Published in final edited form as:

Acad Pediatr. 2011 November ; 11(6): 451–459. doi:10.1016/j.acap.2011.08.002.

A Novel Self-Evaluation Tool to Assess the Team Function of a Child Protection Team

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Abstract

Objective—To develop a reliable and valid self-evaluation tool for use by child protection team (CPT) members.

Methods—An on-line survey was administered to members of 10 CPTs. The survey included 3 sections: 1) Initial Conditions (eg, team composition, resources); 2) Enabling Conditions (eg, team effort, strategy); and 3) Team Effectiveness (eg, team cohesion, meeting performance standards). Each section contained multiple subscales. Internal consistency was calculated using Cronbach's α . To evaluate construct validity, the subscale scores of the most advanced teams who qualified as centers of excellence ($N=3$) were compared to the subscale scores of the other teams ($N=7$) to determine whether the tool could distinguish between the two.

Results—Of 116 team members, 83 (72%) completed the survey. The subscales exhibited good internal consistency ($\alpha = 0.71 - 0.97$). The 3 centers of excellence had significantly higher mean scores than the other 7 CPTs on the following subscales: incentives (in the Initial Conditions section) (61.46 vs. 38.89, $p = 0.003$), effort (in the Enabling Conditions section) (79.31 vs. 67.70, $p = 0.003$), and professional growth (in the Team Effectiveness section) (83.89 vs. 80.40, $p = 0.004$).

Conclusions—This novel survey demonstrates satisfactory test characteristics and can be used to assess CPT performance and identify areas for improvement.

Keywords

Child Protection Team; Child Abuse; Program Evaluation

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Financial Disclosures: the authors have no relevant financial relationships with the manufacturers of any commercial products or providers of commercial services related to this topic.

Conflict of Interest: the authors have no conflicts of interest to report.

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BACKGROUND

Hospital-based child protection teams (CPTs) were first established more than 50 years ago as an approach to the care of abused children.^{1–3} These multidisciplinary teams are typically composed of doctors, nurses, social workers, and other professionals with expertise in the field of child abuse and neglect. Nationwide, CPTs vary significantly in their composition, roles, and source of funding, but they share a common goal of improving the coordination and quality of care of children who are suspected victims of maltreatment.^{3–19}

In a recent study, experts in the field of child abuse and neglect reached consensus on tasks that CPTs should perform and factors related to the effectiveness of CPTs.²⁰ The expert panel identified regular program review as a characteristic of high-quality CPTs and concluded that CPT performance should be evaluated both internally by CPT members and externally by professionals who use CPT services. The National Association of Children's Hospitals and Related Institutions (NACHRI) has published guidelines that outline what a CPT should do to be considered either a basic team, an advanced team, or a center of excellence²¹ (Table 1), but there is no standard approach to evaluating a CPT's performance, and no evaluation tools are available.

A reliable and valid self-assessment survey would help CPTs conduct regular internal evaluations, identify team strengths and weaknesses, and monitor progress towards goals of quality improvement. The use of a standardized evaluation would also allow for the comparison of teams to one another and help identify the characteristics of CPTs that are critical to success. The aims of this study, therefore, were to develop a self-evaluation tool for use by CPT members and to evaluate the structure, internal consistency, and construct validity of the instrument.

METHODS

Theoretical framework

To develop a model of performance specific to CPTs, we used the theoretical framework of Hackman's model of group effectiveness²² as well as prior findings on factors related to the effectiveness of CPTs.²⁰ While there are many ways to evaluate team performance, we chose to use Hackman's model (Figure 1) because it has been used in the evaluation of multidisciplinary health care teams in the past.^{22,23}

Hackman's model is based upon the premise that a team's effectiveness is related to definable variables that impact team function. The first category of variables, known as initial conditions, is comprised of structural features that include group structure and composition, task clarity, organizational context, and the physical environment. The second category of variables, known as enabling conditions, reflects the actual performance of team members. Variables included in this category are team effort, adequate knowledge and contribution, and task performance strategy. Both initial conditions and enabling conditions impact team effectiveness, and Hackman identifies three specific outcomes that should be included in measuring team effectiveness: 1) the team's production of a high quality product; 2) the team's cohesion, or desire to continue working together; and 3) the team's contribution to the well-being and growth of members.

To adapt this model to the evaluation of CPTs, we used information on factors related to CPT effectiveness to develop the survey questions. In our prior study,²⁰ experts in the field of child abuse and neglect identified variables such as active interdisciplinary collaboration, provision of adequate resources by the hospital, and team collegiality, as important for CPT

effectiveness. We used these findings to create survey questions specific to the variables important for CPT function and then organized the questions into the initial conditions, enabling conditions, and team effectiveness categories described by Hackman's model.

Human Subjects and Ethical Considerations

IRB approval was obtained from the Boston University Medical Campus IRB prior to the initiation of the study.

