupportevolutionofanappliedscience.pdf.
[43] *Id.*

respected.[44] When a person is enabled to "achieve his or her goals in a socially acceptable manner," problem behavior is rendered "irrelevant, inefficient, and ineffective" and is cast aside.[45] Significantly, PBS alters behavior both in the short and long-term.

By contrast, aversive methods do not achieve the lasting changes that PBS can produce. Punishment-oriented behavioral control techniques must continue to be applied in order to sustain positive results for extended durations, and sometimes punishment may even escalate behaviors.[46]

Researchers have compared the two approaches by looking at persons subject to both: They studied the impact of the cessation of harsh invasive techniques and introduction of a positive treatment regimen, focusing on five individuals whom the JRC subjected to contingent electric shock, food deprivation, and other aversive interventions.[47] These individuals were subsequently transferred to another program, the May Institute, which developed intervention plans based on the PBS model, involving functional assessment of the stimulus for positive and

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[44] *Id.* at 5 - 6.
[45] *Id.* at 5.
[46] *See, e.g.*, Nathan H. Azrin, *Effects of punishment intensity during variable-interval reinforcement*, 3.2 J. OF THE EXPERIMENTAL ANALYSIS OF BEHAVIOR 123, 130 (1960), http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1403961/pdf/jeabehav00201-0033.pdf; Gary W. Lavigna & Thomas J. Willis, *The Efficacy of Positive Behavioral Support with the Most Challenging Behavior: The Evidence and its Implications*, J. OF INTELLECTUAL & DEVELOPMENTAL DISABILITY 185, 186 (2012) (citing Ricard W. Malott, et al., ELEMENTARY PRINCIPLES OF BEHAVIOR (3rd ed. 1997), https://www.researchgate.net/profile/Gary_Lavigna/publication/229006911_The_efficacy_of_positive_behavioural_support_with_the_most_challenging_behaviour_the_evidence_and_its_implications/links/53dfc1050cf2aede4b492e9c.pdf.
[47] Frank L. Bird & James K. Luiselli, *Positive Behavioral Support of Adults with Developmental Disabilities: Assessment of Long-term Adjustment and Habilitation Following Restrictive Treatment Histories*, 31 J. OF BEHAVIOR THERAPY AND EXPERIMENTAL PSYCHIATRY 5 (2000), Addendum at 3-4.

negative behaviors.[48] There was no increase in problem behaviors from the onset of the transfers, and, measured after two years, there were significant long-term gains.[49] The results demonstrated that "punishment-based approaches can be terminated, alternative strategies can be substituted, and through a clinically responsive system of monitoring and decision making, behavioral adjustment can be supported without having to resort to invasive forms of treatment."[50]

The success of the May Institute's treatment approach is consistent with numerous other studies on the use of PBS that postdate the 1987 Judgment. In fact, "there are a number of clinical demonstrations in which positive procedures have been associated with a broad reduction in very severe behaviors," as well as "a growing literature providing empirically rigorous demonstrations that specific techniques can produce important behavior reduction."[51]

These conclusions were reaffirmed in more recent scholarship drawing on subsequent research.[52] The most up-to-date and comprehensive review of the research literature on PBS looked at twelve carefully selected published studies of individual and groups of persons, some of whom were subjected to aversive approaches previously, focusing on the efficacy of using an exclusively positive approach to address seriously challenging behaviors.[53] The research review

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[48] *Id.* at 3-4, 5. "Multifaceted behavior-support plans that included antecedent control, positive reinforcement, functional communication training, personal preference selection, and life-style changes, were substituted." *Id.* at 5.
[49] *Id.* 12-13.
[50] *Id.* at 14.
[51] Robert Horner et al., *Toward a Technology of "Nonaversive" Behavioral Support*, 15 J. OF ASS'N FOR PERSONS WITH SEVERE DISABILITIES 3-10 (1990) (citations omitted), Addendum at 17.
[52] *See* Martha E. Snell, *Fifteen Years Later: Has Positive Programming Become the Expected Technology for Addressing Problem Behavior? A Commentary on Horner et al.*, 30 RES. & PRAC. FOR PERSONS WITH SEVERE DISABILITIES 11 (2005), Addendum at 16 (research after Horner, Dunlap 1990 article confirms "PBS interventions have continued to be effective in significantly reducing the problem behavior of individuals with severe disabilities, autism, and developmental disabilities" (citations omitted)).
[53] *See* Lavigna & Willis (2012), note 44, at 186-88.

details numerous accounts of individuals exhibiting serious, even life-threatening behaviors that were effectively addressed with the PBS method.[54] Studies that followed groups of persons also yielded excellent results, with substantial reductions of dangerous behaviors.[55]

The authors concluded that the research supports a scientific determination that PBS is "effective." They summarized their assessment of the research by addressing each of the common contentions of those that claim aversives are necessary notwithstanding PBS: "PBS appears to be effective for the most severe problems (as well as less severe problems), for high-rate behaviour (as well as low-rate behaviour), and for behaviour problems exhibited by people who live in institutional settings (as well as for people who live in the community)."[56]

There is now "near universal agreement that contingent skin shock is professionally unnecessary and inappropriate because there are other, far less restrictive methods to treat challenging behaviors."[57] In fact, since the 1990s, when more positive methods of addressing problem behavior became accessible, very few studies have supported the use of punitive

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[54] *Id.* at 188-90. In one case, self-injury was wholly eliminated in a man that displaying "health and life threatening" self-injurious behavior "resulting in frequent hospitalizations, extensive tissue damage, serious malnutrition and drastic weight loss" that suffered three years of aversives without benefit. *Id.* at 188. This case is described in greater detail in the original study. *See* Karen Berkman & Luanna H. Meyer, *Alternative Strategies and Multiple Outcomes in the Remediation of Severe Self-injury, 13* J. of the Ass'n for Persons with Severe Handicaps, No. 2, 76-86 (1988), Addendum at 29-37. *See also* Gary W. Lavigna & Thomas J. Willis, *A Model for Multi-Element Treatment Planning and Outcome Measurement, in* AUTISM: IDENTIFICATION, EDUCATION AND TREATMENT (Trisha Van Berkell ed.,1992), also cited in the author's 2012 article (PBS completely successful in eliminating problem behaviors of seventeen year-old boy with autism and hearing loss prone to strike his nose with his fist or against another object; aversive interventions only escalated self-harm), Addendum at 42-53.

[55] Lavigna & Willis (2012), note 44, at 189-90. 77% of 138 persons examined in one of the studies showed substantial improvements. *Id.*

[56] *Id.* at 194. The authors further concluded that PBS: ". . . appears to be a cost-effective approach that can be widely taught and disseminated to all people working in the field, including direct service workers." *Id. See also* Lavigna and Willis (1992), note 52, to the same effect.

[57] *See* Affidavit of Gary W. Lavigna accompanying Defendants' Memorandum at ¶15.

strategies.[58] As a result, there is no valid scientific justification for JRC's use of electric shock techniques persons with disabilities in its care; to the contrary, there is a consistent and well-validated scientific reason to prohibit the prospective use of these techniques, which constitute changed circumstances and which justify modification of the Consent Decree.

In addition to PBS, there are a range of other treatment methodologies that provide positive alternatives to punitive approaches. These include: 1) Dialectical Behavior Therapy (DBT), a form of cognitive behavior psychotherapy designed specifically for individuals with self-harm behaviors, such as self-cutting, suicide thoughts, urges to suicide, and suicide attempts;[59] 2) Applied Behavior Analysis (ABA), the process of systematically applying interventions designed to teach skills that will in turn reduce challenging behaviors and demonstrating that the interventions employed are responsible for the improvement in behavior;[60] and FBAs, discussed above, a process for addressing challenging behavior by

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[58] *See* Fredda Brown, *Patients Exhibiting Self-Injurious and Aggressive Behaviors*, FDA, Reference 107 (2016), https://www.regulations.gov/document?D=FDA-2016-N-1111-0110.

[59] DBT is an effort to change how an individual's thinking is processed; therapists seek to reduce challenging behaviors, such as interruptions or angry outbursts, while teaching individuals how to become familiar with and manage feelings that may arise. *See, e.g.,* Julie F. Brown et al., *Treating Individuals With Intellectual Disabilities and Challenging Behaviors With Adapted Dialectical Behavior Therapy*. 6.4 J. OF MENTAL HEALTH RES. IN INTELLECTUAL DISABILITIES 280 (2013). (DBT has been shown to effectively reduce CBs in other emotionally dysregulated populations and findings in this study suggests that modified DBT holds promise for effectively treating individuals with intellectual and developmental disabilities), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3725667/.

[60] *See, e.g.,* Gary W. LaVigna, *The role of positive programming in behavioral support plan*, in TREATMENT OF SEVERE BEHAVIOR DISORDERS: BEHAVIOR ANALYSIS APPROACHES 59 (E. Cipani ed., 1989) (positive programming offers promise for producing the durable treatment effects that have been so elusive with other behavior reduction strategies. It does so because it is based on an analysis of the role the aberrant behavior serves the person and aims to establish a new behavioral repertoire that legitimizes that role and teaches the person more effective and more socially acceptable ways of dealing with the environment), https://www.regulations.gov/document?D=FDA-2016-N-1111-0108; Angela Hassioti et al., *Applied behaviour analysis and standard treatment in intellectual disability: 2-year outcomes*, 198 THE BRITISH J. OF PSYCHIATRY 490 (2011) (the specialist behaviour team intervention plus

identifying the purposes of specific behaviors and selecting appropriate interventions for those behaviors.[61] In addition to these therapeutic approaches, there are also a range of pharmacological treatments available today, which can effectively complement other interventions.[62] Finally, a variety of other approaches involve external environmental and interpersonal interventions, such as establishing high quality environments,[63] maintaining appropriate staffing ratios,[64] and employing specialized staff for a variety of functions.[65]

D. Policy Statements Issued by Leading Organizations Condemn JRC's Practices.

Since the 1987 Order in this case, a large number of respected organizations that represent the interests of persons with disabilities have denounced the use of contingent electric

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standard treatment arm continued to show significant clinical gains beyond the initial 6 months of the trial), http://bjp.rcpsych.org/content/198/6/490.

[61] *See, e.g.*, Mark D. Shriver et al., *Evaluating the validity of functional behavior assessment,* 30 SCH. PSYCHOLOGY REV 180 (2001) (FBA is a core component of behavior analysis and has a long and successful history within that philosophical and scientific paradigm), https://faculty.unlv.edu/sloe/Courses/EPY%20715/FBA%20Articles/Schriver,%20Anderson,%20%26%20Proctor%20(2001).pdf.

[62] FDA, Proposed Rule at 24411.

[63] *See, e.g.*, J. Cimino et al., *Evidence-based Competencies for Promoting Social and Emotional Development and Addressing Challenging Behavior in Early Care and Education Settings*, Project BLOOM Professional Development Steering Committee (Oct. 2007) (section II outlines the components of a high quality environment; such an environment includes the capacity to provide assessment, direct and indirect guidance techniques, and a caring classroom community), http://csefel.vanderbilt.edu/resources/states/se_competencies.pdf.

[64] *See, e.g.,* Bethany R. Lee & Ron Thompson, *Comparing Outcomes for Youth in Treatment Foster Care and Family-Style Group Care,* 30 CHILDREN AND YOUTH SERVICES REV 746 (2008) (the low youth-to-staff ratios and high rates of positive reinforcement for socially desirable behaviors are components of the model that have been found to be effective), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2515489/.

[65] *See, e.g.*,, Gary W. LaVigna and Thomas J. Willis, *Challenging Behavior: A Model for Breaking the Barriers to Social and Community Integration*, 1 POSITIVE PRACTICES (1995) **(**in developing a framework for breaking the barriers to integration caused by challenging behavior, the authors describe a model support plan which includes, as social change agents, behavior consultants and one-to-one support staff), http://www.iaba.com/article.htm.

shock aversives. Their strongly worded statements are reflective of the clear consensus emerging subsequent to the Court's Judgment that the JRC's practices are inhumane and ineffective.

The American Association of Intellectual and Developmental Disabilities (AAIDD) is the oldest and largest interdisciplinary organization of professionals and citizens committed to the effective and humane care of persons with intellectual and developmental disabilities, with a membership of more than 5,000 persons in the United States and more than 50 other countries. It promotes progressive policies, research, and effective practices. Noting that "[s]ome persons who have an intellectual or developmental disability continue to be subjected to inhumane forms of aversive procedure," as well as resulting "growing concern" about these practices, AAIDD, in its Position Statement on Aversive Procedures, "condemns such practices and urges their immediate elimination."[66]

The Arc of the United States, in addition to condemning the use of painful aversives for similar reasons, noted in a 2010 policy statement which was adopted jointly with AAIDD that aversives not only "do not reduce challenging behaviors," but they are also counterproductive because they "inhibit the development of appropriate skills and behaviors."[67] Similarly, TASH[68]

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[66] AAIDD, Position Statement on Aversive Procedures, https://aaidd.org/news-policy/policy/position-statements/aversive-procedures#.V-G46fkrKMw. The AAIDD stated that aversive procedures generate "[o]bvious signs of physical pain" and serious side-effects, "including tissue damage, physical illness, severe stress, and/or death," and dehumanize persons through "means such as social degradation, social isolation, verbal abuse . . . and treatment out of proportion to the target behavior." *Id.*

[67] The ARC, Behavioral Supports (2010), http://www.thearc.org/who-we-are/position-statements/life-in-the-community/behavioral-supports.

[68] The individual letters of this acronym are not associated with any particular words. It derives from a prior acronym for the American Association for the Education of the Severely and Profoundly Handicapped, or AAESPH, which was deemed unworkable. *See* http://tash.org/about/history-tash/.

has also issued a policy statement denouncing the use of aversives and calling for their elimination on similar grounds.[69]

Thirty-one organizations, including AAIDD, the Arc, TASH, and virtually all of the most well-known and respected professional and consumer associations for persons with intellectual and developmental disabilities in the country joined in a 2009 letter calling for reform of the use of pain and punishment to modify the behavior of individuals with disabilities.[70] The letter urged recipients – including the Department of Health and Human Services, the Department of Education, the Attorney General, and pertinent Congressional Committees – to "show leadership in protecting the rights of all people in the United States by acting to put an end to these inhumane [aversive] practices wherever they occur."[71] The letter addressed the issue of painful

[69] TASH, Resolution on Positive Behavioral Supports (2000) http://tash.org/about/resolutions/tash-resolution-positive-behavioral-supports/. TASH is also the organizer of the Alliance to Prevent Restraint, Aversive Interventions and Seclusion (APRAIS). APRAIS was established in 2004 by leading education, research and advocacy organizations to eliminate the use of dangerous and dehumanizing practices as a means of managing challenging behavior. It has 31 member organizations. *See* http://tash.org/advocacy-issues/coalitions-partnerships/aprais/.

[70] Available at http://autisticadvocacy.org/2009/10/call-for-action-to-end-the-judge-rotenberg-center-and-aversives/. The organizations signing the letter included, among others: the American Association on Intellectual and Developmental Disabilities; Association of University Centers on Disabilities; The Arc of the United States; Autism National Committee; The Autistic Self Advocacy Network; Center on Human Policy, Law, and Disability Studies, Syracuse University; Coalition for the Legal Rights of People with Disabilities (Massachusetts); Disability Rights Education and Defense Fund; Easter Seals; National Association of County Behavioral Health and Developmental Disability Directors; National Association of Councils on Developmental Disabilities; National Association for the Dually Diagnosed; National Disability Rights Network; The National Leadership Consortium on Developmental Disabilities, University of Delaware; TASH; and United Cerebral Palsy.

[71] *Id.*

aversive procedures in general, but also honed in on the practices at the JRC.[72] As a direct result of the letter, the Department of Justice initiated an investigation into practices at JRC.[73]

More professional, scientific, family, and consumer associations continue to join this consensus. In June 2015, the National Association of State Directors of Developmental Disabilities Services (NASDDS), representing the nation's commissioners of developmental disability and related services, adopted a position statement on behavioral support for people with developmental disabilities which rejects the use of aversive interventions that inflict pain, discomfort and/or social humiliation) and promotes the use of Positive Behavioral Support practices.[74] The Association explained:

> Aversive interventions do not address the cause of the problematic behavior, do not promote social networks or participation in the community, and may cause trauma through the application of pain or fear…. Positive Behavior Support (PBS) is recommended as the most appropriate approach … in supporting people with I/DD to address problem behavior.[75]

Most recently, professional associations have also articulated their support for the FDA's proposed ban on ESDs; twenty-two disability rights organizations submitted written comments supporting the ban to the Panel Meeting docket, one of which was signed by 23 disability rights groups.[76] Among these is a widely-signed letter circulated by the National Leadership

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[72] *Id.* The letter makes specific reference to JRC. *Id.*

[73] Letter from Department of Justice, Civil Rights Division to Nancy Weiss (Feb. 18, 2010), Addendum at 55. Two years later, the National Council on Disability encouraged DOJ to expedite its investigation. Letter dated April 12, 2012, http://www.ncd.gov/rawmedia_repository/DOJ%20letter%20re%20%20JRC-1.pdf. *Amici* are informed that the DOJ investigation is ongoing.

[74] NASDDS, Position Statement on Positive Behavioral Supports, http://www.nasddds.org/uploads/documents/NASDDDS_Position_Statement_on_Postive_Behavioral_Support_%2800000003%291.pdf (June 2015).

[75] *Id.*

[76] FDA, Proposed Rule at 24393. For example, the National Association for the Dually Diagnosed (NADD) submitted a letter in support of the proposed ban on ESDs dated May 2016 available at https://www.regulations.gov/document?D=FDA-2016-N-1111-1264.

Consortium on Developmental Disabilities, the Autistic Self Advocacy Network and the Bazelon Center for Mental Health Law.[77]

E. International Law, Which Should Be Afforded Significant Weight, Prohibits the Use of Contingent Electric Shock.

International law roundly condemns contingent electric shock, and labels it a form of torture.[78] The United Nations definition of torture encompasses "any act" causing "severe pain and suffering" that is "intentionally inflicted" for the purpose of "intimidating and coercing" an individual, when it is done with the "consent or acquiescence" of a "public official" or someone acting in an "official capacity."[79] At JRC, aversives are punishment that is "intentionally inflicted" and thus is prohibited by international conventions and treaties.

Though the UN definition of torture predates the 1987 Court Order, international authorities have since applied it specifically to JRC's use of painful aversives. In 2010, JRC was the subject of a report by the Mental Disability Rights International, which issued an urgent call to the United Nations Special Rapporteur on Torture to prohibit the use of aversives, as used by JRC.[80] Later that year, the Special Rapporteur, Manfred Nowak, publicly stated that he was "shocked" by the report and promptly sent the U.S. government an urgent appeal to investigate.[81]

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[77] Comment from A Better Life, LLC (June 1 2016), https://www.regulations.gov/document?D=FDA-2016-N-1111-1451.

[78] *See* Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment (Convention Against Torture). G.A. Res. 39/46, U.N. Doc. A/RES/39/46 (December 10, 1984).

[79] *Id.* at Art.1, ¶1.

[80] "Torture not Treatment: Electric Shock and Long-term Restraint in the United States on Children and Adults with Disabilities at the Judge Rotenberg Center" ("MDRI Report"), www.disabilityrightsintl.org/wordpress/wpcontent/uploads/USReportandUrgentAppeal.pdf.

[81] Katie Hinman and Kimberly Brown, *UN Calls Shock Treatment at Mass. School Torture*, (June 30, 2010), http://abcnews.go.com/Nightline/shock-therapy-massachussetts-school/story?id=11047334.

On June 11, 2012, Juan E. Méndez, the current Special Rapporteur on Torture, & Anand Grover, Special Rapporteur on the Right to a High Standard of Physical and Mental Health wrote to the U.S. State Department about the treatment of children and young adults at Judge Rotenberg Center. The U.S. Mission to the UN responded to the UN High Commissioner for Human Rights June 2012 letter with assurances of concern and a cataloguing of the various U.S. federal and state efforts to curb the use of electric devices that deliver skin shocks at the Judge Rotenberg Center. He describes the review of the device by the FDA, the Department of Justice's investigation of potential civil rights law violations, as well as actions by agencies within New York and Massachusetts.[82]

In 2013, Special Rapporteur Méndez presented another report to the U.N. Human Rights Council,[83] calling on the U.S government to bring an end to the use of electric shocks and restraint at JRC. He unequivocally concluded that "the rights of the students of the JRC subjected to Level III Aversive Interventions by means of electric shocks and physical means of restraint have been violated under the UN Convention against Torture and other international standards."[84] Mr. Nowak made it clear that benevolent intent does not excuse torture. In fact, JRC practices cannot be justified under international law for any reason: "The prohibition of torture is absolute."[85] In fact, according to Nowak, an unambiguous rule is particularly necessary where the motive is "treatment," given the heightened potential for "serious violations and

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[82] Letter from Peter F. Mulrean, Deputy Permanent Representative, U.S. Mission to the UN and Other International Organizations in Geneva to Juan E. Mendez & Anand Grover, Office of the UN High Commissioner for Human Rights (Jan. 2, 2013), Addendum at 56-58.
[83] U.N. Special Rapporteur on Torture, *Report of the Special Rapporteur on Torture and other Cruel, Inhumane or Degrading Treatment or Punishment,* at 84, U.N. Doc. A/HRC/22/53/Add.4 (March 4, 2013), http://www.ohchr.org/Documents/HRBodies/HRCouncil/RegularSession/Session22/A-HRC-22-53-Add4_EFS.pdf.
[84] *Id.*
[85] Hinman and Brown, *see* note 79.

discrimination against persons with disabilities" that are "masked as 'good intentions' on the part of health professionals."[86] Based upon the UN's investigation and report, the JRC's practices are illegal under international law.[87]

Subsequent to the UN Report, the Convention on the Rights of Persons with Disabilities was ratified by 106 countries and signed by 153, including the United States. Article 15 bans torture in terms as unequivocal as the Convention against Torture.[88] Thus, by virtue of the Conventions Against Torture and on the Rights of Persons with Disabilities, international law reflects consensus that contingent electric shock has no legitimate purpose in civilized societies.

The United States is a party, not merely a signatory, to the International Convention Against Torture. The Convention was ratified by the Senate, making it a treaty obligation of the United States. The United States has signed, but the Senate has yet to ratify, the Convention on the Rights of Persons with Disabilities. However, as a signatory, "a state's obligations under it are controlled by the Vienna Convention of the Law of Treaties[,] which requires signatories to 'refrain from acts which would defeat [the Convention's] object and purpose."[89]

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[86] MDRI Report at 25 (quoting Manfred Nowak & Elizabeth MacArthur, *The United Nations Convention against Torture: A Commentary* 54 (2008), *citing* Herman Burgers & Hans Danelius, *The United Nations Convention against Torture; Handbook on Convention against Torture and Other Cruel, Inhuman or Degrading Treatment* 119 (2008)).

[87] MDRI Report at 26.

[88] Article 15 of the Convention on the Rights of Persons with Disabilities – Freedom from torture or cruel, inhuman or degrading treatment or punishment – reads (in pertinent part) as follows:

> 1. No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment . . .;
> 2. States Parties shall take all effective legislative, administrative, judicial and other measures to prevent persons with disabilities, on an equal basis with others, from being subjected to torture or cruel, inhuman or degrading treatment or punishment.

G.A. Res. 61/106, Article 15, U.N. Doc. A/RES/61/611 (December 13, 2006).

[89] *In the Matter of the SPCA Article 17-A Guardianship Proceeding for Mark C.H.*, 906 N.Y.S.2d 419, 433 (N.Y. Sur. 2010).

Even when international law is not binding, courts look to it for guidance. In its deliberations over whether juveniles should be subject to life without parole, the Supreme Court opined that evidence of agreement among "the world's nations that a particular sentencing practice is inconsistent with basic principles of decency" constitutes persuasive authority.[90] The Commonwealth's high court has also looked to international law for guidance.[91]

In this case, particularly when JRC stands alone in its use of painful aversives, the Court should give significant weight to well-reasoned and widely supported international legal principles prohibiting the use of painful punishments and electric shock devices on persons with disabilities that are reflected in both the Convention Against Torture and the Convention on the Rights of Persons with Disabilities.

F. The Current DDS Regulations Reflect the Consensus View that Painful Aversive Techniques Should Be Banned, At Least Prospectively.

Following and advancing the trend to eliminate the use of painful aversives, the DDS issued regulations in 2011, amending its behavior modification regulations to nearly eliminate the use of "Level III" aversives, including the electric shock techniques currently employed at JRC.[92] The new regulations are consistent with the overwhelming weight of authority emerging since this Court's 1987 Judgment.

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[90] *Graham v. Florida,* 560 U.S. 48, 81-82 (2010).
[91] *See*, e.g., *Adoption of Peggy*, 436 Mass. 690, 699 (2002) (the SJC carefully considered the implications of the Convention on the Rights of the Child on the case at bar, even though the treaty was not binding).
[92] 115 C.M.R. 5.14 (4)(b)(4). Aversives are wholly prohibited except for persons grandfathered.

