Evaluating and Monitoring the Impact of a Crisis Intervention System on a Residential Child Care Facility

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Residential child care staff require specialized knowledge and skills to prevent and manage aggressive and acting out behavior on the part of children in their care. Often a child's aggression is visible through crisis episodes that leave both the child and the care worker in turmoil. Without proper training and supervisory support, staff can react to a child's aggression with counter-aggression; or worse, staff can respond with abusive behavior toward the child. This article reports the process and impact of implementing a consistent crisis intervention methodology known as Therapeutic Crisis Intervention (TCI) within one medium sized facility in the northeastern United States. Impact was measured by monitoring critical incidents, staff knowledge, confidence and skill levels, and the consistency of staff intervention pre and post implementation. The implementation of TCI was successful in substantially reducing critical incidents, significantly reducing documented physical restraint episodes in one unit, and increasing staff knowledge, confidence and consistency in crisis intervention facility-wide. The article discusses the limitations of this evaluation and monitoring system, and suggests additional evaluation strategies that might overcome these limits.

Child caring agencies depend on the personal and professional commitment of their staff to care for children who are often aggressive, emotionally draining, and manipulative. Children's aggressive behavior can have both a physical and emotional consequence for the caretaker, often beyond mere injury or upset (Snow, 1994). Ideally, even under these difficult circumstances, child care workers like any other professional caregiver must be accessible emotionally, physically, and intellectually, and create meaningful relationships with children (Kahn, 1993) in safe environments (Pe-
characterize a safe environment as extending beyond the standard of "doing no harm" to providing a highly organized, coordinated system of care where a child's treatment outcomes can be measured. Bath (1994) points to developing specialized verbal and physical intervention techniques with aggressive children that adhere to strict legal, ethical and developmentally sound methods of treatment. Without adequate training and programming, staff risk re-enforcing violence with counter-violence that characterized the youth's family, neighborhood and community life.

Therapeutic Crisis Intervention

Developed by Cornell University in 1980, first with a grant from New York State and later in 1982 with a Federal grant from the National Center on Child Abuse and Neglect in Washington, DC., Therapeutic Crisis Intervention (TCI) was conceived as a highly structured training program to increase child and youth care staff skills, knowledge, and confidence to respond to both the feelings and behavior of children when they are upset, in crisis, or at their most destructive (Budlong, Holden, & Mooney, 1993). Built on crisis management, prevention and de-escalation theory (Caplan, 1961; Parad, 1965; Parad & Parad, 1990), TCI is based on the premise that the successful resolution of a child's crisis is dependent on the adult's ability to respond in the most caring, therapeutic and developmentally appropriate manner possible (Trieschman, Whittaker, & Brendtro, 1969; Whittaker & Trieschman, 1972). The TCI curriculum teaches residential child care workers strategies to interpret children's aggressive behaviors as an expression of needs, and motivates them to choose skills and behaviors which reduces the potential for their own counter-aggression. The training activities teach skills that allow residential child care staff to monitor their own level of arousal to aggression, to use active listening, the Life Space Interview (Redl, 1959; Wood & Long, 1990), and other behavior management techniques. These communication and behavioral techniques have the potential to de-escalate a child's anger and frustration, and ultimately help the child gain self-control. If a child cannot control their rage, frustration, and anger, and they are in danger of injuring themselves or others, safe and therapeutic physical management techniques are taught to ensure that the child's acting out is contained, and later used as an opportunity for learning, growth and discovery. All physical interventions were reviewed by medical and physical therapy professionals to ensure the interventions minimize risk of injury in these high-risk interventions.
As part of the Federal government’s institutional abuse prevention initiative in the early 1980s, the desired outcome for TCI was a decrease in the number of injuries to children in residential care as a result of crisis management techniques or physical restraint methods that were either developmentally inappropriate, abusive, or misapplied. Initial evaluation of the program reported that in the midst of a public campaign to encourage reporting child abuse in residential care, significant decreases in child abuse reports occurred in those facilities that implemented TCI. On the other hand, significant increases occurred in those comparison facilities that did not implement TCI (Kerness, 1983).

Since its initial development as a direct training program in New York State, TCI’s crisis prevention and management system has been disseminated through a 5-day (35 hour) train-the-trainer format that is complemented by periodic one and two-day re-fresher courses. Registered graduates from the 5-day course must maintain their status as registered TCI trainers by taking re-fresher courses within a 36-month period. Approximately 5,000 residential child care staff are registered as TCI trainers throughout North America, the United Kingdom, Russia, Australia and Ireland.