Participants

Ten hospital-based CPTs with a total of 116 members were selected to complete the CPT self-evaluation. To select the teams, we solicited nominations of CPTs that might be interested in participating from the members of the Helfer Society, an honorary group of physician leaders in the field of child abuse and neglect. Twenty CPTs were nominated and contacted by the study team. A survey was completed by each CPT director to determine whether the CPT met the NACHRI definition of a basic team, an advanced team, or a center of excellence. The 10 teams ultimately included in the study were selected by the study team from the 20 respondents to represent a range in basic, advanced, and center of excellence teams. The CPT directors of the 10 teams that were included in the study were asked to complete the CPT self-evaluation along with the other members of their teams.

Description of the Instrument

The original survey consisted of 89 questions in three main categories: 1) initial conditions, which included 4 subscales related to team size and composition, task clarity, institutional support, and the physical environment; 2) enabling conditions, which included 3 subscales related to effort, knowledge and decision making, and strategy; and 3) team effectiveness, which included 3 subscales related to standards met, team cohesion and desire to continue working together, and the team's contribution to personal and professional growth. Table 2 summarizes the content of each section and provides examples of the types of questions included. The questions were presented in a multiple choice format, most with Likert-type scale answer choices. For the purpose of the study, we also included a section on demographics.

The survey of the team leader consisted of 53 questions in three different categories: 1) the section on team structure and staffing included questions about medical leadership, team coordination, and the role of social work; 2) the section on team function asked about clinical services provided, policy work, prevention and advocacy activities, community collaboration, educational initiatives, and research; and 3) the section on administrative infrastructure focused on funding, reimbursement, and risk management.

Procedure and Analysis

The internet-based self-evaluation survey concerning the team function of CPTs was administered to the members of the 10 participating CPTs. The members received an introductory letter from a member of the study team (IT) as well as two additional reminder letters.

Factor Analysis—Confirmatory factor analysis was used to test whether the hypothesized theoretical model of the team survey was consistent with the data. The chi-square statistic, root mean square error of approximation (RMSEA), comparative fit index (CFI), non-normed index (NNI), and normed fit index (NFI) were all used to test whether the model fit the data. Exploratory factor analysis was used to assess alternative underlying structures, and Kaiser's rule was used to select factors with eigenvalues > 1 .²⁴

Item Evaluation and Reduction—The scores on each subscale were summed and then linearly transformed to a 100 point scale for ease of comparison. For each item and subscale, the number and percentage of missing responses, mean score, standard deviation, and distribution of responses were evaluated. To reduce the number of questions on the survey, the correlation between items on the same subscale was evaluated using Pearson correlation coefficients. When two items on the same subscale were highly correlated (Pearson correlation coefficient ≥ 0.9), the question that was also most highly correlated with additional items was eliminated. Items were also removed if their factor loading coefficient was ≤ 0.40 or if their elimination led to an increase in Cronbach's α of ≥ 0.05 for the subscale.

Assessment of Reliability—For each subscale, internal consistency was calculated using Cronbach's α .²⁵

Assessment of Construct Validity—The team leader's survey was administered to each CPT director, and the responses were evaluated using simple frequencies. Members of the study team (IT, CK) used the information from the survey of the team leaders to classify CPTs as centers of excellence, advanced teams, or basic teams based on the NACHRI criteria. Construct validity was estimated by comparing the mean subscale scores of center of excellence ($n = 3$), advanced ($n = 4$) and basic ($n=3$) teams to determine whether the tool could distinguish between CPTs in the different categories. Generalized estimating equations were used to adjust for the clustered data at the team level.²⁶ The mean subscale scores of centers of excellence teams ($n = 3$) were then compared to those of the advanced and basic teams combined ($n = 7$), again adjusting for clustered data at the team level. We hypothesized that there would be a measurable difference in subscale scores between the teams, with the center of excellence teams scoring higher.

RESULTS

Of the 116 members of the 10 participating CPTs, 83 (72%) completed the survey. The participants were predominantly female, White, and not Hispanic/Latino, and the majority had both worked at the hospital and been a member of the CPT for 3 years or more (Table 3). The respondents included physicians, nurse practitioners, nurses, social workers, and other professionals, including lawyers, psychologists, child life specialists, and child protective services workers.

Confirmatory factor analysis was performed on the subscales of each of the three survey categories: initial conditions, enabling conditions, and team effectiveness. The fit statistics demonstrated unacceptable model fit for all three sections (Table 4). Since the original hypothesized model was not a good fit, exploratory factor analysis was performed to identify alternative underlying structures. In the initial conditions category, 5 factors were identified with eigenvalues > 1 , accounting for 72% of the total variance of the category. In the enabling conditions category, 2 factors were identified with eigenvalues >1 , accounting for 92% of the variance, and in the team effectiveness category, 6 factors had eigenvalues >1 , accounting for 69% of the variance. The revised survey structure based on the exploratory factor analysis is presented in Table 5.

By eliminating questions that were highly correlated with other items on the same subscale (correlation coefficient ≥ 0.90), had factor loading coefficients ≤ 0.40 , or whose elimination led to an increase in Cronbach's α of ≥ 0.05 for the subscale, we were able to decrease the number of questions on the survey from 89 to 70. The revised self-evaluation tool can be found in Appendix 1.