In advance of taking this action, DDS conducted a research review.[93] Agency staff found a dearth of support for aversives in recent impartial studies.[94] Conversely, the research justified concerns that any benefits from electric shock practices were ephemeral unless staff persistently maintained or increased punishments.[95]

In contrast to the lack of support in the literature for painful aversives, the review noted burgeoning support in the professional literature postdating this Court's 1987 judgment for positive behavior interventions.[96] DDS cited 1999 and 2005 reviews of clinical literature, each concluding that there was ample documentation of the efficacy of PBS interventions in reducing problem behaviors of children and adults with severe disabilities.[97]

The DDS thereafter drafted regulations and conducted rulemaking proceedings under the state Administrative Procedures Act and prepared a summary of the comments it received from interested persons.[98] Responses overwhelmingly supported DDS' proposal to limit the use of aversives.[99] Opposition was limited exclusively to persons affiliated with JRC.[100] Written comments received from national, state, and local

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[93] *See* Response to Testimony and Written Comments to Proposed Amendments to Behavior Modification Regulations ("Response to Comments") 115 CMR 5.14 (Oct. 14, 2011), available at http://www.mass.gov/eohhs/docs/dmr/regs/reg-115cmr514-comments.pdf.
[94] *Id.* at 8 – 9.
[95] *Id.*
[96] *Id.*
[97] *Id.* at 8.
[98] *See id.*
[99] *Id.* at 9 – 19.
[100] *Id.* An overwhelming number of written comments received by the Department were in support of the proposed regulations. 272 of the 287 written comments supported the proposed regulations. 15 were opposed. Of the 73 unduplicated oral comments, 15 were in support and 56 opposed to the proposed regulations. All of the comments opposed to the regulations came from individuals affiliated with the Judge Rotenberg Center ("JRC"). *Id.* at 2.

associations were unanimously in support of the proposed regulations,"[101] though there was sentiment in these groups that the regulations ought to wholly ban aversives.[102]

More recently, DDS has proposed new regulations on PBS applicable to all programs which are operated, funded or licensed by the Department.[103] Through these regulations, DDS seeks to ensure that all such programs employ PBS, an approach that will "promote the dignity and respect of individuals and will not be unduly restrictive or intrusive."[104] To do so, DDS requires programs to establish institutional capacity to implement PBS.[105] DDS also sets a range of standards for the use of PBS, such as standards for treatment plans, clinicians, and allowed practices.[106]

II. The DDS Acted Within Its Authority In Issuing Regulations Governing ESDs.

The DDS action is neither *ultra vires* or inconsistent with the DDS' enabling statute, arbitrary, or in violation of individual rights. In light of changed circumstances, including the

[101] *Id.* at 2, 14. Organizations included the President's National Council on Disabilities, the American Association on Intellectual and Developmental Disabilities (Massachusetts Chapter), the ARC of Massachusetts, the National Association of State Directors of Developmental Disability Services, the Association of Developmental Disability Providers, the Massachusetts Developmental Disabilities Council, MA Advocates Standing Strong, the Providers Council, TASH and many others. Local organizations that serve people with disabilities in Massachusetts also weighed in uniformly in support of the regulations, including United Cerebral Palsy of Berkshire; Bridgewell; TILL; BAMSI; Partners: Community Systems, Inc.; North Suffolk Mental Health: Work, Inc.; Shore Collaborative; Life Works; Behavioral Health Network; United Cerebral Palsy (Boston); NorthEast ARC; Seven Hills; Minute Man ARC; Vin Fen; Employment Resources, Inc.; the May Institute; American Training: LifeLinks; Stavros Center for Independent. *Id.* at 16-17.
[102] *Id.* at 14.
[103] 115 CMR 5.14(1)(b).
[104] 115 CMR 5.14(1)(c).
[105] 115 CMR 5.14(3), (4), (5).
[106] 115 CMR 5.14 (7)-(17).

issuance of properly-promulgated and binding regulations enacted since the 1987 Order of this Court, the Order should be vacated.

A. Prospectively Banning Painful Aversives in Regulated Facilities Is Within DDS's Statutory Authority, as the SJC Recognized in a Previous Case Involving the Parties to This Action.

While the new 2011 DDS behavior modification regulations prospectively ban the use of aversives in facilities licensed by DDS, in recognition of the Consent Decree, they distinguish between individuals at JRC that currently have substituted judgment orders authorizing the use of ESDs and newly-placed JRC residents, explicitly exempting the former group from the regulatory ban.[107] As noted above, DDS sponsored thorough rulemaking proceedings before promulgating the behavior modification regulations, which are consistent with the authority invested in the Agency by the General Court.

DDS' role with respect to persons with developmental disabilities is significant. It is required by statute to establish a comprehensive system of community services, as well as standards and community-based oversight for such programs.[108] It also has responsibility for licensing private facilities providing residential or day care services,[109] and for promulgating regulations governing the operation of these facilities.[110]

The legislature's charge to DDS is otherwise broadly stated. The Agency is required to attend to "*all matters* affecting the welfare" of persons with intellectual or developmental

[107] 115 C.M.R. 5.14 (4)(b)(4).
[108] G.L c. 19B, § 12A, 13.
[109] G.L c. 19B, § 15(a).
[110] *Id*. It "may refuse to grant, suspend, revoke, limit or restrict the applicability of or refuse to renew a license …for any violation of its regulations or standards" governing these facilities. G.L. c. 19B, § 15(d).

disabilities.[111] (emphasis supplied) In the listing of subject matters upon which the DDS is specifically charged with adopting regulations, there is explicit reference to "treatment."[112] Indeed, in this and in other areas within its purview, the DDS is required to promote "the highest practicable professional standards."[113] Its authority clearly extends to treatment issues, as evidenced by longstanding DDS regulations governing service eligibility,[114] treatment planning and appeals,[115] complaints,[116] due process,[117] and, most relevant to this case, the definition and protections for legal and human rights, covering such matters as abuse, neglect, exploitation, competency, consent, medication, restraint, and behavioral interventions.[118] Neither the broad legislative mandate, nor the Agency's practices over the past four decades, including the periods preceding and post-dating the Consent Decree, offer a basis for concluding that its regulatory authority is limited to matters such as physical plant standards and patient/staff ratios.[119]

In *Judge Rotenberg Center. v. Dep't of Mental Retardation*, the SJC rendered it clear that courts have no inherent authority to override regulations. [120] "Indeed, it is fundamental that a

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[111] G.L c. 19B, § 1

[112] *See* M.G.L.A. 123B § 2, charging DDS with adopting regulations that "establish procedures and the highest practicable professional standards for the reception, examination, treatment, restraint, transfer and discharge of persons with an intellectual disability in departmental facilities," that are "adaptable to changing conditions and to advances in methods of care and treatment and in programs and services for persons with an intellectual disability," and that meet "the highest practicable professional standards for community services for persons with developmental disabilities."

[113] *Id*.

[114] 115 CMR 6.01 – 6.09.

[115] 115 CMR 6.20 – 6.25 (planning) and 6.30 – 35, 6.63 (appeals).

[116] 115 CMR 9.06.

[117] 115 CMR 9.11.

[118] 115 CMR 2.01 and 5.00 *et seq*.

[119] *Amici* respectfully disagrees with the view expressed by the Court in *In Re. Guardianship of S.B.* on the scope of DDS' authority relative to treatment decisions. *See* May 14, 2014 Order and Memorandum of Decision on Respondent Dept. of Developmental Services Motion to Dismiss Petition to Expand the Powers of a Guardian filed on February 19, 2014, at 3.

[120] 424 Mass. 430, 446 (1997).

judge's order should and could not ignore the Department's authority regarding certification requirements or compliance with applicable regulations" as "[t]o do so would violate the principles of separation of powers by usurping an executive function."[121] The Court stressed that the Agency had not forfeited its "regulatory authority over JRC's programs and facilities,"[122] stating that: "A court ... may not properly exercise the functions of the executive branch of State government."[123] Since the DDS has properly exercised its authority to regulate services to JRC residents, its regulation is a valid exercise of DDS' statutory duty.

B. The DDS Regulations Are Not Arbitrary and Capricious.

The "police power," now "more commonly termed the State's regulatory authority," [124] refers to government's broad power to make laws as "necessary to secure the health, safety, good order, comfort, or general welfare of the community."[125] Courts should give no more than minimal scrutiny to governmental limitations on individual prerogatives,[126] and must uphold challenged agency actions that are not arbitrary or lacking in any "rational basis."[127] A court must give "due weight to the experience, technical competence, and specialized knowledge" of

[121] *Id*.
[122] *Id*. at 446.
[123] *Id*. The Court cited *Care & Protection of Isaac*, 419 Mass. 602, 606 (1995), quoting *Matter of McKnight*, 406 Mass. 787, 792 (1990) and *Guardianship of Anthony*, 402 Mass. 723, 727 (1988).
[124] *Goodridge v. Department of Public Health*, 440 Mass. 309, 321-22 (2003).
[125] *Id*.
[126] *See American Lithuanian Naturalization Club, Athol, Mass., Inc. v. Board of Health of Athol*, 446 Mass. 310, 320 (2006) (local board of health prohibition on smoking in private clubs upheld as "rational").
[127] *Goodridge*, 440 Mass at 330. This standard applies unless the challenged impingement implicates a right deemed "fundamental" or involves a "suspect classification." *Id*. *See also Massachusetts Hosp. Ass'n, Inc. v. Department of Public Welfare,* 419 Mass. 644, 652 (1995).

the Agency, as well as to "the discretionary authority conferred upon it."[128] The DDS' regulation at issue here is reasonable and clearly meets this test.

Recently, in a case implicating "fundamental" religious freedoms,[129] the SJC held that the Department of Children and Families (DCF) properly refused to license plaintiff prospective foster and adoptive parents that practiced corporal punishment on their naturally born children,[130] even though they were otherwise "ideal" potential foster/adoptive parents.[131] Neither DCF nor the Court questioned the plaintiffs' veracity in promising that they employed physical punishment sparingly on their own children and did so privately,[132] as well as the parents' vow not to impose corporal punishment on children placed in its care.[133] The Court nonetheless held that DCF policy was "reasonably related" to its mission and that the Agency acted within its authority.[134]

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[128] *Magazu v. Department of Children and Families*, 473 Mass. 430, 437 (2016) citing G.L. c. 30A, § 14(7) and *Bulger v. Contributory Retirement Appeal Bd*., 447 Mass. 651, 657 (2006), and cases cited therein.

[129] *See* Argument at II (B).

[130] *Magazu,* 473 Mass. 430.

[131] Justice Cordy, in a concurring opinion in which Justices Botsford and Duffly joined, stated that it was "apparent from the record that in every respect (but for one) they were ideal foster and preadoptive candidates. They had a very stable home environment, a nurturing supportive relationship with their own two children, and an excellent record of employment and community involvement." *Id*. at 447.

[132] *Id.* at 433, 439. Physical discipline would thus be administered "out of the sight and hearing" of the prospective foster children/adoptees. *Id*. at 437.

[133] DCF reasoned that it could not adequately screen out children previously abused for placement with the plaintiffs, who could be re-traumatized by awareness of the parents' discipline of their own daughters. *Id*. at 439-40. Agency staff also expressed concern that foster children could suffer physical punishment themselves if they were ultimately adopted. *Id*. at 440.

[134] DCF relied on regulation banning the use of physical discipline on foster children, 110 CMR § 7.111(3), as well as an unwritten "policy and practice of not placing foster children in homes where parents administer physical discipline to their own children." *Magazu*, 473 Mass. at 440-441. The unwritten rule, though not "articulated in express terms," was upheld because it fell "squarely within the parameters of the department's enabling legislation and companion regulations, and is rationally related to the department's objectives in the placement of foster children." *Id.* at 441, citing "*Anusavice v. Board of Registration in Dentistry,* 451 Mass. 786, 795

It was clear from the Court's decision in *Magazu* that the minimal scrutiny standard was crucial to the result. Three concurring Justices expressed grave doubts regarding the DCF's wisdom and even honesty.[135] The Justices nonetheless agreed unanimously that the Court was not permitted to substitute its judgment for that of the Agency on how to best protect children and upheld the DCF's action.

The harm the DDS regulation addresses is far less speculative than that which provided the basis for the DCF action in *Magazu*. In that case, the Court upheld the Agency's right to protect against merely the "potential" that a child with an unknown abuse history might be placed with the plaintiffs, become privy to the administration of corporal punishment on another child notwithstanding the parents' precautions, and become re-traumatized. The DDS regulations, by contrast, will directly prevent JRC from employing an electric shock device that the DDS as well as the FDA determined is unsafe and ineffective. Even if this Court disagrees with this assessment of scientific evidence and clinical conclusions it must afford DDS deference equivalent to that the SJC gave to DCF and allow the Agency to enforce its regulations.

C. The DDS Has a Compelling Interest in Protecting Children and Other Incapacitated Persons from Harm that Justifies its Regulation of ESDs.

Even if the right asserted by JRC on behalf of some of its residents and their parents to choose to be subjected to ESDs is "fundamental" in nature and subject to "strict scrutiny"

(2008) (where board's policy "is not contrary to the language of its enabling statute, and is rationally related to furthering the board's purpose to safeguard the public health and welfare, it will be upheld").

[135] Justice Cordy said that the Department's position could be characterized as "overly rigid and cautious in the extreme." *Magazu*, 473 Mass. at 448. Noting the dire need for foster/adoptive placements and reportedly lax licensing practices apparently linked in other cases to well-publicized tragic outcomes, he "wonder[ed]" if the "real problem in this case was not so much the department's concern for child safety, but rather a disagreement with the plaintiff's beliefs regarding the upbringing of their children." *Id*. at 446-49.

analysis, thus obliging DDS to demonstrate a "compelling" interest in justification of its ESD ban, this Court should uphold the regulation.[136] DDS, carrying the mantle of the State acting as *parens patriae*, has sufficient justification for banning the use of ESDs on both minor and adult JRC residents.

"It cannot be disputed that the State has a compelling interest to protect children from actual or potential harm."[137] In fact, the State fulfills its duty for both children and incapacitated persons in a wide variety of contexts. In some, where the rights abridged are "fundamental," the governmental conduct must be strictly scrutinized. For example, in *Magazu*, the SJC went beyond holding that the State's action was rationally based; it also found that the State's interest in protecting children from harm was sufficiently compelling to justify what the Court held was a "substantial burden" imposed on the exercise of "sincerely held" religious beliefs in which the plaintiffs use of corporal punishment was grounded.[138] As a result, the Court upheld an application of policy that denied plaintiff parents the right to offer a permanent home to needy children. The interest in child protection asserted by DCF was powerful enough to override a fundamental right to free religious exercise, even when it only involved possible harm.

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[136] *See Aime v. Commonwealth*, 414 Mass. 667, 673 (1993): The Court stated that in challenges to governmental action implicating substantive due process ". . . the nature of the individual interest at stake determines the standard of review that courts apply." If "a right deemed to be "fundamental" is involved, courts "typically will uphold only those statutes that are narrowly tailored to further a legitimate and compelling governmental interest." (citations omitted)

[137] *Blixt v. Blixt,* 437 Mass. 649, 656 (2002). citing *Prince v. Massachusetts*, 321 U.S. 158, 167 (1944); *Matter of McCauley*, 409 Mass. 134, 136 (1991).

[138] *Id.* at 445-46. The Court employed the "balancing test" enunciated in *Attorney Gen. v. Desilets*, 418 Mass. 316, 321-23 (1994) for determining religious liberty claims under the Massachusetts Constitution, which the Court stated is more protective than the federal. *Magazu*, 473 Mass. at 442-43. The test "requires that we determine whether the State action about which a party has complained (here, a prohibition on the use of corporal punishment in a foster home) 'substantially burdens [the] free exercise of religion, and, if it does, whether the Commonwealth has shown that it has an interest sufficiently compelling to justify that burden.'" *Id*.

Further, assertions of *parens patriae* authority often impinge on what State and federal courts have characterized as a parents' fundamental right to care for their children without undue state interference.[139] These circumstances "rang[e] from the complete severance of parental rights on a judge's finding of parental unfitness, to the limitation of parental choices in the areas, for example, of education, health care, and safety."[140] In several cases, the State's interest in child protection was deemed sufficiently compelling to override parental decisions that, as here, involved serious health issues.[141]

The State's authority to protect children and incapacitated persons is not limited to life and death situations. In *Blixt*, the SJC reversed a trial court determination that G.L. c. 119, § 39D (the so-called grandparents' visitation statute) authorized violations of parents' "fundamental right" under the state and federal constitutions "to make decisions concerning the care, custody, and control of their child."[142] The Court held that the State's interest in protecting children from harm ensuing from the loss of access to persons with whom they enjoy important relationships was sufficiently compelling to allow for overrides of even a fit parents' liberty interest in child rearing.[143] Thus even fundamental parental rights may yield to "the compelling State interest in protecting the welfare of a child who has experienced a disruption in the family unit from

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[139] *See Youmans v. Ramos,* 429 Mass. 774, 784 (1999).
[140] *Blixt*, 437 Mass. at 656. (citations omitted)
[141] *Custody of a Minor*, 378 Mass. 732 (1979) (denying parents the right to administer laetrile to their child as cancer treatment)*; Matter of McCauley*, 409 Mass. 134 (compelling blood transfusions over parents' religiously based objections).
[142] *Blixt*, 237 Mass. at 651.
[143] *Blixt*, 437 Mass. at 658. The Court reaffirmed and acknowledged parents' fundamental rights by establishing a presumption in favor of parental choices on visitation right of third party, subject to override under certain conditions. *Id. See also Youmans*, 429 Mass. at 784-85 (natural father's fundamental parental rights outweighed by child's need for continuing relationship with caretaking aunt).

harm."[144] If the State may protect children from psychological harm that arises from separation in abrogation of a fundamental right, it similarly may protect them from an almost entirely abandoned behavioral control technique that involves painful electric shocks, particularly when more humane and less invasive alternatives for controlling self-injurious behavior are available.

The *parens patriae* right to protect against harm extends to adults at JRC, almost all of whom are incompetent.[145] Typical rationales for determining whether the State has a sufficient basis for overriding individual choices that implicate privacy rights are articulated in case law,[146] but the list is "not exhaustive, and other State interests may also deserve consideration."[147] For example, in the *Myers* case, the SJC held that the State's interests in preventing prisoners from refusing treatment in order to "manipulate" prison placements justified forced kidney dialysis.[148] The Commonwealth's interest in preventing highly vulnerable persons from exposure to harsh and painful behavioral control methods in facilities it regulates is as weighty as its interest in keeping prisoners from attempting to obtain a prison placement transfer.

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[144] *Blixt*, 437 Mass. at 660. *See also Youmans*, 429 Mass. at 784-85.

[145] The State authority is not affected by whether the person is acting on their own behalf or through a guardian seeking a court's permission to subject the person to an extraordinary procedure as provided for under the 1987 Order. The mandated "substituted judgment" process does not expand or contract the range of viable alternatives. It is designed to allow incapacitated persons "the same panoply of rights and choices" that a court is prepared to "recognize in competent persons." See *Superintendent of Belchertown State School v. Saikewicz*, 373 Mass. 728, 746 (1977) (citing *Strunk v. Strunk*, 445 S.W.2d 145 (Ky. 1969)). Thus, choices forbidden to persons that are competent, such as a choice to commit suicide (*see Commonwealth v. Mink*, 123 Mass. 422 (1877)), or, if the DDS regulation is upheld, to be exposed to ESDs, are unavailable to incompetent persons as well.

[146] *See In the Matter of the Guardianship of Roe,* 383 Mass. 415, 448-49 (1981): "Among the State interests which we have identified in our prior cases are: "(1) the preservation of life; (2) the protection of the interests of innocent third parties; (3) the prevention of suicide; and (4) maintaining the ethical integrity of the medical profession," citing *Saikewicz*, 373 Mass. at 741 (1977).

[147] *Id.*

[148] *Commissioner of Correction v. Myers*, 379 Mass. 255 (1979).

The DDS regulations are further justified by the Agency's interest in preventing use of painful aversives for clearly inadequate reasons (e.g. to promote compliance with petty commands). In the *Roe* case, the Court said that the potential for abuse of institutionalized persons is "obvious."[149] Accordingly, the Court noted in *Rogers* that abuse can arise from an undue emphasis on "maintain[ing] order."[150]

A similar impulse can motivate abusive use of ESDs on JRC residents. In fact, incidents of serious abusive treatment at JRC have been well-reported, including in startling videotapes of wonton resident shocking aired on commercial television.[151] DDS, in the discharge of its duty to protect vulnerable persons from harm, properly weighed this potential and actual risk, in concluding that shock devices should not be used on its clients.

DDS has a compelling interest in preventing the use of ESDs, even if it means limiting individual choice, in most cases expressed by a parent on a child's behalf or through a guardian in Probate Court proceedings. Just as DDS has long prohibited the use of seclusion and most forms of mechanical restraint due to its informed assessment of the benefits versus the risk, so too has it now properly exercised the same statutory authority to prohibit the use of electric shock devices. This is particularly true when PBS, a "less intrusive alternative" for dampening self-injurious or otherwise undesirable behavior, is available and more effective.[152] Further, as the SJC suggested in *Saikewicz*, the State may have an inchoate interest in denying individuals

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[149] *Roe,* 383 Mass. at 437, n.11.
[150] *Rogers v. Commissioner of Dept. of Mental Health*, 390 Mass. 489, 503 (1983).
[151] *See* Fox News report of April 10, 2012: https://www.youtube.com/watch?v=aAj9W0ntUMI.
[152] *See* Part I (D). In *Rogers*, 390 Mass. at 511, the Court held that the Commonwealth's right to force antipsychotic medications on persons without court authorization in an emergency is contingent on the lack of viable alternatives. *Id*. Certainly, the Commonwealth should be entitled to hold private residential facilities to this same standard.

the right to make choices that "'cheapen' the value which is placed in the concept of living."[153] Such an interest would certainly justify eliminating the use of aversive control techniques that are demeaning both to the subject of the punishment and the person that administers it.

CONCLUSION

For the foregoing reasons, this Court should grant Defendants' Motion and enter judgment vacating the Consent Decree and terminating its jurisdiction over this case.

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[153] *Saikewicz*, 373 Mass. at 742.

ADDENDUM

PERGAMON

Journal of Behavior Therapy
and Experimental Psychiatry 31 (2000) 5–19

JOURNAL OF behavior therapy and experimental psychiatry

www.elsevier.com/locate/jbtep

Positive behavioral support of adults with developmental disabilities: assessment of long-term adjustment and habilitation following restrictive treatment histories☆

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Received 26 July 1999; received in revised form 30 December 1999; accepted 30 March 2000

Abstract

The long-term maintenance of behavioral treatment effects is an important measure of clinical significance but is not reported with regularity in the published literature. The present report concerned therapeutic maintenance by evaluating five adults with developmental disabilities who had been exposed to multiple, restrictive procedures (food deprivation, mechanical restraint, electric shock) in a prior residential treatment facility and were transitioned to a new habilitation setting where these procedures were terminated in favor of alternative methods of behavior support. As revealed through a 24-month follow-up period, all of the participants were able to maintain clinically acceptable levels of challenging behaviors following the removal of the restrictive treatment procedures. Quality of life measures also revealed that the participants experienced greater independence, reduced supervision, and increased diversity in their living and work environments. These findings add to the limited studies on extended maintenance outcomes from behavioral intervention for serious clinical disorders in adults with developmental disabilities by demonstrating that positive adjustment can be sustained in the long-term without the continuation of restrictive treatment procedures. © 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Maintenance; Behavioral intervention; Restrictive treatment

☆ Manuscript published under editorship of former editor L. Reyna.

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0005-7916/00/$ - see front matter
PII: S0005-7916(00)00004-5

1. Introduction

Assessing the long-term outcome of persons with developmental disabilities who were treated for seriously challenging behaviors is a critical concern when evaluating the clinical significance of intervention. However, extended follow-up reports that describe the maintenance of behavioral treatment effects are the exception rather than the rule. Foxx (1996) suggested several guidelines that should be adopted when determining the lasting effects of procedures. First, is the treatment plan that was used initially to reduce challenging behaviors still necessary to ensure maintenance? Second, positive changes in challenging behaviors ideally should continue when intervention is withdrawn. Third, the follow-up assessments should be based on multiple occurrences that are spread over a protracted period of time instead of a single data point. Finally, "The contingencies in effect throughout the maintenance phase should be specified so that factors that may have contributed to any durable effects can be identified" (Foxx, 1996, p. 233).

Although it is an important topic in its own right, the study of treatment maintenance is particularly noteworthy with respect to persons who have been exposed to punishment-based interventions. The development and evolution of "nonaversive" treatment strategies notwithstanding (Koegel, Koegel & Dunlap, 1996; Luiselli & Cameron, 1998; Repp & Singh, 1990), restrictive and invasive procedures sometimes are approved for and implemented with persons who have developmental disabilities and demonstrate aggressive, self-injurious, and health-threatening behaviors. Attending to the long-term effects of punishment procedures addresses the question of whether negative consequences must be maintained to support clinical gains beyond initial treatment. Ongoing and prolonged treatment via punishment, of course, means that individuals experience numerous applications of noxious social, physical, and sensory stimuli. Furthermore, treatment integrity likely will suffer when practitioners are required to implement negative procedures repeatedly for many months and sometimes, years.

Very few studies have reported long-term follow-up assessment of challenging behaviors that were treated using punishment procedures. Foxx and Livesay (1984) completed a 10-year retrospective analysis of 8 adult-age individuals with mental retardation who had overcorrection as the primary treatment approach to manage behaviors such as aggression-disruption, pica, coprophagy, and failing to attend class. Positive, long-term outcome varied widely among the participants and was associated with "higher" cognitive ability, procedures that were not complex or effort-intensive, the ability to eliminate sources of reinforcement for the challenging behavior, and the presence of clinical "experts" who could provide requisite staff training and supervision.