The need for a safe and therapeutic crisis management system is well documented in the literature (Bath, 1994), and is evident in the results of public inquiries throughout North America and the United Kingdom. The findings of theses reports attest to the severe and dangerous consequences when ill-conceived verbal, emotional, physical and mechanical methods are utilized (Brannan, Jones, & Murch, 1992; Garbarino, Guttmann, & Seeley, 1986; Levy & Kahan, 1991; New York State Commission on Quality of Care, 1992; Nunno & Motz, 1988; Weiss, Altimari, Blint, & Megan, 1998). Although TCI has been implemented in residential child care facilities throughout North America, the United Kingdom, Ireland, Australia, and Canada, a systematic evaluation of its impact on a facility has not been done since the 1980s (Kerness, 1983; Titus, 1989). In order to monitor and measure the process and consequences of implementation, the project searched for a facility that had little or no contact with TCI. In addition, the facility would have to agree to participate in an examination of its crisis management practices, engage in an implementation strategy, and finally, participate in a range of evaluation procedures.

Facility Description

In 1994, a residential facility in the Northeastern region of the United States and Cornell University’s Residential Child Care Project entered into
an agreement to implement Cornell's TCI program, and evaluate its impact on the facility. The facility's executive director had been recently appointed, and after his preliminary assessment of facility critical incident reports he sought to implement a consistent crisis intervention strategy throughout its four residential units. Since both the resources of the facility and the Cornell project were limited, Cornell agreed to implement TCI in the facility at no cost in return for the facility's participation in an 18-month evaluation and monitoring study.

The facility was originally built in 1865 to house the orphaned children of the American Civil War. The facility at the time of the study operated four types of residential units for children ranging in age from 5 to 18 years. Children placed had exhausted the resources of their families and communities, or they had been adjudicated by the courts as abused, neglected, truant, or delinquent. Some had serious alcohol or substance abuse problems. The facility was accredited by the Council on Accreditation of Services for Families and Children, Inc., and its programs were funded through placement arrangements with its home state's Department of Social Services, Department of Mental Health, and Family Court system. The facility provided residential services to children in settings from foster and community group-care, to diagnostic assessment and temporary shelter services. The four residential units held about 50 beds and cared for approximately 350 children per 12-month period. Over 90% of the population were male. The population census remained stable for the 18-month study period throughout the four residential units.

Description of the residential units

Unit A: Unit A at the time of the study was one of the few licensed community mental health residential rehabilitation programs for young children in the state where the facility was located. The program served children ages 6 through 12 and offered child welfare authorities an alternative to psychiatric hospitalization for children with serious emotional disturbances. It served approximately 3% (N=11) of all children in the residential programs.

Unit B: An emergency shelter and diagnostic program (Unit B) provided emergency shelter 24 hours a day, 365 days a year to children between the ages of 12 and 18 years for up to 30 days. The diagnostic program offered 45-day assessment for troubled children from 5 to 18 years. Children were generally referred by county child welfare agencies or the courts. The Shelter and the Diagnostic program accounted for 84%
(N=295) of the children served by the facility's four residential group facilities.

Unit C: Unit C was designed for 14 to 18 year old youths who had been placed by the courts for neglect or delinquency. All residents had emotional or behavioral problems that warranted therapeutic attention but they were not judged severe enough to require psychiatric hospitalization or a secure setting. All youths were integrated into the community public schools, and were expected to graduate. Treatment approaches focused on teaching anger management strategies, and learning acceptable social skills. This program cared for approximately 8% (N=28) of all children served by the facility.

Unit D: Unit D was a group home for youths ranging from 14 to 18 years who were recovering from addictions to alcohol and other substances. The population limit was nine. The program was designed in six parts with a minimum stay of one month in each part. As a short-term placement, the program was geared to teaching youths how to control their alcohol or substance dependency, and to understand the causes of their addiction. Each resident continued his education and schooling within the community. This program served 5% (N=18) of the total child population of the facility's residential programs.