The characteristics of the individual survey items are summarized in Table 6. The percent of missing values for each item ranged from 0–16%. In the team effectiveness section, 14% of responses were missing from each of the items in the review and reporting, testimony, and consultation subscales. The percent floor effect ranged from 0–8%, while the ceiling effect ranged from 5–81%. The subscales with the highest ceiling effects were the review and reporting, testimony, and consultation subscales in the team effectiveness section.

Table 7 summarizes the characteristics of each subscale. The percent of missing values ranged from 1–18%. The mean subscale scores, transformed to a 100 point scale, ranged from 55.39–86.38. The percent floor effect ranged from 0–15%, while the ceiling effect ranged from 0–67%. The highest ceiling effects were seen in the physical environment and testimony subscales. Each of the subscales exhibited good internal consistency with Cronbach's α ranging from 0.71–0.97.

Based on the results of the team leader survey, 3 of the 10 CPTs met the NACHRI criteria for centers of excellence, 4 for advanced teams, and 3 for basic teams. The participants who completed the team leader were predominantly physicians (90%) who had been members of the CPT for more than 5 years (80%).

The number of team members differed greatly between the teams in the three categories. A total of 39 participants were members of the 3 centers of excellence, 34 participants were members of the 4 advanced teams, and 10 participants were members of the 3 basic teams. Given the low number of participants from the basic teams, we were statistically unable to compare the mean subscale scores between the three groups. We therefore combined the basic and advanced teams and compared the members' mean scores to those of the members of the 3 centers of excellence. Table 8 summarizes the mean subscale scores for the centers of excellence and the combined basic and advanced teams. The centers of excellence had higher mean subscale scores when compared to the other teams on the incentives subscale in the initial conditions section (61.46 vs. 38.89, $p = 0.003$), the effort subscale in the enabling conditions section (79.31 vs. 67.70, $p = 0.003$), and the professional growth subscale in the team effectiveness section (83.89 vs. 80.40, $p = 0.0004$).

DISCUSSION

We used a well-accepted theoretical framework to develop a novel instrument to evaluate CPT performance. The revised instrument demonstrated good internal consistency, and at least one subscale on each section was able to distinguish between teams considered centers of excellence and other teams. In fact, the centers of excellence scored higher than the other teams on many subscales, but we had limited power to detect a statistically significant difference. In the future, this tool could be used internally by individual CPTs to assess team function, identify areas for improvement, and monitor progress towards the goals of quality improvement. An internet-based version of the survey would allow individual CPT members to respond anonymously, which may result in more candid responses. While we developed the survey specifically for the self-evaluation of CPTs, the instrument includes measures of team function that could be applied to other hospital-based multidisciplinary care teams.

Although our original hypothesized survey model was not a good fit with the data, we were able to use exploratory factor analysis to identify meaningful subscales in each category and revise the structure of the survey. When we analyzed the individual questions included in the survey, we noted a ceiling effect, particularly on the questions included in the subscales in the section on team effectiveness related to review and reporting, testimony, and consultation. The participants ranked their teams highly in the areas of providing multidisciplinary review of cases of possible child abuse and neglect, facilitating the

accurate communication of child abuse and neglect findings to appropriate agencies, providing testimony of medical findings in court when necessary, and providing medical consultations on cases of possible child abuse and neglect. These are some of the most basic tasks of a CPT so the high rankings are not surprising. While it is possible that the CPTs are doing well in these areas, external measures of team performance are needed to further establish the validity of this self-assessment survey.

The subscales of the revised evaluation tool demonstrated good internal consistency, with Cronbach's $\alpha > 0.7$, which is a widely accepted demarcation for satisfactory internal consistency.²⁷ When we assessed whether the survey could distinguish between centers of excellence and other CPTs as defined by NACHRI, we found a statistically significant difference in mean scores on the subscales concerning incentives, effort, and professional growth. The incentives subscale includes questions related to individual and team incentives, the effort subscale includes questions related to attendance and active participation, and the professional growth subscale contains questions related to the ways in which participation on the team leads to skill acquisition and professional development.

Many of the NACHRI guidelines used to define basic, advanced, and center of excellence teams focus on factors related to team structure, staffing, and administration. While the criteria included in the NACHRI guidelines emphasize important aspects of CPT function, they are incomplete. The inclusion of the additional subscales in this novel instrument will allow CPT members to provide more comprehensive assessments of their team's function.

This study has at least four limitations. First, it is possible that we have overlooked a component of CPT performance and have not included it in our instrument. When developing the content of the evaluation tool, we included tasks and characteristics of CPTs that have previously been identified as important for CPT effectiveness. Many of these are general variables that are important to CPTs but are not necessarily unique to the field of child abuse. There are likely specific factors that influence the performance of individual teams that we have not included in this survey, and some teams may need to do additional assessment of certain areas of team function. We believe, however, that the content of this instrument will be widely applicable to hospital-based CPTs and will provide meaningful feedback on important areas of team function.