Linscheid, Pejeau, Cohen and Footo-Lenz (1994) reported the near suppression of self-injurious head-hitting by an 8-year old boy with severe to profound mental retardation using contingent electric shock administered by the self-injurious behavior inhibiting system (SIBIS). Treatment was introduced in a hospital setting during a 5-day period and one year later, a 2-h observation session conducted in the same environment revealed an absence of the behavior. By his mother's report, the boy

wore the SIBIS device continuously at school and about 50% of the time at home after he had been discharged from the hospital.

Two other studies described maintenance effects from electrical aversion treatment of self-injurious behavior. Duker and Seys (1996) evaluated contingent, therapist-delivered electric shock with 12 persons (ages 3–43 years), diagnosed with severe to profound mental retardation, who exhibited multiple typographies of self-injury. Following initial treatment sessions, six participants maintained suppression of self-injury with treatment still in effect for follow-up periods that ranged from 2 to 47 months. One participant reportedly was free from self-injury with treatment discontinued 36 months posttreatment. Two participants required from 10 to 30 shock presentations daily (17–26 months following treatment), two had treatment terminated because "tolerance for the aversive stimulus seemed to have developed" (4–18 months following treatment), and one required the addition of a protective head device in combination with contingent shock (15 months following treatment).

The second study that addressed electrical aversion treatment was conducted by Ricketts, Goza and Matese (1993) with a 28-year old male who demonstrated self-injurious head-hitting and head-banging. An initial study using SIBIS treatment produced a decrease in the participant's self-injury from a baseline rate of 44.3 responses per minute to 0.01 responses per minute upon conclusion (Linscheid, Iwata, Ricketts, Williams & Griffin, 1990). For approximately 3 years posttreatment, near-zero levels of self-injury were maintained while attempts were made to fade gradually the SIBIS device. However, during an additional year of follow-up, the participant's self-injury increased significantly, treatment with SIBIS became clinically contraindicated, and the program was terminated.

Interpretation of the preceding studies suggests that the implementation of punishment-based procedures, including those that incorporate noxious stimulation, do not guarantee long-term reductive effects in the treatment of severe behavior disorders. In fact, the data point to the conclusion that in order to sustain positive results for extended durations, contingencies may have to remain operative and even then, individuals eventually may be unresponsive to previously effective interventions (Duker & Seys, 1996; Ricketts et al., 1993). Therefore, it is unclear whether highly invasive methods of behavioral intervention must, or should, be applied continuously to support protracted positive outcomes or whether they can be discontinued with favorable effect.

The present report adds to the limited literature on long-term response maintenance following punishment-based treatment in several ways. It describes five adults with developmental disabilities who had been exposed to multiple, "aversive" treatments in a previous service setting and who subsequently were discharged to an alternative habilitation program in which the former interventions were discontinued abruptly. Multifaceted behavior-support plans that included antecedent control, positive reinforcement, functional communication training, personal preference selection, and life-style changes, were substituted. The participants adjustment to these interventions are presented from the time they entered the new habilitation setting through a 2-year, posttreatment period. Therefore, in comparison to maintenance outcomes that were reported in the absence of active treatment

(Foxx & Livesay, 1984) or under conditions where aversive procedures remained in effect (Duker & Seys, 1996; Linscheid et al., 1994; Ricketts et al., 1993), this analysis is based on the discontinuation of restrictive procedures in favor of alternative methods. The question posed was how do adults with developmental disabilities and seriously challenging behaviors respond in the long-term when they are no longer exposed to negative and highly invasive procedures?

2. Method

2.1. Participants

The participants were five men, ages 24–34 years, who had developmental disabilities and protracted histories of seriously challenging behaviors that included aggression, self-injury, property destruction, pica, and elopement. Before their enrollment in the present service setting (described below), they had received treatment in numerous habilitation programs, culminating in a secure, residential-care facility. Three of the participants had mild mental retardation and possessed effective communication skills to adequately express their wants and desires. Two of the participants had moderate mental retardation and had not yet acquired consistent communication competencies. All participants were able to perform most self-care and daily living skills independently or semi-independently. Table 1 presents the age and diagnoses of each participant at the time this project was initiated.

2.2. Setting

As noted earlier, there were two settings that formed the basis of this report. The predischarge setting was the secure, residential-care facility the participants attended before their enrollment in the present habilitation program (described below). The predischarge setting was located in the northeast United States and functioned as an aggregate treatment environment for approximately 50 children and adults who had

Table 1
Age and diagnosis of participants

Participant	Age	Diagnosis
Mike	34	Obsessive compulsive disorder Organic personality disorder Depression Tourette's disorder
Bob	25	Autism
Ron	28	Borderline personality disorder Bipolar disorder
Alex	24	Autism
Jeff	26	Autism

developmental disabilities and severe behavior disorders. The participants had been at this setting on average of 2–3 years before discharge.

The second setting was The May Center for Adult Services, a program operated by The May Institute Inc. which is a behavioral healthcare organization located in Massachusetts serving children, adolescents, and adults who have developmental disabilities, psychiatric disorders, acquired brain injuries, and medically compromised conditions. This was the setting the participants entered following discharge from the secure residential-care facility. Two of the participants were enrolled in a day-program at the center that included individualized and small-group vocational training and was scheduled from 9:00 a.m. to 4:00 p.m. on weekdays. The other three participants received supportive work experiences with the assistance of a job coach. Each participant lived in a community-based living arrangement that was designed specifically to accommodate his behavioral challenges. The center coordinated all training and therapeutic services between the employment-program and group-homes including administrative, clinical, medical, staff training, and family service responsibilities. Four participants were discharged from the residential-care facility to The May Center within six months of each other; the fifth participant was discharged approximately one year earlier.

2.3. *Target behaviors*

Before they left the residential-care facility, clinical staff from The May Center observed the participants, reviewed their treatment histories, and conducted a detailed analysis of the treatment plans that had been implemented. One of the primary objectives that was addressed during these assessments was to identify the challenging behaviors that were the target of intervention at the residential-care facility and would remain the focus of clinical attention when the participants entered the center. These behaviors are presented in Table 2.

2.4. *Assessment and evaluation*

The data presented in this report were gathered in three phases. First, the frequency of the target behaviors displayed by each participant during the month preceding discharge from the residential-care facility were tallied. These data represented the outcome from measurement that was performed routinely in that setting. Staff from The May Center were not involved in the collection of data at the predischarge setting. Second, the frequency of the target behaviors during the first month the participants received services at The May Center were recorded as a feature of comprehensive program evaluation. These data indicated behavior-frequency following the elimination of restrictive treatment strategies that had been applied in the previous residential-care facility. Target behaviors continued to be recorded daily throughout the course of intervention at the center. And third, the frequency of target behaviors per month are presented for 6-, 12- and 24-month intervals from the time the participants entered the center. These outcome data demonstrated the

Table 2
Target challenging behaviors of participants

Participant	Behavior
Mike	Aggression
	Pica
	Elopement
	Self-injury
Bob	Aggression
	Self-injury
	Property destruction
Ron	Aggression
	Pica
	Elopement
Alex	Aggression
	Self-injury
	Property destruction
Jeff	Aggression
	Property destruction

long-term maintenance of intervention following the elimination of restrictive treatment procedures.

2.5. Interobserver agreement

As a component of routine data collection conducted at The May Center, interoberver agreement (reliability) was assessed for the challenging behaviors that were targeted for each participant. Interobserver agreement was calculated by comparing the independent recordings of two staff members and dividing the smaller recorded frequency by the larger recorded frequency and multiplying by 100. For the first 18 months of enrollment at the center, these assessments were completed one day per week and ranged from 90 to 100%. During the 18–24 month period, interobserver agreement assessments were completed one day every other week and ranged from 96 to 100%. Interobserver agreement data were not provided from the predischarge setting.

2.6. Phases

2.6.1. Pre-discharge evaluation phase

During the month preceding discharge from the residential-care facility, the treatment plans for each participant were reviewed. For each plan, the rationale for intervention was evaluated, particularly with reference to the purported functional influences on the challenging behaviors and respective hypothesis formulation

Table 3
Intervention procedures in effect with participants during pre-discharge evaluation phase

Participants	Intervention procedures
Mike	DRO Token economy Loss of privileges Token fines Mechanical restraint Contingent electric shock
Bob	DRO Loss of privileges Token fines Dietary restrictions Contingent electric shock
Ron	DRO Loss of privileges Dietary restrictions Threat to reinstate contingent electric shock
Alex	DRO Loss of privileges Contingent exercise Dietary restrictions Contingent electric shock
Jeff	DRO Loss of privileges Dietary restrictions Contingent electric shock

(Luiselli, 1996; Repp & Karsh, 1994). Because all of the participants had been exposed to multicomponent treatment plans, each intervention procedure was reviewed in detail to determine the contribution of that procedure toward clinical outcome and the acceptability of the procedure subsequent to discharge. This evaluation also included an inspection of the data for each participant as depicted in graphs and summary tables.

The intervention procedures used with the participants during the month that preceded their discharge to The May Center are shown in Table 3. All of the plans that had been developed for the participants featured positive reinforcement procedures such as DRO schedules (differential reinforcement of other behavior) and a token economy. The participants forfeited reinforcers through the imposition of fines (response cost) and also had privileges restricted when they performed a predetermined frequency of target behaviors. Restrictive and deprivation procedures also were employed with each participant. *Dietary restrictions* required that a participant receive a maximum number of calories per day through the consumption of bland food and "earn back" more palatable meals contingent upon the absence of specific target

behaviors. A procedure of *mechanical restraint* consisted of immobilizing the movement of a participant by applying a secure device to the ankles for a predetermined period of time as a consequence for target behaviors. Finally, *contingent electric shock* was programmed by having a participant were a body-apparatus that delivered faradic stimulation when activated remotely by a staff person. Four of the participants (80%) received dietary restrictions, one of the participants (20%) received mechanical restraint, and four of the participants (80%) received contingent electric shock during the pre-discharge evaluation phase.

None of the participants had been prescribed psychotropic medication during their stay at the residential-care facility. They remained medication-free while receiving services at The May Center.

It is important to note that during the predischarge evaluation phase, staff from The May Center participated exclusively in the review of each participant's intervention plan and supporting data and not in the implementation of treatment or clinical decision-making. For this reason, we cannot comment about the fidelity of behavior support programming that was instituted in the predischarge setting.

2.6.2. Transition and program development phase

The transition and program development phase corresponded to the first month of enrollment at The May Center for each participant. During this phase, there were several foci of program development:

(1) The dietary restrictions, mechanical restraint, and contingent electric shock procedures implemented previously with the participants were discontinued and never reinstated.
(2) Each participant was placed in a community-based group-home that was selected to ensure the proper combination of adults and staff supervision. The group-homes were in city and suburban locations, were staffed to provide continuous monitoring of all residents, and were environmentally safe and free of potential hazards. Clinical supervisors were assigned to each group-home and were responsible for coordinating all home-based services, formulating programming, and supervising staff.
(3) Indirect and descriptive methods of functional assessment were implemented to acquire additional information about sources of control over challenging behaviors. These assessment methods included the detailed behavior report (Groden, 1989), the motivation assessment scale (Durand & Crimmins, 1988), and scatterplot recording (Touchette, Mac Donald & Langer, 1985).
(4) Alternative intervention plans were designed for each participant based on the reviews and analyses that were completed during the pre-discharge evaluation phase and the impressions formed from the functional assessments. These procedures are listed in Table 4.

The DRO procedures enabled the participants to receive preferred objects, consumables, materials, and activities when they did not engage in the target behaviors for predetermined periods during the day and over the course of multiple days.

Table 4
Intervention procedures in effect with participants during transition and program development phase

Participants	Intervention Procedures
Mike	DRO Loss of privileges Emergency physical restraint
Bob	DRO Functional communication training Exclusionary time-out
Ron	DRO Functional communication training Loss of privileges
Alex	DRO Relaxation training Functional communication training Exclusionary time-out Emergency physical restraint
Jeff	DRO Functional communication training Exclusionary time-out Emergency physical restraint

Functional communication training (FCT) was used to teach a participant how to communicate effectively by performing a response that was functionally equivalent to the target behaviors (Durand & Carr, 1991). *Exclusionary time-out* required that a participant sit in a "quiet area" that was removed from main activity locations, and to remain there for a defined period of nonagitation, contingent upon the occurrence of specific target behaviors. For one participant, *relaxation training* was provided through muscle tension-release exercises that were taught as a method of self-control. The final procedure, *emergency physical restraint*, entailed the protective holding of a participant by one or more staff persons when his behavior was judged to pose a significant risk to self, others, and the environment. The guidelines for the application of emergency physical restraint were those promulgated and approved by the state's regulatory agency for settings providing habilitation services to adults with mental retardation. Furthermore, staff who were responsible for applying emergency physical restraint received training, certification, and ongoing supervision in the use of the procedures.

2.6.3. Follow-up programming and evaluation phase

The intervention plans for the participants were refined and adapted during the course of ongoing treatment at The May Center. Their response to the alternative plans was assessed continuously by reference to the frequency data and the observations of clinical staff. The objective with each participant was to withdraw as many

procedures as possible so that behavior improvement was maintained under conditions of "natural support" (Horner et al., 1990).

3. Results

Table 5 presents the frequency of target behaviors exhibited by each participant during the month preceding discharge from the residential-care facility, during the first month of programming provided by The May Center, and for one month at 6-, 12- and 24-month follow-up periods. These data indicate that Bob, Ron, and Jeff presented with near-zero frequencies of target behaviors during the month prior to discharge. Other than an increase in the frequency of aggression recorded for Bob during the first month of his transition to The May Center, target behaviors remained at the same level for each participant through the 24-month follow-up phase. Table 5 shows that Mike engaged in moderate frequencies of all target behaviors preceding discharge, demonstrated a reduction in responding during the first month of transition programming, and maintained zero frequencies at each follow-up period. Alex had the highest frequencies of target behaviors during the month before discharge and these levels continued during the first month of transition programming and at the 6- and 12-month follow-up periods. By the 24-month follow-up, clinically relevant reductions in the target behaviors were documented.

Table 5
Frequency of target behaviors per month for participants during pre-discharge evaluation phase, transition and program development phase, and follow-up programming and evaluation phase

Participant	Behavior	Pre-discharge	Transition	6-month	12-month	24-month
Mike	Aggression	7	0	0	0	0
	Pica	1	0	0	0	0
	Elopement	1	1	0	0	1
	Self-injury	2	1	0	0	0
Bob	Aggression	2	6	2	1	2
	Self-injury	0	0	0	0	0
	Destruction	0	1	0	0	0
Ron	Aggression	0	0	0	0	0
	Pica	0	0	0	0	0
	Elopement	0	0	1	0	0
Alex	Aggression	14	26	20	11	2
	Self-injury	26	62	27	26	10
	Destruction	0	8	1	1	0
Jeff	Aggression	0	0	0	2	0
	Destruction	0	0	0	0	0

Table 6
Intervention procedures in effect with participants during transition and program development phase and 24-month follow-up programming and evaluation phase

Participants	Pre-discharge	24-Month follow-up
Mike	DRO Loss of privileges	DRO Loss of privileges
Bob	DRO FCT Exclusionary time-out	DRO FCT Self-directed time-out
Ron	DRO FCT Loss of privileges	DRO
Alex	DRO Relaxation training FCT Exclusionary time-out	Relaxation training FCT Self-directed time-out
Jeff	DRO FCT Exclusionary time-out Physical restraint	FCT Self-directed time-out

As discussed previously, the elimination of restrictive treatment procedures was followed, in turn, by the development of alternative methods of behavior support. Overtime, the intervention plans developed with the participants were modified further in an effort to realize the most "naturalistic" treatment approach. Table 6 describes the procedures that comprised each participant's behavior support plan during the first month of programming provided by The May Center and the procedures that were in effect 24-months later. As seen in the table, all participants experienced either a reduction in the number of procedures that went into their support plan or a change in the method of implementation. For example, whereas Bob, Alex, and Jeff had nonexclusionary time-out programmed during the Transition and Program Development phase, that procedure had been modified to self-directed time-out over the course of treatment.

As an additional measure of long-term outcome, the residence and work environments of the participants during the month that preceded discharge and at the 24-month follow-up period are detailed in Table 7. Each participant had a change in his residence environment from living in a 4–6 person group-care setting, that was secure and included continuous video monitoring, to smaller group-settings, with reduced security, in community-based homes or apartments. Their work environments changed from exclusively bench work tasks in a sheltered setting to supported employment within a variety of community contexts.

Table 7
Residence and work environments of participants during pre-discharge evaluation phase and 24-month follow-up programming and evaluation phase

Participants	Residence Environment	Work Environment
Mike	Pre-discharge: 6-person group-home Secure setting Video-monitoring 24-Month follow-up: Apartment with 1 : 1 staff Window alarms Exterior doors locked	Pre-discharge: Benchwork Sheltered workshop Video-monitoring 24-Month follow-up: Supportive employment 1 : 1 job coach
Bob	Pre-discharge: 6-person group-home Secure setting Video-monitoring 24-Month follow-up: 3-person group home	Pre-discharge: Benchwork Sheltered workshop Video-monitoring 24-Month follow-up: Supportive employment 1 : 1 job coach
Ron	Pre-discharge: 6-person group-home Secure setting Video-monitoring 24-Month follow-up: Semi-independent apartment living	Pre-discharge: Benchwork Sheltered workshop Video-monitoring 24-Month follow-up: Independent full-time job
Alex	Pre-discharge: 6-person group-home Secure setting Video-monitoring 24-Month follow-up: 2-person group-home	Pre-discharge: Benchwork Sheltered workshop Video-monitoring 24-Month follow-up: Supportive employment 1 : 1 job coach
Jeff	Pre-discharge: 6-person group-home Secure setting Video-monitoring 24-Month follow-up: 2-person group-home	Pre-discharge: Benchwork Sheltered workshop Video-monitoring 24-Month follow-up: Supportive employment 1 : 1 job coach

4. Discussion

Following the elimination of highly restrictive and invasive treatment procedures for challenging behaviors, five adults with developmental disabilities were able to achieve long-term community adjustment and a positive response to alternative clinical supports. In summary, the participants did not display a significant increase in

challenging behaviors when the restrictive treatment procedures were terminated, they responded well to the substitute behavior support plans, and these outcomes were maintained over a 2-year course of follow-up evaluation. Thus, for these individuals, restrictive methods were not required despite the fact that they experienced such intervention in a previous treatment setting. It is possible, of course, that the prior invasive treatment contributed to the long-term outcomes presented in this report. Nevertheless, the findings indicate that extended maintenance of treatment effects can occur when programs that are dominated by punishment procedures are terminated in favor of more benign methods of intervention.

In addition to the low-frequency occurrences of challenging behaviors that were documented with the participants, significant changes in life-style also occurred. Recall that the history of each participant before discharge included living in a group-care residential facility that restricted independent mobility and imposed continuous video monitoring. Their work environment was a sheltered day program in which they were exposed only to benchwork assembly tasks under simulated conditions. In contrast, by the 24-month follow-up period, the participants all were living in community-based group homes or apartments, with fewer peers, and in some cases, independently or semi-independently under reduced staff supervision. As for their work environments, each participant had acquired one or more supportive employment opportunities in the community.

Our presentation of these data appears to conform to several of the guidelines proposed by Foxx (1996) when evaluating maintenance effects from behavioral interventions. First, because the relatively low-frequency challenging behaviors displayed by the participants in their former setting suggests that a therapeutic effect had been produced from such treatment, the maintenance data confirm that the original methods of intervention were not required in the long term. In line with a second recommendation by Foxx (1996), the maintenance assessments were performed on a continuous basis, up to two years from the participants entry into their present service setting, and not as a single data point. Lastly, the contingencies that comprised the behavior support plans for each participant were described in detail so that the therapeutic procedures associated with response maintenance could be identified.

Although these results demonstrated that restrictive treatment procedures could be withdrawn without sacrificing control over challenging behaviors, the participants continued to receive multicomponent intervention plans during the follow-up assessment phases. Thus, their behavior and community adjustment was never evaluated in the absence of treatment. To do so, however, would be antithetical to the purpose and objectives of the service setting, which was designed to support adults with developmental disabilities and seriously challenging behaviors within a community habilitation model. The point of emphasis in this regard is not that treatment was suspended but rather, that challenging behaviors could be maintained at low frequencies for very long periods using procedures that were not highly restrictive, were positively oriented, and were "faded" consistently to achieve the most natural source of support.

It should be recognized that the data presented in this report were collected from two independent service settings and that the methods of response recording and

documentation differed in each location. Also, this project did not include the experimental manipulation of variables that would lead to conclusive statements concerning sources of control over responding or factors that were responsible for the durability of maintenance effects. However, as a systematic evaluation of treatment maintenance, the external validity of our findings is bolstered because the results are based on "real-world" clinical exigencies and reflect conditions that are encountered by many human service agencies who serve adults with developmental disabilities.

In conclusion, this report is one of the few that describes protracted maintenance of behavioral intervention for adults with developmental disabilities exposed previously to highly restrictive treatment methods. The results are encouraging in demonstrating that punishment-based approaches can be terminated, alternative strategies can be substituted, and through a clinically responsive system of monitoring and decision-making, behavioral adjustment can be supported without having to resort to invasive forms of treatment.

Acknowledgements

This project was completed at The May Center for Adult Services, Revere, MA. The authors thank James Sperry, Helena Carreiro, and Kellie Ward for their contributions. Frank Bird presently is affiliated with Melmark New England, Woburn, MA. Requests for reprints should be addressed to James K. Luiselli, Director, The May Center for Applied Research, The May Institute Inc., 220 Norwood Park South, Norwood, MA 02062.

References

Duker, P. C., & Seys, D. D. (1996). Long-term use of electrical aversion treatment with self-injurious behavior. *Research in Developmental Disabilities, 17*, 293–301.

Durand, V. M., & Carr, E. G. (1991). Functional communication training to reduce challenging behavior: Maintenance and application in new settings. *Journal of Applied Behavior Analysis, 24*, 251–264.

Durand, V. M., & Crimmins, D. (1988). Identifying the variables maintaining self-injurious behavior. *Journal of Autism and Developmental Disorders, 18*, 99–117.

Foxx, R. M. (1996). Twenty years of applied behavior analysis in treating the most severe problem behavior: Lessons learned. *The Behavior Analyst, 19*, 225–235.

Foxx, R. M., & Livesay, J. (1984). Maintenance of response suppression following overcorrection: A ten year retrospective examination of eight cases. *Analysis and Intervention in Developmental Disabilities, 4*, 65–79.

Groden (1989). A guide for conducting a comprehensive behavioral analysis of a target behavior. *Journal of Behavior Therapy and Experimental Psychiatry, 20*, 163–170.

Horner, R. H., Dunlap, G., Koegel, R. L., Carr, E. G., Sailor, W., Anderson, J., Albin, R. W., & O'Neill, R. E. (1990). Toward a technology of "nongressive" behavioral support. *The Journal of The Association for Persons with Severe Handicaps, 15*, 125–132.

Koegel, L. K., Koegel, R. M., & Dunlap, G. (Eds.) (1996). *Positive behavioral support: Including people with difficult behavior in the community*. Baltimore, MD: Brookes.

Linscheid, T. R., Iwata, B. A., Ricketts, R. W., Williams, D. E., & Griffin, J. C. (1990). Clinical evaluation of the self-injurious behavior inhibiting system (SIBIS). *Journal of Applied Behavior Analysis, 23*, 53–78.

Linscheid, T. R., Pejeau, C., Cohen, S., & Footo-Lenz, M. (1994). Positive side effects in the treatment of SIB using the self-injurious behavior inhibiting system (SIBIS): Implications for operant and biochemical explanations of SIB. *Research in Developmental Disabilities, 15*, 81–90.

Luiselli, J. K. (1996). Treatment formulation in applied behavior analysis. *The Habilitative Mental Healthcare Newsletter, 15*, 50–55.

Luiselli, J. K., & Cameron, M. J. (Eds.) (1998). *Antecedent control: Innovative approaches to behavior support.* Baltimore, MD: Brookes.

Repp, A. C., & Karsh, K. G. (1994). Hypothesis-based interventions for tantrum behaviors of persons with developmental disabilities in school settings. *Journal of Applied Behavior Analysis, 27*, 21–32.

Repp, A. C., & Singh, N. N. (Eds.) (1990). *Nonaversive and aversive interventions for persons with developmental disabilities.* Sycamore, IL: Sycamore Publishing.

Ricketts, R. W., Goza, A. B., & Matese, M. (1993). A 4-year follow-up of treatment of self-injury. *Journal of Behavior Therapy and Experimental Psychiatry, 24*, 57–62.

Touchette, P. E., MacDonald, R. F., & Langer, S. N. (1985). A scatter plot for identifying stimulus control of problem behavior. *Journal of Applied Behavior Analysis, 18*, 343–351.

Research & Practice for Persons with Severe Disabilities
2005, Vol. 30, No. 1, 3–10

CLASSIC TASH ARTICLE V

Reprinted from The Journal of The Association for the Severely Handicapped, Volume 15(3), Fall, 1990.

Toward a Technology of "Nonaversive" Behavioral Support

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Nonaversive behavior management is an approach to supporting people with undesirable behaviors that integrates technology and values. Although this approach has attracted numerous proponents, more adequate definition and empirical documentation are still needed. This article presents an introduction to the nonaversive approach. Important definitions are suggested, and three fundamental elements are presented: (a) an emerging set of procedures for supporting people with severe challenging behavior; (b) social validation criteria emphasizing personal dignity; and (c) a recommendation for prohibition or restriction of certain strategies. These elements are defined in hopes of stimulating further discussion and empirical analyses of positive behavioral support.