Agency Workforce

One hundred and twenty management, clinical, supervisory and direct care staff (N=70 full-time; N=50 part-time) were employed by the facility during the study period. Both part-time and full-time staff were scheduled weekends, nights and holidays, although there were indications in our pre-implementation interviews that part-time staff was assigned these periods almost exclusively. Sixty-two direct care staff worked with children in the four residential units. Twenty-seven were full time staff (44%) while the remaining 35 (56%) were part-time staff. These staff represented the bulk of the direct care staff of the four residential units. The remainder of the staff (N=58) served clinical, supervisory, administrative or support functions, or were assigned to foster care or independent living units. These units were not included in our study, although all staff eventually received training in TCI.

Staff was almost equally divided according to gender - 52% were female and 48% were male. Almost half of the staff's tenure at the facility was less than one year while only 3% worked at the facility for 11 years or over. Education levels of staff ranged from "some high school" to "master's degree". The largest percentage of staff had a Bachelor's degree
(36%), while 19% had a master's degree. Participants categorized their area of study as social work (12%), psychology (25%), sociology (5%), education (13%) and other social sciences (12%). The remaining listed "other" as their area of study. Staff turnover rates during the project were not determined.

**Overview of the Implementation and Evaluation Methodology**

The project was planned and executed in three phases over an eighteen-month period from October 1994 to March 1996. Table 1 provides an overview of the implementation and evaluation components of the project. The implementation strategy was based on cooperation from all levels of staff. Since the facility's executive director (as well as the Board of Directors) provided support for all aspects of the project, establishing the need and designing shared goals, ideals, and outcomes occurred without significant obstacles (Kettner, Moroney & Martin, 1990).

**Table 1**

**Timetable for Evaluation, Training and Implementation**

<table>
<thead>
<tr>
<th>Pre-Implementation</th>
<th>Implementation</th>
<th>Post-Implementation</th>
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<tbody>
<tr>
<td>10/94 12/94</td>
<td>4/95 6/95</td>
<td>10/95 12/95</td>
</tr>
<tr>
<td>1/95 3/95</td>
<td>7/95 9/95</td>
<td>1/96 3/96</td>
</tr>
<tr>
<td>• Introduction of the program to executive staff.</td>
<td>• Introduction of the program to facility supervisors and staff.</td>
<td>• Post-Implementation consultation with project staff</td>
</tr>
<tr>
<td>• Examine needs, set goals and outcomes with executive staff.</td>
<td>• Review needs, set goals and outcomes with supervisors and clinical staff.</td>
<td>• Interviews with child care staff and supervisors</td>
</tr>
<tr>
<td>• Interviews with child care staff and supervisors.</td>
<td>• Consultation with project staff</td>
<td>• Confidence measures gathered</td>
</tr>
<tr>
<td>• Confidence measures gathered.</td>
<td>• Knowledge data gathered</td>
<td>• Knowledge data gathered</td>
</tr>
<tr>
<td></td>
<td>• Direct training of all facility staff</td>
<td>• Post-Implementation consultation with Cornell staff</td>
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</table>
The project used two strategies to implement the crisis intervention system. The first strategy was listening to supervisor and direct staff concerns about children in crisis through interviews and group meetings. The second strategy was orienting the supervisory and key clinical staff to the basic tenets of TCI's developmental approach to crisis prior to introducing the prevention, de-escalation, and physical intervention system to child care staff through training. All supervisors, with the exception of one, recognized the importance of a consistent facility-wide crisis intervention system which was based on the developmental needs of the children served.

During the pre-implementation phase, supervisors helped Cornell staff review current crisis intervention practices, and answered any questions Cornell staff had about the unique dimensions of the facility and its units. They also helped set implementation goals and priorities, and introduced the project to facility direct care staff in routine staff meetings. Later, four supervisors completed a regularly scheduled train-the-trainer program in Therapeutic Crisis Intervention sponsored by Cornell's Residential Child Care Project. These supervisors agreed to deliver direct training to staff as a part of their normal work duties, and to assist in the implementation process wherever they were needed. Implementation of TCI consisted of six 4 or 5-day direct training programs that were given to the entire facility staff, including support staff who had contact with children. Training outcomes for this 5-day program are listed in Table 2. The implementation phase of the project was complete when all staff were trained in the 5-day TCI program, and when clinical and unit supervisors received a follow-up re-fresher course that focused on post crisis de-briefing between the care worker and their supervisor.