Second, our results may be affected by the overall response rate as well as the missing data for individual items. The overall response rate of 72%, however, is higher than the average response rates that have previously been reported for both electronic and print surveys.^{28, 29} The response rates for individual questions varied widely, with missing data ranging from 0–16%. On the subscales, missing data ranged from 1–18%. The unanswered questions may have been due, in part, to the length of the survey. By analyzing the characteristics of the individual survey questions, we were able to reduce the number of questions from 89 to 70, which is a 21% reduction. The revised survey will be faster to fill out and will likely demonstrate an improved completion rate.

Third, when evaluating the difference in scores between centers of excellence, advanced, and basic teams, we did not have sufficient power to compare the three groups. We combined the basic and advanced teams, which likely accounts for some of the similarity in subscale scores. We would probably see a larger difference between the mean subscale scores, particularly in the initial conditions and team effectiveness subscales, if we had compared the basic teams to advanced or center of excellence teams.

Finally, this evaluation tool is a measure of self-assessment of CPT team function by CPT members. While this is an important component of evaluation, it should not be the only measure of CPT success. Future work will focus on identifying interim milestones and

outcome measures of CPT function that can be used to validate the self-evaluation tool and further assess CPT performance. Potential measures of CPT performance that could be used to validate the survey include time from referral to CPT to completion of the consult, team member adherence to clinical practice guidelines, child re-referral rates to Child Protective Services, the receipt of services by families, and child re-injury rates. External evaluation of the CPT by professionals who refer cases to the team will also provide important information about team performance, but additional work is needed to adapt the evaluation tool for external assessment.

CONCLUSIONS

This novel evaluation tool demonstrates satisfactory internal consistency, and three subscales can distinguish between centers of excellence and other CPTs. This survey can be used internally by CPT members to identify team strengths and weaknesses and monitor progress towards goals of quality improvement. In the future, this survey could be modified and used to evaluate other hospital-based multidisciplinary care teams.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Acknowledgment of support: This research was funded in part by grant R03 HD050445-01 from NICHD (Tien) and T32 HP10263-01 from Kirchstein-NRSA (Kistin).

Abbreviations

CPT	Child Protection Team
NACHRI	National Association of Children's Hospitals and Related Institutions
RMSEA	root mean square error of approximation
CFI	comparative fit index
NNI	non-normed index
NFI	normed fit index

References

1. Delnero, H.; Hopkins, J.; Drews, K. The medical center child abuse consultation team. In: Kempe, CH.; Helfer, RE., editors. *Helping the Battered Child and His Family*. Philadelphia, PA: JB Lippincott Co; 1972. p. 161-176.
2. Schmitt, BD., editor. *The CPT Handbook*. New York, NY: Garland STPM Press; 1978.
3. Rowe DS, Leonard MF, Seashore MR, Lewiston NJ, Anderson FP. A hospital program for the detection and registration of abused and neglected children. *N Engl J Med*. 1970; 282(17):950-952. [PubMed: 5436032]
4. Thomas DE, Leventhal JM, Friedlaender E. Referrals to a hospital-based child abuse committee: a comparison of the 1960s and 1990s. *Child Abuse Negl*. 2001; 25(2):203-213. [PubMed: 11330920]
5. Bross, DC.; Krugman, RD.; Lenherr, MR.; Rosenberg, DA.; Schmitt, BD. *The new CPT handbook*. New York, NY: Garland Publishing Inc; 1988.
6. Hochstadt NJ, Warwicke NJ. How effective is the multidisciplinary approach? A follow-up study. *Child Abuse and Neglect*. 1985; 9(3):365-72. [PubMed: 4052843]