DESCRIPTOR: nonaversives

In recent years, a broad-based movement has emerged in support of nonaversive behavior management. This movement reflects a commitment to the value that people with severe disabilities who exhibit challenging behaviors should be treated with the same respect and dignity as all other members of the community (Evans & Meyer, 1985; Gast & Wolery, 1986; LaVigna & Donnellan, 1986; McGee, Menolascino, Hobbs, & Menousek, 1987). It also reflects a concern that many people who perform undesirable behavior have been, and are being, subjected to dehumanizing interventions that are neither ethical nor beneficial (Durand, 1988; Guess, Helmstetter, Turnbull, & Knowlton, 1987). Nonaversive behavior management seeks alternatives to the emphasis on behavioral suppression through aversive contingencies and calls instead for a focus on positive procedures that educate and promote the development of adaptive repertoires (Evans & Meyer, 1985). However, defining the critical elements and empirical basis for the nonaversive approach remains a major challenge (Mulick, in press).

An important feature of the current focus on nonaversive behavior management is that the basic concepts are being promoted from several different perspectives. There is no specific technique or procedure that distinguishes the approach. Rather, different proponents offer not only varying procedural recommendations, but different theories of behavior in its support (Carr, 1988; Donnellan, LaVigna, Negri-Shoultz, & Fassbender, 1988; Durand & Crimmins, 1988; Evans & Meyer, 1985; McGee et al., 1987). This article is a response to these varying presentations of nonaversive behavior management. To begin such a discussion, however, it is necessary define critical terms.

Preparation of this manuscript was supported in part by the United States Department of Education, Cooperative Agreement G0087C023488. The opinions expressed herein do not necessarily reflect the position or policy of the United States Department of Education, and no official endorsement by the Department should be inferred.

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Defining "Aversive" and "Nonaversive"

The term "nonaversive behavior management" is an unfortunate label. In our view, the term is operationally inaccurate, and functionally misdirected. Of greatest concern is the inconsistency between the technical and ethical standards for labeling an event as aversive. Technically, the term "aversive" refers to a class of stimuli that are followed by escape or avoidance responses (Azrin & Holz, 1966; Bandura, 1969; Johnston, 1988; Van Houten, 1983). A slap or an electric shock is aversive if a person moves away or avoids being slapped or shocked. Similarly, a hug or a brussels sprout is aversive if a person consistently moves away from, or avoids it. In many traditional behavioral programs, aversive stimuli are used as punishers in an effort to decrease targeted behaviors.

The problem with the technical definition is that it does not include a clear mechanism for distinguishing *mildly* aversive events from *very* aversive events. It is practically impossible to provide support or instruction that does not include at least some mildly aversive events. Withholding attention, redirecting from preferred (albeit self-injurious) behavior, making a request to perform a new behavior, and delivering instructional prompts all may be aversive to some degree. If the technical definition of "aversive" is applied, there are few teachers or clinicians who could argue that they implement a totally nonaversive approach.

Nonaversive behavior management, however, has developed less as a response to mild, or potentially mild, forms of aversive stimuli, than as an alternative to the use of more extreme aversive events. The ideological use of "aversive" has become synonymous with procedures that involve the delivery of pain, withholding basic human needs, or social humiliation. From an ethical perspective these procedures are viewed as too extreme to be accepted as "treatment" (Guess, 1988).

At present, we do not have an adequate means of assessing operationally the level of aversiveness or intrusiveness of an intervention for a particular individual before its implementation. The result is that nonaversive behavior management is interpreted by some individuals to mean the abolition of all punishers. For others, nonaversive behavior management is associated with rejection of only those punishers that involve pain or physical harm (tissue damage). For still others, a more complex definition of aversive includes presumptions of "physical or emotional distress." A major obstacle to building an effective set of procedures and a coherent support philosophy is the absence of accepted definitions. For the purposes of this article, we will use the term "aversive" in its technical form.

A second, and equally important, reason why the label "nonaversive behavior management" is confusing is that it focuses attention on the negative aspects of this approach. The most important and exciting elements of the nonaversive avenue to behavioral support lie in the emphasis and precision with which positive intervention strategies are used. We anticipate that history will view these contributions as far more important than the rejection of the aversive procedures that currently dominates efforts to define nonaversive behavior management. For this reason, we join many colleagues in preferring the label "positive behavioral support," and will employ it for the remainder of this article.

A major issue for the positive approach to behavior management is the range of different theoretical and methodological banners that fly under the positive flag. Educative programming, positive programming, functional communication training, gentle teaching, functional equivalence programming, and nonaversive behavior management are all variations on the positive approach to providing behavioral support. We view the differences among these, and other variations, as important and constructive aspects of the movement. As with any developing area, time is needed to explore different strategies and options. An important objective at this time is to define different variations and document their effects. Across the array of discussions and descriptions of positive or nonaversive options, however, we believe three main contributions are dominant: (a) the emerging positive technology; (b) an emphasis on social validation and human dignity in determining the appropriateness of behavioral procedures; and (c) the recommendation for prohibition, or severe restriction, of certain classes of behavioral techniques.

An Emerging Technology of Positive Behavioral Support

The first contribution of positive programming is an emphasis on specific procedures for managing severe, challenging behavior in community settings. It is important to recognize that the positive/nonaversive approach will be a hollow contribution if it does not include an effective set of procedures for managing challenging behaviors. At this writing, empirical support for a comprehensive, positive technology is developing but is by no means compelling (Carr, Taylor, Carlson, & Robinson, 1990). There are a number of clinical demonstrations in which positive procedures have been associated with a broad reduction in very severe behaviors (Berkman & Meyer, 1988; Donnellan et al., 1988; Donnellan, LaVigna, Zambito, & Thvedt, 1985; Durand & Kishi, 1987; McGee et al., 1987). In addition, there is a growing literature providing empirically rigorous demonstrations that specific techniques can produce important behavior reduction under experimental conditions (Carr & Durand, 1985; Durand & Carr, 1987; Horner & Albin, 1988; Hunt, Alwell, & Goetz, 1988; Koegel, Koegel, Murphy, & Ryan, 1989; Koegel & Koegel, 1990; Mace et al., 1988; Singer, Singer, & Horner, 1987; Winterling, Dunlap, & O'Neill, 1987).

There is not, however, a data base that allows confidence in the ability of available positive programming technology to respond to all severe behavior challenges. The technology of positive programming is still developing and is just beginning to receive adequate empirical support. Among the different efforts to build this technology, however, we believe there are at least nine common themes that are worthy of acknowledgment and encouragement. These are listed here.

An Emphasis on Lifestyle Change

The positive/nonaversive approach focuses on the lifestyle of the individual, in addition to the frequency, duration, and intensity of the challenging behaviors (Horner, Dunlap, & Koegel, 1988). Behavioral support should result in durable, generalized changes in the way an individual behaves, and these changes should affect the individual's access to community settings, to social contact, and to a greater array of preferred events. Among the most important issues for a technology of behavioral support is recognition that the standards for assessing "success" are changing. An effective behavioral support plan should integrate procedures for building access to activities, places, people, and events in addition to modifying the patterns of specific desirable and undesirable behaviors (Hitzing, 1988; Horner, in press; O'Brien, 1987).

Functional Analysis

Assessing the antecedents and consequences of a behavior has long been advocated in applied behavior analysis (Baer, Wolf, & Risley, 1968; Bandura, 1969; Kanfer & Saslow, 1969; Ullman & Krasner, 1965). The technology of functional analysis is improving, however, and much greater focus is being given to efficient processes for defining when challenging behaviors are likely to occur and what events are likely to be maintaining the behavior (Carr & Durand, 1985; Durand & Carr, 1987; Durand & Crimmins, 1988; Iwata, Dorsey, Slifer, Bauman, & Richman, 1982; Touchette, McDonald, & Langer, 1985). In addition, there is increasing emphasis on building a direct link between the results from a functional analysis and the actual intervention program that is developed (Carr, 1988; Horner & Billingsley, 1988; O'Neill, Horner, Albin, Storey, & Sprague, 1988).

Multicomponent Interventions

The positive approach to behavior management seldom employs a single intervention to address a single challenging behavior. In most cases, interventions involve the simultaneous manipulation of many variables (e.g., Berkman & Meyer, 1988; Durand & Kishi, 1987). Movement of an individual to a more personal, less segregated setting, ignoring minor inappropriate behaviors, providing multiple opportunities for choice making, systematic instruction on new functional behaviors, increased access to preferred events, and staff training may all be combined into one intervention plan. As part of the focus on lifestyle change, the nonaversive approach often includes complex (multicomponent) interventions that are designed to increase classes of positive behavior and decrease classes of undesirable behavior simultaneously (Koegel & Koegel, 1988).

Manipulation of Ecological and Setting Events

Behavior management has long been associated with manipulation of the events that immediately precede and follow targeted behaviors. An exciting area of growth within the field is the recognition that if broad behavior patterns are to be affected, a greater range of variables must be considered. Various authors (Patterson, 1982; Wahler & Fox, 1981) have advocated expanding the range of variables included in behavioral support plans. These recommendations are beginning to be acknowledged in the support of people with more severe disabilities. Diet, eating schedule, exercise options, sleeping patterns, rapport, noise level, density of housing, and predictability of daily events are being recognized as nontrivial variables in both the quality of a person's life and the extent to which undesirable behaviors are manifested (Bailey, 1987; Kern, Koegel & Dunlap, 1984; Rast, Johnston, Ellinger-Allen, & Drum, 1985). The important issue for practitioners and families is that behavioral support plans are beginning to include practical, basic elements that have great promise for both affecting behavior change and improving the likelihood that positive changes endure.

Emphasis on Antecedent Manipulations

The emerging, positive approaches to behavioral support emphasize the use of antecedent manipulations. This emphasis comes in such forms as (a) modifying events in a setting so that the stimuli eliciting the undesirable behavior are reduced or removed (Touchette et al., 1985) and (b) adding antecedent events that increase the likelihood of positive behaviors (Horner & Albin, 1988; Horner, Day, Sprague, O'Brien & Heathfield, in press). These are not new ideas, but the increased use of functional analysis information permits these approaches to be practical elements in behavioral support plans.

Teaching Adaptive Behavior

Among the most important elements in a nonaversive approach is attention to teaching individuals adaptive ways of obtaining outcomes that they currently achieve through challenging behaviors (Carr, 1988; Evans & Meyer, 1985; LaVigna & Donnellan, 1986). This approach focuses on defining the behavioral "function" of challenging behaviors and teaching the individual socially acceptable ways of achieving that function. Among the most common examples is the teaching of communication skills. There are a growing number of

clinical and experimental demonstrations in which the development of communication skills has been associated with the reduction in levels of challenging behaviors (Carr & Durand, 1985, Durand & Carr, 1987, Horner & Budd, 1985; Koegel et al, 1989). Challenging behaviors occur as part of a complex behavioral ecology. By attending to the functions of challenging behaviors, clinicians may be able to identify skill deficits. Focusing on the development of the identified skills may be an effective and efficient approach to decreasing challenging behaviors without the use of intrusive interventions.

Building Environments with Effective Consequences

Positive procedures focus less on the manipulation of consequences than has been typical of behavioral interventions. Nonaversive systems include traditional procedures of consistently rewarding positive behavior and reducing rewards for undesirable behavior. Differential reinforcement of other behavior (DRO) (Luselli, Miles, Evans, & Boyce, 1985; Rose, 1979), differential reinforcement of incompatible behavior (DRI) (Mulick, Schroeder, & Rojahn, 1980; Steen & Zuriff, 1977), and differential reinforcement of alternative behaviors (Alt-R) (Carr, 1988) are cornerstones of all positive behavioral interventions. The positive approach, however, also includes attention to additional consequence variables. One strategy has been to identify a presumed reinforcer that maintains a challenging behavior, and to deliver that reinforcer at a high rate either for desirable behaviors, or noncontingently (LaVigna & Donnellan, 1986).

A second, and more complex, contribution of positive procedures has been to focus on the development of the individual's reinforcement history. People with challenging behaviors who have lived in highly restrictive settings may have very limited reinforcement histories. Very few events function as reinforcers, and the relationship between a person's behavior and positive events is not clear. One approach to this situation is to create a setting in which an array of potentially positive events are made available at a high, predictable rate as long as undesirable behaviors are not performed. The objective is, in part, to allow some of these events to develop into effective reinforcers. Only with the development of effective reinforcers (including social contact with staff) is programmatic success anticipated.

Minimizing the Use of Punishers

Although there is considerable debate about the use of punishers, a general theme of the positive programming approach is that the delivery of punishers for challenging behaviors is not desirable. The most common alternative is to minimize the reinforcement of challenging behaviors, redirect the person to more appropriate behaviors, and combine this procedure with other instructional and environmental manipulations (Evans & Meyer, 1985; Koegel & Koegel, 1989; LaVigna & Donnellan, 1986; McGee et al., 1987). Many advocates of positive behavior management recognize, however, that a typical array of events (frowns, reprimands, etc.) can be viewed technically as punishers and yet provide critical learning information.

Distinguish Emergency Procedures from Proactive Programming

An effective technology for supporting people with severe challenging behaviors must provide families and staff with specific strategies for responding when these behaviors occur. It is not sufficient simply to recommend how to ignore or avoid undesirable behaviors. Many behaviors place the person with a disability, or others, at such severe social or physical risk that both of these options are unacceptable. It is equally important, however, to recognize that many times the preferred response to dangerous situations is not to deliver a behavioral intervention designed to change the behavior, but just to provide sufficient temporary control to ensure that no one gets hurt. An effective technology of positive behavioral support must include specific procedures for providing support in dangerous situations. It is critical, however, that a clear distinction be made between crisis intervention strategies for infrequent use in emergency situations and ongoing proactive programming designed to produce substantive positive change. Crisis intervention procedures must not be allowed to turn into on-going restraint, or be used as a defense for the absence of effective programming.

The development of a well defined technology of positive behavioral support will take time. There is too little information currently available to assert that positive approaches are capable of solving all behavior problems or documenting that one approach is superior to any other. Both well controlled empirical analyses and less controlled clinical analyses are needed. The objective for the near future should not be to force consensus among those developing positive strategies, but to increase the precision with which a wide array of approaches are evaluated empirically.

Social Validation and the Role of Dignity in Behavioral Support

The second defining element of positive behavioral support is the addition of a social validity standard (Wolf, 1978) for determining the appropriateness of any intervention. Defining the appropriate use of the technology within an ethical context has long been accepted within applied behavior analysis (Kazdin, 1980). Two professional criteria often have been defined. The first is that any behavioral intervention must be justified in balance with the benefit anticipated for the person with disabilities (Irvin & Singer, 1984). Any intervention, no matter how benign, intrudes into a person's life to some degree. The level of intrusiveness should be in propor-

tion to the magnitude of the anticipated gain. The second standard is that clinicians should use the least intrusive intervention option that can logically be expected to be successful in a reasonable time period (Foxx, 1982; Matson & DiLorenzo, 1984). This second standard often has led to guidelines requiring that less intrusive interventions be documented as ineffective before implementing significantly intrusive actions (Foxx, 1982; Katz bill, 1988; Lovaas & Favell, 1987). An important nuance of this standard is that the demand is *not* that all less intrusive interventions be tried, but that all less intrusive strategies that logic and current research indicate *may have an effect* should be attempted.

A positive approach to behavior management fully endorses these traditional criteria. In addition, however, the positive approach adds a "dignity" standard. *Behavioral interventions should maintain and support the personal dignity of the individual.* Procedures that typical members of a community find excessive should be viewed with extreme caution. Because the purpose of behavioral interventions is to assist people in becoming full participants in society, the procedures used to achieve this goal should be within the standards set by society. Requiring behavioral interventions to be socially valid recognizes that it is not just the type of intervention that is important, but also the manner in which that intervention is implemented. By its nature, behavioral technology involves continuous on-site technical and ethical judgement. Even mildly intrusive, or reinforcement-based, interventions can be used in an inhumane, undignified manner that is disrespectful and stigmatizing to the individual with challenging behaviors. As a result, the following are recommended:

1. *The appropriateness of all behavioral interventions should be evaluated in terms of three criteria.* (a) Is the level of intrusiveness logically balanced by the value of the anticipated behavior change for the person with challenging behavior? (b) Is the proposed intervention evaluated by competent professionals as the least intrusive intervention likely to be successful? (c) Is the intervention judged by community members not to be dehumanizing, degrading, or disrespectful to the individual receiving support?

2. *The more intrusive an intervention, the greater the need for continuous public monitoring.* The more intrusive an intervention, the more important it is that members of the community (e.g., human rights committee) both approve the written plan for the intervention *and observe the plan being implemented.* Written descriptions and the labels applied to behavioral intervention strategies can be ambiguous. Repeated direct observation of the intervention implementation by community members is critical for maintaining the social validity of more intrusive interventions.

3. *The more intrusive an intervention. the greater the need for procedural regulation.* The greater the social or physical intrusiveness of an intervention, the more appropriate are procedural regulations that restrict (a) who may use the intervention, (b) when the intervention may be used, and (c) the conditions for monitoring the intervention. For example, such interventions as overcorrection, psychotropic medications, or time out may be used with minimal intrusiveness, or they may involve severe social and physical restriction. While it would be inappropriate to eliminate all forms of these interventions, it is appropriate for regulatory agencies to specify restrictions defining when more restrictive forms may be used, and to limit the use of these forms by people who do not have adequate training in the implementation of effective, ethical interventions (Lovaas & Favell, 1987; Van Houten et al., 1988).

Recommendations to Prohibit or Restrict Classes of Behavioral Interventions

The most hotly debated element of positive programming has been the recommendations that aversive behavioral procedures be banned or restricted (Iwata, 1988; Matson & Taras, 1989; Mulick, in press). At one extreme has been a call that all interventions that (a) deliver physical pain, (b) result in harm (medical attention), or (c) are judged to be disrespectful or dehumanizing should be legally and morally prohibited. Multiple recommendations to this effect have been made in texts (Donnellan et al., 1988; Evans & Meyer, 1985; LaVigna & Donnellan, 1986; McGee et al, 1987), newsletters (Sobsey, 1987), resolutions by professional organizations (TASH, AAMR, ASA), and proposed state regulations/laws (Katz bill, 1988). In response has been the argument that in a small number of severe situations it is more immoral to withhold an effective, though painful, intervention (e.g., electric shock), or to use less effective interventions that require extended time to be effective, than to use a painful yet immediately effective procedure (Mulick, in press). Of equal importance, it has been argued that to impose prohibitions on a science as young and ill-defined as behavioral support is damaging to the development of practical, effective procedures.

The debate surrounding the prohibition or restriction of interventions that use severe, aversive stimuli will not be settled soon. An unfortunate aspect of the debate is that it focuses attention away from the more important contributions of positive behavioral support in developing technology and social validation standards. The positive aspects of the debate are that (a) it is forcing an in depth evaluation of acceptable, professional procedures, and (b) it is adding a strong voice from families and consumers of behavioral support in addition to the longstanding discussions of clinicians and ethicists. In addition, there is a growing acceptance within the field that the use of aversive stimuli must be

regulated (either by professional organizations or by legal mandate). Lovaas and Favell (1987), for example, have provided a set of guidelines for using aversive stimuli that precludes use of these procedures in all but the most extremely unusual situations, and then only by a very small number of very well trained and monitored clinicians. The functional difference between the professional guidelines recommended by Lovaas and Favell (1987) and a total prohibition of all procedures that involve pain or harm is minimal in terms of the number of people who would receive aversive stimuli. Clearly, the time has come for limiting the use of stimuli and procedures that are painful, damaging, and dehumanizing. The debate should be not on whether to limit our use of the most severe forms of behavioral intervention, but on *how* that limitation should occur.

A consistent message for families, teachers, and community service providers is that positive programming is the expected technology. The routine use of procedures that deliver pain (shock, pinching, slaps), procedures that result in harm (bruises, cuts, broken bones), and procedures that are disrespectful or dehumanizing (facial sprays, shaving cream in mouth, foul smells) are no longer acceptable. Families, teachers, and community service personnel should turn toward (a) developing competence in the technology of positive programming and (b) addressing internal policies and procedures to prevent the abuse of severe, intrusive procedures.

The resolution to the debate surrounding the use of aversive stimuli is to develop and rigorously document positive support procedures that produce consistent, rapid, durable, generalized changes in challenging behaviors while facilitating the development of broad lifestyle changes. This is a tall order, but there must be effective strategies for creating alternatives to the use of behavioral procedures that are painful, harmful, or dehumanizing. The critical question is how to do this and to ensure that all individuals gain access to the best, most humane, most effective support possible. The marriage of ideology and science must be in the delivery of effective, positive alternatives.

Summary

This article describes aspects of positive behavioral support. Our effort has been to further define this technology and emphasize three main elements: (a) an emerging set of procedures, (b) the addition of social validation standards for acceptability, and (c) the prohibition or regulation of procedures viewed as excessively aversive or disrespectful. Through these three elements, positive behavioral support is an integration of technology and values. At this time, the values are more well defined than the technology. Our hope is to refocus attention on the discussion, analysis, and application of those powerful positive procedures that will be critical for raising positive behavioral support from a debated approach to the established technology in our field.

References

Azrin, N. H., & Holz, W. C. (1966). Punishment. In W. R. Honig (Ed.), *Operant behavior: Areas of research and application.* (pp. 380–447). New Jersey: Prentice Hall.

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.

Bailey, J. S. (1987). *Functional analysis.* Presented at ABA Symposium, Nashville, TN.

Bandura, A. (1969). *Principles of behavior modification.* New York: Holt, Rinehart, and Winston.

Berkman, K. A., & Meyer, L. H. (1988). Alternative strategies and multiple outcomes in the remediation of severe self-injury: Going "all out" nonaversively. *Journal of The Association for Persons with Severe Handicaps, 13,* 76–86.

Carr, E. G. (1988). Functional equivalence as a mechanism of response generalization. In R. H. Horner, G. Dunlap, & R. L. Koegel (Eds.), *Generalization and maintenance: Life-style changes in applied settings.* (pp. 221–241) Baltimore: Paul H. Brookes.

Carr, E. G., & Durand, V. M. (1985). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis, 18,* 111–126.

Carr, E. G., Taylor, J. C., Carlson, J. I., & Robinson, S. (in press). Reinforcement and stimulus-based treatments for severe behavior problems in developmental disabilities. *Proceedings of the Consensus Conference on the Treatment of Severe Behavior Problems and Developmental Disabilities.* Washington, D.C.: National Institute of Health.

Donnellan, A. M., La Vigna, G. W., Negri-Shoultz, N., & Fassbender, L. L.(1988). *Progress without punishment: Effective approaches for learners with behavior problems.* New York: Teachers College Press, Columbia University.

Donnellan, A. M., La Vigna, G. W., Zambito, J., & Thvedt, J. (1985). A time limited intensive intervention program model to support community placement for persons with severe behavior problems. *Journal of The Association for Persons with Severe Handicaps, 10,* 123–131.

Durand, V. M. (1988). Towards acceptable and effective intervention for severe behavior problems. In R. H. Horner & G. Dunlap (Eds.), *Behavior management and community integration for individuals with developmental disabilities and severe behavior problems* (pp. 83–96). Eugene: Specialized Training Program, University of Oregon.

Durand, V. M. & Carr, E. G. (1987). Social influences on "self-stimulatory" behavior: Analysis and treatment application. *Journal of Applied Behavior Analysis, 20,* 119–132.

Durand, V. M., & Crimmins, D. M. (1988). Identifying the variables maintaining self-injurious behaviors. *Journal of Autism & Developmental Disorders, 18*(1), 99–117.

Durand, V. M., & Kishi, G. (1987). Reducing severe behavior problems among persons with dual sensory impairments: An evaluation of a technical assistance model. *Journal of The Association for Persons with Severe Handicaps, 12,* 2–10.

Evans, I. M., & Meyer, L. H. (1985). *An educative approach to behavior problems: A practical decision model for interventions with severely handicapped learners.* Baltimore: Paul H. Brookes.

Foxx, R. M. (1982). *Decreasing behaviors of severely retarded and autistic persons.* Champaign, IL: Research Press.

Gast, D. L. & Wolery, M. (1986). Severe maladaptive behaviors. In M. E. Snell, (Ed.), *Systematic instruction of persons with severe handicaps* (3rd ed.) (pp. 300–332). Columbus, OH: Merrill Publishing.

Guess, D. (1988). Problems and issues pertaining to the transmission of behavior management technologies from researchers to practitioners. In R. H. Horner & G. Dunlap (Eds.) *Behavior management and community integration for individuals with developmental disabilities and severe behavior problems* (pp. 19–46). Eugene: Specialized Training Program, University of Oregon.

Guess, D., Helmstetter, E., Turnbull, H. R., & Knowlton, S. (1987). *Use of aversive procedures with persons who are disabled: An historical review and critical analysis.* Seattle: The Association for Persons with Severe Handicaps.

Hitzing, W. (1988). *Community support for people with challenging behaviors.* Presentation at Oregon Developmental Disabilities Conference, Eugene.

Horner, R. H. (in press). The future of applied behavior analysis for people with severe disabilities. In L. Meyer, C. Peck, & L. Brown, (Eds.), *Critical issues in the lives of people with severe disabilities.* Baltimore: Paul H. Brookes.

Horner, R. H., & Albin, R. W. (1988, September). *Functional Analysis.* Presentation at the Research and Training Center on Community-Referenced, Nonaversive Behavior Management National Conference, Santa Barbara, CA.