Table 2
Training Outcomes

Upon successful completion of the four day program participants will be able to:

1. Intervene with children in crisis in a therapeutic manner.
2. Apply crisis prevention and de-escalation techniques.
3. Understanding children's personal strengths and needs.
4. Use intervention approaches appropriate to the child and situation.
5. Avoid power struggles.
6. Conduct a Life Space Interview.
7. Apply verbal and non-verbal de-escalation techniques.
8. Use three physical intervention techniques.
9. Use a child's crisis as an opportunity for growth.
Post-implementation project support included supervisor meetings, telephone contact with supervisory staff, and individual supervisory consultation upon request.

Evaluation of Implementation and Outcomes

Together with the facility, the project wanted to examine the impact of TCI on documented critical incidents and physical restraint episodes, on staff knowledge, confidence and skills, and on the consistency of staff intervention throughout the facility. Specifically, the project hypothesized that after implementation critical incidents involving aggressive and belligerent behavior on the part of the child would be reduced, staff knowledge, and confidence in crisis handling would be increased, and crisis handling would be more consistent throughout the facility. The process and outcome evaluation strategies selected were a mix of qualitative and quantitative methods appropriate to discover current crisis intervention practices, and to assess the extent and quality of implementation within the units of the facility. A pre-post design was used to gather data throughout the three phases of the project: pre-implementation, implementation and post-implementation. With this pre/post design, the project could monitor the impact of implementation on critical incidents, confidence, knowledge, and skill levels, as well as, consistency of crisis intervention practice across units within the facility. Cornell's Human Subject Committee, as well as the legal counsel to the facility, reviewed and approved the evaluation design.

Data Collection Procedures

There were four major data gathering tools used: pre-post knowledge based tests, a Likert based confidence scale, an interview protocol and the facility's own critical incident report forms.

Knowledge levels. The measure or instrument used to evaluate learning during training was a pre-post test that measured knowledge gain as a result of the training, and the participant's subjective impression of training at its conclusion. This pre-post criterion referenced knowledge-based test consisted of thirty multiple-choice questions and reflected the training content. Pre and post tests had identical knowledge based items. Each test item was linked to specific training objectives, and has been validated by a group of experts who ranked the objectives and the test items as key knowledge necessary for assisting children to resolve crisis. Through this
test, knowledge of specific crisis intervention techniques and learning
points were assessed before and immediately after the training to ensure
that participants demonstrated sufficient knowledge gain. This instrument
provided aggregate level data which was used to assess the success of the
training to increase the knowledge level of staff in preparation for imple-
mentation of the Therapeutic Crisis Intervention model. The test was also
administered to monitor staff knowledge levels up to 9 months after formal
training was completed.

Confidence scales. Confidence scales were developed specifically for
this project after it was determined that no existing scale suited project
goals. The notion of confidence was constructed with four domains: (1)
confidence in personal knowledge and skills, (2) co-worker knowledge,
skills, and teamwork, (3) organizational and supervisory support, and (4)
crisis as an opportunity for learning. These four domains are linked to the
project's overall goals, the hypotheses being tested, the theoretical con-
structs present in the TCI crisis intervention system and its training pro-
gram, and the social science literature (See Table 3). Results of a factor
analysis of responses to the 10-item confidence scale indicated that items
for the last two domains, (3) organizational and supervisory support and
(4) crisis as an opportunity for learning were loading as a single large fac-
tor.

| Table 3 |
| Confidence scale domains |

Perception of personal knowledge and skills
- Prevention
- Management
- Confidence in personal knowledge/skill

Perception of co-worker knowledge and skills and teamwork
- Prevention
- Management

Perception of organizational and supervisory support
- Facility management
- Policy and procedure
- De-briefing - Does it occur?
- De-briefing - Does it help understand crisis in context of the child's life?
- De-briefing - Does it help explore impact of crisis on the worker?

Perception of crisis as opportunity for learning
- Worker helping child
Confidence in (1) personal knowledge and skill and (2) co-worker knowledge, skill, and teamwork appeared as two additional factors. The Cronbach Alpha for the pre-implementation test population (N=44) was .69; and for the post-implementation population (N=34), the Cronbach Alpha was .52. The Cronbach Alpha indicates the level of internal consistency within the scale and serves as a reliability measure. A level of .70 is considered satisfactory. The low pre and post alphas were believed to be due, in part, to the small pre and post sample size.