7. Wilson, EP. Multidisciplinary approach to child protection. In: Ludwig, S.; Kornberg, AE., editors. *Child Abuse: a Medical Reference*. New York, NY: Churchill-Livingstone; 1992. p. 79-84.
8. Watt JW. Protective services teams: the social worker as liaison. *Health Soc Work*. 1985; 10(3): 191–198. [PubMed: 4029800]
9. Ebeling, NB.; Hill, DA., editors. *Child Abuse Intervention and Treatment*. Acton, MA: Publishing Sciences Group Inc; 1975. p. 55-75.
10. Pardess E, Finzi R, Sever J. Evaluating the best interests of the child: a model of multidisciplinary teamwork. *Med Law*. 1993; 12(3–5):205–211. [PubMed: 8231685]
11. Whitworth JM, Lanier MW, Skinner RG Jr, Lund NL. A multidisciplinary, hospital-based team for child abuse cases: a “hands-on” approach. *Child Welfare*. 1981; 60(4):233–43. [PubMed: 6788459]
12. Mundie GE. Team management of the maltreated child in the emergency department. *Pediatr Ann*. 1984; 13(10):771–6. [PubMed: 6504589]
13. Cohn, AH. Organization and administration of programs to treat child abuse and neglect. In: Newberger, EH., editor. *Child Abuse*. Boston, MA: Little Brown and Company; 1982. p. 89-101.
14. Ludwig S. A multidisciplinary approach to child abuse. *Nurs Clin North Am*. 1981; 16(1):161–5. [PubMed: 6909873]
15. Tien I, Bauchner H, Reece R. What is the system of care for abused and neglected children in children’s institutions? *Pediatrics*. 2002; 110(6):1226–1231. [PubMed: 12456923]
16. Wallace GH, Makoroff KL, Malott HA, Shapiro RA. Hospital-based multidisciplinary teams can prevent unnecessary child abuse reports and out-of-home placements. *Child Abuse Negl*. 2007; 31:623–629. [PubMed: 17590436]
17. Jones R, Flaherty EG, Binns HJ, Price LL, et al. Clinicians’ description of factors influencing their reporting of suspected child abuse: report of the child abuse reporting experience study research group. *Pediatrics*. 2008; 122:259–266. [PubMed: 18676541]
18. Giardino AP, Montoya LA, Leventhal JM. Financing medically-oriented child protection teams in the age of managed health care: a national survey. *Child Abuse Negl*. 2004; 28:25–44. [PubMed: 15019437]
19. National Association of Children’s Hospitals and Related Institutions. 2008 survey findings and trends. NACHRI; January. 2009 Responding to child maltreatment, children’s hospitals child abuse services. Available at: http://www.childrenshospitals.net/AM/Template.cfm?Section=Child_Abuse_and_Neglect&Template=/CM/ContentDisplay.cfm&ContentID=41897
20. Kistin CJ, Tien I, Bauchner H, Parker V, Leventhal JM. Factors that influence the effectiveness of child protection teams. *Pediatrics*. 2010; 126(1):94–100. [PubMed: 20587674]
21. National Association of Children’s Hospitals and Related Institutions. Defining the children’s hospital role in child maltreatment. NACHRI; January. 2006 Available at: http://www.childrenshospitals.net/AM/Template.cfm?Section=Child_Abuse_and_Neglect&Template=/CM/ContentDisplay.cfm&ContentID=26605
22. Hackman, JR., editor. *Groups That Work (and Those That Don’t): Creating Conditions for Effective Teamwork*. San Francisco, CA: Jossey-Bass; 1990.
23. Vinokur-Kaplan D. Treatment teams that work (and those that don’t): an application of Hackman’s group effectiveness model to interdisciplinary teams in psychiatric hospitals. *Journal of Applied Behavioral Science*. 1995; 20:303–327.
24. Nunnally, JC. *Psychometric theory*. 2. New York: McGraw-Hill; 1978.
25. Cronbach LJ. Coefficient alpha and the internal structure of tests. *Psychometrika*. 1951; 16:297.
26. Liang KY, Zeger SL. Longitudinal data analysis using generalized linear models. *Biometrika*. 1986; 73:13–22.
27. Kline, P. *Handbook of Psychological Testing*. London, England: Routledge; 2000.
28. Cook C, Heath F, Thompson RL. A Meta-Analysis of Response Rates in Web- or Internet-Based Surveys. *Educational and Psychological Measurement*. 2000; 60:821–836.
29. Baruch Y. Response Rate in Academic Studies – A Comparative Analysis. *Human Relations*. 1999; 52(4):421–438.

WHAT'S NEW

Child protection teams (CPTs) should conduct regular internal performance review, but there is no standard tool available. We developed a reliable and valid survey that can be used by CPT members to identify team strengths and weaknesses and promote quality improvement.

Figure 1.
Hackman's Model of Group Effectiveness

Table 1

Summary of NACHRI Guidelines: Characteristics of CPTs that are Basic Teams, Advanced Teams, or Centers of Excellence