Horner, R. H., & Billingsley, F. F. (1988). The effect of competing behavior on the generalization and maintenance of adaptive behavior in applied settings. In R. H. Horner, G. Dunlap, & R. L. Koegel (Eds.), *Generalization and maintenance: Life-style changes in applied settings* (pp. 197–220). Baltimore: Paul H. Brookes.

Horner, R. H., & Budd, C. M. (1985). Teaching manual sign language to a nonverbal student: Generalization of sign use and collateral reduction of maladaptive behavior. *Education and Training of the Mentally Retarded, 20,* 39–47.

Horner, R. H., Day, M., Sprague, J., O'Brien, M., Heathfield, L. T. (in press). The effects of interspersed requests on challenging behavior during instruction. *Journal of Applied Behavior Analysis.*

Horner, R. H., Dunlap, G., & Koegel, R. L. (1988). *Generalization and maintenance: Life-style changes in applied settings.* Baltimore: Paul H. Brookes.

Hunt, P., Alwell, M., & Goetz, L. (1988). Acquisition of conversation skills and the reduction of inappropriate social interaction behaviors. *Journal of The Association for Persons with Severe Handicaps, 13,* 20–27.

Irvin, L. K., & Singer, G. S. (1984). *Human rights review manual.* Eugene: Oregon Research Institute.

Iwata, B. A. (1988). The development and adoption of controversial default technologies. *The Behavior Analyst, 11,* 149–157.

Iwata, B. A., Dorsey, M. F., Slifer, J., Bauman, K. E., & Richman, G. S. (1982). Toward a functional analysis of self-injury. *Analysis and Intervention in Developmental Disabilities 2,* 3–20.

Johnston, J. M. (1988). Regulating the delivery of behavioral technology. In R. H. Horner & G. Dunlap (Eds.) *Behavior management and community integration for individuals with developmental disabilities and severe behavior problems* (pp. 6–18). Eugene: Specialized Training Program, University of Oregon.

Kanfer, F. H., & Saslow, G. (1969). Behavioral diagnosis. In C. M. Franks (Ed.), *Behavior therapy: Appraisal and status* (pp 417–444). New York: McGraw-Hill.

Katz bill, State of California Proposed Legislation, AB520, 1988.

Kazdin, A. E. (1980). *Behavior modification in applied settings (2nd ed.).* Homewood, IL: Dorsey Press.

Kern, L., Koegel, R. L., & Dunlap, G. (1984). The influence of vigorous vs. mild exercise on autistic stereotyped behaviors. *Journal of Autism and Developmental Disorders, 14,* 57–67.

Koegel, R. L., & Koegel, L. K. (1988). Generalized responsivity and pivotal behaviors. In R. H. Horner, G. Dunlap, & R. L. Koegel (Eds.), *Generalization and maintenance: Life-style changes in applied settings* (pp. 41–66). Baltimore: Paul H. Brookes.

Koegel, R. L., & Koegel, L. K. (1989). Community-referenced research on self-stimulation. In E. Cipani (Ed.), *The treatment of severe behavior disorders: Behavior analysis approaches* (pp. 129–150). American Association on Mental Retardation, Washington, D.C.

Koegel, R. L., & Koegel, L. K. (1990). Extended reductions in stereotypic behavior of students with autism through a self-management treatment program package. *Journal of Applied Behavior Analysis, 23,* 119–127.

Koegel, R. L., Koegel, L. K., Murphy, C., & Ryan, C. (1989). *Assessing the effect of different teaching paradigms on disruptive behavior.* Manuscript submitted for publication.

LaVigna, G. W., & Donnellan, A. M. (1986). *Alternatives to punishment: Solving behavior problems with non-aversive strategies.* New York: Irvington Publishers.

Lovaas, O. I., & Favell, J. E. (1987). Protection for clients undergoing aversive/restrictive interventions. *Education and Treatment of Children, 10,* 311–325.

Luselli, J. K., Miles, E., Evans, T. P., & Boyce, D. A. (1985). Reinforcement control of severe dysfunctional behavior of blind, multihandicapped students. *American Journal of Mental Deficiency, 90,* 328–334.

Mace, F. C., Hock, M. L., Lalli, J. S., West, B. J., Belfiore, P., Pinter, E., & Brown, D. K (1988). Behavioral momentum in the treatment of noncompliance. *Journal of Applied Behavior Analysis, 21,* 123–141.

Matson, J. L. & DiLorenzo, T. M. (1984). *Punishment and its alternatives: A new perspective for behavior modification* (Vol. 13). New York: Springer Publishing.

Matson, J. L, & Taras, M. E. (1989). A 20 year review of punishment and alternative methods to treat problem behaviors in developmentally delayed persons. *Research in Developmental Disabilities, 10,* 85–104.

McGee, J. J., Menolascino, F. J., Hobbs, D. C., & Menousek, P. E. (1987). *Gentle teaching: A non-aversive approach to helping persons with mental retardation.* New York: Human Sciences Press.

Mulick, J. A. (in press). The ideology and science of punishment in mental retardation. *American Journal on Mental Retardation.*

Mulick, J. A., Schroeder, S. R., Rojahn, J. (1980). Chronic rumination and vomiting: A comparison of four treatment procedures. *Journal of Autism and Developmental Disorders, 10,* 203–213.

O'Brien, J. (1987). A guide to lifestyle planning: Using the Activities Catalog to integrate services and natural support systems. In B. Wilcox and G. T. Bellamy (Eds.), *A comprehensive guide to The Activities Catalog* (pp. 175–189). Baltimore: Paul H. Brookes.

O'Neill, R. E., Horner, R. H., Albin, R. W., Storey, K., & Sprague, J. (1988). *Manual for the functional analysis of challenging behaviors.* Unpublished manuscript. Eugene: Specialized Training Program, University of Oregon.

Patterson, G. R. (1982). *Coercive family process.* Eugene, OR: Castalia Publishing.

Rast, J., Johnston, J. M., Ellinger-Allen, J. A., & Drum, C. (1985). Effects of nutritional and mechanical properties of food on ruminative behavior. *Journal of the Experimental Analysis of Behavior 44,* 195–206.

Rose, T. L. (1979). Reducing self-injurious behavior by differentially reinforcing other behaviors. *The American Association for the Education of the Severely/Profoundly Handicapped 4,* 179–186.

Singer, G. H. S., Singer, J., & Horner, R. H. (1987). Using

pretask requests to increase the probability of compliance for students with severe disabilities. *Journal of The Association for Persons with Severe Handicaps, 12*, 287–291.

Sobsey, D. (1987, November). Non-aversive behavior management: The verdict is in. News & Notes, *American Association on Mental Retardation* newsletter

Steen, P. L., & Zuriff, G. E. (1977). The use of relaxation in the treatment of self-injurious behavior. *Journal of Behavior Therapy and Experimental Psychiatry, 18*, 447–448.

Touchette, P., McDonald, R., & Langer, S. (1985). A scatter plot for identifying stimulus control of problem behavior. *Journal of Applied Behavior Analysis, 18*, 343–351.

Ullman, L. P., & Krasner, L. (Eds.). (1965). *Case studies in behavior modification.* New York: Holt, Rinehart & Winston.

Van Houten, R. (1983). Punishment: From the animal laboratory to the applied setting. In S. Axelrod and J. Apsche (Eds.), *The effects of punishment on human behavior,* (pp. 13–44). New York: Academic Press.

Van Houten, R., Axelrod, S., Bailey, J. S., Favell, J. E., Foxx, R. M., Iwata, B. A., & Lovaas, O. I. (1988). The right to effective behavioral treatment. *The Behavior Analyst, 11*(2), 111–114.

Wahler, R. G., & Fox, J. J. (1981). Setting events in applied behavior analysis: Toward a conceptual and methodological expansion. *Journal of Applied Behavior Analysis, 14*, 327–338.

Winterling, V., Dunlap, G., & O'Neill, R. (1987). The influence of task variation on the aberrant behavior of autistic students. *Education and Treatment of Children, 10*, 105–119.

Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis, 11*, 203–214.

Received: February 8, 1990
Final Acceptance: April 11, 1990
Editor in Charge: John Nietupski

Research & Practice for Persons with Severe Disabilities
2005, Vol. 30, No. 1, 11–14

Fifteen Years Later: Has Positive Programming Become the Expected Technology for Addressing Problem Behavior? A Commentary on Homer et. al. (1990)

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I found it very satisfying to reread *Toward a technology of "nonaversive" behavioral support,* written in 1990 by Rob Horner and seven of his colleagues. Their predictions of the critical themes for advancing positive behavior support (PBS) ring true. Fifteen years have passed since the publication of this article, and much has happened in the interval. Though I played a more passive role than many of my colleagues in the 1980s and 1990s, I remember well the public confrontations between groups over interventions for serious problem behavior—our battles took place from behind podiums, slinging data and generalizations. There were press conferences and television interviews on the use of punishment and SIBIS (Self-Injurious Behavior Inhibiting System) to reduce problem behavior. Inside and outside of Washington DC political struggles took place over infusing PBS language into educational law. Soon the rhetoric became louder than the research. TASH forged ahead with solid resolutions and the Arc, AAMR, and other organizations joined the battle for PBS.

Horner and his coauthors admitted in 1990 that "our values are more well defined than the technology" (p. 130). Has this imbalance changed in 2005? This commentary will revisit themes of positive programming set forth by Horner et al. (1990), will ask how the field has advanced, and will identify ongoing challenges. Rather than use the original order of the presentation of themes in their article, I have grouped them into two categories: themes that have seen significant change and those reflecting little change.

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PBS Themes Reflecting Significant Change

Functional Analysis

Among professionals and practitioners in the field, functional behavioral assessment (FBA), rather than the more rigorous functional analysis, appears to be regarded as a proven tool ready for widespread use, and at this point considered best practice. There are step-by-step guides for using this approach, some more empirically defined (Carr et al., 1994; Crone & Horner, 2003; O'Neill et al., 1997) than others (Chandler & Dahlquist, 2002; Janney & Snell, 2000). But how well applied are these strategies, and how many school principals and teachers readily understand the steps and use them to actually inform the development of positive and effective interventions? The schoolwide application of PBS that has taken root in many schools has strong implications for ordinary students. Due to its reported success, schoolwide PBS is likely to be the messenger that introduces functional assessment and PBS to the broader school audience.

Functional analysis requires the direct testing of hypotheses on the motivation of problem behavior through experimental, systematic manipulation of environmental variables. By contrast, functional assessment requires that hypotheses be made from several sources of data (e.g., interview, rating scales, direct observation), but they need not be tested through experimental manipulation. Functional analysis is still regarded as the gold standard for use with individuals who have the most dangerous problem behavior. While this approach requires a longer assessment period and the support of professionals trained in behavior analysis, some researchers have successfully substituted brief but rigorous functional analyses in homes and schools using parents and teachers supervised by behavior analysts (e.g., Wacker, Cooper, Peck, Derby, & Berg, 1999). There are also some "in-between" behavior assessment approaches that require limited testing of the

hypotheses or the proposed interventions (e.g., Carr et al., 1994). Recent research involving assessment-based interventions predominantly was found to use functional analysis alone (53%) or functional analysis coupled with functional assessment (29%) and infrequently relied upon functional assessment alone (18%) (Snell, Voorhees, & Chen, in press).

Multicomponent Interventions

As predicted by Horner et al. (1990), it appears that recent research with problem behavior implements more than one intervention to address a single challenging behavior (Carr et al., 1999; Snell et al., in press). In an analysis of 111 such studies, only 22% applied one intervention; 42% applied two; 22%, three; 12%, four; and 2%, five interventions (Snell et al., in press). These intervention components were found to include the traditional use of positive reinforcement for alternate behaviors (78%), assessment-based antecedent approaches aimed at preventing problem behavior by reducing known triggers (65%), teaching new skills to students (49%), and teaching new skills to parents and teachers (26%). Horner et al. (2002), who examined problem behavior interventions with students having autism (1996–2000), found that 62% included multiple interventions. The research challenge is to test the effects of interventions, alone and in combination, to discover efficient and effective combinations that link with student variables.

Emphasis on Antecedent Manipulations

Antecedent-based (or stimulus-based) interventions are intended to reduce the likelihood of an undesirable behavior from occurring or to increase the likelihood of a desirable behavior by changing some of the variables that occur before the target behavior. Antecedent interventions vary widely from scheduling, setting, and curriculum modifications to changes in social organization. For example, if the noise level in a school cafeteria appears to trigger a student's problem behavior that leads to escape, antecedent manipulations might include attending lunch when fewer children are present or having the student wear a quiet music headset. Snell et al. (in press) found that 65% of current research was found to apply antecedent-based interventions, while Horner et al. (2002) found 43% for recent research with individuals having autism. Earlier studies supported this trend (Carr et al., 1999; Lane, Umbreit, & Beebe-Frankenberger, 1999). Carr et al. (1999), who compared assessment-based interventions over time, found that reinforcement-based interventions dominated in the 1980s but were surpassed in the 1990s by stimulus-based interventions.

Teaching Adaptive Behavior

Horner et al. identified this theme as one of the most important elements in PBS—teaching students new appropriate behavior that competes with the problem behavior by matching its function. For example, a child whose tantrums reliably result in attention from others is taught to make simple requests for attention. While the strategy, which relies on functional assessment, is both simple and logical, it was infrequently practiced with traditional behavioral approaches. Recent research lends strong support to an educative or instruction-based approach, particularly when communication is the adaptive behavior taught (e.g., Durand, 1999). Horner et al. (2002) reported that 81% of recent interventions with individuals having autism involved skill instruction, while Snell et al. reported 49% for a broader population of learners. In addition to changing students' problem behavior patterns by teaching replacement skills, there also is growing support for changing adults' behavior patterns by teaching them to recognize and respond to students' adaptive behaviors while not responding to their problem behavior.

Minimizing the Use of Punishers

Carr et al. (1999) tracked research that included PBS components alone or "non-PBS" components (direct application of reductive, reactive procedures) over the three time periods analyzed (mid-1980s, early 1990s, and mid-1990s). They found punishment associated with one quarter of the cases. Over time they reported gradual decreases in non-PBS research accompanied by rapid increases in PBS research. Horner et al. (2002) reported that punishment (e.g., time out, reprimand) was used in 32% of the interventions with students with autism, while Snell et al. (in press) found punishment to be an intervention component in 10% of the database published between 1997 and 2002 involving school-aged individuals with disabilities. These numbers suggest a reduction in the use of punishers but a continued reliance on punishment of either type: contingent delivery of aversive stimuli or contingent removal of positive stimuli.

Building Environments With Effective Consequences

Research on schoolwide PBS probably provides the best example of this theme. There is a rich database of schools, elementary through secondary, applying schoolwide PBS that offer a continuum of effective behavioral assessment and support (Crone & Horner, 2003; Walker et al., 1996). The majority of students (80–85%) in any school seem to respond well to simple interventions involving consistent, logical rules that state appropriate behavior specific to school settings (cafeteria, classroom, hallways) and consequences. The remainder of the student body seem to need brief functional assessments (5–15%), more comprehensive functional assessments (3–7%), or more extensive functional analyses (1–2%). Intervention for this group matches the intensity of assessment and ranges from specialized group to individual PBS interventions. To implement this approach, schools must have leadership

to support training personnel, organizing staff into working teams, and committing to at least a 3-year period for the technology to be put into place (Crone & Horner, 2003). While current emphases on school test performances may seem to divert attention and resources, schools that have the capacity to implement a continuum of behavioral assessment and support are likely to yield behavioral improvements that affect academic performance.

Themes Reflective of Less Change

Emphasis on Lifestyle Change

Lifestyle change interventions are meant to improve family life, jobs, social relationships, or the problem context. Carr et al. (1999) found it was rare that this was the focus of intervention reported in the literature between the 1980s and 1990s (3.5%). In the more recent database (1997–2002) of Snell et al. (in press), only 2% was identified as having this focus. Lifestyle change interventions and measures have not been given the attention they merit by researchers. Goals to improve lifestyle have the advantage of being viewed by most as socially valid. However, efforts to reach these goals may be more complicated than typical antecedent interventions, and behavioral researchers have little history of operationalizing the variables involved and measuring lifestyle changes.

Manipulation of Ecological and Setting Events

While behavioral researchers and school-based teams are used to analyzing data to develop probable explanations for problem behavior, there often are confusing trails of evidence. For example, inconsistencies in problem behavior patterns may lead teams to search for setting events, but their role is evasive and their identification not straightforward. Setting events are idiosyncratic and by definition are distant to the problem behavior. While these characteristics make setting event research difficult to conduct, there is clear evidence that events such as inadequate sleep, dietary shortages, and periods of inattention or excessive stress may increase the probability that ordinary antecedent events will become triggers for problem behavior. While research with this focus has not been tracked in recent reviews, it is true that the controlled manipulation of events distant to the problem behavior poses many logistical difficulties and is likely understudied.

Distinguishing Emergency Procedures From Proactive Programming

Less is known about how schools measure up in this area. In my own interactions with administrators and teachers, I find the misconception that emergency procedures are synonymous with intervention to be widespread. Horner et al. (1990) were wise to urge more differentiation between "temporary control to prevent injury" and proactive, assessment-based programming. Until educators better understand the PBS technology (functional behavioral assessment and effective behavioral support programs), crisis management will be viewed as intervention rather than a stopgap measure to reduce injury while conducting functional assessment and implementing intervention.

Social Validation and the Role of Dignity in Behavioral Support

If researchers document that the goals, methods, or outcomes are socially valid in some way, it is more likely that the process is respectful and the outcomes are worthwhile. Unfortunately researchers tend not to assess these effects; when they do, anecdotal rather than observable data usually are gathered. Acceptable social validation of some type was reported in 22% of the research reviewed by Snell et al. (in press) and for only 3% to 13% of the participants reviewed by Carr et al. (1999). Research on the role of dignity in behavioral support (whether interventions maintain and support the individual's personal dignity) is somewhat related to social validation. While this topic has been written about (e.g., Singer, Gert, & Koegel, 1999), it remains an area of measurement neglect.

Conclusions

Consistent with the message of Horner et al. 15 years ago is that assessment-based PBS interventions have continued to be effective in significantly reducing the problem behavior of individuals with severe disabilities (Snell et al., in press), autism (Horner et al., 2002), and developmental disabilities (Carr et al., 1999). With this progress, additional themes for exploration arise. All recent reviews underscore the problem that researchers often have failed to measure the effects over time or beyond the treatment setting, which may mean the effects are short-lived. Several other problems exist in the recent research that may relate to the seriousness of the problem behavior studied but that also complicate the maintenance and generalization of behavior change. These problems include the findings that (a) teachers and parents were involved in assessment and intervention only about a quarter of the time (Snell et al., in press), even though improved effects were associated with their involvement (Horner et al., 2002), and (b) specialized settings (hospitals and special classes) were more often the location for assessment and intervention than were typical classrooms, homes, and community settings (Snell et al., in press).

After 15 years of study, the imbalance between values and technology that Horner and his coauthors defined has shifted toward a more stable evidence base. The influential power of their words appears to have helped direct researchers in this shift. However, with this success comes the inevitable gap between what we know about addressing problem behavior and what we typically do in school, home, and community settings.

Narrowing this gap remains a continuing challenge to the field.

References

Carr, E. G., Horner, R. H., Turnbull, A. P., Marguis, J. G., Magito-McLaughlin, D., McAtee, M. L., et al. (1999). *Positive behavior support for people with developmental disabilities: A research synthesis.* Washington, DC: American Association of Mental Retardation.

Carr, R. G., Levin, L., McConnachie, G., Carlson, J. I., Kemp, D. C., & Smith, C. E. (1994). *Communication-based intervention for problem behavior.* Baltimore: Brookes.

Chandler, L. K., & Dahlquist, C. M. (2002). *Functional assessment: Strategies to prevent and remediate challenging behavior in school settings.* Upper Saddle River, NJ: Prentice-Hall.

Crone, D. A., & Horner, R. H. (2003). *Building positive behavior support systems in schools: Functional behavioral assessment.* New York: The Guilford Press.

Durand, V. M. (1999). Functional communication training using assistive devices: recruiting natural communities of reinforcement. *Journal of Applied Behavior Analysis, 32,* 247–267.

Horner, R. H., Dunlap, G., Koegel, R. L., Carr, E. G., Sailor, W., Anderson, J., et al. (1999). Toward a technology of "nonaversive" behavioral support*Journal of the Association for Persons with Severe Handicaps, 15,* 125–132.

Horner, R. H., Carr, E. G., Strain, P. S., Todd, A. W., & Reed, H. K. (2002). Problem behavior interventions for young children with autism: A research synthesis. *Journal of Autism and Developmental Disabilities, 32,* 423–446.

Janney, R. E., & Snell, M. E. (2000). *Practices for inclusive schools: Behavior support.* Baltimore: Paul H. Brookes.

Lane, K. L., Umbreit, J., & Beebe-Frankenberger, R. E. (1999). Functional assessment research on students with or at risk for EBD: 1990 to the present. *Journal of Positive Behavior Interventions, 1,* 101–111.

O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J. R., Storey, K., & Newton, J. S. (1997). *Functional assessment and program development for problem behavior.* Pacific Grove, CA: Brooks/Cole Publishing.

Singer, G. H. S., Gert, B., & Koegel, R. L. (1999). A moral framework for analyzing the controversy over aversive behavioral interventions for people with severe mental retardation. *Journal of Positive Behavior Interventions, 1,* 88–100.

Snell, M. E., Voorhees, M. D., & Chen, L. H. Team involvement in assessment-based interventions with problem behavior: 1997–2002.*Journal of Positive Behavioral Interventions.,* (in press).

Wacker, D. P., Cooper, L. J., Peck, S. M., Derby, K. M., & Berg, W. K. (1999). Community-based functional assessment. In A. C. Repp & R. H. Horner (Eds.), *Functional analysis of problem behavior: From effective assessment to effective support* (pp. 32–56). Belmont, CA: Wadsworth.

Walker, H., Horner, R., Sugai, G., Bullis, M., Sprague, J., Bricker, D., et al. (1996). Integrated approaches to preventing antisocial behavior patterns among school-aged youth. *Journal of Emotional and Behavior Disorders, 4*(4), 194–209.

Received: February 18, 2005
Final Acceptance: February 25, 2005
Editor in Charge: Donna Lehr

JASH
1988, Vol. 13, No. 2, 76–86

Alternative Strategies and Multiple Outcomes in the Remediation of Severe Self-Injury: Going "All Out" Nonaversively

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This case study report describes the various treatments implemented over a 3-year period in an effort to reduce and eliminate multiple and severe self-injurious behaviors in a 45-year-old man who had been institutionalized and had exhibited these behaviors for the majority of his life. After baseline, an aversive procedure (contingent mechanical restraint) had been implemented and judged a failure by institution personnel. Subsequent intervention phases introducing community involvement and performance goals that emphasized functional activities in criterion environments and situations were associated with increasingly positive behaviors. Multiple outcome data are reported, including meaningful changes in targeted self-injurious behaviors, maintenance and generalization of those changes to integrated community environments at follow-up using available staff and resources, acquisition of new alternative skills, and placement in a supported apartment in the community with full-time work in a community job site. The procedures and the results demonstrate possible outcomes when nonaversive intervention procedures and community resources are utilized comprehensively as alternatives to aversive procedures focused upon only the immediate reduction of a single target behavior.

DESCRIPTORS: behavior management, choice-making, community integration, decision-making, educational validity, nonaversives, punishment, self-control, self-injurious behavior

Self-injurious behavior is a life-threatening problem reported to occur in individuals with various diagnoses, including "autistic, schizophrenic, retarded, or brain damaged" individuals (Carr, 1977). Forms of this behavior include biting, scratching, picking, hitting, head banging, or punching oneself with sufficient intensity and frequency that tissue damage, permanent injury (e.g., blindness), and the possibility of death are noted as likely consequences if the behaviors are not remediated (Bachman, 1972). Due to the reported failure of less intrusive procedures to modify these behaviors, as well as the seriousness of the behaviors themselves, the use of aversive procedures has been reported frequently in the literature as an effective approach (Carr, 1977; Guess, Helmstetter, Turnbull, & Knowlton, 1987; Matson, 1985). The procedures used have ranged from relatively less intrusive ones such as brief contingent restraint and verbal reprimand to highly aversive and negative measures such as contingent shock, corporal punishment, and mechanical restraint implemented for lengthy time periods (Matson, 1985).

Recently, there has been renewed emphasis upon the importance of analyzing the functions of behaviors such as self-injury as a critical component to the design of effective interventions (Carr & Durand, 1985; Evans &

We wish to acknowledge the assistance and support of the many individuals who contributed to the services provided for Mr. Jordan throughout this study and without whose help the community placement might not have occurred: Dr. Michael Dillon, Ira Fisher, Francis Koon, Michael Hynes, and Denise DiBiase.

Preliminary reports of this case study were presented at the 12th Annual Convention of the Association for Behavior Analysis, Milwaukee, May 1986, and at the 21st Annual Convention of the Association for the Advancement of Behavior Therapy, Boston, November 1987. Preparation of this report was supported in part by Cooperative Agreement G0085C03503, awarded to Syracuse University by the National Institute on Disability and Rehabilitation Research, U.S. Department of Education. The content and opinions expressed herein do not necessarily reflect the position or policy of the U.S. Department of Education, and no official endorsement should be inferred.