Interviews. A primary data gathering tool in this study was an interview protocol conducted with child care workers and supervisors. The purpose of the personal interviews was to discover how child care personnel in all units of the facility managed challenging behavior prior to and after the implementation period. Another purpose for the interviews was to gauge the supervisor's support for implementation. Staff were asked questions (See Table 3) about an incident where they had intervened with a child who was exhibiting aggressive behavior. All interviews were held in accordance with strict confidentiality procedures. The pre-implementation findings were contrasted with the crisis intervention methods used after the implementation of TCI. The post implementation interview also included the following question; Do you have any general comments on the use of TCI? During the pre-implementation phase, a total of 22 supervisors and staff were interviewed. Sixteen interviews with staff and supervisors during the post implementation stage were conducted. Less than half of the original 22 pre-implementation staff and supervisors were included in the post implementation interviews due to turnover, re-assignment, and involvement with critical incidences. Interviews lasted approximately 20 to 45 minutes. They were focused on incidents that occurred within 30 days of the interview.

Table 4
Topics covered in the pre and post implementation interviews

| 1: Description of the incident |
| 2: Precipitating factors surrounding the event |
| 3: De-escalation / behavior management techniques used prior to the incident. |
| 4: Was physical restraint used? |
| 5: Effect of this experience on the relationship to the child |
| 6: Assessment of worries and fears about this aspect of their work |
| 7: Comments about TCI (post interviews only) |
Critical Incident Reports (CIR). Critical Incident Reports are designed to document a wide spectrum of episodes within a residential child care facility. Examples of critical incidents can vary from missed medications, accidental injury to staff or a child, fighting among children, running away, physical restraints, serious verbal threats, temper tantrums, destruction of property, and lack of supervision. The CIR contains information on the date, time, location, circumstances, and the initial outcome of the incident. The report is filled out by the staff directly involved in the incident, and then it is reviewed by their immediate supervisor and/or the director of the facility. A facility then stores the report, or places copies of the report in the child's records if it is deemed to be appropriate to the child's history, assessment, or treatment plans.

The facility in this study followed the critical incident system outlined above. The facility's critical incident forms were used to minimize disruption to the staff routine, overall resistance to the project, and to ensure against changes in the reporting and documentation standards. Each critical incident was examined for the child and staff involved, type of incident, circumstances, and incident resolutions. For the purposes of this study, only the frequencies by unit of five major critical incidents - physical restraint, fighting, running away, serious verbal threats, and physical assault episodes over the 18 months of the project will be reported here.

Findings

Increases in knowledge and confidence. A major objective of the project was to increase the entire staff's knowledge, skill and confidence levels to handle crisis episodes more effectively. This objective was to be reached through five days of direct training in Therapeutic Crisis Intervention, and when necessary, to re-enforce this knowledge, skill and confidence through regular supervisory meetings, on-the-job training, team meetings and post crisis event supervisory/care worker conferences. The primary tool to measure knowledge / skill gain and retention in crisis management fundamentals was the multiple-choice pre - post test format discussed in the methodology section of this paper. The train-the-trainer model was effective in transferring knowledge to direct care staff that is essential to the implementation of TCI. Direct care staff increased their percentage of correct answers from pre-test scores of 49.97% correct to post-test scores of 83.39% correct, a gain of 33.42%. Equally impressive was the knowledge retention rate over a 9-month period from the end of training to a re-administration of the test. Twenty-three staff who could be matched to the
pre and post tests incurred only a 5 percentage point drop in learning score (See Table 5). Clearly, higher knowledge levels were established through direct training, and that knowledge level was retained by participants through the life of the project.

Table 5
Comparison of pre, post and post implementation scores

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>Post Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>104</td>
<td>96</td>
<td>23</td>
</tr>
<tr>
<td>% correct</td>
<td>49.97</td>
<td>83.39</td>
<td>78.52</td>
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</tbody>
</table>

A comparison of the pre/post confidence test indicated statistically significant increases in confidence levels in four major areas. These were staff ability to manage crisis, confidence in co-workers managing crisis, knowledge of agency policy and procedure concerning crisis management, and staff ability in helping children learn to cope. In addition, the standard deviation to the mean in the post-implementation scores decreased from pre levels in 9 out of 10 items indicating that there is more consistency and cluster in responses at all levels of the facility (Table 6). Because this test was relatively new, and because there was a smaller group on post measure, the project viewed the statistical confidence scores with some caution. Yet, seen together with post-implementation interviews, the confidence scores results are consistent with supervisor comments that staff in the residential units are now "on the same page" after training and implementation. Supervisors cited clearer guidelines, common practices, and a common knowledge base among different shifts on the three units that implemented TCI.