CPT Characteristic	Basic Team	Advanced Team	Center of Excellence
Structure/Staffing			
Medical Leadership	Pediatrician with training in child maltreatment, supervises and reviews cases, provides court testimony as needed, collaborates with others in the community.	Mentors other providers, directs improvement of medical services to maltreated children, helps secure funding.	Fellowship training in child abuse and neglect, board-eligible or certified in child abuse pediatrics. Regional leader, educator, researcher.
Team Administration	Paid position, allocated time for team coordination. Helps develop policies/procedures for management of maltreatment, collects and tracks data, cooperates with community investigations, provides appropriate follow-up as needed.	Works to secure ongoing administrative support and funding, organizes multidisciplinary team meetings, organizes peer-review systems, identifies gaps in the child abuse response system.	Coordinates community advocacy and prevention efforts, facilitates research and educational activities, takes a leadership role in organizations involved in child protection.
Social Work	Social worker is a permanent team member, has training in child abuse.	Social worker available during all regular hours and on-call for emergent cases.	Social worker is a regional resource, addresses mental health of referring providers.
Function/Role			
Clinical Services	Team provides: consultations, medical evaluations of suspected victims, sexual abuse exams, forensic interviews, psychosocial assessments and mental health referrals.	Program, clinic, or center staffed by CPT members. Someone is on-call every day for consultation.	Services performed by a clinician who specializes in child maltreatment. Mental health, counseling provided. Subspecialists trained in child abuse issues available.
Policies	The program has referral policies, clinical practice guidelines, and is in compliance with state laws related to reporting abuse.	Protocols for referrals from outlying institutions, policies related to community outreach, protocols with risk management department.	Crisis communications plan in place.
Prevention/Advocacy	Participates in advocacy initiatives to the greatest extent possible.	Time, resources allocated to advocacy and public education.	Leadership in advocacy programs. Hosts conferences, task force meetings.
Community Collaboration	Works with child protective services and local evaluation and treatment centers.	Meets regularly with protective services, police, other hospitals.	Serves as a regional medical resource for the community and other organizations.
Education	Trains hospital staff in child abuse recognition, referral. Staff participate in continuing education activities.	Education provided to residents and other trainees as well as to community-based providers and organizations.	Gives trainees the opportunity to participate in research, may support a fellowship program, provides national training.
Research	Members have knowledge of relevant research, collect data on cases on which team consults	Regular updates on maltreatment literature. Team initiates studies.	Initiates major research projects, engages other centers.
Administrative Infrastructure			
Funding/Reimbursement	Optimizes reimbursement from third-party payers, tracks expenses, partners with other organizations for grants/funds.	Contracts with community organizations and agencies. Has grants from local, state, or national organizations.	Diversified funding, multiple research grants, state funding or appropriations.
Risk Management	Works with hospital on standards for reporting abuse, complying with hospital standards.	Provides 24 hour coverage to offer expert assessment as needed. Develops plan for accusations of staff.	Trains other providers on identification and reporting of abuse. Presents information on controversial cases.

NACHRI: National Association of Children's Hospitals and Related Institutions

CPT: Child Protection Team

Table 2

Content of the Original Child Protection Team Evaluation Tool

Section	Subscale (# questions)	Examples
Initial Conditions	<ul style="list-style-type: none"> • Team size and composition (3) • Task clarity(7) • Institutional support (8) • Physical environment (3) 	<p>“I think that the current composition of our team has a good combination of talents to perform its tasks well”:</p> <p>€ Strongly disagree</p> <p>€ Disagree</p> <p>€ Slightly disagree</p> <p>€ Neither agree nor disagree</p> <p>€ Slightly agree</p> <p>€ Agree</p> <p>€ Strongly agree</p>
Enabling Conditions	<ul style="list-style-type: none"> • Effort (6) • Knowledge and decision making (5) • Strategy (7) 	<p>At your last 4 or 5 team meetings, to what extent did team members come prepared for the meeting?</p> <p>€ Never or almost never</p> <p>€ Seldom</p> <p>€ Occasionally</p> <p>€ Frequently</p> <p>€ Always or almost always</p>
Team Effectiveness	<ul style="list-style-type: none"> • Standards met (36) • Team cohesion, desire to continue working together (7) • Contribution to personal and professional growth (7) 	<p>During the last 6 months, to what extent do you feel that your team's performance of medical consultations met the standards of quality expected by the team?</p> <p>€ Not at all or hardly</p> <p>€ A little</p> <p>€ Somewhat</p> <p>€ Considerably</p> <p>€ Completely</p> <p>€ Don't know</p> <p>€ NA</p>

Table 3

Demographics of Participating Team Members

Demographics	% (N = 83)
Age	
20–29 y/o	14.3
30–39 y/o	31.2
40–49 y/o	24.7
50–59 y/o	22.1
60–69 y/o	7.8
Sex	
Female	84.8
Race	
White	89.7
Black/African American	6.4
Other	3.9
Ethnicity	
Hispanic/Latino	2.6
Worked at the hospital	
Less than 6 months	3.9
6–12 months	5.2
>12 months to <3 years	13.0
3–5 years	23.4
more than 5 years	54.6
Member of CPT	
Less than 6 months	10.8
6–12 months	8.4
>12 months to <3 years	12.0
3–5 years	28.9
more than 5 years	39.7
CPT Professional role	
Social worker	32.9
MD	26.3
NP	11.8
Nurse	9.2
Other	19.7

Table 4

Results of Confirmatory Factor Analysis on the Original Hypothesized Survey Model

Survey Section	# Subscales	Chi-Square (p value)*	RMSEA [†]	CFI [‡]	NNI [§]	NFI [¶]
Initial Conditions	4	367.24 (<0.0001)	0.14	0.63	0.57	0.48
Enabling Conditions	3	249.48 (<0.0001)	0.12	0.73	0.69	0.58
Team Effectiveness	3	4522.98 (<0.0001)	0.21	0.23	0.19	0.19

* Chi-square probability for acceptable model fit is $p > 0.05$.

[†] RMSEA = root mean square error of approximation. Acceptable fit is <0.06 .

[‡] CFI = comparative fit index. Acceptable fit is >0.9 .

[§] NNI = non-normed index. Acceptable fit is >0.9 .

[¶] NFI = normed fit index. Acceptable fit is >0.9 .