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Meyer, 1985). Critiques of the widespread use of aversive procedures in particular have noted that while available evidence may largely support their immediate and dramatic suppression effects on the targeted behavior problem, little to no data are available to support the maintenance and generalization of such short-term treatment outcomes (Guess et al., 1987; Meyer & Evans, 1986). For example, in their unique follow-up study of 12 published cases in which contingent shock had been used to treat self-injurious behavior, Murphy and Wilson (1981) reported that two of the treatments had been unsuccessful in the original report, one author reported having no subsequent knowledge of the client, 7 clients had completely relapsed 2 years after the treatment had ended, 1 had died for reasons unrelated to self-injury, and only 2 of the 12 clients had experienced no relapse. Theoretical and review articles provide extensive discussions of these issues and generally conclude that (a) aversive procedures are associated with short-term behavioral improvements, based upon published studies; (b) little long-term or generalization data are available; (c) in comparison to information on the effects of aversives, relatively less research is available regarding the outcomes associated with alternative nonaversive procedures; and (d) in general, there have been few applications of what has been termed an "educative approach" to behavior problems (Evans & Meyer, 1985). In such an approach, the emphasis in both treatment and the evaluation of outcomes is upon the replacement of problem behaviors by positive alternative behaviors which are judged successful and meaningful in the context of integrated community environments (Evans & Meyer, 1985; Meyer & Evans, in press). Such an approach begins with a detailed functional analysis or a return to the theoretical roots of behavior therapy (Carr, 1985).

Along these lines, Foxx and Dufrense (1984) reported the results of an intervention that emphasized establishing alternative behaviors concomitant with the reduction of severe self-injury by a young adult. Their study included extensive follow-up, in which the maintenance of behavioral improvements at the institution was associated with the inclusion and participation of the individual in a variety of normalized environmental and habilitative experiences. The authors felt that one important aspect of the change in behavior was that the individual was encouraged to take the initiative in making decisions regarding his own programming; the authors considered this critical to the success of the treatment.

The present case study describes several treatment and follow-up phases across a period of nearly 3 years in the life of a male adult who had lived in institutions for most of his life. Since his preschool years, the individual in this study had been reported to engage in multiple and severe self-injurious behaviors, which were judged to be health- and life-threatening and which had resulted in frequent hospitalizations, extensive tissue damage, serious malnutrition, and drastic weight loss. A variety of procedures, both positive and aversive, had failed to modify these behaviors in any significant way in the institutional environment, and this individual was not considered to be a candidate for community placement because of these behaviors. In contrast to past procedures, the emphasis of the present intervention was to implement extensive program and placement changes that would systematically and completely modify the circumstances and environments associated with his self-injurious behaviors and replace them with functional alternatives. Critical evaluative criteria for judging the success of these efforts included changes in the target behaviors; the acquisition of functional, alternative skills; and participation in a variety of community environments, including residential and vocational placement outside the institution at follow-up (Evans & Meyer, 1987; Voeltz & Evans, 1983).

Method

Subject

The male described in this study was born in 1943 and is now 45 years old. Mr. Jordan (not his real name) is nonverbal, but uses vocal sounds, fully intonated phrases, gestures, and pointing to make his desires known. He has resided in institutions for more than 37 years. In 1985, administration of the Leiter International Performance Scale yielded an IQ score of 50, and the psychiatrist who provided services at the institution where Mr. Jordan began the study considered him to be psychotic in addition to having a developmental disability.

Self-injurious behaviors were first reported after a serious illness (measles, whooping cough, and pneumonia) as a small child, which resulted in hospitalization for 2 months at age 2. At age 4, a physician recommended institutional placement, reporting hyperactive and self-abusive behaviors. As there were no immediate vacancies, he was temporarily placed in a foster home while awaiting placement in an institution. At age 5, he changed foster homes, and this foster mother reported self-injurious behavior described as head hitting that caused injury and which was accompanied by simultaneous laughter. He was institutionalized in 1949 at age 6. Placement records note that he was at that time hyperactive, self-injurious, and destructive; behaviors included head banging, picking at his face, putting sharp objects under his nails, and rumination/regurgitation. In subsequent years, the most serious of the behaviors noted in Mr. Jordan's records included frequent operant vomiting, ruminating, head banging, head hitting, scratching and rubbing, picking and tearing off fingernails and toenails, body slapping, eye poking, ear poking, placing sharp objects in his shoes and walking on these objects, and body banging.

On the average, he received sutures and other medical treatment monthly at the clinic or hospital emergency room for injuries caused by his self-abuse and generally was seen by the physician in residence at the institution at least weekly to check his health status. He also hit and kicked others, spat, vomited and excreted on others, and cried and yelled frequently. During phases and time periods when his self-injury was less frequent or less intense, he engaged in a high frequency of what staff referred to as "SIB testing," defined as threats through motions that he would injure himself. Staff indicated that ignoring these threats resulted in an escalation of the testing and, ultimately, the actual self-injurious behavior.

Efforts to control these behaviors included a daily dosage of 1200 mg of Thorazine throughout the time period reported here. An attempt to implement a drug holiday trial in gradual phases (see Phase III below) using a double blind procedure with placebo failed; the trial period elicited suspicions that medication had changed by key nursing personnel who administered the dosage of medication which resulted in (at one point the nurse tasted the placebo liquid) a rapid and dramatic escalation in negative behaviors and a request for a special intravenous dose of Thorazine by Mr. Jordan. Medical supervision was intensive throughout the study.

Intervention Phases

Table 1 summarizes the major features of his environment and each intervention across baseline, intervention, and follow-up phases. The first author became involved with Mr. Jordan during baseline, serving as his staff psychologist at the institution with authority over certain components of his program as team leader, and moved with Mr. Jordan to continue this program responsibility at follow-up in the community. Phase II procedures were developed in consultation with a psychologist specialist in behavior management provided by the overseeing state agency. The second author was introduced during Phase III to assist in the design of an alternative intervention plan due to the dramatic escalation in vomiting, serious weight loss, and resultant hospitalizations.

Baseline. The 5 weeks of baseline data reported here were collected for a time period considered representative of the day-to-day institutional response to Mr. Jordan's self-injurious behavior. Behavior program plans included various DRO (differential reinforcement of other behavior) procedures with an emphasis upon engaging him in alternative activities. However, his attendance at a prevocational day activity program in the community had been interrupted due to his high rates of self-injury, and he typically remained on the living unit at the institution. During the day, a staff person was assigned individually to provide the different puzzles and limited set of activities available to Mr. Jordan; these activities were repetitive, nonfunctional, and considered by staff to be too simple and boring for him. Staff reported decreasing demands as their strategy to control his self-injury. The evening shift, involving a new staff person daily on a rotating shift, was characterized by even fewer demands. Mr. Jordan typically changed into his pajamas at 3:00 p.m. during the shift change and remained in his bedroom until dinner. After dinner (in the dining room with 3 of the 18 other adults who lived on his unit), he returned to his bedroom and listened to music until falling asleep by approximately 8:00 p.m. The 1:1 direct care staff were responsible for continuous recording of eight problem behaviors: (a) SIB testing, (b) scratching face, (c) scratching arms/legs, (d) head banging, (e) arm/leg banging, (f) crying, (g) yelling, and (h) vomiting.

Phase II. As there appeared to be little improvement in his behavior, a new program was implemented from early March through early May 1985. This intervention, designed in consultation with specialized personnel provided by the state as noted above, included positive rewards for increasingly lengthy periods of activity during which no self-injury occurred (DRO) in conjunction with contingent aversive consequences for incidents of self-injury (aversive conditioning). No changes were made in the types of activities included in Mr. Jordan's daily routines on the unit, other than the implementation of the contingent reward procedures. For each 10-min time period during which no self-injury occurred, Mr. Jordan was given a peg. Whenever he had accumulated five pegs, he was rewarded with a 10-min walk off the living unit; as a break from activities which he was thought to find boring, the walk was intended to serve as his reward.

The aversive conditioning intervention specified six target behaviors: (a) motion to bang head; (b) motion to poke eyes, nose, or forehead; (c) lifting knee to hit head; (d) stepping on his own foot; (e) attempting to dive into or out of a chair or couch; and (f) attempting to throw or throwing shoes. Whenever any of these behaviors occurred during the daily activities, contingent mechanical restraint was applied, which involved forced sitting in a chair with a custom-made splint device limiting motion of his arms and head. The restraint was applied in a private setting on the living unit with Mr. Jordan facing a blank wall to limit social reinforcement. He remained in the device for 10 min until calm. If he vomited during this period, he remained in the device regardless until the 10 min had lapsed, after which time he was directed to clean the area and himself. He was then redirected to an activity.

Phase III. This phase extended from early May through September 1985. It represented a heuristic response by the institutional staff to the observation that time away from the unit and the institution was associated with less self-injury. Furthermore, staff reported avoiding use of the aversive procedure, which they considered to be responsible for the increased vomiting. Leaving the unit was no longer contingent on positive behavior; instead, staff were instructed to

Table 1
Major Features of Baseline, Intervention, and Follow-Up Phases with Mr. Jordan

Dates	Staff ratio	Program components		Program for problem behaviors
		Living setting	Activity options	
February–March 1985	1:1	Institution	All activities on living unit Activities primarily table top (puzzles, etc.) with minimal participation in self-care routines	Minimal program demands Passive participation tolerated by staff Manual restraint plus hospitalization used for SIB incidents
March–May 1985	1:1	Institution	As above, plus 10-min walks off living unit as contingent reinforcement	DRO program to reward 10-min intervals with no self-injury during activities with pegs/walk off unit Contingent 10-min mechanical restraint for attempts and incidents of SIB, including time-out during restraint
May–August 1985	1:1	Institution	Activities off the living unit whenever possible Visits to community sites accompanied by staff Initial contacts with family	Staff avoided situations associated with SIB Staff no longer consistently using contingent restraint for incidents of SIB Verbal reprimand for SIB testing and incidents
September 1985–September 1986	Lessened 1:1	Institution	Activities outside the institution whenever possible, including: a) Transition to community living experiences b) Community job training c) Community recreation activities Expanded contact with family	Instruction in alternative positive behaviors/skills: social-communication; self-management; functional daily living; job training Decision making by Mr. Jordan in daily and life-style choices Redirect plus verbal reprimand for SIB testing and incidents Back-up crisis management procedures for serious SIB (i.e., physical restraint until calm), excluding vomiting
October 1986–present	1–2 staff for 3 residents	House in community with 1–2 roommates	Employment training at 2 community job sites: Full-day employment Activities of daily living: chores, cooking, daily living routines, street crossing, laundry, fire alarm Communication training Community activities training, including bank, library, and recreation sites Visits to institution if self-initiated Continued contact with family	Continued instruction in alternative positive behaviors/skills, as above Decision making by Mr. Jordan, as above Redirect plus verbal reprimand, as above Back-up crisis management, as above

have Mr. Jordan off the living unit as much as possible and to introduce him to various community activities and environments. His advocate (a term used in the state institutions for a designated full-time direct care staff person with increased responsibilities for an adult client) integrated him into various aspects of his own personal life. He included Mr. Jordan in activities with his friends, visits to his home and workplace, and in regular outings to various community sites frequented by the advocate. A routine was established whereby Mr. Jordan learned different skills at the motorcycle shop where the advocate also worked. During break time at this site, they would visit a small local store where Mr. Jordan learned to choose and purchase a snack. Lunch was prepared together at the advocate's house prior to returning to the institution. When the shift changed at 3:00 p.m. and the advocate left, Mr. Jordan's activities were as described previously. Only one staff person occasionally took him to her home or shopping during the evening shift.

The contingent aversive procedure described in Phase II remained formally in place, although the procedure was never used during Phase III, due to what staff considered to be a satisfactory overall decrease in self-injurious behaviors. Beginning in June 1985, consultation with the second author began and planning for Phase IV extended over the next few months, emphasizing community integration, adaptive skill acquisition, and personal decision making. Due to the radical departure of Phase IV plans in comparison to previous programs and the need for review and approval by the various regional and state agencies involved, this administrative process extended throughout most of Phase III. The drug holiday trial described earlier also occurred during this time period. Finally, during the summer of 1985, Mr. Jordan's father, whom he had not seen for over 20 years, was located through the initiative of the unit nurse and reintroduced into his life.

During Phase III, a functional analysis of Mr. Jordan's behavior was conducted through direct observation of his behavior in various environments and under different conditions; an examination of patterns in his behavior by setting, times of day, staff on duty, and the activities in which he was engaged; and interviews with numerous direct care and consultative staff at the institution to solicit their observations and subjective impressions regarding his positive and negative behaviors under different conditions. Based upon this information, circumstances were identified that were reliably associated with either high positive or negative behaviors according to staff reports and available records.

Phase IV. Phase IV was implemented in response to the decision by professional personnel that all previous efforts to modify Mr. Jordan's self-injurious behaviors had been unsuccessful; in fact, his condition associated with the aversive consequence program was judged as life-threatening. The intervention plan consisted of four major components: (a) drastically *changing the stimulus conditions associated with self-injury* to introduce novel settings and situations as well as those that were associated with low rates of negative behavior in previous data. This also included avoiding those stimulus conditions associated with self-injury. The plan thus included transition from the institution to a supervised living situation in the community and participation in employment and community recreation activities; (b) *instruction in positive alternative behaviors* and participation in various functional, community-based activities intended to replace self-injurious behaviors over the long term. That is, demands were not eliminated, but were now tied to functional activities rather than to those activities associated with negative behaviors in the past; (c) *involving Mr. Jordan himself in all phases of decision making* regarding his daily schedule of activities. Rather than imposing alternative activities and community living upon him (as institutional living and other activities had been imposed upon him throughout his adult life), the intent was to actively solicit his input and involve him in choice making regarding changes in his program and daily life; and (d) *provide for back-up crisis management procedures* to deal with any self-injurious behavior that might occur. The contingent mechanical restraint procedure was formally omitted from his program.

Throughout this period, the significant relationships established by Mr. Jordan over the past year were also of primary concern. Mr. Jordan's primary advocate and friend was asked to transfer to the planned community residence as a staff person in that setting. A second full-time staff person was also identified and hired prior to Mr. Jordan's move in order to establish a positive relationship prior to the transition from the institution to the community. Finally, arrangements were made for the first author, the psychologist responsible for the overall implementation of Mr. Jordan's program, to transfer also to the community services branch and thus maintain this responsibility after the move.

The emphasis upon giving Mr. Jordan control over various choices and decisions included deciding what to wear, where to go, what to do, and so forth (see Kishi, Teelucksingh, Zollers, Park-Lee, & Meyer, 1988, for a listing of the choices considered of highest priority). Choice procedures were implemented through the use of a photo book designed for use as a communication system. A calendar was used also to teach him to schedule daily activities and, with his input, was annotated weekly with information regarding who would be working with him each day, planned activities for that week, and when certain people were going on vacation (typically a difficult event for him). The long-term goal was to develop Mr. Jordan's understanding of the concept of time, anticipation of events, and management of his own schedule to the maximum extent possible.

The planned transition to the community began by having Mr. Jordan meet various individuals who resided in the community with the assistance of the staff people whom he knew well (particularly the advocate and the new staff person who would move with him). During the period immediately prior to the move, he participated in many aspects of preparation for the move. This included several social and recreational visits to group homes and various overnight visits to his parents' home, his advocate's home, and, eventually, the house in which he would live. He was involved in the planning, purchasing, and arranging of all necessary personal items prior to moving; he packed his belongings and placed them in their appropriate place once moved into his new residence. In fact, he participated in visits to several houses that were potential living sites, including "reading" advertisements for rentals in the newspaper; he also participated in selecting furniture for the house and choosing which bedroom would be

his. Finally, employment training involved gradually exposing Mr. Jordan to several work situations and to job advertisements in the newspaper.

The crisis management strategy to intervene with occurrences of self-injury was implemented if initial efforts to interrupt the behavior either verbally or through redirection failed. The procedure consisted of physically restraining Mr. Jordan from engaging in the negative behavior until calm. (The exception to this was, as before, vomiting, which was not, of course, a behavior that could be prevented from occurring.)

Follow-up. At follow-up, there were additional significant changes in Mr. Jordan's environment and program. At the beginning of October 1986, he moved to a house in the community with staff support. One other adult male with developmental disabilities (and who is higher functioning) moved into the house at the same time and a second roommate moved in during December 1986. His goal plans included self-preservation (fire alarm training), personal grooming and cleaning up, daily chores in the house, cooking (e.g., making breakfast), street crossing, writing, doing the laundry, communication training, participation in a variety of community environments and activities such as grocery shopping and visits to the library and bank, and recreational activities. Mr. Jordan completed two vocational training rotations at job sites in the community doing clean-up work, and placement in a full day job site occurred. Shortly after his move to the community residence, Mr. Jordan made a request to return to the institution: He packed his bags, put on his coat, and, once in the car, directed staff back to the institution. After a visit of an hour or so, he was returned to the house in the community with no protest behavior occurring. Based upon the presumption that Mr. Jordan might well wish to return to the institution on a periodic basis for various reasons (to visit acquaintances, see his old environments, and so forth), his program was augmented to allow for such visits to occur should he so desire.

There has been one significant staff change in his situation: The advocate described previously no longer is assigned to him. However, the new, additional staff person has continued (along with additional new staff). His interactions with his family also have decreased, although limited contact still takes place.

Data Collection

Throughout baseline and Phases II and III, a continuous data collection procedure was used to record the eight problem behaviors of most serious concern (see the baseline description). Mr. Jordan was observed for 16 waking hours each day with 1:1 staffing. Occurrences of any of the behaviors were recorded in 10-min intervals, along with duration of behavior, the presumed precipitating event, any consequences that occurred, and a judgment regarding the severity of the incident. In addition, a narrative log was kept for elaboration of incidents. The nurse also required a daily input/output log to record food consumed and if and when any vomiting occurred. The two logs were kept during all phases reported here.

In September 1985 (the end of Phase III), a new charting system began, which was designed to monitor the behaviors of concern as well as various positive communication behaviors. Time periods and activities thought to be associated with differential rates of self-injury were monitored by this system, including mealtimes, household task activities, dressing, leisure activities, walks outside, and various activities in the community (including weekends). Direct care staff assigned 1:1 to Mr. Jordan were responsible for completing ten 20-s observations, interspersed with recording intervals in which all behaviors that had occurred were marked. This system also monitored other circumstances (time of day, activity, location, staff and other persons present, etc.). This system was designed both to monitor target behaviors as well as to formalize the functional analyses of Mr. Jordan's behavior described earlier. Behavioral definitions were developed and staff were trained in use of the system by the first author, who also performed informal checks on data collection reliability through simultaneous recordings approximately every fourth observation. This system replaced the continuous data collection (described above) during Phase IV; the two log records also were continued throughout this phase. At follow-up, only the log system was in place in the community residence.

During Phase IV, the information in the daily log was used to produce scattergram charts of behavior for further analysis of possible patterns, according to procedures described in Touchette, MacDonald, and Langer (1985). Incidence records (required by the agency) provided a reliability check for the log information. Finally, visits to the clinic or emergency room, hospitalizations, and records of Mr. Jordan's physical condition (including weight) provided verification of changes in his self-injurious behavior across phases and at follow-up 1 year after the move to the house in the community.

Results

A direct comparison of the data presented in the scattergram format based upon the logs and that graphed based upon the time sampling procedure revealed a significant discrepancy in these two sources of information. (Detailed summaries and graphic representation of these data are available from the authors.) In particular, the time sampling procedure documented far fewer occurrences of self-injurious behavior in comparison to the information noted in the logs across all phases. Thus, the log data were used to summarize

changes in Mr. Jordan's behavior. Figure 1 provides a display of the frequency occurrence of the three major self-injurious behavior categories (SIB testing; SIB involving head, arms, or legs, and resulting in tissue damage; and vomiting) for the various phases, compiled based upon the log reports of incidents of these behaviors. In this section, more details on the occurrences of these behaviors and other outcomes are provided for each phase.

Baseline. As noted previously, Mr. Jordan's self-injurious behavior during baseline had resulted in the interruption of his attendance at a day program outside the institution. In fact, by the end of baseline, he seldom left the living unit except to receive treatment in the medical clinic at the institution. When he injured himself, he was physically restrained until he was calm. Restraint was used frequently and on occasion injury to staff as well as to Mr. Jordan occurred. Staff reported their impression that he was socially reinforced by these encounters. Furthermore, Mr. Jordan would vomit when restrained, which would then result in being released from the personal restraint.

During baseline, SIB testing occurred from 0 to 35 times per day, with a mean of 10 incidents for the day shift (7:00 a.m. to 3:00 p.m.) and 2 incidents per evening shift (3:00 p.m. to 11:00 p.m.). Head/arm/leg tissue damage occurrences ranged from 0 to 20, with a mean of 5 times per day shift and 1 incident during the evening shift. Vomiting instances ranged from 0 to 25 times daily, with an average of 4 incidents during the day shift and 2 during the evening shift. Mr. Jordan's weight at the end of this baseline phase was approximately 90 lb.

Phase II. After several applications of the restraint device as an aversive consequence, Mr. Jordan had learned to sit quietly for the full 10 min without struggling, but his vomiting increased. He was also observed to have adapted his vomiting so that he vomited on the floor but not on himself. As the other forms of self-injury targeted in the treatment plan decreased, the vomiting behaviors continued to increase and became a major concern. Up to 35 incidents occurred daily, resulting in dehydration and two medical hospitalizations. During this phase, staff noted a significant reduction in the target behaviors during the walks off the living unit, when in fact it was not possible to implement the contingent mechanical restraint consequence. Furthermore, vomiting did not occur on these walks.

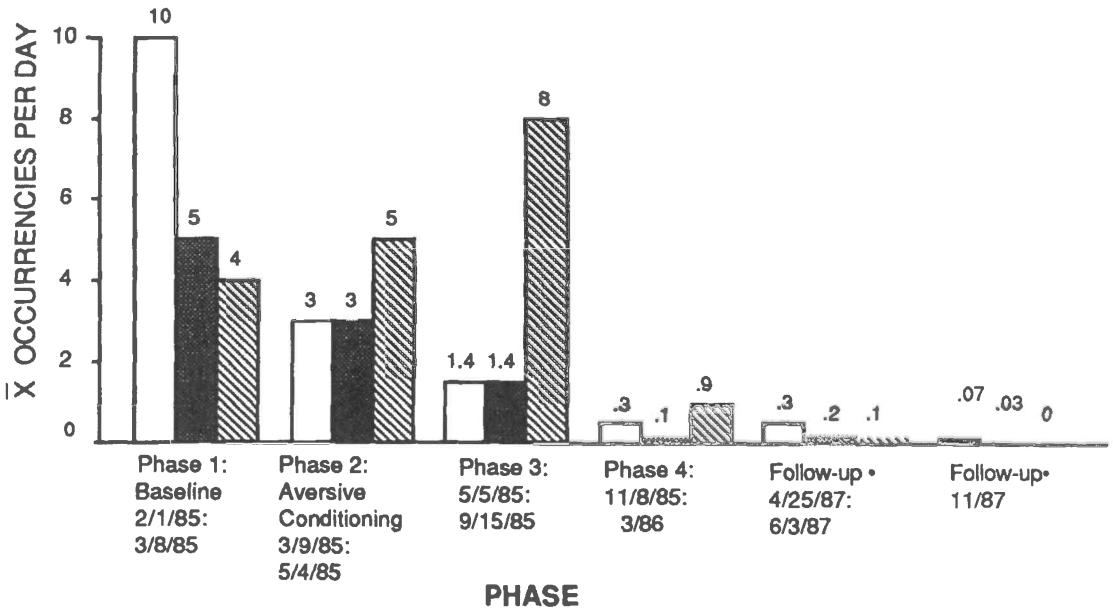
During the 2 months in which the aversive consequence program was in place, SIB testing averaged 3 times per day shift and only 0.4 times during the evening shift. Head/arm/leg tissue damage incidents ranged from 0 to 28 times daily, with a mean of 3 for the day shift and 0.7 for the evening shift. Vomiting incidents ranged from 0 to 35 times daily, with an average of 5 times during the daytime and 9 times during the evening hours. Mr. Jordan's weight at the end of this phase was approximately 85 lb, and serious electrolyte deficiency and dehydration resulted in two medical hospitalizations.

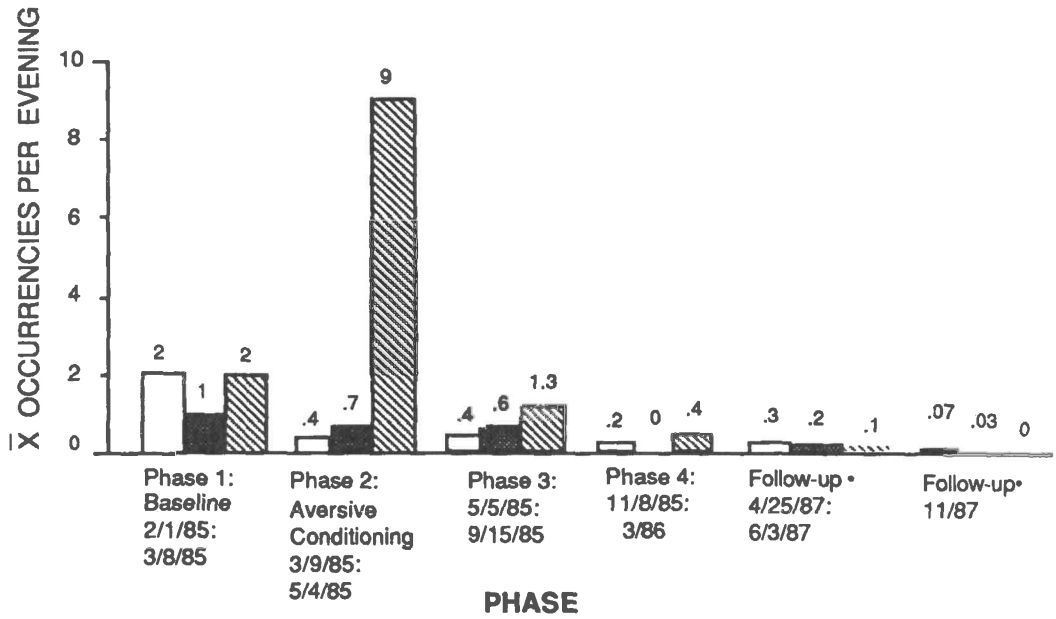
Phase III. The variety of activities introduced during Phase III as well as the implementation of the new program goals described previously were associated with certain changes that further reinforced our assessment of the motivation of Mr. Jordan's behavior. For example, vomiting decreased during the evening shift, but continued to occur at a high rate during the day whenever Mr. Jordan remained on the living unit. As before, he did not vomit nor engage in other self-injurious behavior when on outings in the community with his advocate, other staff, and his family. Mr. Jordan's general mood was described by staff as being more happy, as evidenced by occasional laughing, smiling, or joking with staff. A clear pattern emerged in the scatterplot data, with self-injury occurring at higher rates upon return to the institution and within the institution in comparison to that in community settings.