New staff skills and consistency of intervention. Overwhelmingly, the supervisors perceived an increase in staff skills and understanding of children in crisis after implementation. They pointed to staff now having a "grounding or baseline" from which to approach children who were upset or in crisis. Supervisors reported staff as demonstrating more patience, and expressing more caring attitudes towards the children since they were not taking the child's behavior as personally as they did prior to training.
### Table 6
Comparisons of Means and Standard Deviations between Pre and Post Confidence scale questions

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<tr>
<th></th>
<th>Pre</th>
<th></th>
<th>Post</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>1. I can prevent crisis from escalating in my unit.</td>
<td>5.01</td>
<td>.83</td>
<td>4.87</td>
<td>1.10</td>
</tr>
<tr>
<td>2. I can effectively manage any crisis situation in my unit.</td>
<td>4.66</td>
<td>1.05</td>
<td>5.07*</td>
<td>.57</td>
</tr>
<tr>
<td>3. My co-workers can manage any crisis situation effectively</td>
<td>4.30</td>
<td>1.15</td>
<td>4.84*</td>
<td>.74</td>
</tr>
<tr>
<td>4. My co-workers and I can work together to prevent and de-escalate crisis.</td>
<td>5.25</td>
<td>.71</td>
<td>5.10</td>
<td>.64</td>
</tr>
<tr>
<td>5. Facility management is supportive if approved crisis management techniques are used.</td>
<td>5.09</td>
<td>1.06</td>
<td>5.38</td>
<td>.63</td>
</tr>
<tr>
<td>6. The facility policies and procedures for crisis management are know to all staff.</td>
<td>3.90</td>
<td>1.57</td>
<td>4.69**</td>
<td>1.05</td>
</tr>
<tr>
<td>7. I can help child learn to cope more successfully with life crisis.</td>
<td>4.84</td>
<td>1.07</td>
<td>5.23*</td>
<td>.62</td>
</tr>
<tr>
<td>8. Following a crisis a de-briefing session with my supervisor or the treatment team always occurs.</td>
<td>3.72</td>
<td>1.73</td>
<td>4.37</td>
<td>1.49</td>
</tr>
<tr>
<td>9. Session is helpful to me to understand the context of crisis in the child's life.</td>
<td>4.82</td>
<td>1.31</td>
<td>4.94</td>
<td>1.05</td>
</tr>
<tr>
<td>10. A De-briefing is an opportunity to explore the impact of this crisis on my life.</td>
<td>4.72</td>
<td>1.47</td>
<td>4.94</td>
<td>1.17</td>
</tr>
</tbody>
</table>

* p = <.05; ** p = <.01

Staff allowed children more options when they were upset rather than "confine them to one or two options such as going to their room or taking a time out." These "extra tools" helped staff "fill in the practice blanks,
increased staff skills in avoiding physical restraint." One supervisor summed up her perception of staff after the training with the comment - "Staff have a foundation on which to build and have a focus point. Basically, when staff approach a child who is upset they ask themselves, What am I feeling? What does this child need? What is the best response?" Another supervisor focused her remarks on her own skills when she reported that "I finally figured out what I'm doing and what I'm supposed to be doing. It helped me think about conflicts more. I am more pro-active with staff and children. TCI gave me some direction."

Not all feedback was positive. Some staff reported that they use the pre-crisis intervention strategies but when the going gets tough they "don't have enough time to use all the techniques, especially the Life Space Interviews" after the crisis subsides. Similar comments were made by child care workers during post-implementation interviews.

The second category of responses reported by supervisors was that staff now have a consistent crisis intervention strategy to use from shift to shift, and even unit to unit, for dealing with children in crisis. One supervisor commented that it seemed to help administratively in that TCI set standards for interaction with children and "gave the message that we are here for the residents of this facility. In other words, everyone is on the same page with kids in this facility". They mentioned that "TCI has challenged staff responses to crisis and it has shaken things up." Another response was that staff now felt that there was "organizational approval for safe handling of children", and that "TCI had given a description of a process to handle the crisis events in the facility." One supervisor talked about her staff having more "structure and focus" to their interventions with children and commented that the training "brought the agency together, increased staff confidence by giving a name to the staff-child crisis behavior. " In summary, as one supervisor said clearly, TCI appeared to help change the "mind set of child care workers dealing with children. It gave staff a new perspective of a child's behavior. A child's behavior is now viewed as a coping mechanism rather than merely a challenge."