Table 5

Revised Survey Structure Based on Exploratory Factor Analysis and Data Reduction

Section	Subscale (# questions)
Initial Conditions	<ul style="list-style-type: none"> • Team composition and function (6) • Hospital support (3) • Incentives (3) • Task clarity (3) • Physical environment (3)
Enabling Conditions	<ul style="list-style-type: none"> • Approach (9) • Effort (6)
Team Effectiveness	<ul style="list-style-type: none"> • Review of cases and facilitation of reporting (12) • Provision of testimony (6) • Medical consultations (6) • Team members wish to continue working together (4) • Contribution to personal wellbeing (4) • Contribution to professional growth (5)

Table 6
 Characteristics of Individual Subscale Items in the Revised Survey: Missing Data, Means, Distribution ^{*,†}

Subscale	Item	Score range	Missing n (%)	Mean (SD)	%Floor Effect	% Ceiling Effect	Proportion [‡] %
Initial Conditions	1	1-7	0 (0)	6.39 (0.58)	0	43	--
	2	1-7	0 (0)	6.02 (1.10)	0	35	--
	3	1-7	2 (2)	6.63 (0.56)	0	67	--
	4	1-7	2 (2)	4.79 (1.61)	0	16	--
	5	1-7	4 (5)	5.66 (1.40)	1	30	--
Hospital Support	6	1-7	2 (2)	5.56 (1.49)	1	27	--
	7	1-7	2 (2)	5.47 (1.48)	2	27	--
	8	1-7	5 (6)	4.40 (1.73)	6	13	--
	9	1-7	5 (6)	5.1 (1.75)	4	23	--
Incentives	10	1-7	8 (10)	3.39 (1.64)	8	5	--
	11	1-7	9 (11)	4.61 (1.79)	3	20	--
	12	1-7	13 (16)	4.46 (1.67)	1	11	--
Physical Environment	13 [*]	1-2	9 (11)	--	--	--	78
	14 [*]	1-2	9 (11)	--	--	--	69
	15 [*]	1-2	10 (12)	--	--	--	85
	16	1-7	0 (0)	6.45 (0.82)	1	59	--
Task Clarity	17	1-7	0 (0)	6.13 (1.00)	5	41	--
	18	1-5	1 (1)	3.39 (0.99)	4	12	--
Enabling Conditions	19	1-7	1 (1)	4.27 (1.74)	6	9	--
	20	1-7	2 (2)	5.20 (1.49)	0	17	--
	21	1-7	1 (1)	5.37 (1.59)	2	27	--
	22	1-5	2 (2)	3.56 (0.89)	1	15	--
	23	1-7	2 (2)	5.72 (1.35)	1	30	--
	24	1-7	1 (1)	5.78 (1.04)	0	24	--
	25	1-7	8 (10)	5.27 (1.64)	0	25	--
	Approach						

Subscale	Item	Score range	Missing n (%)	Mean (SD)	%Floor Effect	% Ceiling Effect	Proportion ^z %
Effort	26	1-7	1 (1)	5.54 (1.21)	0	17	--
	27	1-5	2 (2)	3.59 (0.89)	1	15	--
	28	1-5	7 (8)	4.01 (1.13)	5	41	--
	29	1-5	7 (8)	4.38 (0.82)	0	54	--
	30	1-5	7 (8)	4.04 (1.04)	3	42	--
	31	1-5	9 (11)	4.49 (0.74)	0	62	--
	32	1-7	2 (2)	4.37 (1.68)	4	9	--
	33*	1-2	6 (7)	--	--	--	53
Team Effectiveness							
Review and reporting	34	1-5	12 (14)	4.70 (0.86)	1	81	--
	35	1-5	12 (14)	4.62 (0.70)	0	73	--
	36	1-5	12 (14)	4.32 (1.42)	0	70	--
	37	1-5	12 (14)	4.23 (1.43)	0	63	--
	38	1-5	12 (14)	4.51 (1.16)	1	75	--
	39	1-5	12 (14)	4.42 (1.18)	0	70	--
	40	1-5	12 (14)	4.08 (1.71)	0	65	--
	41	1-5	12 (14)	4.06 (1.67)	0	63	--
Testimony	42	1-5	12 (14)	4.44 (1.14)	1	66	--
	43	1-5	12 (14)	4.32 (1.24)	0	63	--
	44	1-5	12 (14)	4.11 (1.64)	0	63	--
	45	1-5	12 (14)	4.03 (1.66)	0	60	--
	46	1-5	12 (14)	3.86 (2.03)	1	73	--
	47	1-5	12 (14)	3.63 (2.16)	0	66	--
	48	1-5	12 (14)	3.58 (2.17)	1	63	--
	49	1-5	12 (14)	3.38 (2.27)	1	61	--
Consultations	50	1-5	12 (14)	3.54 (2.22)	1	66	--
	51	1-5	12 (14)	3.38 (2.28)	1	62	--
	52	1-5	12 (14)	4.49 (1.29)	1	80	--
	53	1-5	12 (14)	4.13 (1.58)	1	65	--
	54	1-5	12 (14)	4.13 (1.61)	0	66	--