Overall, SIB testing ranged from 0 to 30, with a mean of 1.4 occurrences per day shift and 0.4 for the evening shift. A decrease in head/arm/leg tissue damage occurred, with 1.4 incidents per day and 0.6 per evening. A marked increase in the average incidents of vomiting was noted for the day shift, with a mean of 8 (accounted for primarily by time on the unit as opposed to time off the unit); in contrast, an average of 1.3 episodes occurred during the evening shift. During this phase, Mr. Jordan's weight nevertheless increased to 108—the most he had weighed since his admission to the institution. This weight gain was regarded to be the result of the increase in frequency of eating outside the institution on the outings with his advocate, when no vomiting occurred.

Phase IV. The four aspects of Mr. Jordan's program described earlier were fully in place during Phase IV, which also represented his transition to community living and employment. Although 1:1 staffing was continued throughout this period, it was now possible for the first time to leave Mr. Jordan in a room without any occurrences of self-injury. Although we suspected that some of the planned choices and learning experiences in his treatment program were not implemented consistently by staff at the institution (particular staff reported this to be a problem), in general Mr. Jordan was an active participant in the functional routines and various activities described previously.

A marked decrease in all self-injurious behaviors was noted during this phase, with near 0 levels for both day and evening shifts. SIB testing averaged only 0.3 for the day and 0.2 for the evening shifts. Head/arm/leg tissue damage occurred only for a mean of 0.1 for the day and not at all during the evening hours. Finally, the occurrence of vomiting dropped to 0.9 during the daytime and 0.4 for the evening hours. Mr. Jordan's weight at the end of this phase was approximately 125 lb,





KEY:

SIB TESTING

TISSUE DAMAGE (Head/Arm/Leg)

VOMITING

• Collected by residential staff for all day/evening/night times at home (excluding work day).

which was nearly a 50% increase over his weight during the aversive intervention phase.

Follow-up. More than 1 year after his move to the house in the community, Mr. Jordan continues to work a full day in a community site and no longer requires 1:1 staffing during the workday or evening hours at the house. He has mastered his self-preservation goal (i.e., he responds to a fire alarm without any prompting) and participates actively in all household chores, including cooking, cleaning, laundry, and shopping. He participates in social and recreational activities with residents from other supervised apartments and attends parties, movies, picnics, and other social functions in the community for persons with disabilities. He has gone to a local bar to listen to music and on trips to Niagara Falls and two other cities within the state where he lives. He independently completes his domestic living routines in the apartment (including making breakfast) and signs "coffee" and "bathroom" independently without prompting. His sign program has been expanded to include several additional action words and food items, along with a goal to shake his head "yes" and "no" to indicate choices. He is making progress on a goal to learn number skills through counting out place settings for dinner, and he continues to work on spelling and writing goals.

Figure 1 includes data collected from daily logs for two time periods, 7 months and 1 year after community placement, showing self-injurious behaviors continuing to decline to 0 and near 0 levels. During the first follow-up, daily occurrences of SIB testing, head/arm/leg tissue damage, and vomiting ranged from 0 to 10, 0 to 3, and 0 to 3, respectively, with means at near 0 levels. In contrast to his long-standing pattern of daily vomiting, this behavior occurred on only 5 of the 40 continuous days; incidents that did occur generally involved small amounts of food after eating, with Mr. Jordan using the bathroom appropriately and cleaning up after each occurrence. In November 1987, one year after placement in the community, there were two incidents of SIB testing and one incident of SIB tissue damage, which was minor and attended to by Mr. Jordan himself. No vomiting occurred. His weight at that time was approximately 118 lb.

Discussion

At baseline, Mr. Jordan was being asked to adjust to and comply with the conditions associated with an institutional environment—as he had been for many years. Had our functional analysis of his behavior been limited to these environmental and programmatic conditions, it would have been difficult to identify different rates of behavior associated with different environmental stimuli that seldom occurred. Ironically, the 10-min walk off the unit as a reward was the serendipitous occasion for the observation that Mr. Jordan did well on these walks. This situational variation was so clearly associated with behavioral differences that staff responded by expanding the time spent away from the institution and in a variety of community environments. Continued improvements in turn lent further support for an hypothesized relationship between self-injury and certain components of the institutional environment. We hypothesized that he was using self-injury for a variety of functions, including attention-getting on occasion and task avoidance (or noncompliance) on others. It was as if his intellectual abilities were concentrated upon a variety of increasingly negative and life-threatening strategies to effect control in an environment over which he had no control. Thus, situational variation clues provided us with the information to design an alternative positive program that both allowed and encouraged appropriate and long overdue choices and control in his daily life.

Based upon our functional analysis of Mr. Jordan's behavior, we would argue that the decision-making components of his intervention plan were as critical as the environmental changes. Although Mr. Jordan's self-injury was clearly related to the institutional setting, to have *imposed* community living upon him might have resulted in a similar negative pattern. Instead, the emphasis was upon both the different environments and activities as well as upon increasing his own decisions and choices in the context of meaningful and more normalized social relationships. Thus, the curricular components may be as important as ecological ones, as Mr. Jordan continues to learn new, positive social communication and self-management strategies to allow him to exercise meaningful decision making in his daily life. This differs greatly from a contingency management program focused upon the control of the client's behavior by staff, whether through the manipulation of antecedents and/or positive or negative consequences. The approach described here represents instead the application of both basic behavioral principles and educational best practices to design a truly proactive behavioral intervention program.

This case study is not, of course, a controlled experiment. After nearly 40 years of reported and documented multiple forms of severe self-injury, including life-threatening vomiting, it seems unlikely that the dramatic change in Mr. Jordan's behavior would be only coincidentally related to our intervention approach. Some plausible alternative explanation would have to exist, and no such alternative can be readily identified as a logical explanation for these changes after so many years. Yet one might argue that it would be important to isolate *which* of the intervention components described in Phases III and IV is responsible for the changes that occurred, including the reduction in self-injury, significant weight gain and improved health status, and a positive adjustment to a more

normalized life-style in the community. However, it was not our intent to isolate any given treatment component. As all of these components simply represent a comprehensive effort to implement optimal aspects of environmental planning, behavioral programming, habilitative and special education instructional strategies, self-determination, and relationship building, we are encouraged that their implementation was indeed associated with these positive outcomes. Rather than conducting a controlled experiment that might have identified those variables critical to this change and those that were not, our purpose was to test whether the full implementation of these best practices within the resources of a typical agency and community could make a difference in Mr. Jordan's behavior and life-style. It might be more crucial to determine the relative contributions of life-style changes versus skill training in social-communication skills (including making choices and exercising control), where priorities must be identified or limited resources make it impossible to make a comprehensive change. Alternatively, one might argue that agencies and services should be prepared to make the kinds of changes that were made in Mr. Jordan's life *first,* and intervene with individual behaviors only after full supports for a reasonable life-style have failed to generate improvements in those behaviors.

Typically, individuals like Mr. Jordan do not have access to this complement of positive experiences and program elements. In fact, the presence of severe behavior problems is most often associated with increasingly restrictive environments and experiences, along with a loss of meaningful social relationships and personal autonomy. Similarly, the structure of agency resource distribution and review procedures is generally such that additional services and resources are required and provided only in highly restrictive and homogeneously grouped settings, and at the point at which an aversive intervention is sought and implemented. What is different about this intervention effort is that the same intensity of resources and efforts to radically alter and rigorously evaluate treatment from multiple perspectives was implemented with a nonaversive intervention that emphasized the individual's life-style. In Mr. Jordan's case, a long-standing behavior pattern was reversed by providing experiences that should have been in place for anyone in any good service delivery system, and as part of a reasonable life-style. Further efforts are needed to extend these principles and practices to others who exhibit severely challenging behaviors and whose lives have become similarly restricted and atypical in comparison to the experiences valued by others.

Finally, the results reported in this case study go beyond a change in Mr. Jordan's targeted self-injurious behaviors only, whether short or long term. The dramatic improvements in these behaviors associated with different intervention phases have maintained for more than 1 year after his move to the house in the community and are supported by verifiable evidence of significant weight gain and improved health status overall. But two additional outcomes are equally critical. In addition to the decrease in self-injurious behavior, Mr. Jordan has acquired and is acquiring new skills in adaptive behavior to replace his problem behaviors. He is responding to new demands that reflect a more meaningful life-style and is learning to make choices and exercise appropriate control in his daily life. Equally important, he has progressed from an institutional placement, with no prognosis for a change in that placement, to a good adaptation in a supported apartment and employment in the community. We consider all three outcomes to be critical to judgments regarding the effectiveness of an intervention to modify self-injurious behavior.

References

Bachman, J. A. (1972). Self injurious behavior: A behavioral analysis. *Journal of Abnormal Psychology, 80,* 211–224.

Carr, E. G. (1977). The motivation of self-injurious behavior: A review of some hypotheses. *Psychological Bulletin, 84,* 800–816.

Carr, E. G. (1985). Review of *An educative approach to behavior problems. Child and Family Behavior Therapy. 7*(3), 63–68.

Carr, E. G., & Durand, V. M. (1985). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis, 18,* 111–126.

Evans, I. M., & Meyer, L. H. (1985). *An educative approach to behavior problems: A practical decision model for interventions with severely handicapped learners.* Baltimore: Paul H. Brookes.

Evans, I. M., & Meyer, L. H. (1987). Moving to educational validity: A reply to Test, Spooner, and Cooke. *Journal of The Association for Persons with Severe Handicaps, 12,* 103–106.

Foxx, R. M., & Dufrense, D. (1984). "Harry": The use of physical restraint as a reinforcer, timeout from restraint, and fading restraint in treating a self-injurious man. *Analysis and Intervention in Developmental Disabilities, 4,* 1–13.

Guess, D., Helmstetter, E., Turnbull, H. R. III, & Knowlton, S. (1987). *Use of aversive procedures with persons who are disabled: An historical review and critical analysis, TASH Monograph Series, No. 2.* Seattle, WA: The Association for Persons with Severe Handicaps.

Kishi, G. S., Teelucksingh, B., Zollers, N., Park-Lee, S., & Meyer, L. H. (1988). Daily decision-making in community residences: A social comparison of adults with and without mental retardation. *American Journal of Mental Retardation, 92*(5), 430–435.

Matson, J. L. (1985). Punishment. In R. M. Turner & L. M. Ascher (Eds.), *Evaluating behavior therapy outcome* (pp. 254–288). New York: Springer.

Meyer, L. H., & Evans, I. M. (1986). Modification of excess behavior: An adaptive and functional approach for educational and community contexts. In R. H. Horner, L. H. Meyer, & H. D. Fredericks (Eds.), *Education of learners with severe handicaps: Exemplary service strategies* (pp. 315–350). Baltimore: Paul H. Brookes.

Meyer, L. H., & Evans, I. M. (in press). *Non-aversive interven-*

tion for behavior problems: A manual for community and residential settings. Baltimore: Paul H. Brookes.

Murphy, G. H., & Wilson, B. (1981). Long-term outcome of contingent shock treatment for self-injurious behavior. In P. Mittler (Ed.), *Frontiers of knowledge in mental retardation, Vol. II: Biomedical aspects* (pp. 303–351). London: International Association for the Scientific Study of Mental Deficiency.

Touchette, P. E., MacDonald, R. F., & Langer, S. N. (1985). A scatter plot for identifying stimulus control of problem behavior. *Journal of Applied Behavior Analysis, 18,* 343–351.

Voeltz, L. M., & Evans, I. M. (1983). Educational validity: Procedures to evaluate outcomes in programs for severely handicapped learners. *Journal of The Association for the Severely Handicapped, 8,* 3–15.

Received: August 31, 1987
Final Acceptance: November 7, 1987

Stokes, T. F., & Osnes, P. G. (1985). Self-abuse. In M. Hersen & C. G. Last (Eds.), *Behavior therapy casebook* (pp. 342–356). New York: Springer.

Stokes, T. F., & Osnes, P. G. (1986). Programming the generalization of children's social behavior. In P. S. Strain, M. Guralnick, & H. Walker (Eds.), *Children's social behavior: Development, assessment and modification* (pp. 407–443). Orlando, FL: Academic Press.

Erratum

The term "male" was inadvertently substituted for the appropriate term "man" as the following article was edited for publication:

Berkman, K. A., & Meyer, L. H. (1988). Alternative strategies and multiple outcomes in the remediation of severe self-injury: Going "all out" nonaversively. *JASH, 13*(2), 76–86.

The authors wish to clarify that the appropriate terminology throughout the article should be man, not male.

7 A Model for Multielement Treatment Planning and Outcome Measurement

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Despite increased attention to nonaversive procedures in the literature and their apparent effectiveness in dealing with a wide variety of problems for a wide variety of populations (LaVigna & Donnellan, 1986), those opposed to strictly nonaversive approaches challenge their effectiveness. In particular, they question the ability of the nonaversive procedures to deal with the most serious problem behaviors, such as severe aggression and severe self-injury. In fact, if aversive intervention is employed, it is often justified on the basis that less intrusive methods were tried and failed (e.g., Foxx, Bittle, & Bechtel, 1986).

This chapter describes a model for effective behavior management. A case study involving serious self-injury that was successfully treated with nonaversive strategies, after the person was removed from an unsuccessful program employing extreme forms of punishment, is presented. Clinical intervention following a model for multielement treatment planning and outcome measurement resulted in significant behavior improvement.

A CLINICAL MODEL FOR TREATMENT PLANNING AND OUTCOME MEASUREMENT

The multielement treatment plan model includes an expanded view of the outcome criteria for evaluating treatment programs for behavior problems (LaVigna, Willis, & Donnellan, 1989). As illustrated in Fig. 7.1, beyond the traditional criteria of speed and degree of effects, the model requires that intervention be evaluated in terms of the durability and generalization of

their effects, the side effects they produce, and their social and clinical validity (AABT, 1982). This complex array of critical outcomes makes it unlikely that any one procedure will be fully effective. Rather, full results are likely to require multielement treatment plans whose various components, in combination, address the full range of outcome requirements. These separate components must be integrated into an organized treatment plan.

The first major distinction within intervention plans is between *proactive strategies* and *reactive strategies* (LaVigna, Willis, & Donnellan, 1989). Proactive strategies are those designed to produce rapid, durable, and generalized suppression of target behaviors with minimal negative side effects and with good social and clinical validity. Included within this category are ecological manipulations (i.e., changes in the person's physical, programmatic, and/or interpersonal environments); positive programming, designed to teach the person more effective and socially acceptable ways of getting their needs met and of coping with and tolerating naturally occurring, everyday frustrations; and direct treatment (i.e., nonaversive behavioral strategies designed to establish rapid control, while the more permanent goals of ecological manipulations and positive programming are pursued).

Reactive strategies to manage individual occurrences of target behavior are provided to minimize staff and client injury or serious property damage. Our model also considers assessment as a major set of independent

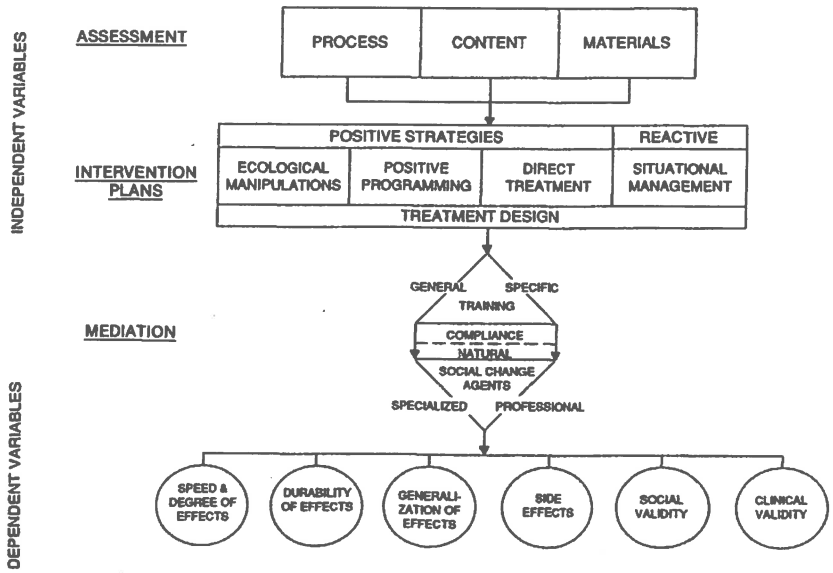

FIG. 7.1 A conceptual framework for research, treatment, and training.

variables. The need for complete information is extended when we consider the possible influence that neurological, medical, or other organic variables may have on behavior. Traditional approaches to behavior modification have tended to minimize or ignore the importance of assessment to effective intervention.

Finally, our model highlights mediation as a separate set of independent variables affecting treatment outcome, and delineates different categories of mediators and different levels of training. This multielement model was applied in the following case study.

METHOD

Client Description

Jeff was a 17-year-old with a profound hearing loss, due to maternal rubella. He also had a diagnosis of autism. Although he had severe deficits in communication in his public school program and with his respite worker at home, Jeff was learning American sign language. His receptive communication included approximately 100 signs, and he had an expressive vocabulary of about four signs. He was able to use signs to label things in his environment and had some symbolic language that was not restricted to an immediate perceptual event. He was also beginning to initiate signs spontaneously. Jeff was only able to follow simple one-part requests, and he had limited self-help skills, requiring physical prompting and supervision for a majority of these activities. He tended to form one strong attachment at a time, usually to a male. He would perform exceedingly well in the presence of that particular person only. At the time of referral, this relationship was with his respite worker.

Jeff resided at home with his parents and three sisters, where he had lived with the exception of a period of 1½ years, when he was approximately 14 years old. During that time, he was in a small group home and attended an associated non-public school program. He was removed from this program by his parents, who felt that the staff were using aversive intervention to an excessive degree and that this treatment was adversely affecting Jeff's behavior.

Jeff's primary problem was his self-injurious behavior. This problem was occurring to such an extent that his parents were unable to meet his needs at home. For this reason, community placement was once again being sought. Jeff was referred for an assessment of his problems and for recommendation of treatment and service strategies to prevent institutional placement pending the availability of an appropriate, community-based residential setting that would be capable of meeting his needs.

Previous Treatment

Jeff's self-injurious behavior (SIB) was of long-standing duration and had occurred sporadically for several years. As described later, the opportunity to be restrained had since become a powerful reinforcer for Jeff. Despite the lack of prior attempts to control these behaviors with sophisticated, consistently implemented nonaversive strategies, punishment was viewed as the last resort in the small group home and private educational program in which he was placed. In that setting, the behaviors were initially controlled by aversive consequences, including bare-bottomed spankings, water squirts, pinches, and the like. Eventually, however, the effectiveness of these procedures diminished, and they acted only to escalate the problem to the point where he was receiving over 100 aversive consequences a day. For example, on one day alone, after more than a year of treatment, he received 177 bare-bottomed spankings.

It was during this period that parental control also deteriorated. Before, family members had good instructional control with Jeff and were able to take him to stores, the beach, the public park, and elsewhere in the community. After Jeff's experience in the punishment program, his parents no longer had this control, and he was virtually 100% noncompliant to any requests that they made. Although his parents reported that it was very rough going when they first removed him from the program, Jeff had established a good relationship with his in-home respite worker, and was reported to be doing well in his public school program.

Assessment and Functional Analysis

Description of Target Behavior

Jeff's SIB was defined as the act of striking his head or nose with his fist or against another object, or the act of abruptly moving his head to the side in order to hit his chin on his shoulder. Despite the fact that he physically restrained himself most of the day and minimal demands were being placed on him, his parents reported that SIB occurred approximately 60 times a day. This rate was confirmed by staff observation.

Antecedents

The primary antecedent to this behavior was Jeff's removal, or threat of removal, from a self-restraining situation. He restrained himself by tangling up with his bed, chair, or other pieces of furniture. Physically, of course, he was able to free himself from these situations anytime he wanted; but, he didn't, and when he was made to, particularly by his mother or father, he was likely to engage in self-injurious behavior. This typically occurred when

a demand was being placed on him. Therefore, demands were also observable antecedents to this response.

Self-injurious behavior was less likely to occur at home when his respite worker was present and when he was the one interacting with Jeff. The respite worker reported that when he was alone with Jeff, SIB virtually never occurred. It was also reported not to occur any more at school, although it had occurred when he was first enrolled. These reports were truthful. Observations of Jeff with his respite worker also suggested, however, that he had developed some very subtle and even symbolic forms of self-restraint that were acceptable and that were not immediately viewed as self-restraint by the people involved. For example, Jeff would put a hat on, lay under the coffee table, and even put the person's arm around his neck. Jeff did not spend any significant time without being restrained, at least symbolically.

Consequences

In the past, SIB has been consequated with aversive stimuli and events. Spanks, water squirts, pinches, and a variety of other events had all been applied. In the classroom, he was consequated by being placed in the middle of the room by himself. This, of course, isolated him from the opportunity to self-restrain. This time-out from positive reinforcement procedure appeared to be the operative strategy used by the school program to keep this behavior under control. At home, a variety of consequences were provided for this response. He was told "no" in emphatic sign language, he was physically redirected, the hair on the back of his neck was pulled, and sometimes, because of the press to do other things, he was just left alone to be by himself and to engage in self-restraint.

Initially, Jeff's respite worker had also applied some of these consequences. Now it appeared that he simply had to withdraw his presence to get Jeff to stop. Being with his respite worker was something that Jeff really liked. It is quite conceivable that, in the past, SIB had played a functional role for Jeff in getting out of things he didn't want to do. Task avoidance was almost certainly still part of the picture. The opportunity to be restrained had appeared to become, however, by itself, a powerful reinforcer (Favell, McGimsey, & Stone, 1978). Its intermittent availability was making a significant contribution to the maintenance of this behavior at home.

Mediators

Jeff's family was not able to carry out the intensity of behavioral intervention he required at this time. Ideally, he needed a small group home setting with trained staff in a one-to-one staff–client ratio that would also

be able to address his hearing loss and communication needs. Such a program was being developed through a grant obtained by the not-for-profit corporation established by Jeff's parents for this purpose. Pending the development of this program, it was necessary for professional staff to be available in his natural home to carry out intervention. The battles with Jeff at home were getting worse and were becoming more exhausting and frustrating for the family. Help was necessary to avoid the disintegration of the family or to avoid institutional placement.

As an interim arrangement, intensive intervention (Donnellan, LaVigna, Zambito, & Thvedt, 1985) in his parents' home at the level of 30 hours a week was recommended. This represented 26 hours a week of direct intervention and 4 hours a week of parent–consultant discussions. In addition, Jeff's parents carried out the complex treatment procedures when staff were not present. Without their full level of in-home service, placement in a state hospital was likely. Such a placement would have been unnecessarily restrictive for Jeff, given the availability of in-home support and, further, would not have provided him with the behavioral treatment he needed for his problems. A continuation of respite services at the level of 8 hours a week was also recommended.

Procedures

Jeff's treatment program was based on assessment results and was organized around four categories as shown in Table 7.1. The following describes the treatment plan that was implemented by the intensive intervention team.

Ecological Manipulations

There was a general consensus that Jeff's needs could best be met in a community-based group home, providing sophisticated behavior modification services within the context of specialized training in independent living and in community and social integration. Traditionally, pending the availability of such a setting, a person with Jeff's level of SIB would have been placed in a state hospital or a comparable segregated setting. It was felt, however, that congregate living, close proximity with large numbers of individuals also having severe behavior problems, the lack of opportunities to learn and to engage in a rich and wide variety of functional, chronological age-appropriate activities, in natural, socially integrated settings, and the other characteristics of a typical state hospital setting would greatly exacerbate Jeff's problems. Accordingly, a critical ecological decision was made to provide intensive intervention in his home and community settings in the belief that in the interim this would provide the greatest ecological support for the control of SIB.

TABLE 7.1
Jeff's Multielement Treatment Plan

Ecological Manipulations
1. Community-based group home
2. Peer and staff sign language for primary communication
3. Interim intensive intervention: 30 hours/week
4. Token reinforcement program
Positive Programming
1. Chronological age-appropriate and functional skill development
2. Discrete trial, differential reinforcement for compliance
3. General sign communication training
4. Signed request for self-restraint
Direct Treatment Strategies
1. Antecedent control; gradually faded
2. DRO schedules
Reactive Strategies
1. No physical intervention was necessary
2. Signed "no! wrong!"
3. Back-up "self-restraints"

A second major ecological manipulation involved the introduction of a token reinforcement program as a mediating system to motivate Jeff to participate in his various scheduled activities and training sessions. Jeff was taught to operate within the token economy in a number of stages: (a) a simple "star" on a token card was delivered for a select behavior; (b) the "star" was exchanged immediately for a "back-up" reinforcer; (c) a picture menu was developed that depicted a variety of "back-up" events; (d) the number of "stars" required to exchange for increasingly larger "back-up" reinforcers was gradually increased to two, three, and four; and (e) Jeff was gradually taught to delay his selection of "back-up" reinforcers.