Implementation and decreases in overall critical incidents. In order to measure the impact of TCI on critical incidents facility-wide, the project needed to ensure that six factors remained constant through the 18-month study period. These factors were that 1) TCI implementation occurred at a similar level in all units, 2) TCI's developmentally based techniques were appropriate to the unit's child population, 3) unit dynamics, staffing, intake policy and program were stable, 4) the number, type, and gender of children remained consistent, 5) documentation of critical incidents across the facility's four units was consistent, and 6) the frequency of critical in-
cidents during the pre-implementation phase had the potential to show a statistically significant movement in either direction. Since the project's implementation strategy rested on the Unit supervisor's active support, cooperation, and training, a task in the pre-implementation phase was to gauge supervisor support for the project.

Although offered to all units and staff within the facility, the process evaluation revealed that only three units (Units B, Units C and Units D) implemented TCI fully within the 18-month study period. Although staff from Unit A took part in all aspects of the facility-wide training and technical assistance, this unit had neither the supervisory support for implementation, nor staff or programmatic stability through the project period. Unit A also served a core population of children whose staff had difficulty, primarily because of programmatic instability and lack of supervisory support, utilizing the strategies which formed the basis for TCI's crisis intervention system. In addition, interviews and incident reviews revealed that Unit A also lacked a consistent documentation procedure for critical incidents. For example, pre-implementation staff interviews revealed that physical restraint documentation was required by their supervisor only if the child offered "unusual" physical resistance. This unit specific policy resulted in two physical restraint reports filed during the first three months of the pre-implementation phase. Nineteen episodes were reported during the second three months of the pre-implementation or baseline period when the project was introduced to the facility. This increase corresponded to Unit A's supervisory decision to "document everything" after hearing of the facility's involvement in the project. Because of this lack of reliable baseline data, and the fact that the facility administration was re-organizing the program to provide more comprehensive services, the project did not include Unit in the evaluation.

Over the 18-month life of the project, 601 critical incidents were recorded in the facility. Critical incidents ranged from aggressive and belligerent episodes such as aggressive and belligerent episodes such as cigarette smoking. From the 601 critical incidents recorded, the project staff examined 348 critical incidents which contained 252 aggressive and belligerent episodes such as verbal threat, fighting, runaway and physical assault episodes, and 96 intervention episodes that resulted in physical restraint. These types of incidents were chosen because they represent a danger to children and staff, and they are a major disruption in facility life. These episodes are typical also of the types of behavior that TCI is designed to prevent and de-escalate.

The Shelter/Diagnostic program (Unit B) saw a significant reduction in aggressive critical incidents from 101 pre-implementation, 64 during
implementation, and 31 post-implementation, \( x^2 (2, N=196) = 38.7, p <.01 \), while the population census of the unit remained stable throughout the study period. Aggressive critical incidents in Units C and D remained relatively steady from 17 incidents in the pre-implementation phase to 18 in the post-implementation phase. More importantly, Unit B, the Shelter/Diagnostic program in the post-implementation phase reduced its physical restraint interventions by 66% from 36 in pre-implementation to 12 in post-implementation. This reduction was statistically significant, \( x^2 (2, N=75) = 11.76, p <.01 \). Units C and D showed a non-significant increase in physical restraints from 5 in the pre-implementation to 8 in the post-implementation study period. Figure 1 provides a graphic portrait of the physical restraint patterns in the three facility units through the entire project period.

**Figure 1**
Total number of physical restraint reports over the 18-month study period

![Graph showing the number of physical restraint reports over time for Units B, C, and D.](image)