Subscale	Item	Score range	Missing n (%)	Mean (SD)	%Floor Effect	% Ceiling Effect	Proportion [‡] %
Team cohesion	55	1-5	12 (14)	4.30 (1.53)	0	75	--
	56	1-5	12 (14)	3.99 (1.75)	0	65	--
	57	1-5	12 (14)	3.95 (1.67)	1	59	--
	58	1-7	2 (2)	5.58 (1.29)	0	26	--
	59	1-7	1 (1)	6.73 (0.47)	0	74	--
Personal wellbeing	60	1-7	1 (1)	5.76 (1.16)	0	26	--
	61	1-7	1 (1)	5.82 (1.12)	0	27	--
	62	1-5	1 (1)	4.21 (0.87)	0	45	--
	63	1-5	1 (1)	4.26 (0.81)	0	46	--
	64	1-5	2 (2)	3.96 (0.97)	1	35	--
Professional growth	65	1-5	2 (2)	3.89 (1.04)	1	36	--
	66*	1-2	1 (1)	--	--	--	27
	67	1-7	1 (1)	5.91 (0.97)	0	28	--
	68	1-7	1 (1)	6.07 (0.90)	0	34	--
	69	1-7	2 (2)	6.06 (0.97)	0	37	--
	70	1-7	1 (1)	6.23 (0.89)	0	43	--

* The denominator for the % missing, % floor effect, % ceiling effect, and proportion is N = 83

[‡] Percentages have been rounded to the nearest percent

[‡] 5 variables had only Yes/No answer choices – the proportion of “Yes” answers are presented here

Table 7

Characteristics of Revised Subscales: Missing Data, Mean Scores, Distribution, and Internal Consistency^{*,†,‡,§}

Subscale	# Items	Missing n (%)	Mean (SD)	% Floor Effect	% Ceiling Effect	Skew	Cronbach's α [§]
Initial Conditions							
Team Composition	6	9 (11)	80.21 (13.85)	0	3	-0.75	0.77
Hospital Support	3	10 (12)	67.05 (23.43)	3	10	-0.70	0.82
Incentives	3	15 (18)	55.39 (23.02)	0	4	-0.15	0.81
Physical Environment	3	10 (12)	77.17 (37.22)	15	67	-1.34	0.87
Task Clarity	3	1 (1)	81.17 (14.18)	0	10	-0.97	0.73
Enabling Conditions							
Approach	9	13 (16)	70.17 (16.60)	0	0	-0.73	0.77
Effort	6	15 (18)	73.59 (18.51)	0	4	-0.76	0.86
Team Effectiveness							
Review and reporting	12	12 (14)	86.38 (18.75)	0	31	-1.70	0.90
Testimony	6	12 (14)	71.22 (40.56)	0	54	-0.98	0.97
Consultations	6	12 (14)	83.33 (25.70)	0	38	-1.88	0.90
Team cohesion	4	2 (2)	82.82 (14.00)	0	14	-1.24	0.79
Personal wellbeing	4	2 (2)	76.56 (19.58)	0	20	-0.53	0.87
Professional growth	5	2 (2)	82.22 (11.76)	0	14	-0.15	0.71

* Scores transformed to 100 point scale

[†] The denominator for the % missing, % floor effect, and % ceiling effect is N = 83

[‡] Percentages have been rounded to the nearest percent

[§] Cronbach's $\alpha > 0.7$ is a widely accepted demarcation for satisfactory internal consistency.²¹

Table 8Mean Subscale Scores: Centers of Excellence vs. Other Child Protection Teams^{*†}

Subscale	Centers of Excellence (N=3, 39 total members) Mean (SD)	Other Teams (Basic and Advanced) (N=7, 44 members) Mean (SD)	p
Initial Conditions			
Team Composition	83.00 (11.06)	77.63 (18.26)	0.13
Hospital Support	78.25 (22.32)	65.59 19.04)	0.21
Incentives	61.23 (20.45)	49.61 (20.79)	0.003
Physical Environment	82.75 (40.25)	82.76 (47.14)	0.99
Task Clarity	82.87 (11.10)	79.45 (21.09)	0.25
Enabling Conditions			
Approach	70.69 (17.08)	69.38 (11.36)	0.68
Effort	78.98 (17.32)	67.95 (19.62)	0.003
Team Effectiveness			
Review and reporting	91.66 (14.51)	82.89 (26.33)	0.09
Testimony	74.81 (39.71)	69.22 (36.80)	0.59
Consultations	88.09 (26.24)	81.53 (24.40)	0.37
Team cohesion	78.70 (11.97)	79.10 (10.77)	0.68
Personal wellbeing	80.23 (15.54)	72.98 (18.82)	0.15
Professional growth	83.44 (10.29)	80.67 (11.07)	0.004

* Scores transformed to 100 point scale

† Means and p values have been adjusted to account for clustered data at the team level by using generalized estimating equations