Positive Programming

There was also a general consensus that a key to managing Jeff's SIB would be the development of domestic, leisure-time, community, and self-help skills. A major part of the program, therefore, involved training in these areas. Systematic training was conducted to establish skills that were functional and chronologically age-appropriate, such as cooking, loading the dishwasher, making a sandwich, showering, and shopping. Training involved: (a) detailed task analyses of skills to be taught; (b) trial-by-trial progression through each task using a "whole-task" training procedure; (c) prompting of correct responses using a hierarchy of assistance; and (d) positive reinforcement for success.

One of the identified functions of SIB was task avoidance. To address this, a compliance training program was developed. Specifically, Jeff was systematically reinforced with praise, exchangeable tokens, and access to preferred activities (i.e., the opportunity to go to his bedroom to restrain himself, and the opportunity to use the backyard swing) for beginning, maintaining, and completing selected activities. A partial list of these selected activities included getting out of bed, getting into and participating with his bath, going to breakfast, getting on his school bus, getting off his school bus, changing his clothes, taking off and putting on various articles of clothing, going to the bathroom, eating with utensils, clearing and setting the table, washing the table after a meal, washing dishes, and participating in leisure activities.

If Jeff did not respond to a signed report to initiate one of these activities within a period of approximately 10 seconds, the request was repeated. If he didn't respond within 10 seconds of the second request, he was prompted with sufficient physical guidance to ensure that the task was completed. He was positively reinforced with praise, tokens, and access to special privileges for compliance to the first request. Physically prompted compliance was consequated with only praise.

Finally, as a powerful reinforcer for SIB was identified as the opportunity to restrain, a major goal of intervention was to teach Jeff, when he was agitated, to request restraints using sign language. This was an effort to teach a more acceptable way of communicating his request to be restrained and to preclude his need to engage in SIB (Donnellan, Mirenda, Mesaros, & Fassbender, 1984).

Direct Treatment

Direct treatment incorporated a number of strategies, including Antecedent Control. It was obvious that Jeff did not engage in SIB when he was self-restrained. Initial observation in the home clearly indicated that Jeff restrained himself much of the time. He would wrap himself around chairs, around his bed, or wrap himself in his own clothes. This self-restraint frequently resulted in the necessity of taking his bed apart in order to get him out of bed. Certain forms of restraint would result in the cut-off of circulation to parts of his body. For example, when he would wrap himself in straps, he would wrap them so tightly that his arms would turn blue. The self-restraint frequently would prevent his movement from one place to another, would prevent compliance with demands, and would necessitate the use of physical force to move him from one setting to another. Prior to intervention, he would spend most of his day at home self-restraining himself in his bed. The purpose of this self-restraint was unclear, but it may have been the way that he learned to manage his own SIB.

To increase Jeff's participation in his home environment without resulting in a severe increase in SIB, he was taught to use a portable, self-restraining device. Initially, he was given a large plastic truck in which he restrained himself by placing his fingers and arms through various openings. However, this device was abandoned because it caused swelling of his fingers and frequent lacerations. Eventually, several self-restraining devices were used, including plastic rings that Jeff could insert over his fingers, a neck brace, a pair of glasses, and removable casts. These portable restraints were gradually faded (Foxx & Dufrense, 1984) along a variety of dimensions, depending on the nature of the particular device. The speed of fading depended on the level of Jeff's SIB and on the ultimate need to insure his safety. (Total fading was not accomplished until after he was placed in his group home.)

A second direct treatment strategy involved a schedule for the *Differential Reinforcement of Other Behavior (DRO)*. Initially, Jeff was reinforced for gradually increased periods during which he was free of SIB. During training sessions, his portable restraints were removed and he was positively reinforced for the absence of SIB. Eventually, however, the initiation of these training sessions was associated with the occurrence of major tantrums. Although Jeff had shown significant progress with this DRO procedure, it was terminated in favor of specified periods of time during which SIB was absent. He was not required to remove his restraints. Throughout the programming day, if SIB had been absent for the specified time interval, he received reinforcement. When SIB occurred, the interval timer was reset.

Reactive Strategies

Initially, all SIB was passively ignored by Jeff's parents and staff. Ignoring was selected because past records and direct observation indicated that contingently signing "no" increased the likelihood of SIB. However, there was one exception. When Jeff hit his head against hard objects, he was signed "No! Wrong!" emphatically. This appeared to stop continued attempts at hitting. Additionally, with this behavior, a shadowing method was used in which Jeff was prevented from contacting an object with his head by placing oneself between him and the object.

During treatment, a series of events occurred that led to an overriding need to protect Jeff's physical well-being. In the first place, Jeff's "neck snapping" resulted in a small laceration. This laceration was subsequently invaded by staphylococcus bacteria, a quite serious problem. As a result, in order to protect Jeff, a "neck brace" was placed on him to prevent additional damage and to allow his chin to heal. Second, approximately 2 weeks later, Jeff caused serious damage to his head while he was at school.

As a result of repeated head hittings, he lacerated his scalp. Therefore, to protect his head, Jeff was given a "helmet" to wear. Third, soon after its introduction, Jeff lacerated his fingers on the helmet. Those lacerations were also invaded by staphylococcus, which subsequently necessitated his hospitalization for a period of 10 days.

Based on these incidents in which Jeff injured himself through intense, high-rate SIB, it was agreed that his need for physical protection should override behavioral programming when necessary. Thus, a variety of methods was explored that could be used to prevent damage, but with the ultimate goal of fading those devices as soon as possible. Therefore, neck braces to prevent neck snapping and removeable casts to prevent head hitting were used. Such protective devices could not be construed as treatment. They were merely a temporary means of protecting Jeff from physical damage while treatment was applied. For example, one of Jeff's neck braces was faded along the dimensions of height and thickness. The intention was to gradually fade any protective device that was used.

Approximately 1 year after initial assessment and the beginning of intensive intervention, Jeff was admitted to a university hospital in order to have corrective foot surgery. He was out of school for a 3½-week period, and when he returned, he was still in his wheelchair. After surgery, several medical complications developed that resulted in considerable physical discomfort and emotional upheaval. The many medical changes Jeff experienced during this period clearly influenced the rate of SIB. As a result, it became necessary to implement another reactive strategy to reduce instances of actual hand-to-head contact. This procedure involved two components: (a) if Jeff began to initiate a hit, an attempt was made to prevent him from making actual contact, especially during tantrums which typically included multiple blows, and (b) when he attempted to hit, staff used a brushing action of the hands in which their lower arm and wrist were placed between Jeff's elbow and wrist, and with a sweeping motion, the hand was brushed down smoothly. Eventually, as Jeff's health improved, SIB was once again ignored, unless he made contact repeatedly for three times and appeared to be escalating.

Group Home Placement

Intensive intervention was provided for Jeff over a period of 61 weeks. At that time, it was possible for him to move into the small group home that had been developed for that purpose by his parents. Whereas the initial treatment plan in the group home setting incorporated the procedures applied by the intensive intervention team, these procedures were progressively revised by the group home staff to reflect their skills, particularly their ability to communicate fluently using sign language, Jeff's continued improvement, and the opportunity to provide treatment for a full program day. The following describes the group home program.

Ecological Manipulations. The major ecological manipulation during this phase was placement in a small group home. Jeff shares this residence with five other young adult men, all of whom also rely on sign language for communication. Further, staff were hired for their ability to sign or willingness to learn this method of communication and, in fact, a number of staff are deaf. For these individuals, signed communication is in fact their first language. The staff–client ratio in the group home is 1:2 during programming hours (14 hours a day, 7 days a week), except for that time Jeff spends in his day program. This level of staffing has allowed for more community integration and more comprehensive programming.

Positive Programming. At 7:30 a.m. Jeff gets up and begins his daily self-care routine comprised of showering, shaving, toothbrushing, hair combing, and dressing. He then assists in bed making and straightening his bedroom. Afterward, he participates in meal preparation by selecting foods (usually a preferred item, such as a burrito), then cooks the food in the microwave. Upon completion of the meal, he cleans his place setting. While waiting for the bus to his day program, Jeff engages in preferred and previously mastered leisure skills. Arriving home at 4 p.m. Jeff prepares a snack and beverage for himself. Programming begins with structured communication sessions and throughout the remainder of the day he receives training on purchasing/money management, preparing a sack lunch, table manners, and a variety of recreational and leisure skills. Community activities on some evenings and during weekends include shopping, swimming, amusement parks, water parks, museums, walks/hikes, bowling, miniature golf, puzzles, restaurants, the beach, car rides, and so on. The day concludes at approximately 10 p.m. with Jeff's preparation for bed.

Jeff has received training on such skills as toileting, toothbrushing, showering, preparing food items (Rice-a-Roni, juice, and sandwich), table manners, and community walks. In his most recent IPP, skill programs focused on: (a) table manners: serving himself, cutting foods, and not eating with fingers; (b) preparing a simple sack lunch consisting of a sandwich, fruit, vegetable, chips, drink, and dessert; (c) participating in a variety of sports and leisure activities such as ball games, skating and bowling, aerobic isometric and body toning exercise routines, and independent skills such as puzzles, computer games, and photo albums; and (d) money management and purchasing skills.

Perhaps most important has been the emphasis on communication-training in his group home environment. Jeff's structured communication program includes vocabulary building, learning the names of important people in his environment, and using language effectively to express his personal needs. He is progressing in all of these areas. Although it is difficult to quantify the number of words Jeff can use independently both

expressively and receptively, it is evident that he does demonstrate basic language skills. His receptive understanding of language is greater than his ability to express himself using language (like most people). Additionally, the vocabulary words that Jeff has mastered, he uses independently. He seems to have a ready aptitude to learn vocabulary for items that interest him (he learned the sign for 'Cadillac' with minimal coaching—he has a lifelong fascination for these cars), but he does not apply the same zeal to learning the more mundane objects in life, and his success has been uneven. These preferences extend to learning the name signs for the staff and the other residents in the home. He has mastered the names of a few staff members, his mother, and even his own name, but has not yet learned the names of the residents.

Direct Treatment. Initially, *Antecedent Control* was also used in the group home. Portable restraints were continued and eventually faded out. The only restraint presently used is symbolic and consists of eye glasses, which Jeff wears propped on the top of his head. Similarly, the schedules of reinforcement have been revised to reflect his dramatic improvement. Two separate *DRO schedules* are currently employed. The first involves hourly intervals, at the end of which he receives an exchangeable token if he has not engaged in SIB *and* if he has not been noncompliant. The second DRO schedule provides additional tokens at the end of each day during which he did not ask for restraints or engage in tantrum behavior.

Reactive Strategies. Physical intervention is no longer necessary to protect Jeff from self-injury. If he engages in SIB, he is emphatically told (signed) "Wrong! Hurt! No!" This is now sufficient to prevent further escalation.

Observation and Recording Procedures

The intervention specialists acted as primary observers throughout the course of treatment. On a prepared form, they recorded the discrete frequency of each topography of self-injury. The total frequency of self-injury was summed at the end of each day. Reliability checks were conducted throughout the course of intervention yielding indices in excess of 85%.

RESULTS

Intensive Intervention

Figure 7.2 shows that Jeff engaged in SIB 50 times per hour during the first week of intensive intervention. This was a rate of almost one incident of

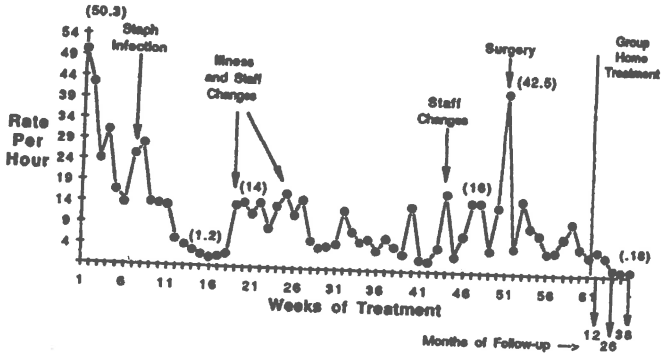

FIG. 7.2 Jeff's self-injurious behavior.

self-injury every minute. Progress was steady but marked by considerable variability in the target response during the course of treatment. Illnesses and staff changes help explain some of this variability. Relatively steady progress was made in the first 18 weeks. However, the spikes in his behavior shown for Weeks 7 and 8 were associated with his staph infection and subsequent 2-week hospitalization. In Week 19, he became ill and this was followed by a period of several weeks during which there were a number of personnel changes on the intervention team. Changes surrounding Week 43 are harder to explain but were also thought possibly to be associated with changes in personnel. The last major spike in Jeff's behavior in Week 51 was associated with the period of time following his surgery. From that point on, his SIB continued to improve and by the end of the intensive intervention was occurring only about five times an hour. This represents a 90% reduction when compared to rates exhibited when intervention began.

Group Home Placement

Figure 7.2 also shows the rates of Jeff's behavior in his group home setting after intensive intervention was terminated. Figure 7.2 shows representative rates during sample weeks approximately 1 year after placement and then approximately every 6 months for the following 2½ years. Jeff's SIB has essentially been eliminated in the group home program. Further, in contrast to what was accomplished in intensive intervention, he no longer requires portable restraints and is content with simply being allowed to wear his glasses propped on top of his head, giving him a rather jaunty look. Group home staff report that SIB and self-restraint were always strongly intertwined behaviors, and it seems clear that the home's success in fading out restraints played a major role in finally controlling SIB. Jeff is also under good instructional control, responding to the first request over 95% of the time. This is considered to be within normal limits and is acceptable to Jeff's parents and the staff who work with him.

SUMMARY

The results show that Jeff's severe self-injurious behavior was successfully treated using strictly nonaversive procedures. These results are particularly significant given Jeff's previous placement in a program that considered punishment to be the last resort and, therefore, justified. In fact, punishment not only failed to solve the problem but also led to its exacerbation.

One challenge to nonaversive approaches is that it requires very specialized knowledge that would not be accessible to most settings. In Jeff's case, outside consultation and intensive staff were only available and provided during the first phase of intensive intervention. During this phase, only a 90% reduction in the problem behavior was achieved. In contrast, Jeff's most significant progress occurred in his group home setting, where the staff were able to communicate with Jeff using sign language, where they related to him as a competent and self-actualizing individual, and where they were able to revise and modify the procedures developed by the intensive intervention team based on their on-going assessment, and based on Jeff's continued progress.

In fact, staff and Jeff's parents are not willing to rest on their laurels yet. They believe that Jeff has only begun to realize his potential. For example, after graduation from school, Jeff was placed in a day activity program that specializes in dealing with severe behavior problems. The general consensus is that in contrast, Jeff could do well in a supported work program. For example, he could wash and do detailing for Cadillac limousines for a local rental agency.

The major implication of this case study is that aversive procedures may not be necessary, even for the most challenging and severe behaviors. Those who would propose punishment for individual cases have a major responsibility to document that previous attempts to solve problems nonaversively were comprehensive, well-designed, and consistently implemented. This level of accountability is missing from today's literature. Rather than relying on the unsubstantiated claims that previous attempts failed, the specifics of those previous attempts should be described in sufficient detail to allow for their independent evaluation. Our model suggests that to accomplish enduring and important clinical outcomes, comprehensive assessment and complex multielement treatment plans may be needed. Jeff represents only one example of this possibility.

ACKNOWLEDGMENT

The authors wish to thank Jean Rothfelder for her assistance and support.

REFERENCES

AABT Task Force Report. (1982). The treatment of self-injurious behavior. *Behavior Therapy, 13,* 529–554.

Donnellan, A. M., LaVigna, G. W., Zambito, J., & Thvedt, J. (1985). A time-limited intensive intervention program model to support community placement for persons with severe behavior problems. *Journal of the Association for Person with Severe Handicaps, 10*(3), 123–131.

Donnellan, A. M., Mirenda, P. L., Mesaros, R. A., & Fassbender, L. L. (1984). Analyzing the communicative functions of aberrant behavior. *Journal of the Association for Persons with Severe Handicaps, 9*(3), 201–212.

Favell, J. E., McGimsey, J. F., & Jones, M. L. (1978). The use of physical restraint in the treatment of self-injury and as a positive reinforcement. *Journal of Applied Behavior Analysis, 11,* 225–241.

Foxx, R. M., & Dufrense, D. (1984). "Harry": The use of physical restraint as a reinforcer, time-out from restraint, and fading restraint in treating a self-injurious man. *Analysis and Intervention in Developmental Disabilities, 4,* 1–13.

Foxx, R. M., Bittle, R. G., & Bechtel, D. R. (1986). The successful treatment of a dually-diagnosed deaf man's aggression with a program that included electric shock. *Behavior Therapy, 17,* 170–186.

LaVigna, G. W., & Donnellan, A. M., (1986). *Alternatives to punishment: Solving behavior problems with nonaversive strategies.* New York: Irvington.

LaVigna, G. W., Willis, T. J., & Donnellan, A. M. (1989). The role of positive programming in behavioral treatment. In E. Cipani (Ed.), *Behavioral approaches to the treatment of aberrant behavior* (pp. 59–82). AAMD Monograph Series, American Association on Mental Deficiency.

U.S. Department of Justice
Civil Rights Division

Disability Rights Section - NYA
950 Pennsylvania Avenue, NW
Washington, DC 20530

VIA FIRST CLASS MAIL

FEB 18 2010

Ms. Nancy Weiss
306 Underwood Court
Baltimore, MD 21212

Re: Judge Rotenberg Center, DJ 202-36-233

Dear Ms. Weiss:

The Department of Justice has received your complaint alleging that the Judge Rotenberg Center has violated title III of the Americans with Disabilities Act of 1990 (ADA), 42 U.S.C. §§ 12181-12189. This office has opened a routine investigation of the complaint. Please note that our decision to investigate does not reflect any determination as to the merits of the complaint. Our goal is to investigate this matter in a fair and impartial manner and to work with all parties to reach a productive and amicable resolution.

Title III of the ADA prohibits discrimination against qualified individuals with disabilities by public accommodations. A copy of the Department's regulation implementing title III of the ADA is enclosed for your convenience. The text of the ADA, the Department's regulation, and many technical assistance publications can also be accessed on our ADA Home Page at <http://www.ada.gov>

We look forward to working with you to bring this matter to a prompt resolution. If you have any questions, please do not hesitate to contact Jessica Albert at this office at 202-353-9875. Please refer to the case number referenced above whenever you contact this office about this case.

Sincerely,

Renee Wohlenhaus
Deputy Chief
Disability Rights Section

UNITED STATES MISSION
TO THE UNITED NATIONS AND OTHER INTERNATIONAL ORGANIZATIONS
IN GENEVA

January 2, 2013

Mr. Juan E. Mendez
Special Rapporteur on torture and other cruel,
inhuman or degrading treatment or punishment
Office of the United Nations High Commissioner for Human Rights

Mr. Anand Grover
Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health
Office of the United Nations High Commissioner for Human Rights

Dear Messrs. Mendez and Grover,

This letter is submitted in response to your letter dated June 11, 2012 concerning "the treatment suffered by children and young adults enrolled in the residential programme of the Judge Rotenberg Center (JRC)" located in Canton, Massachusetts. The Department of State has provided your letter to various federal and state entities in order to obtain information related to the allegations contained therein. The entities which we have communicated on this matter include the United States Department of Justice (DOJ), the United States Food and Drug Administration (FDA), the New York State Department of Health (DOH) and the governor's Special Advisor on Vulnerable Persons, and the Commonwealth of Massachusetts' Department of Developmental Services (DDS).

By way of background, the Individuals with Disabilities Education Act (IDEA) requires public schools to make available to all eligible children with disabilities a free appropriate public education in the least restrictive environment appropriate to their individual needs. IDEA requires public school systems to develop appropriate Individualized Education Programs (IEPs) for each child with a disability who requires special education and related services. The specific special education and related services outlined in each IEP reflect the individualized needs of each student. Each student's IEP must be developed by a team of knowledgeable persons and must be reviewed at least annually. The team includes the child's teacher; the parents, subject to certain very limited exceptions; the child, if determined appropriate; a qualified agency representative; and other individuals at the parents' or agency's discretion. If parents disagree with the proposed IEP, they can request a due process hearing and a review from the state educational agency if applicable in that state and can appeal the state agency's decision to state or federal court.

As noted in your letter, the JRC uses Graduated Electronic Decelerators (GED) to deliver contingent skin shocks as a form of aversive behavior control. Two of the three versions of the GED that the JRC currently uses, the GED3A and GED4, are modified beyond what was originally cleared by FDA,[1] and the JRC's production of these devices is in violation of the Federal Food, Drug, and Cosmetic Act. The FDA recently sent a warning letter to JRC identifying the infringing conduct, demanding prompt corrective action, and requesting a meeting to discuss discontinuing the use of the modified devices. See, December 6, 2012 Letter from Muthar S. Shamsi, FDA District Director to JRC (attached and available at http://www.fda.gov/ICECI/EnforcementActions/WarningLetters/2012/ucm331291.htm).

In addition to the inspections and communications initiated by the FDA, the use of aversive therapy by JRC has been challenged through a variety of state and federal legislative and judicial actions. In May of 2011, the founder and director of the JRC, Matthew Israel, was charged with misleading a grand jury and subsequently resigned from his position as part of a plea agreement that included a five-year term of probation. Meanwhile, the DOJ investigation into possible violations of civil rights laws at the JRC remains open and ongoing. As indicated in our June 28, 2010 response to a previous special mandate-holder letter on this subject, we will gladly provide additional information once that investigation is complete.

In the meantime, there have been some developments on the state level that are worth noting in so far as they respond, in part, to the questions raised in your letter. In Massachusetts, a variety of measures that would regulate or ban the use of aversive treatment have been introduced in recent years, none of which have been passed into law. Most recently, two budget amendments (#548 and #555), which addressed and restricted the use of aversive treatment within the Commonwealth, were introduced in 2011. Although both passed in the State Senate, both amendments failed to pass through the joint conference committee and therefore did not become law. See, October 2, 2012 Letter from Massachusetts State Senator Brian Joyce (attached). Separately, the DDS amended its behavior modification regulations in October of 2011 in order to ban all schools in Massachusetts, including JRC, from using certain aversive interventions, unless a child had a court-approved treatment plan that allowed for their use prior to September 1, 2011. See, 115 Mass. Code Regs. 5.14; Bryant v. N.Y. State Educ. *Dep't*, Docket No. 10-40290-cv, at *13 (2d Cir, August 20, 2012) (available at http://caselaw.findlaw.com/us-2nd-circuit/1609202.html). Under the revised regulation, aversive interventions are defined to include "contingent application of physical contact aversive stimuli such as spanking, slapping, hitting or contingent skin shock." 115 Mass.

[1] The JRC originally obtained clearance for the original Graduated Electronic Decelerator (GED), a Class II Aversive Conditioning Device (21 CFR 882.5235), in 1994. Clearance was obtained via the United States Food and Drug Administration's (FDA) Premarket Notification process, also referred to as the 510(k) process. A 510(k) is a premarket submission made to FDA to demonstrate that the device to be marketed is at least as safe and effective as another legally marketed device (21 CFR 807.92(a)(3)). A 510(k) device is not considered by FDA to be approved.

Code Regs. 5.14(3)(d)(1). We understand that this will lead to the eventual prohibition of aversive therapy practices in Massachusetts.

In New York, the Board of Regents, which governs the State Education Department (SED), promulgated regulations in 2006 prohibiting all schools, including "approved out-of-state day or residential schools" such as JRC, from using aversive interventions. *See*, N.Y. Comp. Codes R. & Regs. Tit. 8, § 19.5(b)(1) (2012); September 17, 2012 Letter from New York Deputy Secretary of Health James E. Introne (attached). This regulation defines "aversive intervention" as an intervention "intended to induce pain or discomfort to a student for the purposes of eliminating or reducing maladaptive behaviors." *Id.* § 19.5(b)(2). This prohibition includes a grandfather clause that allows for annually-renewable exemptions in the case of children whose "individualized education plan" (IEP) was approved before June 30, 2009. *Id.* That regulation was recently reviewed by the United States Court of Appeals for the Second Circuit, which upheld a lower-court's dismissal of a statutory and constitutional challenge brought on behalf of certain parents whose children are enrolled at the JRC. *See*, *Bryant*, Docket No. 10-40290-cv. In addition, in June of this year, New York State passed the "protection of people with special needs act," S. 7749/A.10721, which includes certain new reporting requirements that the Deputy Secretary of Health believes "will ensure that no facility, inside or outside of New York State, can use aversive interventions except upon a 'person-specific authorization'." *See*, Letter from New York Deputy Secretary of Health James E. Introne. New York has indicated further that they "expect that by June of 2014 all [New York] residents at JRC, including those few who remain subject to court-approved aversive interventions, will be offered placements in New York state where such interventions are not authorized." *Id.*

Sincerely,

Peter F. Mulrean
Deputy Permanent Representative

Attachments:

(1) December 6, 2012 Letter from Muthar S. Shamsi, FDA District Director to JRC
(2) October 2, 2012 Letter from Massachusetts State Senator Brian Joyce
(3) September 17, 2012 Letter from New York Deputy Secretary of Health James E. Introne