**Discussion and Summary**

There are limitations with the evaluation methodology in this study. Although the facility appears representative of numerous small to medium not-for-profit facilities throughout North America, a major question remains about the process of implementation and the critical incidence reduction results being generalizable to other facilities. The facility did volunteer for TCI implementation, and by doing so the facility self-selected. An argument could be made that this facility would have achieved the same results with any other crisis prevention and management system simply because it was ready to incorporate a facility-wide program. Other
fundamental questions remain, for example, about whether the critical incidence reductions were due to TCI’s prevention and de-escalation strategies, or whether the existing leadership through tighter supervision and monitoring alone could have produced the same reduction. What is necessary is a methodology that incorporates a more sophisticated pre- and post-design with a sample of facilities in differing geographic areas throughout North America. The basic pre-post design might follow a staggered schedule of training for units within a facility, as well as for differing facilities. Campbell and Stanley (1963) refer to this as the "recurrent institutional cycle design" and Epstein and Tripodi (1977) describe the evaluation design as an "Interrupted Time Series Design". Implementing this design can help maintain the internal validity of the project, while supporting its evaluation and monitoring strategies. Such a staggered approach to training is often necessitated by institutional concerns of scheduling and resources, but can be used to the advantage of the evaluation effort. The strength of this design derives from the ability to compare baseline with follow-up data within each group, but also adds a meaningful comparison between the follow-up data of like facilities and units. If these two comparisons yield similar results, then rival hypotheses regarding differences between the groups or temporal changes other than the training can be ruled out. Any future evaluation design should be carried out by an independent evaluation staff. The introduction of control or comparison facilities into the evaluation methodology, and an independent evaluator would provide more confidence in any results.

Despite the limitations of our evaluation methodology, the success of this project points to the necessary elements of leadership, cooperation, and collaboration among executive, clinical, and supervisory staff within a facility. Through the facility’s executive leadership the project gained remarkable access to the inner workings of a residential facility. The executive director clearly understood and supported the notion that any crisis prevention and management system needed to be consistent with the facility’s mission and philosophy of child care, and supported through clear and well known policies and procedures. Through the director’s leadership, time and money was allocated to train an entire residential staff, supervisors and clinical staff volunteered to become registered TCI trainers. Supervisors supported the project by implementing the behavior management and intervention strategies on a unit basis, and monitoring their use on a day-to-day basis. The supervisor-trainer then was able to integrate what was learned on the unit into subsequent training and re-fresher courses offered to facility staff. Leadership and learning was shared
throughout the facility by executive staff, supervisors, clinical staff and
direct care workers, as well as project implementation and evaluation staff.

The lessons learned in this project about the necessity of leadership,
clinical oversight, supervision, training and critical incident monitoring to
the successful implementation of a crisis prevention and management sys-
tem may also be helpful to more open community programs, such as alter-
native community schools and youth-service programs that serve at-risk
children. Some caution should be taken here when transferring TCI’s to
non-therapeutic community programs. It was obvious from the project that
one of the important lessons from implementation was that the facility
leadership, clinical and supervisory staff had little difficulty with TCI’s
essential philosophy that a child’s behavior is an expression of a child’s
needs. Implementation success as measured by a reduction in critical inci-
dents may suffer if any community education or human services program
finds this philosophy too much of a concept shift.

Another significant outcome is the development of a monitoring and
evaluation system to assess the impact and effectiveness of a facility's cri-
sis prevention and management intervention system, and on quantifiable
outcomes such as the frequency and kinds of critical incidents. This simple
design can be used by clinical or administrative staff to assess the impact
of their decisions, policies, or plans, on caregiver / child interactions. For
example, this monitoring and evaluation design can offer facility admin-
istration the capacity to track periods of the day during which children and
staff may be more vulnerable. Using this type of data in management deci-
sions is not a new concept and has been in the human services literature
during the past decade with the rise of computer-based information man-
agement, and quality assurance systems (Freel & Epstein, 1993; Grasso &
Epstein, 1987; Grasso & Epstein, 1993).

A crisis intervention strategy is a necessary and critical aspect of a
residential child care facility’s treatment and behavior management for
children who have the potential for aggressive and self-destructive behav-
ior. Clearly, this modest study showed that this facility benefited from the
implementation of TCI during the study period. The benefits were evident
on different levels. Direct care staff increased and retained their crisis in-
tervention knowledge and techniques, and were more confident in their
ability to manage crises as they arose. Staff reported that their confidence
working with colleagues as a team increased, and overall there was a more
consistent approach to children in crisis across units, and among staff
shifts within units. In addition to raising staff learning and confidence lev-
els, selected supervisory staff learned techniques to conduct effective and
long-lasting training programs, and to assist staff in coping with crises.
This project provides limited but promising evidence that increasing staff knowledge and skills, improving their confidence and utilizing comprehensive prevention, de-escalation, crisis and post-crisis strategies and techniques can result in substantial reductions in the most aggressive child behavior, and offer significant reductions in physical restraint interventions.

References


